BRCiS Building Resilient Communities in Somalia

CAUSAL DESIGN

BRCiS III Baseline Report

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BRiCS Building Resilient Communities in Somalia

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Prepared for:

Causal Design partners with international development clients to provide rigorous independent program evaluation, expand cultures of evidence within organizations, and join them in efforts to relieve human suffering and end poverty.

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TABLE OF CONTENTS

EXECUTIVE SUMMARY

Building Resilient Communities in Somalia (BRCiS)[1], a consortium of national and international organizations, supports marginalized communities in Somalia to become more resilient to shocks and stresses, including as a result of climate change, through a contextually adaptive approach. The BRCiS Consortium is implementing BRCiS III, a five-year resilience project funded by FCDO[2], in nineteen districts in the Southern and Central regions Somalia and is supporting households across 172 communities. The long-term objective of the BRCiS III project is to contribute to reduced severity of humanitarian needs and displacement in Somalia by supporting marginalized communities in rural Somalia to have sufficient social, financial, and environmental assets to better cope with shocks and stresses and adapt to the effects of climate change. To achieve this outcome, BRCiS will implement a series of layered and sequenced, mutually reinforcing outputs designed to strengthen the systems most likely to support rural communities in Somalia to cope with high impact shocks and stresses in the short term and adapt to climate change in the medium to longer term.

Causal Design[3] is collaborating with the BRCiS Consortium to assess the levels of resilience capacities of BRCiS III communities and to what extent those and wellbeing outcomes improve over the course of BRCiS III. As BRCiS programming is targeting resilience at the household, community, and larger ecosystem levels, the BRCiS III measurement strategy assesses resilience capacities at all three levels including household surveys, Community Scoring Dialogues, and an assessment of the surrounding ecosystems. Further, as resilience capacities across all these levels interact and are synergistic, these aspects of resilience are integrated together in a single measurement, developed by BRCiS and Causal Design, called the Resilience Spectrum Score. This index is a qualitative measure that is meant to provide indicative evidence of change in resilience capacities over time.

This approach to measuring resilience is unique in that it integrates multiple levels of resilience capacities in a single measure. It acknowledges that a household's ability to prepare for and weather shocks is influenced not only by their own capacities but by the larger capacities of the community and the broader ecosystem.

This baseline report highlights key findings across data collected at each of the household, community, and ecosystem levels and seeks to understand the profile of the BRCiS III project target areas, the types and impacts of shocks and stresses experienced by communities, the differential effects on vulnerable groups, the coping strategies employed by households, the existing resilience capacities, and the pathways to improving resilience to inform the design and implementation of BRCiS III resilience-building interventions. The key findings from the baseline report are:

- **Households in BRCiS III communities live in highly shock-prone environments with strong perceived shock impacts.** Almost all households (92%) reported that they experienced at least one shock in the past year. Natural hazard shocks were most common with half of households

[1] https://www.nrc.no/what-we-do/brcis-consortium---building-resilient-communities-in-somalia/
[2] https://www.gov.uk/government/organisations/foreign-commonwealth-development-office
[3] https://causaldesign.com/

experiencing excessive rains or flooding in the past year, likely driven by the catastrophic El Niño floods experienced across large parts of the country in November 2023. Further, shocks are often unexpected: more than two-thirds of households who experienced flooding (reported by 49% of households) or drought (reported by 18% of households) did not anticipate it. Households perceive these shocks to have strong impacts on multiple dimensions of their wellbeing including income, food consumption, asset stocks, and water access. Most households reported that they have not yet recovered from the shock(s) they experienced the past year.

- **Some vulnerable groups report more severe impacts from shocks on some dimensions of their wellbeing.** Both households of a minority clan group and households with a member over 70 report more severe impacts on their income from flooding relative to less vulnerable households. Households without a male generating income report a more severe impact on food consumption from drought relative to households where a male is generating income. These same households also report a more severe impact on their health from several shocks and stressors including unemployment, rising food prices, and clan conflict.

- **Most households have seasonal employment and low access to education.** The most common sources of income are cash for work opportunities, livestock, and agriculture. Producing milk is most common in pastoral areas whereas growing sorghum is more common in agro-pastoral areas. Almost all (90%) of heads of households have not complicated primary education.

- **Households have very few assets and low access to financial services which limits their ability to absorb the impact of shocks.** Virtually no households (1%) regularly save and on average own very few productive or livestock assets. On average, households only have one source of income and very few have consistently reliable sources of income. Over three-quarters of BRCiS III communities have no access to financial services. This reality significantly limits households' ability to absorb and prepare for shocks: Eighty percent of households without plans to prepare for future shocks cite lack of savings as their primary constraint to doing so.

- **Households appear to have strong social ties within their immediate network but limited social capital beyond that.** Households regularly rely on their relatives for help both in and outside of the community, with 80% of households citing they can turn to these individuals in times of need. Further evidence to suggest strong social ties is that while savings is low, borrowing is very common and is one of the most frequently utilized coping strategies. Social ties beyond immediate relatives appear weaker, as few households cite being able to rely on other individuals in times of need. Most households also do not know a person of influence in their community.

- **While social cohesion within communities appears strong, collective action and engagement with local governance structures is low.** For over half of communities, there is a good level of social cohesion and peace within the community and/or with neighboring communities. The large majority of households (95%) also reported that they did not experience any localized conflict in the past year. However, collective action is low: almost all households (93%) did not participate in an activity to benefit the community with other community members in the past year. Further, while households report community leaders being active, it is uncommon for households to meet with community leaders and most households perceive themselves to have no influence over decision making.

- **Community governance structures to manage risk are relatively inclusive of vulnerable groups but are limited in other ways.** BRCiS III communities exhibited relatively stronger resilience capacities regarding inclusion of vulnerable groups and women into community decision making structures, relative to other community resilience capacities. Vulnerable groups and women are regularly and actively represented in community disaster risk reduction and recovery decision-making and management, though resulting decisions and actions sometimes address their needs and priorities. However, communities largely lack effective mechanisms for identifying disaster risks and linkages to high level actors to support with shock recovery**.** The majority of communities (98%) do not integrate disaster risk reduction into community development planning. Further, most communities (94%) have no partnerships between the community and external actors that can provide funds or resources for disaster risk reduction and recovery.

- **Communities have low resilience in disaster preparedness for effective response systems.** Most communities have no access to trained/qualified healthcare services and no organization responsible and capable of emergency preparedness, response and early recovery. Communities are marginally more resilient regarding operational early warning systems, where approximately one-quarter of communities have awareness about when a shock may occur, and leadership and volunteerism, where the community plays a somewhat active role in preparedness, response and recovery, but few or some of the affected people and vulnerable groups are reached.

- **Soil quality around households appears poor with low carbon content and high levels of erosion.** The soil organic carbon content on average measures 5.5 grams per kilogram or 0.55%, which is compared to between 10-20 grams per kilogram which is typically considered a healthy rangeland. On average, 75% of the area around households have soil erosion. The baseline analysis also highlights that ecosystem characteristics such as soil carbon content and erosion level among other attributes are some of the most predictive characteristics of food security and water access, which suggests that ecosystems are important for these outcomes. Aspects of ecosystem quality will be further explored once ICRAF's data collection exercise has completed.

- **At a big picture level, overall resilience is similar across households and differences between communities do not appear to be driven by geographic contexts.** When considering the Resilience Spectrum index, which captures resilience at the household, community, and ecosystem levels, all communities apart from one have scores between 2.5 and 3.5 (out of 5 where higher scores indicate higher resilience). Further, there is minimal variation of the Absorptive, Adaptive, and Transformative Resilience indices across livelihood zones. Overall, households have very low ability to absorb shocks (Absorptive Index), minimal ability to adapt livelihoods in face of shocks (Adaptive Index), and a moderate level of governance mechanisms, infrastructure, community networks, and formal and informal social protection mechanisms (Transformative Index). Most communities (77%) have low resilience according to the ARC-D methodology. Finally, the resilience variation that exists across communities does not appear to be driven by geography. In other words, there are many cases where clusters that score higher on the Resilience Spectrum are in the same region as those that score lower. This suggests that what may drive the differences in these cluster scores is less geographically driven and rather related to other aspects of the communities within those clusters. This affirms BRCiS III community-driven approach to understanding resilience and tailoring resilience building plans to each community.

- **Food security of households is low and coping strategies to mitigate food shortages are common.** Over one-third of households (37%) are classified as poor food security status and another 21% are classified as borderline, according to the Food Consumption Score. This maps to the IPC level of 3+. Fewer than half of households (43%) are classified as having an acceptable level of food security. Of the children who ate solid, semi-sold or soft foods in the past 24 hours, very few (2%) consumed foods from at least five of the key food groups.

- **Households regularly rely on reducing food consumption to mitigate food shortages.** The most common strategy to cope with shocks was to reduce expenditure, largely through reducing food consumption. Households use these strategies commonly: in the past seven days, strategies to reduce or change food consumption patterns were implemented between two to three days on average. Relying on relatives to borrow food or money to cope with food shortages is also common. The most common strategy in more dire circumstances is to sell livestock.

- **Only a quarter of households have access to a safe, reliable, and nearby drinking water source.** While many households have access to an improved water source that is nearby, that water source is not reliable year-round. Two-thirds of households (66%) are not able to access the same water source throughout the year. Additionally, access to water for productive use is much more limited: only 20% of households have access to water for this use.

The findings underscore the need for tailored and contextually-adaptive resilience-building interventions that address the specific challenges faced by vulnerable households and communities in BRCiS III clusters. In particular, the findings both validate certain BRCiS III programming priorities as well as highlight areas where additional investigation may be valuable:

- **Access to finance services and opportunities for income-generating livelihoods is a clear gap but a better understanding of the specific barriers to higher savings and diversified income streams may be useful.** A key finding of the baseline report was that access to savings, assets, and financial services is very low across households. As BRCiS has highlighted, when communities have increased access to financial assets from income, savings and affordable credit, they can better meet household needs and increase investment in resilience capacities. This underlines the importance of expanding and strengthening household asset reserves and income generating opportunities. However, it is not clear from the baseline findings what the current barriers to these outcomes are. For example, are savings low because of behavioral or institutional factors? Why do opportunities for self-employment not already exist? These types of insights can help refine whether the proposed approach of strengthening financial inclusion networks and facilitating access to business support services to support income generation are the right pathways to improving these outcomes.

- **Strengthening community decision-making advocacy structures and linking to external actors is needed but may possibly be limited by contextual factors.** The baseline report found that the majority of communities do not have procedures in place for understanding and identifying high risk shocks. Further, most communities have no partnerships between the community and external actors that can provide funds or resources for disaster risk reduction and recovery. This highlights that the planned development of community networks to identify and advocate for

resilience needs as well as linking these networks with local and national authorities as well as humanitarian and development actors could help fill this gap. However, it is also important to note that the baseline found that collective action within communities is currently low, that it is uncommon for households to meet with community leaders, and most households perceive themselves to have no influence over decision making. It is unclear what drives these findings, for example, whether households are not partaking in activities to benefit the community because those opportunities do not exist or because appetite for these types of activities is low. Nevertheless, these contextual factors would likely influence the effectiveness of this BRCiS III implementation plan so it will be important to monitor as these activities take place.

- **Strengthening ecosystems through natural resource management appears to be a critical activity but programming teams should also keep in mind possible contextual barriers.** The baseline report found that soil quality around households is relatively poor and access to safe, reliable drinking water is limited. Additionally, access to water for productive use is much more limited: only 20% of households have access to water for this use. While a more in-depth analysis of the ecosystem was limited with the available data, findings suggest that ecosystem strengthening would still be beneficial, especially around water management and soil preservation. However, relatedly, low collective action in communities may signal other contextual factors that might influence willingness to participate in participatory activities.

- **Consider revisiting the mechanism within Early Warning, Early Action systems.** Considering the anticipated frequency and severity of shocks, increasing communities' ability to forecast shocks to better prepare for them is critical. This is affirmed by the baseline finding that most households still do not anticipate natural hazard shocks before they occur: more than two-thirds of households who experienced flooding or drought did not expect it. However, even for households that reported hearing messages about natural hazards, most still did not expect the shock to occur. Further, most households do not have a plan to prepare for future shocks, though they cite financial constraints as the key barrier. While it is unclear from the baseline data whether the lack of preparation is behaviorally-related, this may be an important contextual factor to dig deeper into to ensure the effectiveness of Early Warning mechanisms.

- **Additional research on primary constraints to better food security may be valuable.** The baseline found that food security of households is overall low and that households regularly engage in coping strategies to manage these food shortages. However, the baseline was limited in its ability to unpack the drivers of food insecurity, whether access, availability, or demand for different types of food groups (with regards to food security indicators that measure diversity of food groups). As such, it may be useful to conduct additional inquiry around this point to validate whether enhancing food production systems and promotion of nutrition practices are the appropriate mechanisms to improve food security.

Additionally, there were several important learnings to consider ahead of midline and endline data collection:

- **Reconsider depth versus breadth of midline and endline survey instruments.** The baseline instrument was long (over two hours) and covered many indicators across different sectors. While

this allows us to learn about outcomes across different domains, it does not allow us to dive deeply into the mechanisms of any particular outcome or dig into certain learning questions (e.g. around programming for minority clan households) more deeply. Given that a key learning goal is to understand to what extent and how BRCiS III programming is contributing to changes in outcomes, it may be worth revisiting the structure of the instrument. For example, without a comparison group of households, we are limited in our ability to make claims about the causes of changes in outcomes. The more data that can be collected on the hypothesized causal pathways in the Theory of Change (ideally supported by qualitative work), the more effectively we can probe on what is contributing to changes in outcomes. Our recommendation is to focus on depth over breadth in the midline: focus on a subset of key outcomes for BRCiS and related intermediate outcomes and other questions that will help us understand the Theory of Change pathway or other key learning questions. This of course needs to be balanced with collecting the indicators that are required for reporting purposes. If BRCiS has available resources, additional qualitative work to complement this would likely be valuable.

- **Revisit approach for measuring percentage of BRCiS households displaced by shocks for midline and endline data collection rounds.** The baseline data collection revealed the challenges of measuring the logframe impact indicator "*Percentage of households displaced from BRCiS III communities by shocks."* Specifically, we are able to observe whether households are currently displaced in BRCiS III communities and whether previously displaced households have returned, but we are not able to observe households that have left and have not returned. This information will be collected in the midline and endline by speaking with community leaders to gather approximate figures on the number of households that have been displaced.

- **Revisit approach for measuring agricultural production indicators.** The data collected on household agricultural yield (i.e. quantity of various crops produced in the past year) were noisy. This required considerable cleaning of the data and eliminating of outlier values. The current yield indicators are generated from three pieces of information: the quantity produced by crop, area of arable land, and percentage of land dedicated to a specific crop. The data from the baseline suggests that this information is challenging for farmers to recall accurately. One option for reducing the noise in these indicators is to instead generate a binary variable rather than continuous indicators on overall yield. For example, "Have you planted X crop?" If yes, "Did you plant more than 10kg (or any other relevant threshold)?" Other questions could include the number of household members involved in farming activities or whether the planted corps were used for selling. These questions, while not providing precise yield estimates, can be informative and likely would require the same or less time than collecting detailed yield data.

- **Consider whether collecting income data is adding value.** The household income data was equally noisy, leading to imprecise and potentially inaccurate estimates of income. Measuring income in these contexts is very challenging due to highly seasonal income (e.g. agriculture, casual labor) and no administrative records. Rather than measuring overall household income, it may be more useful to target specific income streams that BRCiS is specifically aiming to increase, such as from self-employment. Measuring income from specific sources, especially from which income is relatively more regular, will likely lead to more reliable estimates.

- **Revisit conflict dynamics module.** The household survey included newly designed questions around conflict experienced within the household. The findings revealed that there are possibly measurement challenges with this module as a very low percentage of households reported that they experienced any form of conflict in the past year. This finding diverged from the percentage of households reporting conflict as a type of shock experienced in the past year. It is not clear what is driving this discrepancy, whether it be comprehension or translation issues or sensitivities around reporting different types of conflict. Regardless, it may be worth conducting some cognitive interviews with households to understand how they are answering these questions.
- **Refine questions on perceived impact of shock.** The household survey includes several questions on the impact households perceived on various domains of their wellbeing from shocks. These were Likert scale questions with values ranging from no to high impact. The usefulness of this question structure is not clear as there is little variation in responses (most respondents stated moderate to high impact), and it is not clear what the specific impact is that underpins those values. It may be worth considering the specific effects of certain shocks that BRCiS is interested in, for example, "Have any livestock died in the last year due to disease or lack of food?" These insights will likely be more useful for programming teams.

1.0 INTRODUCTION

1.1 Background

Somalia, located in the Horn of Africa, is a country of profound geographical, historical, and socio-political complexity. With a predominantly arid and semi-arid climate, it frequently experiences severe droughts and water scarcity, which, coupled with limited arable land and ongoing desertification, severely impacts agricultural productivity and food security. The country has an extensive coastline, making it vulnerable to coastal erosion and rising sea levels. In addition, Somalia is one of the most complex and protracted humanitarian crises in the world. The combination of armed conflict, climate shocks, and economic instability has resulted in widespread displacement, food insecurity, and severe malnutrition. According to recent estimates, over 2.6 million Somalis are internally displaced, and nearly 5.2 million people require humanitarian assistance.

Politically, Somalia has struggled to establish a stable and effective central government since 1991. The extremist group Al-Shabaab controls parts of the country and frequently conducts attacks, undermining efforts toward stability and governance. Corruption remains pervasive, affecting all levels of government and hindering development and international aid efforts. Environmentally, Somalia faces frequent droughts, leading to water shortages, crop failures, and livestock deaths, which exacerbate food insecurity and malnutrition. Periodic famines, resulting from the combined effects of drought, conflict, and poor governance, have caused significant loss of life and displacement. Deforestation, primarily driven by charcoal production, has led to soil erosion and loss of biodiversity. The impacts of climate change, including more frequent and intense extreme weather events, further threaten the country's already fragile livelihoods and food security.

Building Resilient Communities in Somalia (BRCiS) is a consortium of national and international organizations – Action Against Hunger (ACF), Concern Worldwide (CWW), GREDO, the International Rescue Committee (IRC), KAALO, Save the Children, and Norwegian Refugee Council (NRC)[4] as lead agency. BRCiS' objective is to work across the humanitarian-development divide, supporting marginalized communities in Somalia to become more resilient to shocks and stresses, including as a result of climate change. BRCiS approach is contextually adaptive, focused on the specific shocks, needs, and priorities of individual communities. BRCiS was established in 2013 and is now implementing projects funded by multiple humanitarian and development donors in more than ten regions of Somalia.

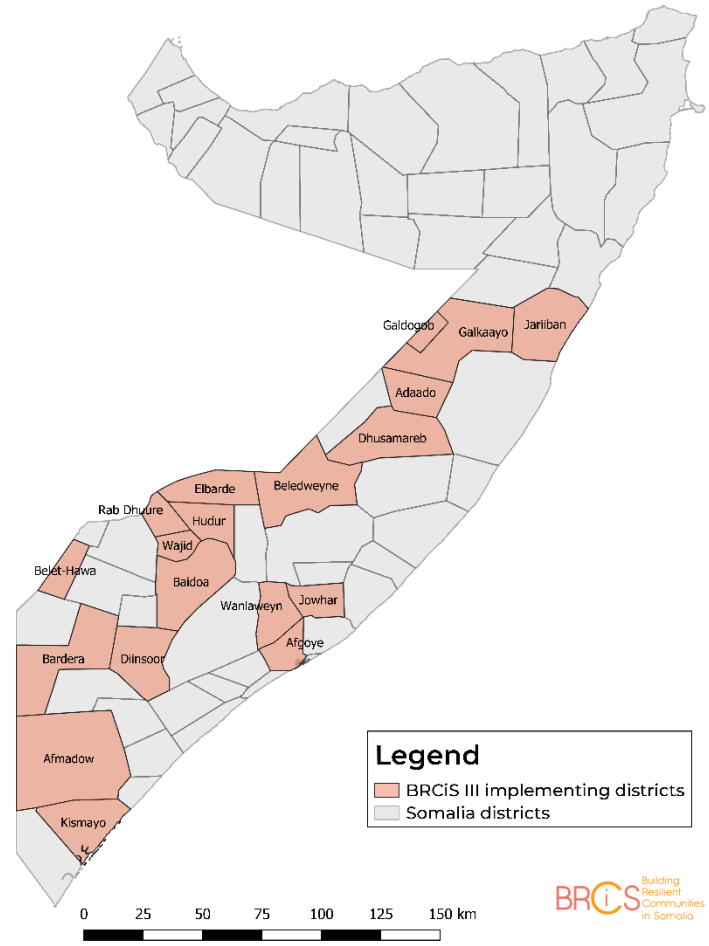
The BRCiS Consortium is carrying out BRCiS III, a five-year resilience project funded by FCDO which is targeting 1,019,330 Somalis across 172 communities across nineteen districts in South and Central Somalia. The main goal of BRCiS III is to reduce the severity of humanitarian needs and displacement in Somalia. This will be achieved by assisting marginalized rural communities in Somalia to build up enough social, financial, and environmental resources to better handle shocks, stresses, and climate change effects. BRCiS will implement a series of coordinated outputs aimed at strengthening systems that support rural communities in Somalia, helping them cope with immediate challenges and adapt to climate change over time. BRCiS III is designed and delivered at area-level with a focus on those that are most vulnerable and marginalized. This means that investments are made from a multi-sectoral perspective to generate

[4] https://www.nrc.no/

systemic change and transformational resilience gains. These systems are local leadership systems that dictate how communities plan for shocks and distribute assistance; the natural ecosystem, capable of providing life- and livelihood-sustaining ecosystem services like water, healthy soil and productive land and market systems that provide equal, inclusive economic opportunities, financial assets, and inclusion.

BRCiS III project operates in 9 regions (Bakool, Bay, Gedo, Lower Juba, Lower Shabelle, Middle Shabelle, Hiran, Galgaduud, and Mudug) in Somalia and 19 districts under these regions with over 1 million target population from 172 local communities. BRCiS III target communities share common resources such as grazing fields, water sources, forests, community resource conflicts, security, and forests, as well as strong economic connections. The BRCiS target locations in Somalia represent a diverse range of contexts, each with specific challenges related to conflict, climate shocks, and socio-economic conditions. BRCiS's holistic approach to building resilience involves tailored interventions that address the unique needs of each location, focusing on improving access to essential services, supporting sustainable livelihoods, and fostering social cohesion. By understanding and responding to the specific contextual backgrounds of these areas, BRCiS aims to create lasting positive impacts on the resilience and well-being of Somali communities.

Figure 1: BRCiS III Target Districts



1.2 Resilience Measurement Overview

Causal Design is collaborating with BRCiS to assess the levels of resilience capacities of BRCiS III communities and to what extent those and wellbeing outcomes improve over the course of BRCiS III. As BRCiS programming is targeting resilience at the household, community, and larger ecosystem levels, it is important that resilience is measured at each of these levels. As such, the BRCiS III measurement strategy assesses resilience capacities at three levels:

- **Household.** Household quantitative surveys will be used to assess resilience capacities at the individual household level. This household level survey instrument captures key aspects of household level resilience such as income sources, assets, and human and social capital.
- **Community.** BRCiS III will also measure the collective resilience capacities of communities where the project works, such as community decision-making, infrastructure, and health and education services, among others.
- **Ecosystem.** BRCiS III will assess each ecosystems' natural characteristics and dynamics of human access and use such as status of degradation, prevalence of resource-based conflict, and other dynamics pertaining to use of these resources, including social and gender-based inclusion/exclusion.

Further, as resilience capacities across all these levels interact and are synergistic, these aspects of resilience are integrated together in a single measurement, developed by BRCiS and Causal Design, called the Resilience Spectrum Score. This index intends to present a holistic view into resilience, incorporating system-level dynamics that influence resilience as well as individual household capacities into a single measure.

1.3 Research Questions

Measuring community resilience is important for understanding the strengths and weaknesses (resilience capacities) of a community in the face of shocks and stresses, and for identifying areas for improvement (resilience pathways). To that end, the key research questions that underpin the findings in this baseline report are:

1. What is the profile of BRCiS III project target areas, including demographic characteristics, socio-economic status, cultural norms, and other relevant contextual factors, and how does this profile impact the design and implementation of the project?
2. What types of shocks and stress do target communities experience the most? What is the frequency, duration, and severity (only for recurrent and shocks of greatest impact) of these shocks and stresses?
3. How do specific shocks and stresses differentially affect vulnerable groups and households within communities (particularly marginalized groups, women, elderly, and disabled persons) within households? In what ways should resilience-building interventions be tailored to them?
4. How do households in target communities typically prepare to respond to and recover from various shocks? What are the primary coping strategies used, how do they vary over time (seasonality), are they positive or negative?
5. What are existing levels of resilience capacities in target communities? What are the factors that contribute to or detract from community resilience?

6. What are the resilience pathways for improving target communities' resilience level? Which resilience capacities are critical to mitigate the negative effect of shocks on wellbeing? And how do these resilience capacities vary in different livelihood zones?

2.0 METHODOLOGY

The BRCiS baseline comprises three distinct surveys, namely the TANGO[5] household survey, the analysis of Resilience of Communities to Disaster (ARC-D)[6] community survey, and the Ecosystem Health Assessment survey. BRCiS collaborated with GOAL, the organization that developed the ARC-D tool, to provide training to Consortium Members on the ARC-D tool in Mogadishu between September 17 and 23, 2023. This collaboration also involved overseeing the data collection using the ARC-D tool, ensuring data quality, and providing support for reporting. Alison Sneddon, GOAL's Global Resilience Advisor, was the primary focal point for collaboration with BRCiS on this assessment.

BRCiS also collaborated with the World Agrofrestrty Centre (ICRAF)[7] to assist in the design and training of ecosystem health assessment tools, oversee the quality of data collection, and generate the ecosystem report. This collaboration was led by principal scientists Michael Hauser and Leigh Winoweicki and included multiple in-person trainings that covered the co-design of the ecosystem health baseline methodology (October 2 – 4, 2024 on the ICRAF Campus in Nairobi, Kenya) and practical training for field baseline focal points on the Land Degradation Surveillance Framework (LDSF) (February 4-7, 2024 in Samburu, Kenya). ICRAF took the lead in developing tools for assessing ecosystem health, training members on data collection, analysis, and reporting while BRCiS Members spearheaded the on-the-ground data collection efforts.

Lastly, BRCiS is also engaged with CAUSAL DESIGN to review and update the existing BRCiS TANGO household survey tool, train Consortium Members on the tool, analyze the baseline data from the household, ARC-D, and ecosystem assessments with the support of GOAL and ICRAF, and ultimately produce the final comprehensive baseline report. The CAUSAL DESIGN team was led by Christy Lazicky as Team Leader and Principal Investigator and also included Quetzali Ramirez Guillen as Research Manager & Assistant Researcher, with additional support provided as needed from within CAUSAL DESIGN's full-time staff.

BRCiS and CAUSAL DESIGN established a weekly meeting schedule to guide the entire process, from the inception of baseline tool development to training Members, conducting baseline data collection, analysis, and reporting. CAUSAL DESIGN provided a three-day virtual training session to train Members on household baseline data collection tools, data quality assurance, and ethical protocols. Subsequently, the team traveled to Mogadishu, Somalia, to co-lead an in-person workshop where they presented and contextualized the final baseline findings. BRCiS Members managed field-based data collection, while CAUSAL DESIGN took charge of data cleaning, analysis, and final reporting.

The role of the BRCiS Consortium Management Unit (CMU) was to lead and oversee and manage all these processes and ensure the quality of the work. To ensure data quality, the BRCiS CMU established

[5] https://www.tangointernational.com/resilience.html
[6] https://www.goalglobal.org/other-programme-priorities/disaster-resilience/
[7] https://www.cifor-icraf.org

a comprehensive data quality assurance guideline. This guideline outlined the procedures for data collection to be followed by Members and enumerators. It specified the expectations for enumerators, provided guidance for handling unforeseen challenges, and defined criteria for identifying valid and invalid surveys. Additionally, a live dashboard was developed to enable team members to monitor their performance throughout the data collection process.

The main duty of BRCiS Consortium Members was to oversee the training of field-based data collectors, carry out household and community ARC-D and ecosystem health baseline data collection, interviews, and ensure high standards of data quality, privacy, and ethics throughout the data collection process. In total more than 200 enumerators and 33 data collection team leaders were engaged in the data collection process. Approximately 25% of data collectors were female.

As outlined in the original ToR (see Appendix IV), the initial baseline assessment schedule aimed to conclude the baseline report and its dissemination by April 2024. However, the project experienced a few delays relating to the adverse effects of El Niño flooding (in November and December 2023) and observance of Ramadan (March 11th and April 10th) that constrained team members' ability to collect field data. The resulting delay was approximately two months with all deliverables concluded in June 2024. This delay did not have a substantive impact on the overall project implementation as both events likewise led to an extension of the overall project inception period by three months to end on 30 June 2024.

Training and Data Quality Assurance

BRCiS Members designated a team leader to assume leadership and oversight responsibilities for each Member's baseline data collection process, with the primary objective of leading the baseline data collection in the field and ensuring the quality of the collected data. These team leaders underwent comprehensive training sessions to equip them with the necessary skills and knowledge for utilizing ARC-D tools, Ecosystem baseline tools, and TANGO household baseline training. The training was conducted in person by GOAL and ICRAF, while Causal Design provided virtual training on TANGO household baseline and baseline data quality assurance protocols, facilitated by the BRCiS Consortium Management Unit. The training sessions focused on fostering a thorough understanding of the questionnaires, data collection procedures, and the imperative of upholding privacy, confidentiality, and ethical considerations during interviews. As a result of these trainings, Members' team leaders and the Consortium Management Unit reached a consensus on clearly defined roles, responsibilities, and timelines for the baseline data collection process. Subsequently, team leaders conducted field training sessions for the staff members responsible for conducting the field-based baseline data collection. Throughout the data collection process, the team leaders were present in the field to oversee the proceedings, ensure data quality, and provide any necessary support to the data collectors.

To uphold data quality standards, several processes were undertaken as follows:

- The baseline survey questionnaires, tools, and methodologies underwent extensive discussions and consultations with various stakeholders, including the BRCiS CMU, Members, Programme and M&E staff, field-based staff, and select international partners. This inclusive approach aimed to capture diverse perspectives and feedback, while also ensuring the appropriateness of these tools in accordance with ethical considerations.

- The baseline data collection tools were developed utilizing ONA Toolbox, with careful consideration given to incorporating quality checks, skip patterns, and data limits into the questionnaire design. These measures were implemented to minimize incorrect data entry and guarantee the accuracy of the collected data.
- Members team leaders implemented a robust spot-checking procedure during the field interviews. Enumerators underwent spot-checks, wherein team leaders re-interviewed at least one household per enumerator. This meticulous process served to detect any inconsistencies or errors that may have arisen during the data collection process.
- Furthermore, the BRCiS Consortium Management Unit (CMU) carried out data back-checks by randomly selecting households from each Member's target location. Through these back-checks, the CMU conducted interviews and rigorously verified the accuracy and reliability of the collected information. This additional layer of scrutiny contributed to the overall assurance of data quality within the baseline findings.
- After data collection, data cleaning procedures were implemented to identify and rectify any inconsistencies or missing data.

Ethics and Safeguarding

The Baseline survey strictly adhered to NRC data protection legislations, specifically the General Data Protection Regulation (GDPR), and ethical guidelines encompassing Integrity, Accountability, Respect, and Beneficence, in accordance with the required norms and standards. A comprehensive approach was taken to ensure participant rights, starting with an informed verbal consent question integrated into the data collection tool. Only households that provided consent were interviewed, guaranteeing that participants possessed a clear understanding of the survey's objectives, their voluntary involvement, and the confidentiality of their responses. Robust measures were implemented to safeguard confidentiality, respecting cultural, legal, and institutional provisions. Notably, a strong focus was placed on upholding traditions, customs, norms, and policies, including the principles of "Do No Harm" and the Child Protection Policy. These guiding principles were effectively communicated through training provided to the team leaders of the Members, reinforcing the commitment to protecting respondents' rights throughout the survey process.

Data Access and Security

Strict access controls were enforced to limit data accessibility solely to authorized personnel involved in the survey. Stringent data security measures, including encryption, password protection, and restricted access, were implemented to uphold the confidentiality and protect the integrity of the collected data. As part of this initiative, BRCiS established a shared TeamSite folder, enabling relevant stakeholders to collaborate and exchange baseline data and reports securely.

Digital Tools and Dashboards

To facilitate effective baseline data collection, monitoring data collection progress, ensure data quality, and present the final baseline findings, a range of digital tools were developed.

- Baseline Data Collection Tools: To facilitate the baseline data collection process, all data collection tools were developed using the ONA toolbox[8], a mobile-based platform widely recognized and utilized by the BRCiS Consortium Members. Given its long-standing usage within the BRCiS Consortium, the Members were already familiar with the ONA toolbox. To ensure data security and integrity, each Member was assigned a unique username and password. The CMU granted access to the baseline tool exclusively to the team leaders of the Members, further enhancing accountability and control over the data collection process.

- Baseline Data Collection Monitoring Dashboard: Baseline data collection monitoring tools and live dashboards were created to monitor the progress of the data collection as well as ensure the data quality by conducting spot-checks and data back-checks. To prioritize data security and privacy, access to the collected data was granted exclusively to the respective BRCiS Members responsible for their submission. Each Member had access only to the data they had submitted, ensuring confidentiality and safeguarding sensitive information.

- Baseline Findings Dashboard: Represents an extensively interactive and participatory design, aiming to present a comprehensive overview of the baseline findings. This highly dynamic platform will undergo regular updates throughout the midline and endline assessments, facilitating the tracking of changes over time. The dashboard operates on an open-source framework, ensuring accessibility for resilience, humanitarian, and development partners. This accessibility promotes informed decision-making, broader dissemination of findings, and aligns with one of BRCiS's primary objectives of contributing to sector-wide initiatives. With its user-friendly interface and comprehensive data representation, the dashboard serves as a valuable resource for individuals seeking insights and access to information pertaining to the project's target areas.

These digital tools are aligned with the FCDO digital strategy (FCDO Digital Strategy 2018 to 2020: doing development in a digital world) to ensure efficacy and uphold best practices.

- The Baseline data collection tools and Baseline Monitoring Dashboard are accessible exclusively to BRCIS Members through ONA credentials, exemplifies our focus on privacy and security, ensuring that sensitive data is accessed securely. This access control integrates seamlessly with existing workflows, demonstrating our commitment to designing with the user in mind and understanding the existing ecosystem.

- For scalability, the Baseline Findings Dashboard was made accessible to a wide range of stakeholders without login requirements, showcasing BRCiS strategic planning for broad dissemination and user engagement.

- R and R Shiny were utilized, robust open-source tools, to build these dashboards, reflecting BRCiS dedication to sustainability and open innovation. These platforms support ongoing improvements and community-driven enhancements, vital for adapting to evolving project needs.

[8] https://ona.io/home/products/ona-data/features/

- Data integrity is at the heart of BRCiS operations, guided by rigorously defined SOPs agreed upon by BRCIS Members and BRCiS CMU. This data-driven approach ensures that BRCiS processes are standardized and reliable, enhancing the accuracy of BRCiS insights.
- Finally, the open access to the Baseline Findings Dashboard fosters a collaborative environment, enabling stakeholders to engage with and act upon the data insights effectively.
- By integrating these principles, BRCiS digital tools not only enhance project outcomes but also adhere to the highest standards of ethical digital practice.

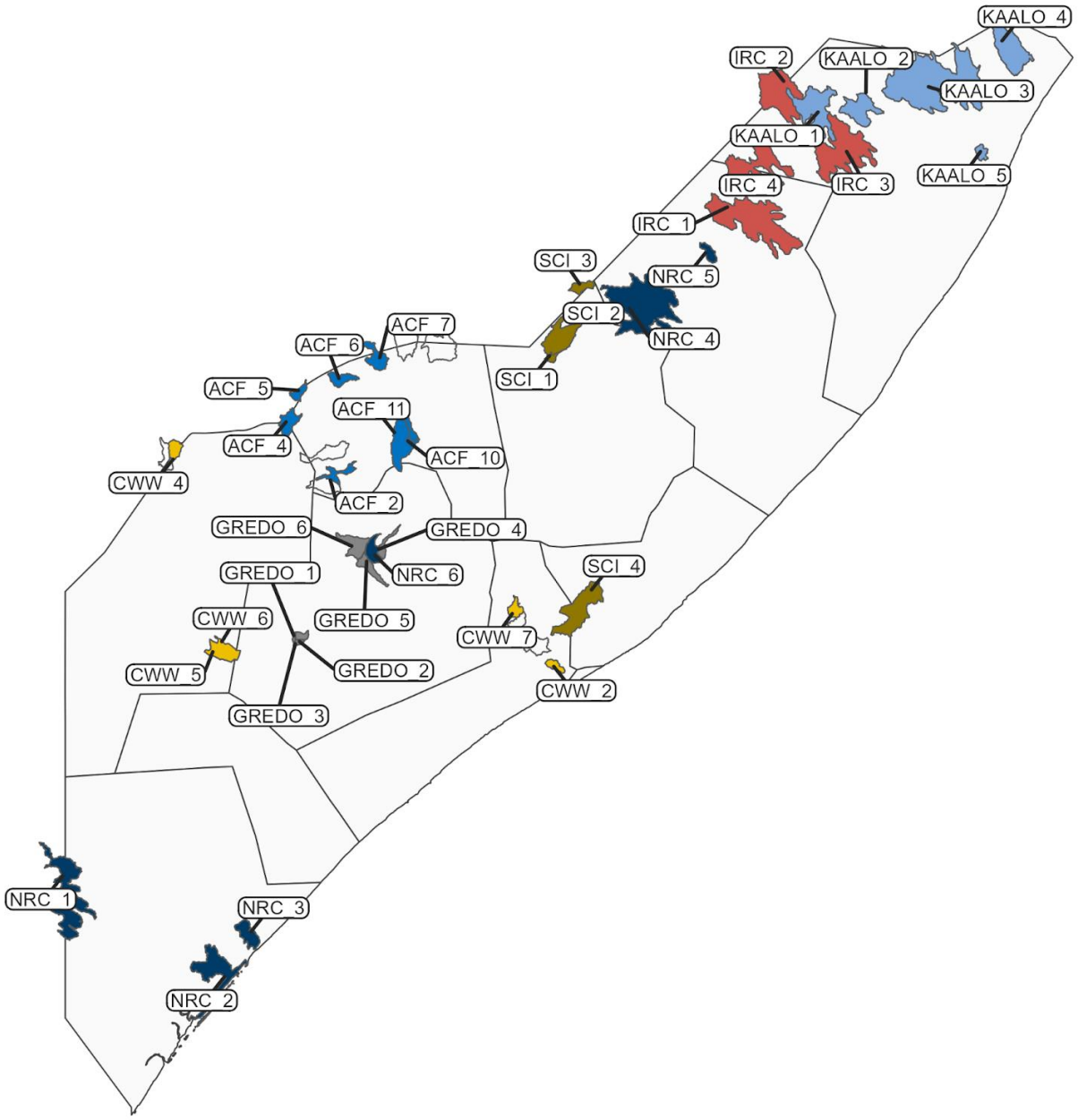
The findings in this baseline report are drawn from data collected at each of the three levels of resilience measurement: household, community, and ecosystem. Below we outline the sampling approaches and how the data was collected at each of these levels in more detail.

2.1 Household Level

Within BRCiS III program areas, there are 172 communities across 35 clusters that have been targeted to receive BRCiS programming (see Figure 2 below). Within each community, 25 households were randomly selected using a random walk procedure, as there was no pre-existing register of households.[9] In practice, enumerator teams chose five starting points in each community by using commonly known landmarks or randomly picking points on Google Maps. Then at each point, enumerators randomly selected a starting direction, and sampled every 5th household for a total of 5 households in each of the five points. Given the unequal probability of selection of households in different communities because communities have varying numbers of households, we applied sampling weights to our analysis that account for the population of the community that the sample of households was drawn from. For example, because urban communities are much larger than rural communities, larger sampling weights are applied to households in urban communities since they are representing more households in those communities, whereas households in rural communities receive smaller sampling weights because they represent relatively fewer households.

[9] Sampling calculations used to determine this target sample size are detailed in the BRCiS III Baseline Inception Report.

Figure 2: BRCiS III Clusters



Furthermore, given BRCiS interest to understand the experiences of households from minority clans, we supplemented the random walk sampling procedure with purposeful sampling of these households given the random walk procedure alone likely would not have included many of these households. Specifically, in each community, enumerators identified the Community Resilience Committee (CRC) representative from a minority clan and asked them to list 15 minority clan households. In communities where CRCs were not present, enumerators engaged with traditional elders to identify minority clan households. From this list, the enumerator randomly sampled eight of those households. In

cases where there were fewer than 15 households, the enumerator selected all of them. It should be noted that given the purposeful nature of selection of these additional minority clan households, this additional component to the sample may not be representative of minority clan households. For example, it may be the case that households that the CRC knows have larger social networks than those that the CRC does not know. Therefore, given the nonrepresentative nature of the sampling approach, when reporting primary findings, we exclude this group of households from our analysis. We include this sample only when looking at outcomes disaggregated for minority clan household groups.

The final sample is 5,162 households. This includes 4,293 which were randomly selected using the random walk approach and 869 minority households which were purposively selected. While the random walk sampling target was largely achieved, there were fewer minority households sampled than the sampling target as there were a significant number of communities that did not have any minority households.

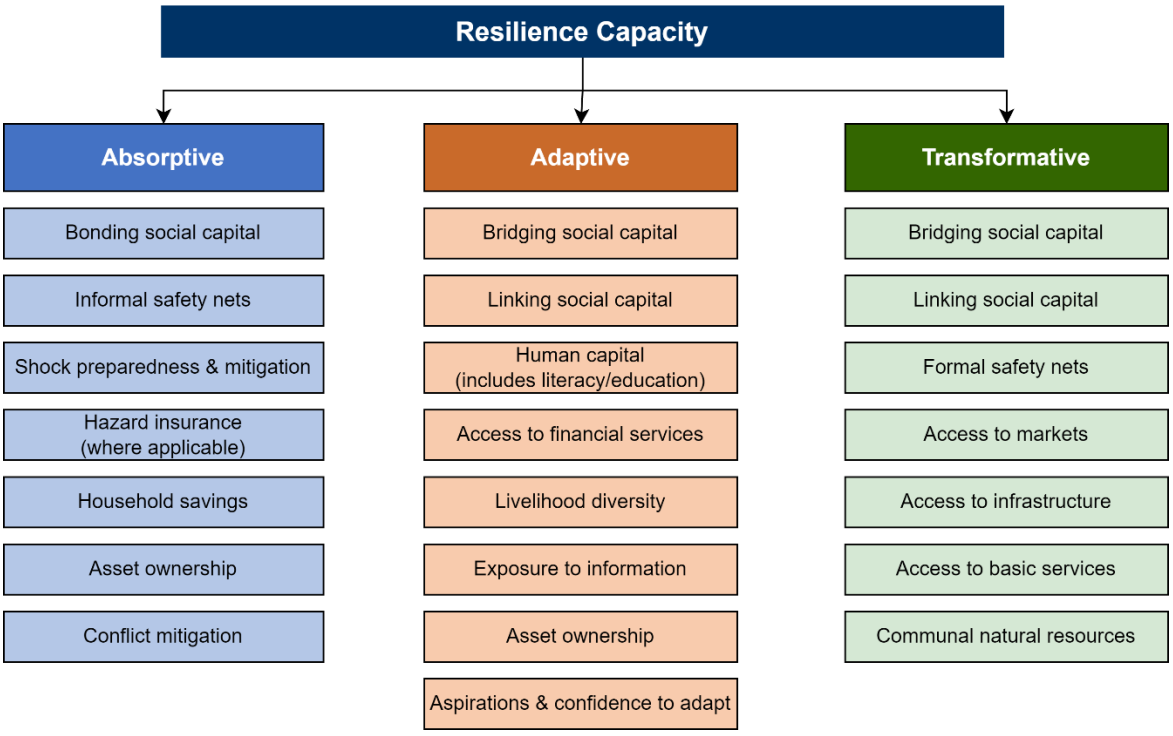
Table 1: Sample Sizes across Sampling Procedures

Sampling Approach	Target	Achieved	Percent
Random walk	4,300	4,293	99.8%
Purposeful sampling of minority households	1,376	869	63.1%
Total	5,676	5,162	91.0%

Household data collection was conducted between February 12 – March 18, 2024. With each household, enumerators conducted a survey that collected information on shocks experienced, coping strategies, resilience capacities, and wellbeing outcomes including food security and access to safe drinking water. This survey was informed by the TANGO resilience framework, which is a common approach for measuring resilience that acknowledges that there is no single indicator that captures all of resilience.[10] Rather, resilience is captured by a set of capacities that enable households and communities to effectively function in the face of shocks and stresses and still meet a set of well-being outcomes. Figure 3 illustrates the three components of the TANGO resilience measurement framework and which capacities are included within each component. Our understanding of household resilience relies on this framework and the household outcomes we present below map to these resilience capacities.

[10] https://www.tangointernational.com/resilience.html

Figure 3: TANGO Resilience Measurement Framework



2.2 Community Level

Data on community level resilience was collected using the analysis of Resilience of Communities to Disaster (ARC-D) tool[11] and was collected in each of the 172 BRCiS III communities. Data was collected between February 17 – April 19, 2024. **This information was collected as part of the BRCiS III Community Engagement Protocol that harmonized initial community entry and engagement with baseline measurement, recognizing that this assessment tool has unique value as both a measurement and community engagement tool.** The ARC-D consists of two parts. The first part (Part A) of the assessment collects contextual information on each community using key informant interviews with community leaders. In this part, a primary risk scenario is identified based on the risks that are most common and impactful for the community. The second part of the survey (Part B) assesses the community's level of disaster resilience to the primary risk scenario in terms of 30 key resilience components.[12] The responses are gathered through a facilitated focus group discussion (FGD) of community members. For each component, the focus group ranks the community on a scale of 1-5 with scores being specific to the component in question.

Part A was conducted with the community resilience committee (CRC) or other formal community leaders with each community. Part B was conducted with two focus groups in each community - one with men and one with women. Each focus group contained between 8-12 participants and was purposively selected to include individuals with a range of perspectives including CRCs, community leaders, adults,

[11] https://www.goalglobal.org/other-programme-priorities/disaster-resilience/
[12] BRCiS enumerator teams gathered information on two risk scenarios but for the purpose of our analysis, we chose the risk that was identified as the primary one.

youth, people with disabilities, elderly and farmers. Each focus group produced one score for each of the 30 ARC-D components for each of the major shocks identified in Part A. Then, the BRCiS team led debriefs within each community to reconcile the two FGD scores into a final score for each of the 30 ARC-D components.

2.3 Ecosystem Level

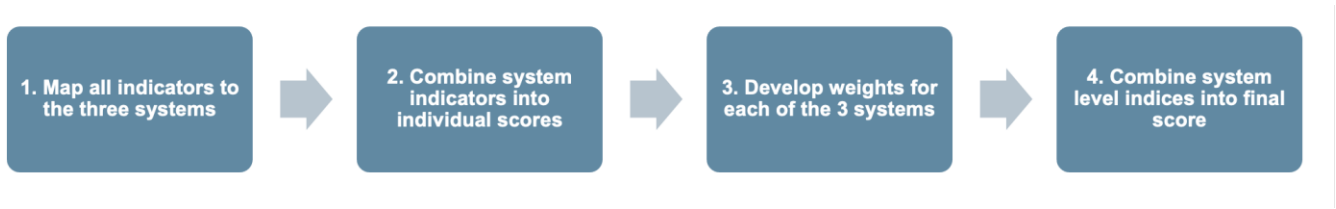
Ecosystem level data was collected through BRCiS' partnership with the World Agroforestry Centre/ICRAF[13] through ICRAF's global ground-truth dataset on various soil and vegetation indicators including Soil Organic Carbon (SOC), erosion, pH, tree/shrub/grass species and more.[14] This global dataset (~200,000 samples in Africa) was combined was bi-annual (2020-2022) Landsat 8 imagery and machine learning to predict soil and vegetation properties in Somalia at 30-meter resolution. The large training dataset allows for high accuracy predictions indicated by the overall SOC prediction accuracy of 85%. Additional field data collection in Somalia is planned and will increase the local prediction accuracies and enhance the understanding of the local soil, vegetation and biodiversity conditions. For this baseline report, the satellite-derived predictions, based on the ground-truth dataset, are used. Additionally, in-person surveys will be conducted within communities to gather additional data on livestock health and crop health. However, this baseline report only includes findings from the satellite data given the in-person surveys had not yet taken place when this report was being drafted.

2.4 Resilience Spectrum Score

In order to communicate how resilience is changing across the household, community, and ecosystem levels, we aggregate data across these three levels into a composite system-level resilience measurement methodology that has been termed the Resilience Spectrum Score. The Resilience Spectrum Score is comprised of three sub-indices which reflect resilience in each of the three systems BRCiS III aims to influence: Inclusive, Shock Responsive Leadership, the Natural Ecosystem, and the Market System and Financial Inclusion. It is intended to be a qualitative measure that is meant to provide indicative evidence of change in resilience capacities over time. **It is not an objective resilience measurement approach but rather has been developed to better reflect BRCiS' nuanced understanding of the different combination of resilience capacities and pre-existing social, environmental, and financial assets already available to communities during shocks and stresses.**

The Resilience Spectrum Score was generated using a four-step process as summarized in Figure 4.

Figure 4: Steps to Generate Resilience Spectrum Index



First, Causal Design mapped all indicators that would be collected as part of the household, community, or ecosystem data collection to one of three systems. For example, indicators on social capital or collective action were mapped to the Inclusive, Shock Responsive leadership system, indicators on soil pH and

[13] https://www.worldagroforestry.org/
[14] for more information see: https://www.cifor-icraf.org/knowledge/publication/25533/

landcover were mapped to the Natural Ecosystem system, and indicators on income sources and access to financial institutions were mapped to the Economic Inclusion and Diversification system. Next, all the indicators within a system were aggregated into a single score using an inverse covariance weighting approach.[15] This approach first requires transforming indicators so they are all directionally consistent. For example, if for one indicator a larger score indicates a positive outcome, whereas for a second indicator, a lower score indicates a positive outcome, we multiply one of these indicators by -1. While these indicators for the Resilience Spectrum were initially selected during the baseline inception phase, after the data was collected, we carefully reviewed each indicator to assess whether there was theoretically a clear and positive relationship with resilience regarding the specific system BRCiS III aims to influence. For example, in conversations with ICRAF, it was learned that more tree cover does not necessarily mean a better ecosystem, because if it is an invasive species, more tree cover can imply more environmental degradation. We also removed household conflict from the Shock Responsive Leadership system given that it is not directly tied to the outcomes BRCiS is influencing with its interventions for this system. The final set of indicators are outlined in Appendix II.

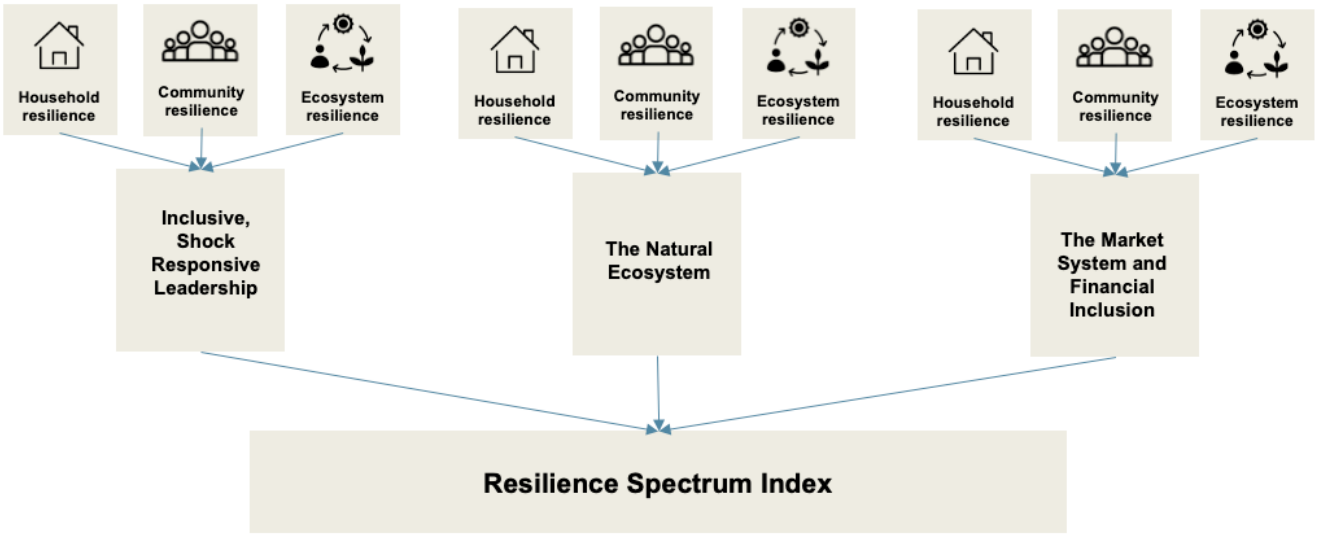
We then combine all variables into a single index and used the inverse covariance approach to determine the relative weight for each variable based on the information content of each. If two variables are highly correlated (e.g. infrastructure and basic services in the community), they each will receive less weight than a variable that is less correlated with the others (e.g. equitable gender decision making). We then rescaled each of these indexes to a range of one to five. It is important to note that this process for generating indices creates an index that is centered at zero. In other words, since the index is rescaled from one to five, the average for the entire sample at baseline is three (by construction). However, for the BRCiS III learning goals, what matters is how community resilience changes over time with respect to their baseline level of resilience, and this distribution will not necessarily be centered at three. Additionally, we can also use this index to see how resilience varies across communities at baseline.

To create the final Resilience Spectrum Score, we aggregated these three sub-indices together in a weighted sum. Each sub-index was weighted by its anticipated impact on resilience. To develop these weights, we leveraged the contextual expertise of BRCiS consortium Members and other stakeholders with extensive experience in resilience programming in Somalia. Stakeholders responded to a survey asking how they would allocate a fixed budget of 100 coins to the three systems with the goal of improving resilience in communities in Somalia.[16] In total, 25 stakeholders responded to the survey. The coin allocations were averaged across stakeholders to determine the final weights. Figure 5 illustrates how the three resilience levels and three systems interact to create the Resilience Spectrum.

[15] Anderson, M. L. 2008. Multiple Inference and Gender Differences in the Effects of Early Intervention: A Re-evaluation of the Abecedarian, Perry Preschool, and Early Training Projects. Journal of the American Statistical Association, 103(484), 1481–1495.

[16] For the purpose of the exercise, costs of interventions were assumed to be the same such that the coins strictly represent how impactful interventions in each system were believed to be.

Figure 5: Constructing the Resilience Spectrum



Further details on the process for developing the Resilience Spectrum Score can be found in Appendix I.

2.5 Limitations & Lessons Learned

Timing of Baseline Survey and Subsequent Midline and Endline Surveys

The baseline surveys were conducted during the Jilaal season (December to March), prior to the project implementation and shortly after El Niño-induced flooding occurred in several parts of Somalia, including BRCiS target locations. It is important to note that this timing may have influenced respondents' perceptions and their ability to answer certain questions, such as those related to water access and the most severe shocks experienced in the past 12 months, with flooding being commonly reported in BRCiS target locations compared to drought.

To mitigate the potential bias introduced by the El Niño flooding, the BRCiS Consortium Members extensively discussed this issue and established clear action planning by incorporating the baseline findings with community action plans. BRCiS will ensure that the midline assessment in 2026 and the endline assessments in 2027/2028 to be conducted in the Jilaal season, maintaining consistency with the baseline timeline. This approach will enable more accurate and comparable data collection across different phases of the project.

Sampling Limitations

The BRCiS baseline survey covered all 172 communities targeted by BRCiS across 19 districts, employing a combination of random walk sampling for target community members and purposive sampling for minority groups. It is important to acknowledge that, due to the inherent nature of random sampling and possibility of sampling errors or biases, Causal Design and BRCiS collaborated to thoroughly design a comprehensive random walk sampling methodology, aiming to ensure a representative sample.

Regarding the inclusion of minority groups, a minimum of 8 households from each community were selected using snowball sampling. However, it should be noted that this additional component of the

sample, which specifically targets minority clan households, may not be fully representative. Consequently, when presenting primary findings, these households are excluded from the analysis due to the nonrepresentative nature of the sampling approach. Nevertheless, the sample of minority clan households is included when examining outcomes disaggregated specifically for this group.

This approach allows for a balanced consideration of the baseline findings while acknowledging the limitations and ensuring transparency in the reporting and analysis process.

Data Collection Process Challenges and Lessons Learned

Numerous challenges were encountered during the data collection process, which are outlined below:

- Participant reluctance to participate in the baseline interview in certain areas due to baseline tool length: The baseline instrument had a lengthy duration of over two hours, covering a wide range of indicators across different sectors. While this enabled comprehensive insights into various outcomes, it limited our ability to delve deeply into specific outcomes or address certain learning questions.
- Sampling methodology: Many data collectors were unfamiliar with the random walk sampling methodology, resulting in difficulties in its adoption. BRCiS conducted comprehensive training on the sampling methodology and closely monitored Members' adherence to it during the baseline data collection.
- Minority Groups: Snowball sampling proved challenging in locating minority groups in some target locations as there isn't formal registry of minority households, resulting in an achievement rate of 63.1% for target minority households.
- Cultural sensitivity of certain baseline questionnaires: Some respondents expressed discomfort in responding to specific questionnaires, such as those related to clan affiliation. BRCiS addressed this issue by providing additional explanations for such questions and allowing respondents the option to skip and not answer them.
- Ramadan Observance: In 2024, Ramadan occurred between March 11th and April 10th, 2024. The ARC-D baseline data collection started from March 23rd to April 9th, 2024, and community availability was limited due to fasting, which slowed down the data collection process.

These challenges were acknowledged and managed to the best of our abilities to ensure the integrity and validity of the baseline data collection process.

Data Analysis Challenges and Lessons Learned

The baseline illuminated several important learnings to consider ahead of midline and endline data collection:

- Reconsider depth versus breadth of midline and endline survey instruments. The baseline instrument was long (over two hours) and covered many indicators across different sectors. While this allows us to learn about outcomes across different domains, it does not allow us to dive deeply into the mechanisms of any particular outcome or dig into certain learning questions.

- Revisit approach for measuring agricultural production indicators. The data collected on household agricultural yield (i.e. quantity of various crops produced in the past year) were noisy. This required considerable cleaning of the data and eliminating of outlier values. The current yield indicators are generated from three pieces of information: the quantity produced by crop, area of arable land, and percentage of land dedicated to a specific crop. The data from the baseline suggests that this information is challenging for farmers to recall accurately. One option for reducing the noise in these indicators is to instead generate a binary variable rather than continuous indicators on overall yield.

- Consider whether collecting income data is adding value. The household income data was equally noisy, leading to imprecise and potentially inaccurate estimates of income. Measuring income in these contexts is very challenging due to highly seasonal income (e.g. agriculture, casual labor) and no administrative records. Rather than measuring overall household income, it may be more useful to target specific income streams that BRCiS is specifically aiming to increase, such as from self-employment. Measuring income from specific sources, especially from which income is relatively more regular, will likely lead to more reliable estimates.

- Revisit conflict dynamics module. The household survey included newly designed questions around conflict experienced within the household. The findings revealed that there are possibly measurement challenges with this module as a very low percentage of households reported that they experienced any form of conflict in the past year. This finding diverged from the percentage of households reporting conflict as a type of shock experienced in the past year. It is not clear what is driving this discrepancy, whether it be comprehension or translation issues or sensitivities around reporting different types of conflict. Regardless, it may be worth conducting some cognitive interviews with households to understand how they are answering these questions.

- Refine questions on perceived impact of shock. The household survey includes several questions on the impact households perceived on various domains of their wellbeing from shocks. These were Likert scale questions with values ranging from no to high impact. The usefulness of this question structure is not clear as there is little variation in responses (most respondents stated moderate to high impact), and it is not clear what the specific impact is that underpins those values. It may be worth considering the specific effects of certain shocks that BRCiS is interested in, for example, "Have any livestock died in the last year due to disease or lack of food?" These insights will likely be more useful for programming teams.

3.0 FINDINGS

3.1 Sample Overview

Table 2 provides an overview of various characteristics of households in BRCiS III clusters. On average, households have 8 members where being part of the household is defined as members of a household are adults or children that live together in the same dwelling/house and eat from the ‘same pot’ and includes anyone who has lived in the house for 6 of the last 12 months, but it does not include anyone

who lives there but eats separately. Approximately one-third of households (35%) has a member who is a farmer.

Almost half of households (45%) reside in urban areas, as shown in Figure 6, which is driven by the fact that while fewer in total, urban communities are much larger on average than rural communities. Approximately one quarter reside in pastoral areas (27%) and in agro-pastoral areas (23%). A small contingent of households are based in riverine and coastal fishery areas.

Table 2: Characteristics of BRCiS III Cluster Households

Characteristic	Mean	Upper CI	Lower CI	N
Average size of the household	8.07	7.64	8.49	4,293
Households where at least one member is a farmer	35.19%	32.27%	38.21%	4,276
Households receiving assistance from the BRCiS program	14.43%	12.46%	16.66%	4,187

Figure 6: Distribution of Households across Livelihood Zones

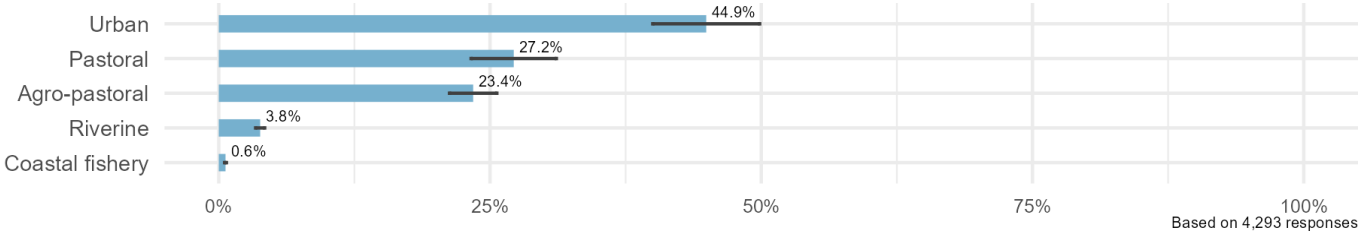


Figure 7 highlights the proportion of households from different majority clan groups. Approximately one-third of households are Daarood (38%) and another third are Hawiye (34%). Twenty percent of households are Digil & Mirifle, and a small contingent of households are either Beelaha aad or Dir (9%). The distribution of minority clans in the sample is shown in Figure 8. Households represent a number of different clan groups, including Asharaf, Bantu/Jareer/Gosha/Makane/Shiidle/Reer Shabelle/Mushungli, and Eyle/Eylo, among others. It is important to note that this distribution of households within minority clans may not be representative of the larger BRCiS III population of households given the purposeful selection of households from minority clan groups.

Figure 7: Distribution across Majority Clan Groups

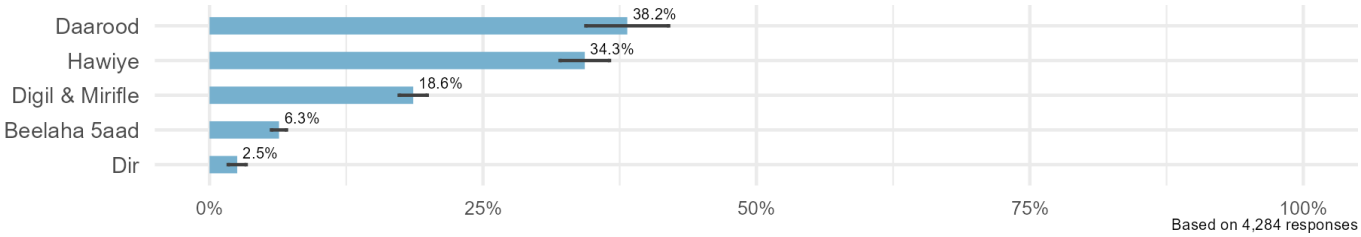
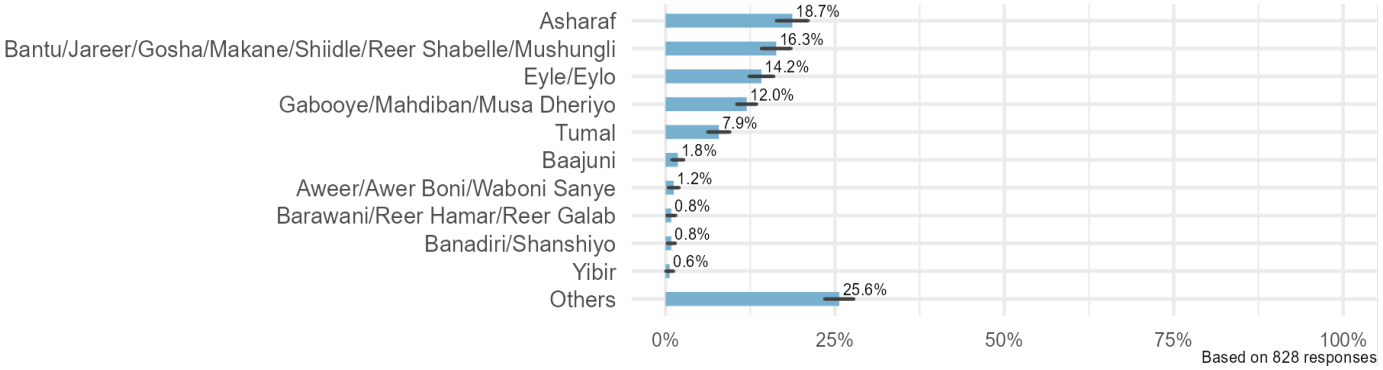


Figure 8: Distribution across Minority Clan Groups



Key Insights on Minority Clans
The minority clan households in this sample of BRCiS households were found to have marginally worse food security outcomes and coping behaviors than that of majority clan households. Heads of households of minority clan households were also on average less educated than majority clan heads of households. Minority clan households are slightly more likely to rely on and support households within their clan group relative to households in majority clans. A map that depicts in which clusters minority households were located can be found in Appendix III.

3.2 Shocks Experienced & Coping Strategies

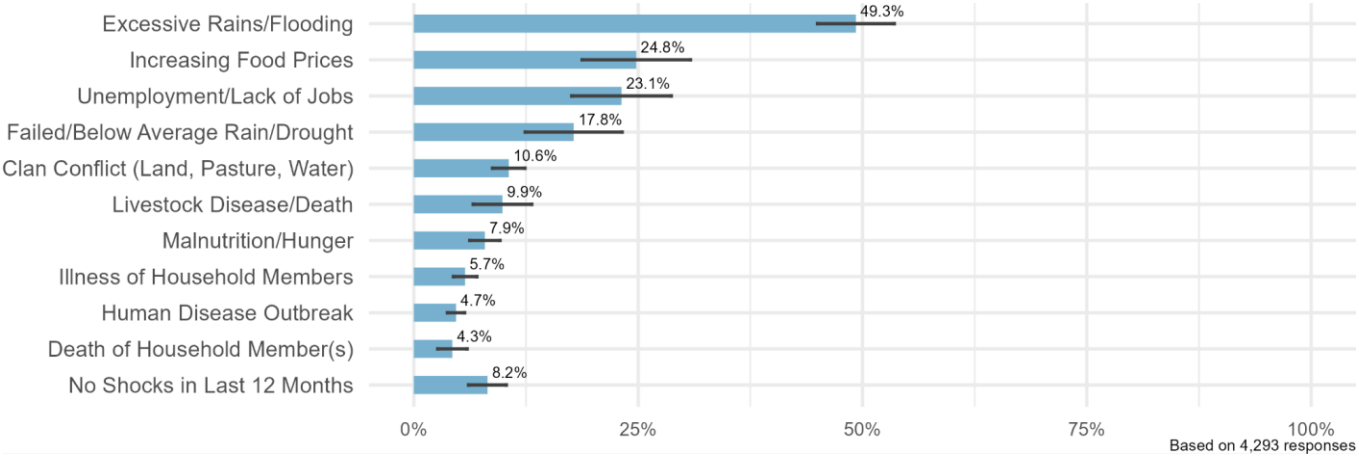
Frequency & Severity of Shocks and Stressors

A key learning priority for BRCiS III is understanding the frequency and severity of shocks and stressors experienced by households and how households respond to and recover from these shocks. Figure 9 illustrates the shocks and stressors reported by households that were experienced in the past 12 months (excluding shocks that were experienced by fewer than 2.5% of households). **These findings highlight that households reside in a challenging and shock-prone environment: the large majority of households (92%) reported that they experienced at least one shock in the past year.** Across all households, excessive rains and flooding was the most common shock experienced by almost half of households (49%). This is likely driven by the catastrophic El Niño floods experienced across large parts of the country in November 2023.[17] A quarter of households reported increasing food prices (25%) and

[17] During the baseline inception process, the El Niño response was taking place.

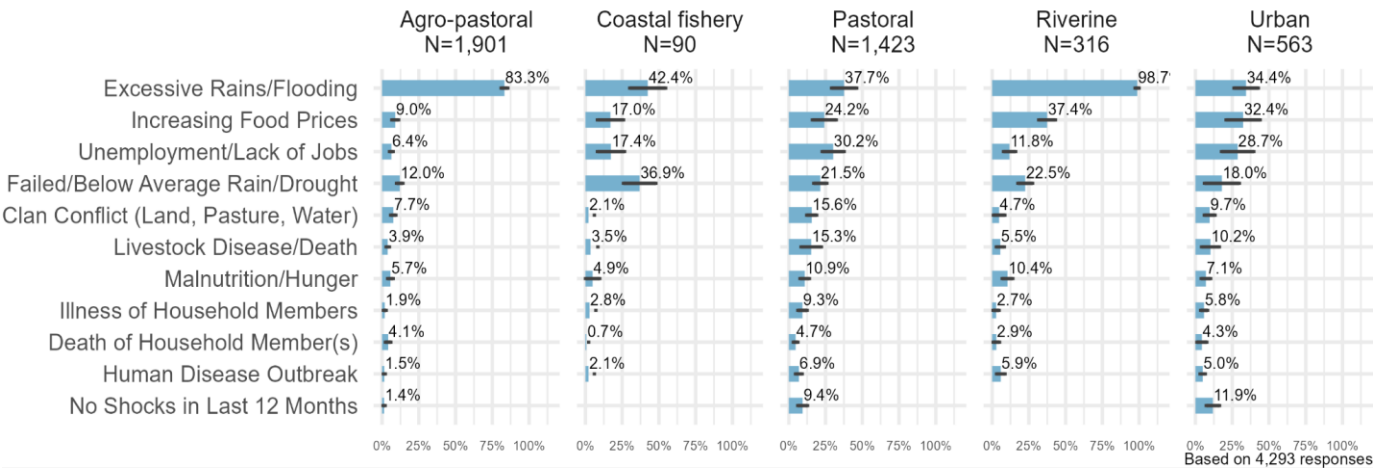
unemployment (23%) as other shocks or stressors they experienced in the past year. Only 18% of households reported experiencing drought or below average rain in the past year. This context underscores the need to support households in building community structures to mitigate the impact of shocks.

Figure 9: Shocks and Stressors Experienced in Past 12 Months



The experience of shocks varied across livelihood zones as depicted in Figure 10. Excessive rains and flooding were experienced most commonly in riverine (99% of households) and agro-pastoral (83% of households) areas. The impact of rising food prices was felt the most in riverine and urban areas with approximately one-third of households in those livelihood zones reporting experiencing it in the past year. Below average rain or drought was also more commonly reported in coastal fishery areas (37% of households).

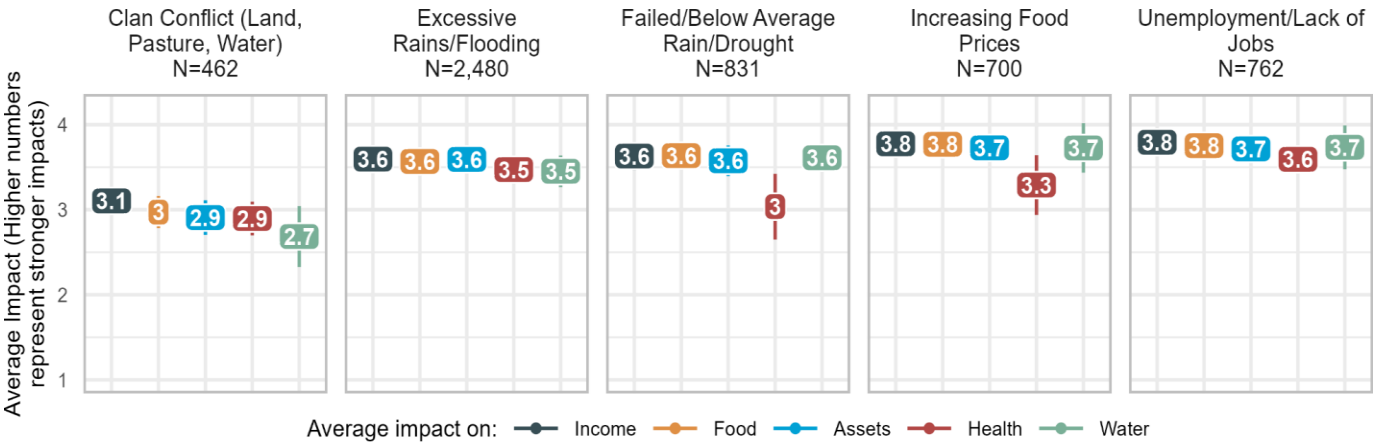
Figure 10: Shocks and Stressors Experienced in Past 12 Months Across Livelihood Zones



Households were also asked to report the perceived impact of each shock experienced on various aspects of their livelihoods. Response options ranged from one to four, with one indicating no impact and four indicating strong impact. Households reported the perceived impact on their income, food consumption,

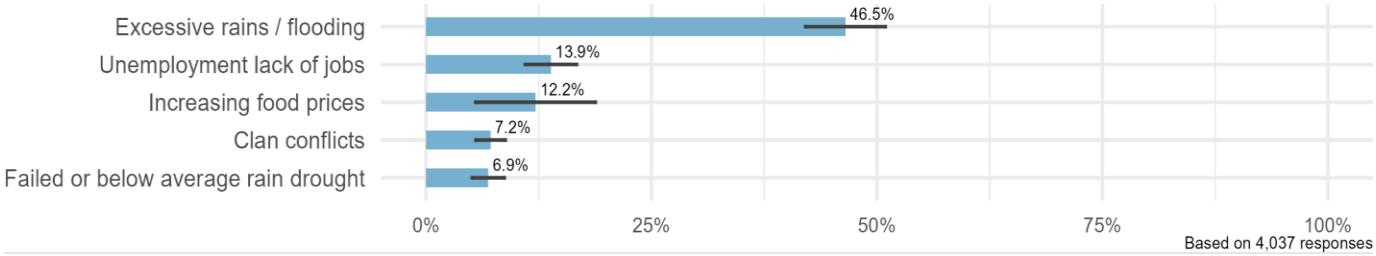
water consumption, health, and asset stock. **Across the four most common shocks experienced, households reported a perceived strong impact on all five aspects of their wellbeing**, as illustrated in Figure 11. This underscores the importance of improving households' resilience to shocks given the destructive nature of these shocks on various aspects of their lives. The perceived impact on households' health was more moderate for below average rain or drought and increasing food prices. Clan conflict was perceived to have a less severe impact across the five domains, with perceived impacts ranging from slight to moderate. This may be because clan conflict tends to be more localized while the other shocks are more widespread.

Figure 11: Perceived Impact of Shocks and Stressors



Additionally, when asked out of all shocks experienced in the past year, which was the most impactful on your household, the majority of households (47%) stated excessive rains or flooding, as shown in Figure 12. This underscores how destructive the El Niño floods were for households' livelihoods in the past year.

Figure 12: Shock or Stressor that was Most Impactful



Experience of Shocks of Vulnerable Groups

While shocks and stressors are destructive to all households, some groups may feel the effects more given societal constraints they may face. As such, we explore the experience of shocks and stressors for various vulnerable household groups. Specifically, we assess the experience and perceived impact of

shocks for households that have no adult males currently generating income[18], households with a member over 70 years of age, households of a minority clan group, and households with a member with disabilities.

Table 3 shows the prevalence of vulnerable groups of interest sampled from the random walk (representative sampling approach). Households where there is no male generating income are relatively common, occurring in one third of households (36%). Households with a member with disabilities and households with a member over 70 years old are slightly less common, occurring in 21% and 17% of households, respectively. Overall, households with one of these characteristics are common: 60% of households have one of these vulnerability characteristics.

Table 3: Prevalence of Vulnerable Groups

Vulnerable Group	Mean	Upper CI	Lower CI	N
Households where men do not generate income	35.50%	31.44%	39.78%	4,000
Households with at least one member with disabilities	21.11%	16.46%	26.65%	4,261
% Households with at least one female member with disabilities	12.77%	8.47%	18.80%	4,293
% Households with at least one male member with disabilities	9.30%	7.25%	11.87%	4,292
Households with at least one member over 70 years old	16.63%	13.99%	19.66%	4,293

Figure 13 illustrates the experience of shocks and stressors in the past year reported across each of these vulnerable groups within communities. As shown below, within a given community, some vulnerable groups are more likely to report experiencing certain shocks or stressors than less vulnerable groups. In particular, households from minority clan groups are more likely to report experiencing excessive rains/flooding or failed rains/drought than households from majority clan groups in the same communities. Both households with a member with disabilities and households with a member over 70 years old are more likely to report experiencing increasing food prices than households without members from these groups. Interestingly, households without male members generating income are less likely to report excessive rains and flooding than households with male members generating income.

[18] We focus on this group of households as an alternative to female-headed households. This is informed by the finding that in the Somalia context, the concept of a female headed household is not consistently defined across households. Further, the presence of unemployed males in the household may be a better indicator of vulnerability than a female-headed household. See more in Levine, S. and Mosel, I. (2021) 'Economics, social status and gender relations: what makes households "female-headed" in Somalia? Lessons from a rapid learning exercise'. HPG briefing note. London: ODI (www.odi.org/publications/17962-economics-social-status-andgender-relations-what-makes-households-female-headed-somalia-lessons).

Figure 13: Prevalence of Shocks and Stressors Reported by Vulnerable Groups

Figures 13-17 depict the perceived impact on various aspects of wellbeing of the most commonly reported shocks and stressors for each of these vulnerable groups within a given community (averaged across communities). We control for the community where households are expecting that perceived shock impact is very geographically driven. Overall, some vulnerable groups report more severe impacts from shocks on some dimensions of their wellbeing. For example, both households of a minority group and households with a member over 70 report more severe impacts on their income from flooding relative to households from the corresponding non-vulnerable group. Households without a male generating income report a more severe impact on food consumption from drought relative to households where a male is generating income. These same households also report a more severe impact on their health from several shocks and stressors including unemployment, rising food prices, and clan conflict. These findings highlight it may be useful to probe into the mechanisms leading to these differentials in perceived impact from shocks to assess whether and how BRCiS III interventions should be tailored to these groups.

Figure 14: Relative Perceived Impact from Excessive Rains/Flooding

Figure 15: Relative Perceived Impact from Drought

Figure 16: Relative Perceived Impact from Unemployment

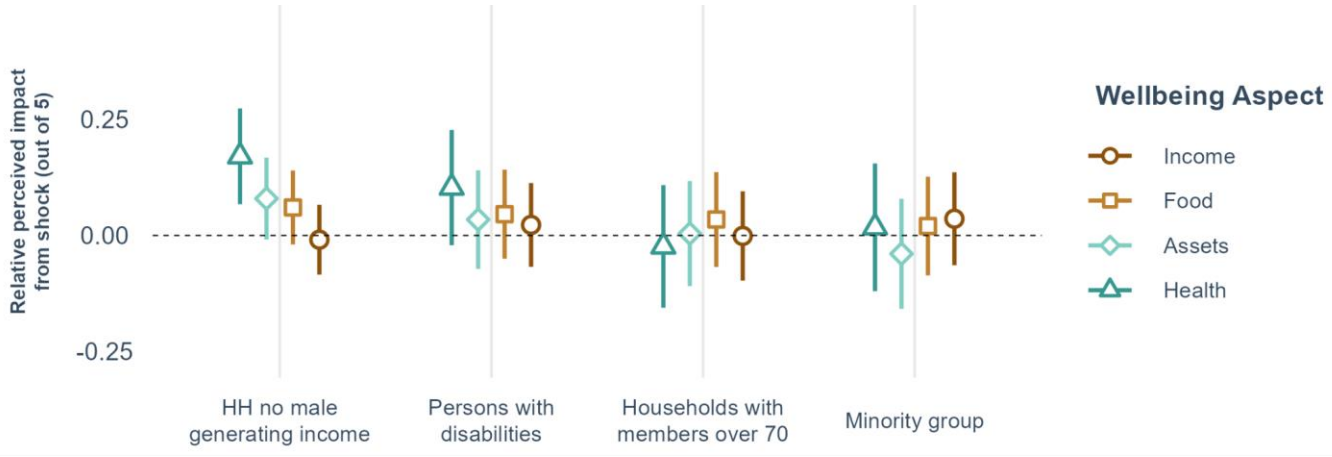


Figure 17: Relative Perceived Impact from Increasing Food Prices

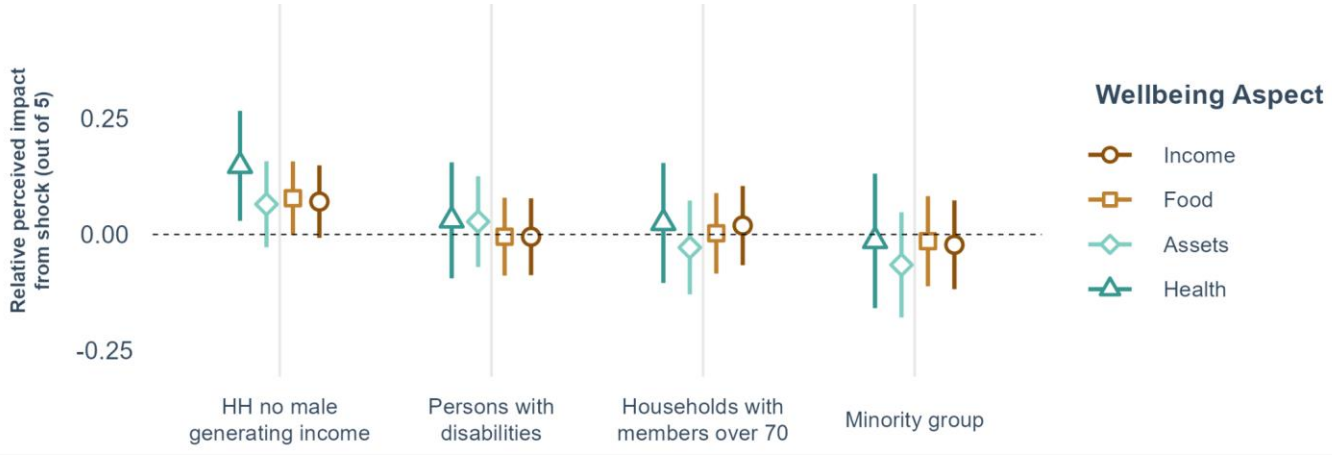
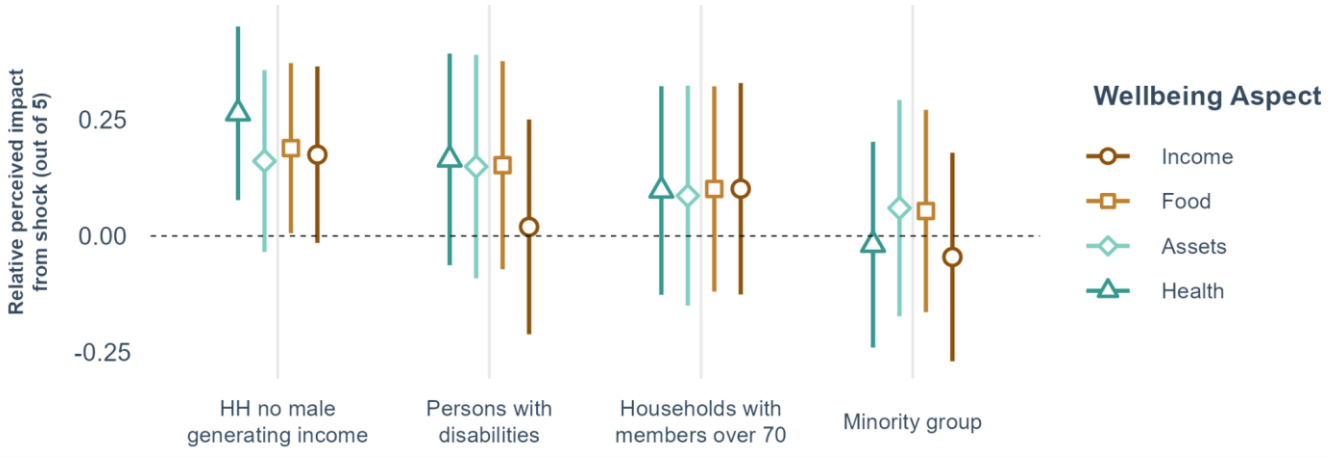


Figure 18: Relative Perceived Impact from Clan Conflict

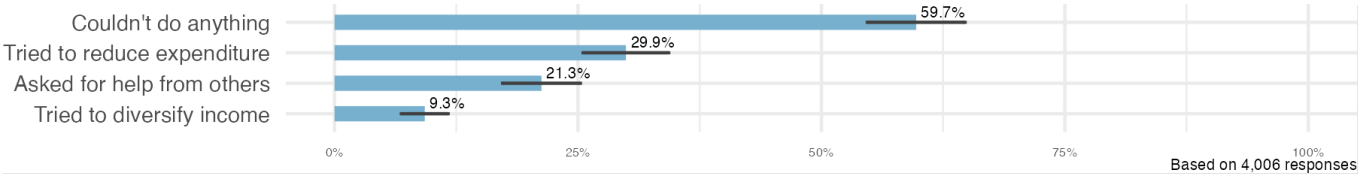


COPING STRATEGIES

Another key learning objective for BRCiS is to understand how households in target communities typically prepare to respond to and recover from various shocks. To that end, households were asked which strategies they used to cope with each shock they faced in the past year. Figure 19 illustrates the prevalence of high-level coping strategies utilized across all shocks experienced. **The majority of households (60%) stated that they were not able to deploy any coping strategy.** This underscores the need for resilience building interventions such as those offered by BRCiS III to improve households' ability to respond to shocks.

Reducing expenditure was the most common coping strategy reported, utilized by a third of households (30%) in the past year. Relying on social networks and asking others for help was slightly less common, reported by 21% of households. Finally, attempting to diversify income was the least common strategy utilized, reported by 9% of households. Likely, this was the least commonly utilized coping strategy because opportunities for diversifying income are not available, which is supported by the notion that most households were not able to utilize any coping strategy. This underscores the need for enhancing the resilience of livelihoods to shocks and strengthening skills which may lead to new income streams that are part of the BRCiS III implementation plan.

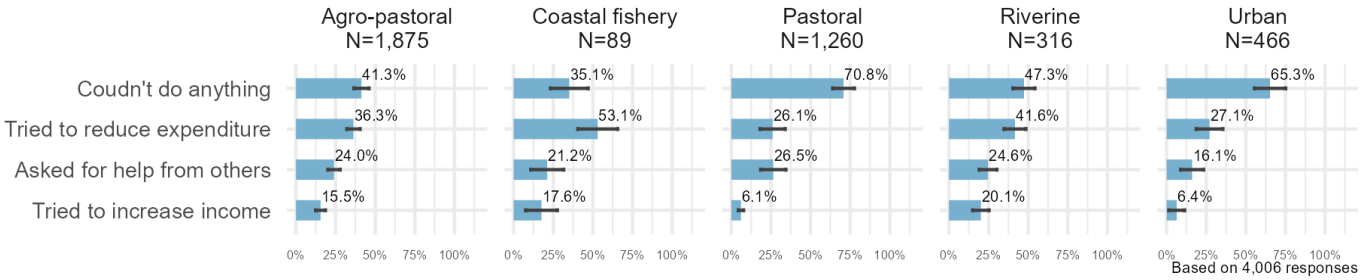
Figure 19: Prevalence of High-Level Coping Strategies



Coping strategy utilization also varies across livelihood zones. Households in pastoral and urban areas were more restricted in their ability to deploy any coping strategy. Over two-thirds of households in pastoral communities (71%) and in urban areas (65%) were not able to respond to shocks at all. This suggests

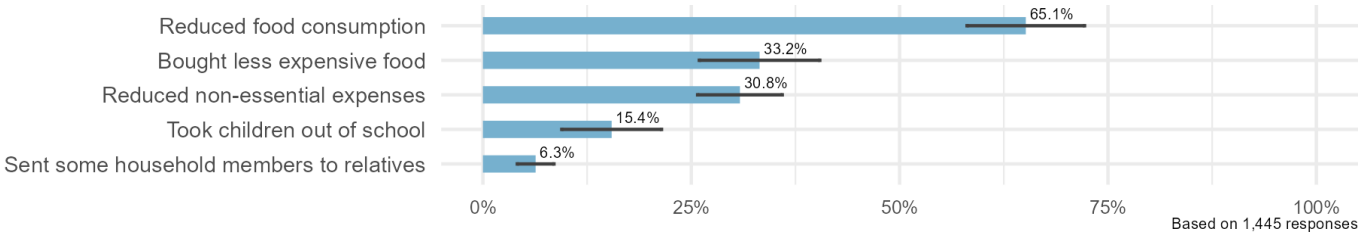
that communities in these areas may need additional support or resilience interventions that are better tailored to their specific needs. The findings suggest that households in coastal fishery areas were more able to deploy strategies to reduce expenditure, though the margin of error on these findings are wider indicating more uncertainty with this conclusion.

Figure 20: Prevalence of High-Level Coping Strategies Across Livelihood Zones



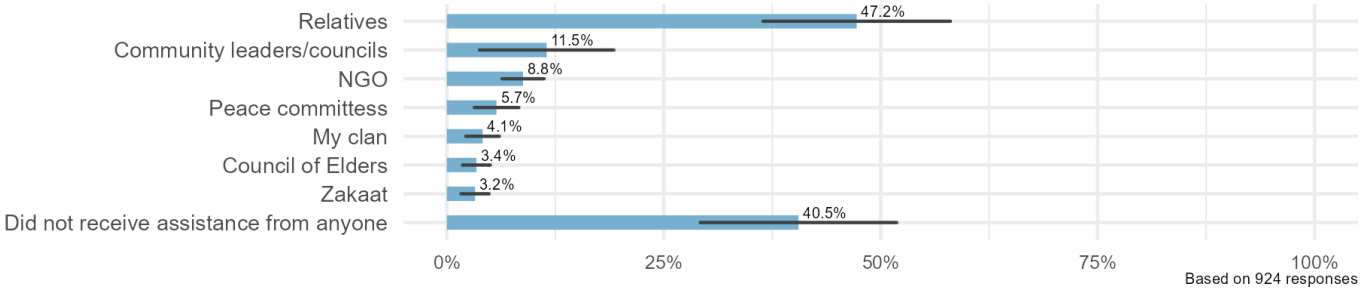
Digging deeper into specific coping strategies, when it comes to the most common coping strategy of reducing expenditure, the most prevalent approach is reducing food consumption, as shown in Figure 21. This was used by over two-third of households (65%) that reported they reduced food expenditure or 23% of households overall. This suggests it is an accessible strategy for households given its prevalence, despite its impact on household wellbeing. Reducing expenses through purchasing less expensive food and reducing non-essential expenses were also used to a degree.

Figure 21: Prevalence of Coping Strategies to Reduce Expenditure



As shown in Figure 22[19], for households that relied on asking others for help, households most commonly received assistance from relatives (47% of households). Other more formal assistance, such as from community leaders/councils, NGOs, or peace committees, was less common. However, 40% of households report that they did not receive assistance despite asking for help.

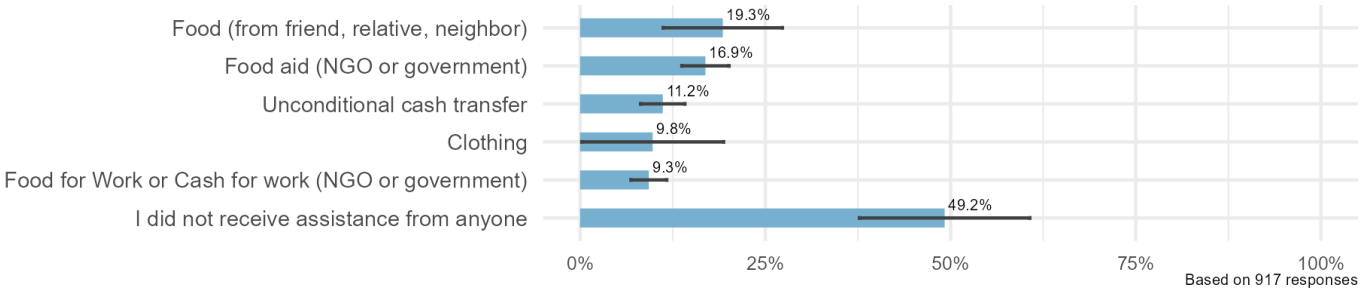
Figure 22: Where Households Received Assistance from



[19] We restrict the graph to the types of assistance for which more than 5% of households reported.

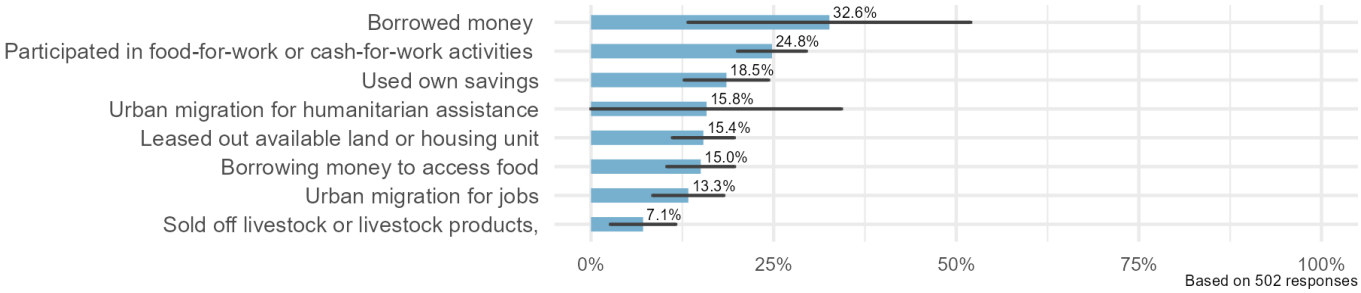
For those that received assistance from whom they asked, food was the most common type of assistance received, whether from informal sources such as friends or relatives or via food aid from an NGO or government, as shown in Figure 23.

Figure 23: Type of Assistance Received



Out of all households that used a coping strategy to diversify the income of the household, borrowing money and participating in food-for-work or cash-for-work activities were the most common strategies utilized, as illustrated in Figure 24.

Figure 24: Prevalence of Coping Strategies to Diversify Income



With regards to the large climate related shocks (flooding and drought), most households did not expect these shocks, and for those that did, few had a strategy in place to mitigate the effects. As shown in Table 4, fewer than a third of households (31%) expected the shock. Of those households that expected the shock, only one quarter (25%) had a strategy in place. This suggests that plans to develop and strengthen Early Warning systems and Early Action mechanisms could be beneficial in this context.

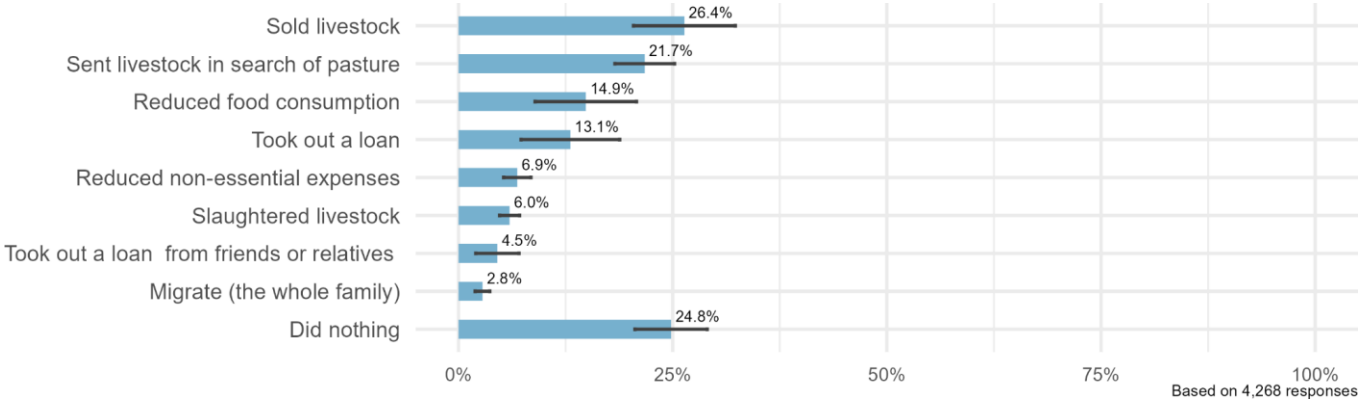
For the small group of households that had a strategy, this strategy was commonly used collectively with other households in the community (75% of households that used a strategy). However, most households did not find that strategy useful.

Table 4: Strategies for Unexpected Natural Hazard Shocks

Outcome	Mean	Upper CI	Lower CI	N
Households that expected excessive rains and flooding or drought to come	30.72%	25.10%	36.97%	2,130
Households that had a strategy to mitigate effects of flooding or drought	25.06%	21.04%	29.57%	661
Households that used strategy together with other households	76.64%	63.13%	86.27%	219
Households that believe the strategy was extremely/very helpful	27.29%	17.15%	40.50%	215
Households that believe the strategy was extremely/very effective in ensuring survival	24.08%	13.53%	39.13%	220

In addition to strategies deployed within the household, households were also asked about which coping strategies are used by others in the community. The strategies that households perceive others in their community to engage in more commonly differ from their own as shown in Figure 25. Selling livestock was the most common strategy reported to be used within the community (reported by 26% of households) though it was one of the least common strategies used by households themselves. One-quarter of households (25%) also stated that other community members did nothing, despite 60% of households stating that they were not able to deploy any coping strategy themselves. This difference may reflect households perceiving that other households within their community have more resources and are more capable of responding to shocks.

Figure 25: Coping Strategies Utilized by other Community Members



Ability to Recover & Prepare for Shocks & Stressors in the Future

Households were asked to what extent they have recovered from the shocks they experienced in the past year. Response options ranged between one and five with one being did not recover at all and five being not affected (and four being fully recovered). Figure 26 shows the average reported ability to recover for the five most common shocks or stressors. **On average, households have not recovered from these shocks, with responses ranging between did not recover and recovered some but still worse off than before**. With regards to other stressors, households reported a marginally lower recovery status for unemployment and lack of jobs. There are largely similar trends across livelihood zones as pictured in Figure 27.

Figure 26: Average Ability to Recover from Shock or Stressor

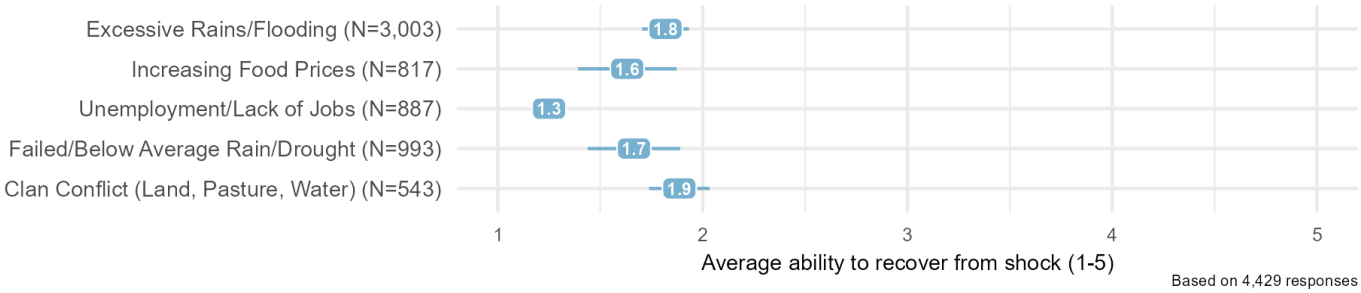
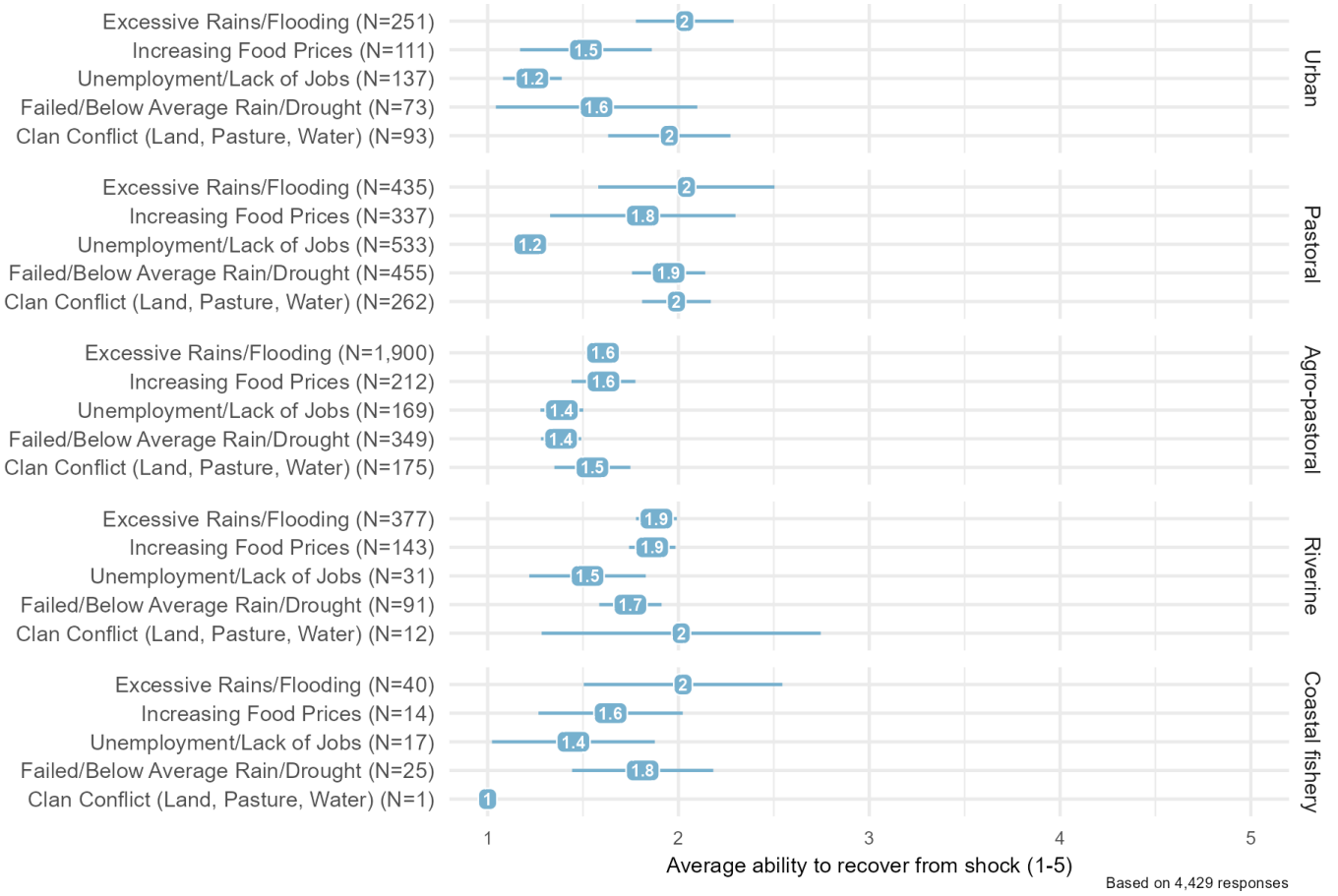
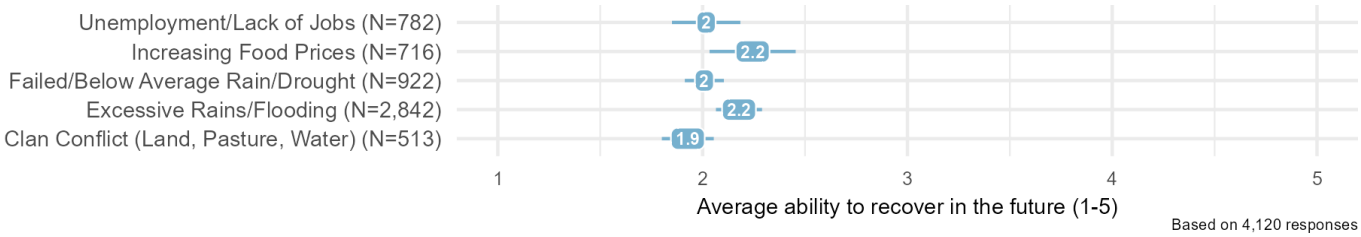


Figure 27: Average Ability to Recover from Shock or Stressor Across Livelihood Zones



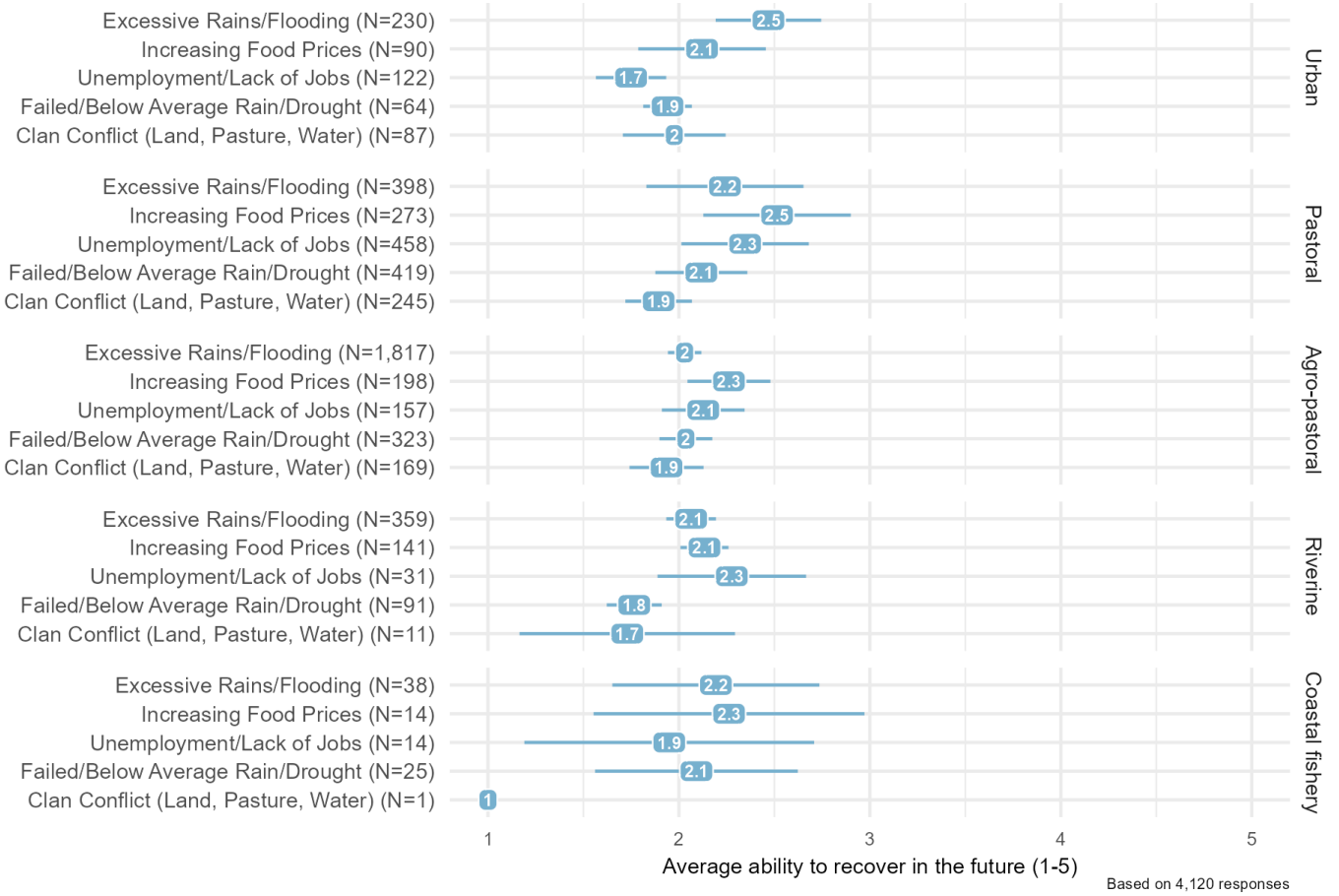
Households were also asked to predict how well they would recover from shocks in the future. On average, households rate their ability to recover in the future slightly higher than their current ability, though it is unclear what drives this, whether optimism or an expectation of having more resources in the future. Households' responses ranged from recovering some but still being worse off than before to recovering to the same level as before. Households rated their ability to recover in the future slightly higher for the shocks of increasing food prices and excessive rains or flooding.

Figure 28: Average Ability to Recover from Shocks or Stressors in the Future



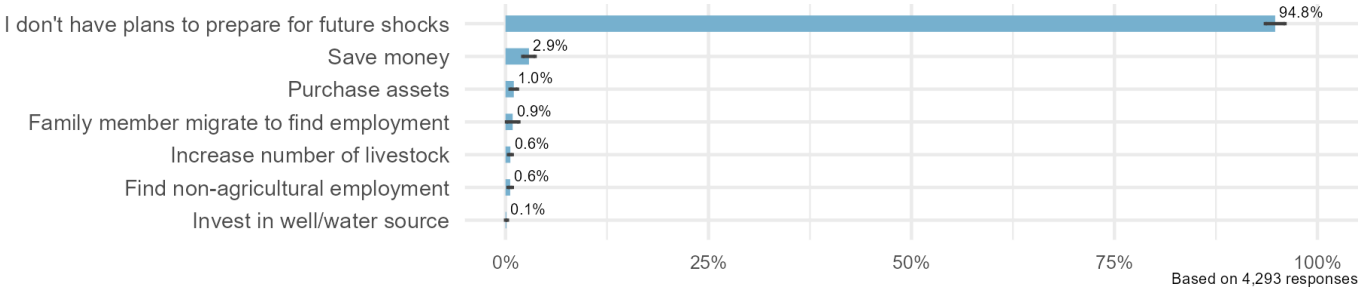
There is some variation in how well households expect to recover from future shocks across livelihood zones. Notably, households in urban areas are more pessimistic about their ability to recover from unemployment relative to households in other livelihood zones, which may reflect the relative availability of income-generating opportunities in urban areas relative to other areas.

Figure 29: Average Ability to Recover from Shocks or Stressors in the Future across Livelihood Zones



Households were also asked about whether they have plans to prepare for future shocks. An overwhelming majority of households (95%) do not have plans to prepare for future shocks, as shown in Figure 30. This once again underscores the relevance of planned BRCiS III Early Warning and Early Action development as well as activities to strengthen community structures to develop Community Action Plans for identifying high risk shocks. For the very few households that have plans, saving money and purchasing assets are marginally the more common plans.

Figure 30: Plans to Prepare for Future Shocks



The primary constraint for preparing for shocks in the future for the large majority of households (79%) is lack of savings or wealth to rely on as shown in Figure 31. Lack of livestock is also a common constraint, reported by 42% of households. As shown in Figure 32, these patterns are largely consistent across livelihood zones. These two findings highlight that limited assets are a major challenge for households to mitigate the impact of shocks on their wellbeing. Developing opportunities for households to build asset reserves through and access income generating opportunities is likely a promising avenue for increasing resilience to shocks.

Figure 31: Constraints to Preparing for Shocks in the Future

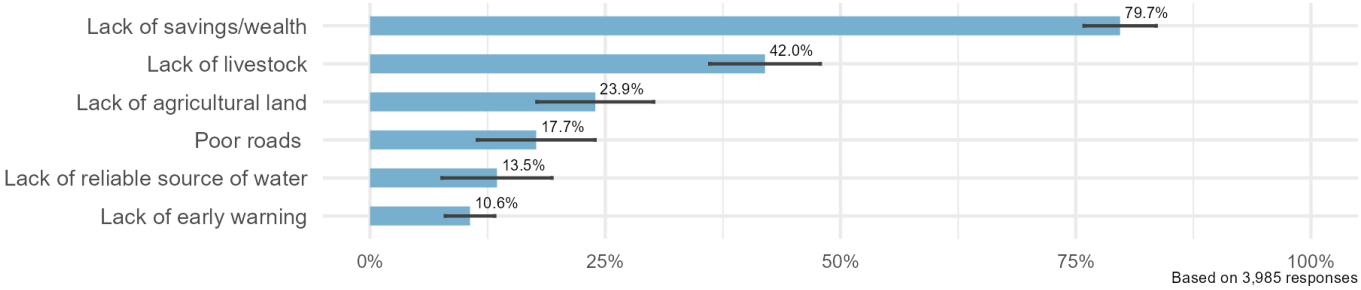
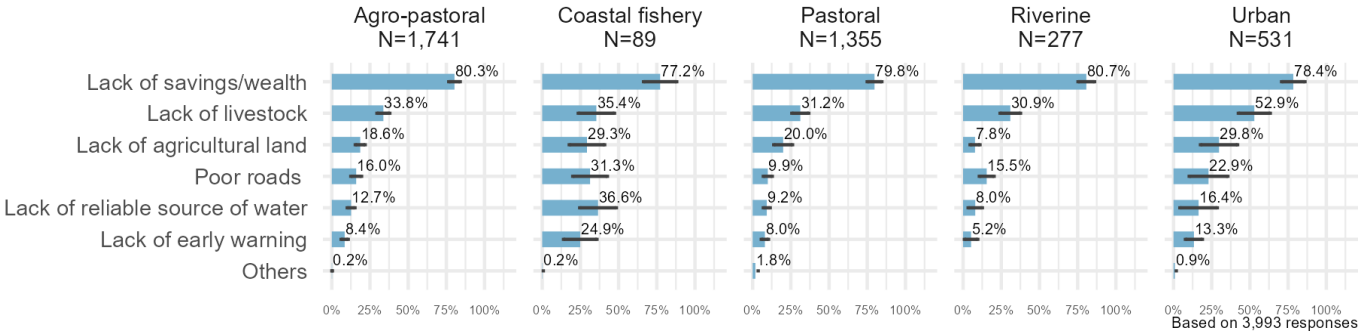


Figure 32: Constraints to Preparing for Shocks in the Future Across Livelihood Zones



3.3 Resilience Capacities

A key research question for BRCiS III is understanding the existing levels of resilience capacities within communities to inform how BRCiS III can most effectively build on these through its planned activities. As highlighted above, resilience is complex and is influenced by capacities at the household, community, and ecosystem level. To that end, we discuss capacities at each of these levels in this next section. We

conclude with the bigger picture of resilience for households in BRCiS III communities by presenting the results on the Resilience Spectrum Score.

Household Resilience Capacities

Access to Finance

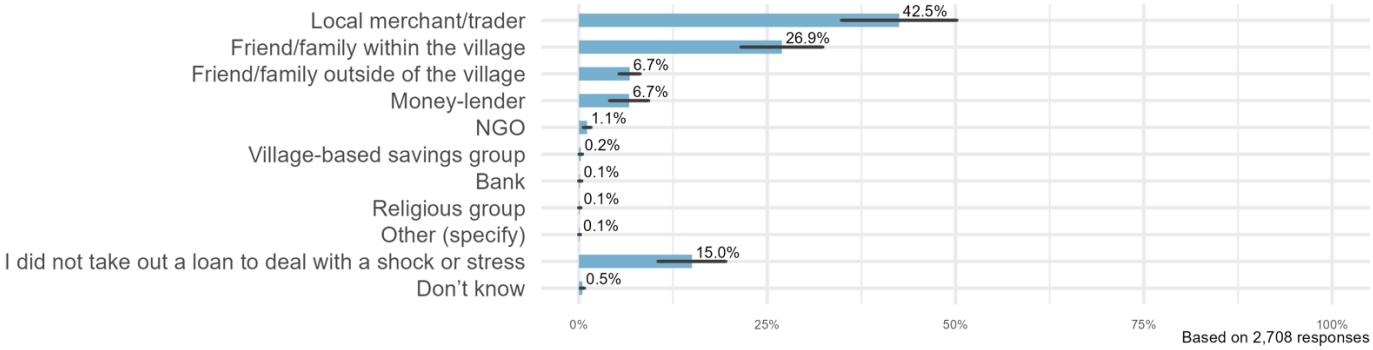
Borrowing is fairly common in communities with 60% of households reporting that they borrowed in the past year, as shown in Table 5. As outlined below, this is a common strategy deployed for coping with food shortages. As households most commonly rely on immediate relatives for support, it is likely that most of this borrowing activity is informal. **However, regular saving is highly infrequent with only 1% of households reporting that they regularly save cash.** Of the very few households that save, less than one-third of households (30%) are saving in a formal institution (e.g. MFI or bank). Very few households (5%) have access to insurance in their community. Once again, this underscores the limited financial services that households have access to.

Table 5: Household Access to Finance

Outcome	Mean	Upper CI	Lower CI	N
Households that took out a cash loan in the last 12 months	58.96%	54.78%	63.03%	4,218
Households that regularly save cash	1.36%	0.96%	1.92%	4,222
Households that save in a formal institution (of those who save at all)	29.67%	24.00%	36.05%	70
Households with access to insurance in the community	4.88%	3.62%	6.57%	4,159

In the case of taking out loans specifically to cope with shocks, it is most common to take out loans from local merchants or traders, as reported by 43% of households. Borrowing from family or friends in the village was also relatively common.

Figure 33: Sources of Loans Taken out to Cope with Shocks



Assets & Income Diversification

Households own very few productive assets, such as plows, hoes, or wheelbarrows (among others). This affirms why savings and lack of wealth were raised as the primary constraint to mitigating shocks reported by households. As shown in Table 6, households own fewer than one of those items on average. For household assets such as tables, chairs, lamps or electronics such as cell phones, TVs, and radios, households own 7 of these on average. Cell phones are almost universally owned, reported by 91% of

households. Torches and chairs are also other common household assets. **Over one-third of households (37%) own a smartphone.** For households that own livestock, they own 17 animals on average.

Table 6: Household Assets & Income Sources

Outcome	Mean	Upper CI	Lower CI	N
Number of productive assets owned	0.86	0.78	0.95	4,293
Number of household assets owned	6.77	6.40	7.13	4,292
% Households that own a smart-phone (cell phone)	36.78%	32.09%	41.73%	4,293
Average number of livestock owned for households that own livestock	16.78	14.90	18.67	1,967
Number of income sources	1.08	1.04	1.11	4,293

Figure 34: Household Assets Owned

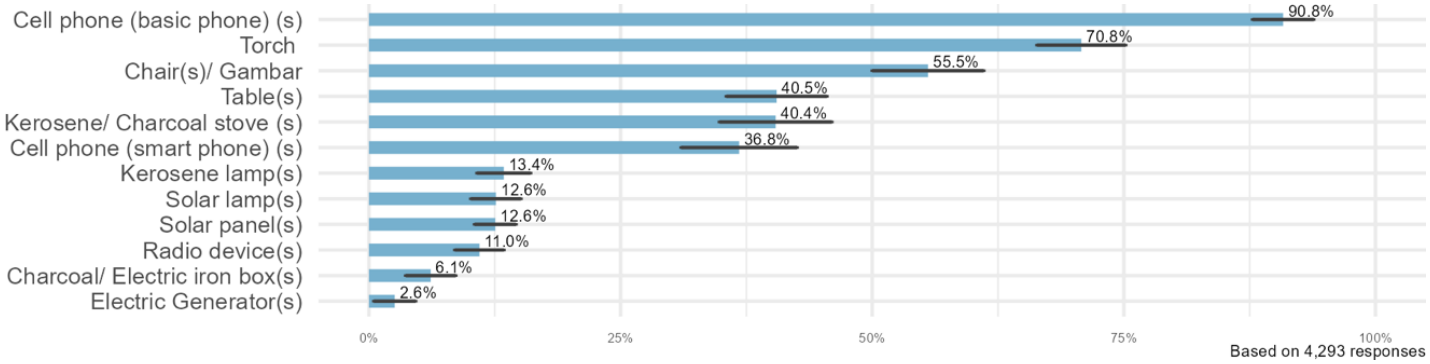
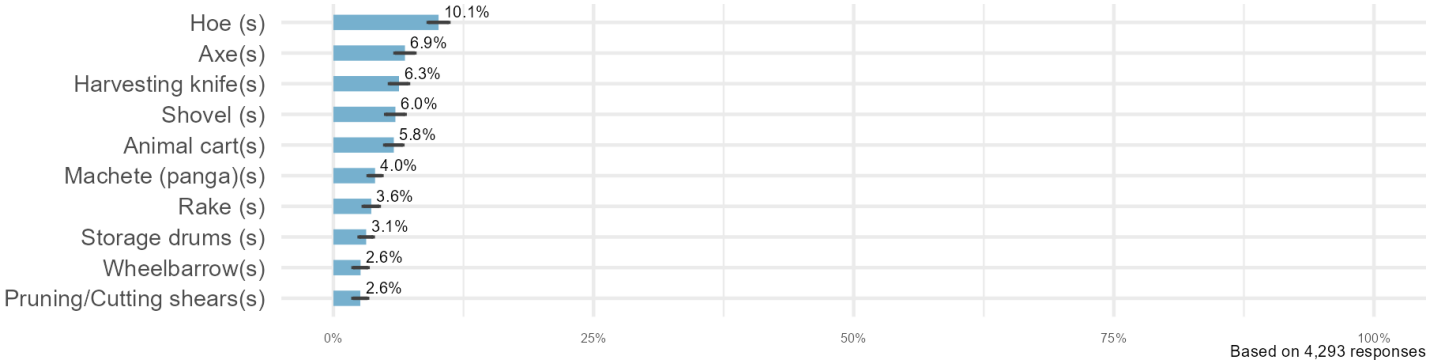


Figure 35: Productive Assets Owned



Ownership of household assets is fairly consistent across livelihood zones, as shown in Figure 36, with cell phones, torches, and chairs being the most common assets. Smart phone ownership is unsurprisingly higher in urban areas (reported by 49% of households). However, productive asset ownership varies widely by livelihood zone, as shown in Figure 37. Ownership of these assets is almost non-existent in coastal fisheries, pastoral, and urban areas. This is likely explained by variations in livelihoods.

Figure 36: Household Assets Owned by Livelihood Zone

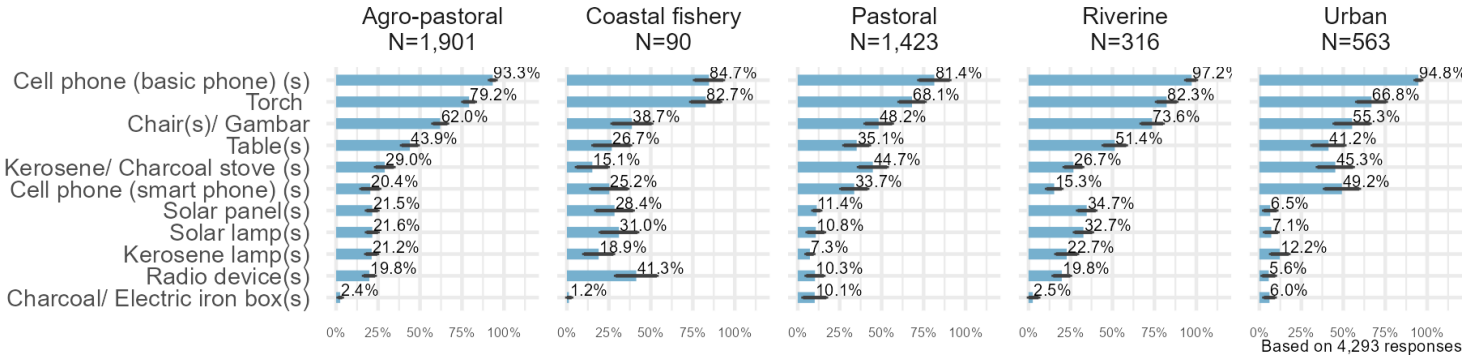
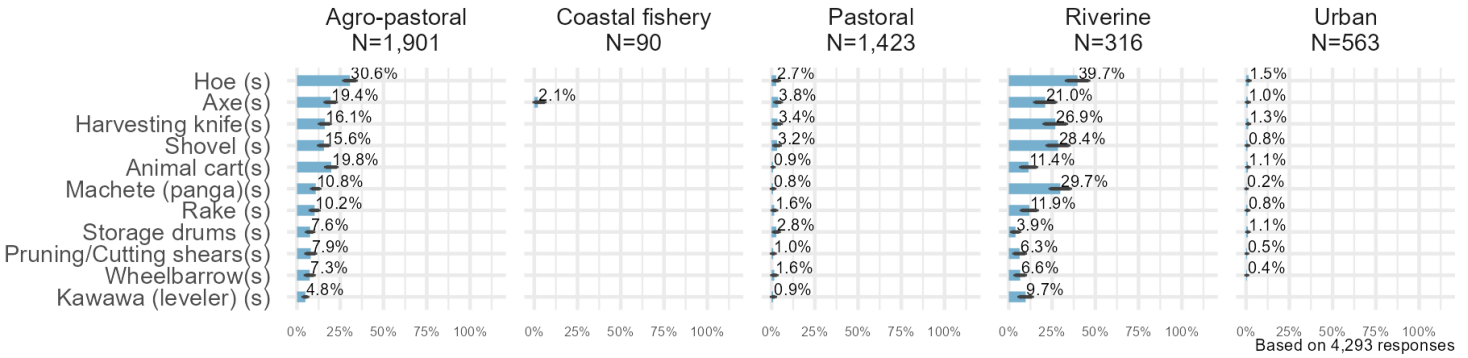


Figure 37: Productive Assets Owned by Livelihood Zone



Livestock ownership varies by type of livestock. Goats are more commonly owned, reported by 33% of households. Livestock ownership also varies by livelihood zones as shown in Figure 39. Households own a larger variety of livestock in agro-pastoral and riverine areas. It is rare for households to own livestock in coastal fishery areas and urban areas, apart from goats.

Figure 38: Livestock Ownership

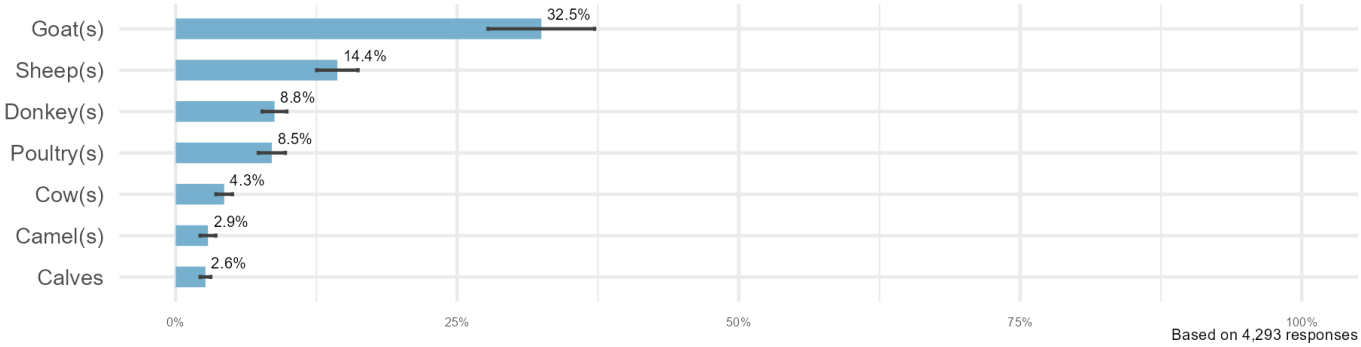
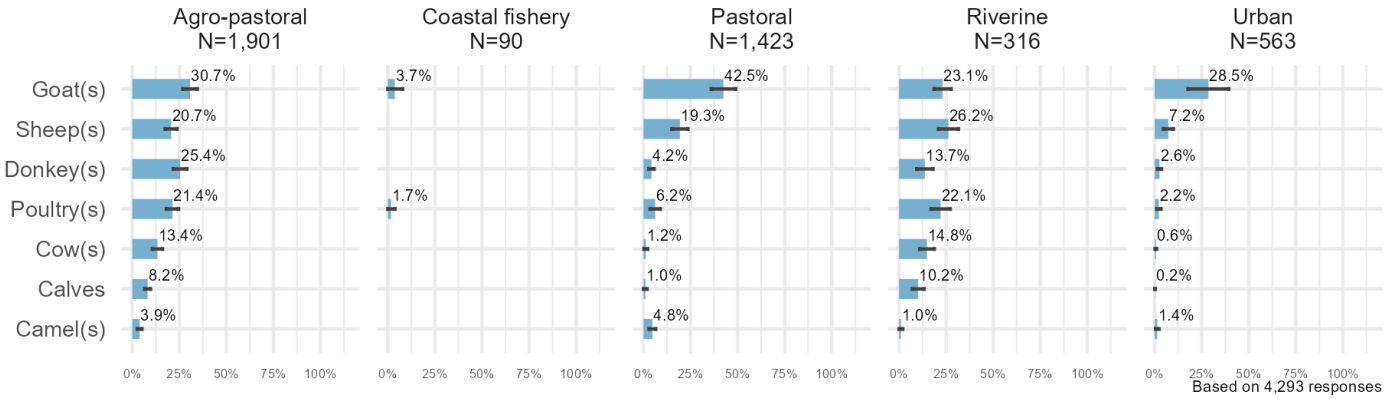
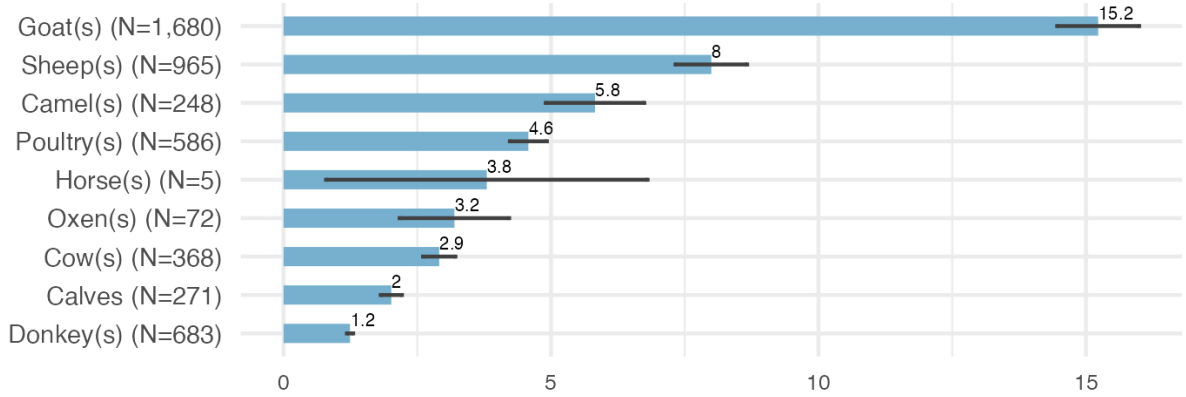


Figure 39: Livestock Ownership by Livelihood Zones



For households that own any livestock, they have 15 goats on average. Sheep and camels are also more common with households owning 8 and 6 on average, respectively.

Figure 40: Average Number of Livestock Owned for Households that Own Any



On average, households only have one source of income and very few have consistently reliable sources of income (formal employment or small businesses). Almost half of households (48%) earn income from casual labor, as illustrated in Figure 41. Raising livestock and agriculture are also somewhat common sources of income, as reported by 27% and 20% of households, respectively. Very few households are formally employed (2%) or have a private or small business (12%).

Income sources vary significantly by livelihood zone, as shown in Figure 42. Casual labor is common in riverine areas (a source for 62% of households) but is only a source for 27% of households in coastal fishery areas. Agriculture is much more common in agro-pastoral and riverine areas while livestock is the most common source in pastoral areas. Finally, fishery is the most common source of income for households in coastal fishery areas by far, reported as an income source by 71% of households.

Figure 41: Income Sources

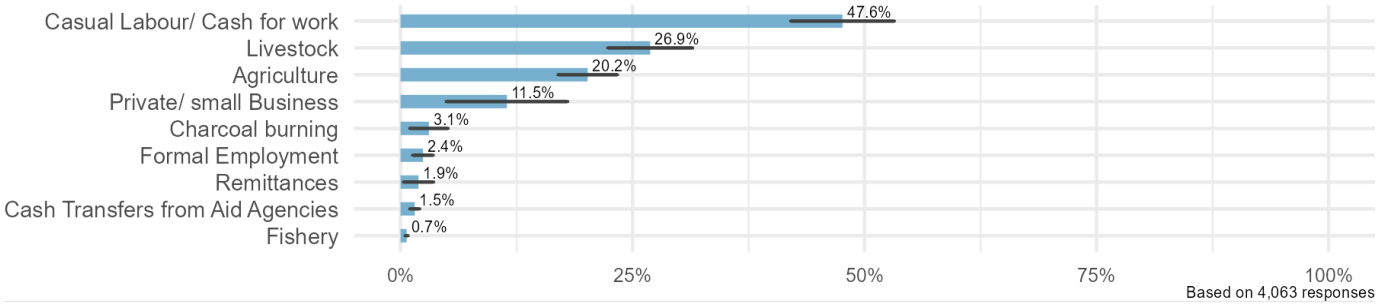
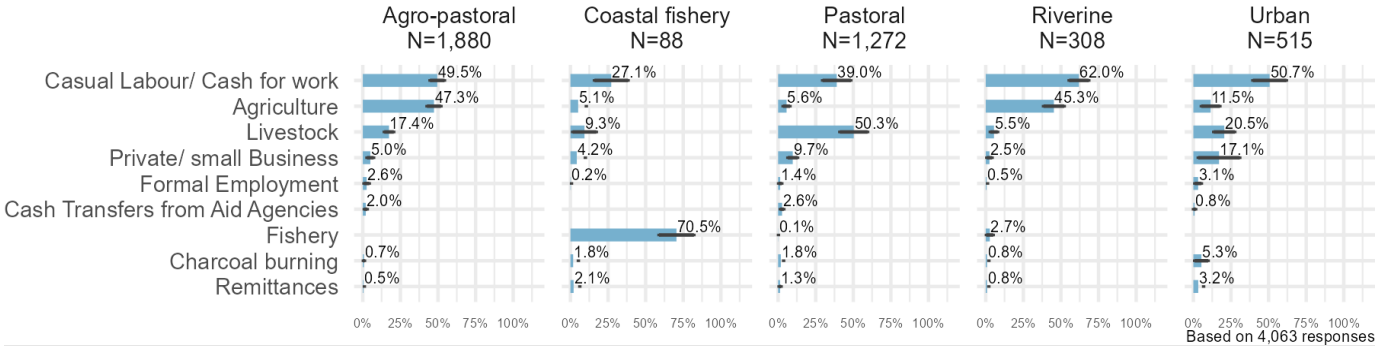
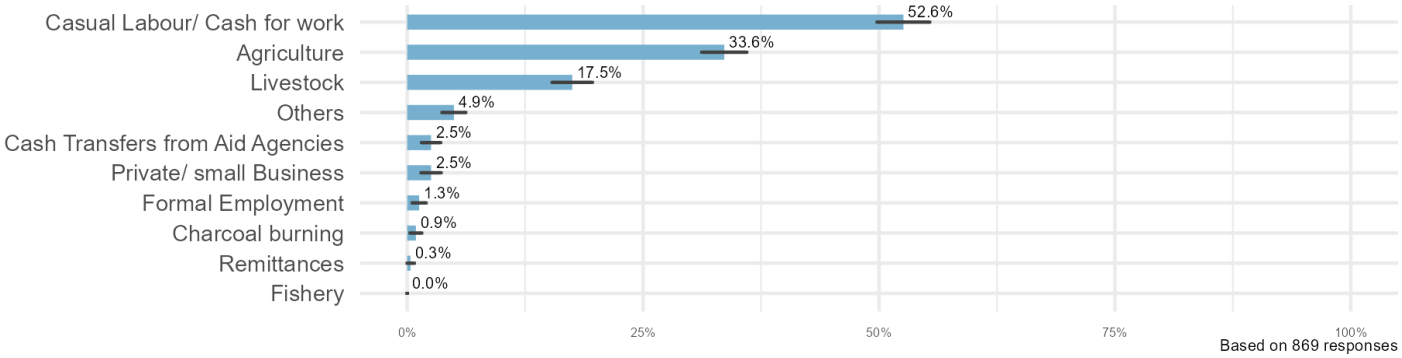


Figure 42: Income Sources Across Livelihood Zones



Income sources for minority clan households are similar as shown in Figure 43. Casual labor work opportunities is the most common income source, reported by 53% of households. Agriculture and livestock are also common income sources.

Figure 43: Income Sources for Minority Clan Households



SOCIAL CAPITAL

Households regularly rely on their relatives for help both in and outside of the community, as shown in Figures 41 and 42. A large majority of households (89%) say they are able to turn to their relatives in the community as well as outside of the community (72% of households). A large proportion of households also expect to support relatives both inside and outside of the community when needed. Relying on other groups such as clan groups, neighbors, or friends is less common. We also find a similar trend when disaggregating by urban versus non-urban livelihood zones (pictured in Appendix III).

Figure 44: Social Capital within the Community

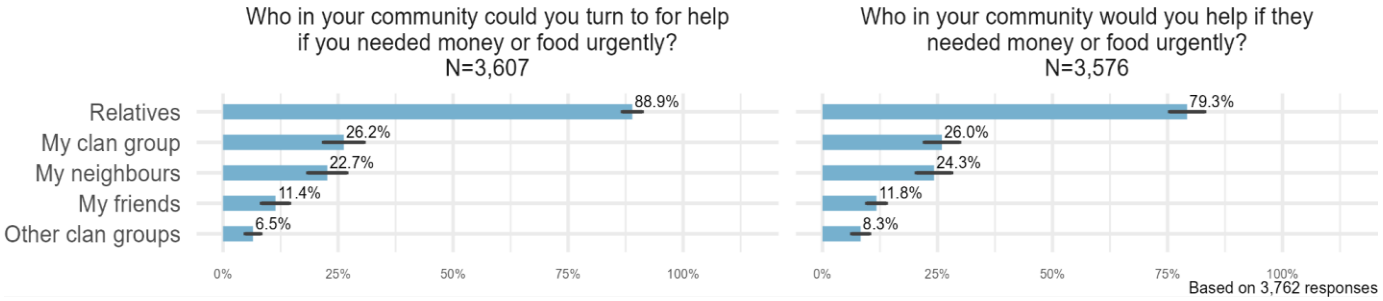
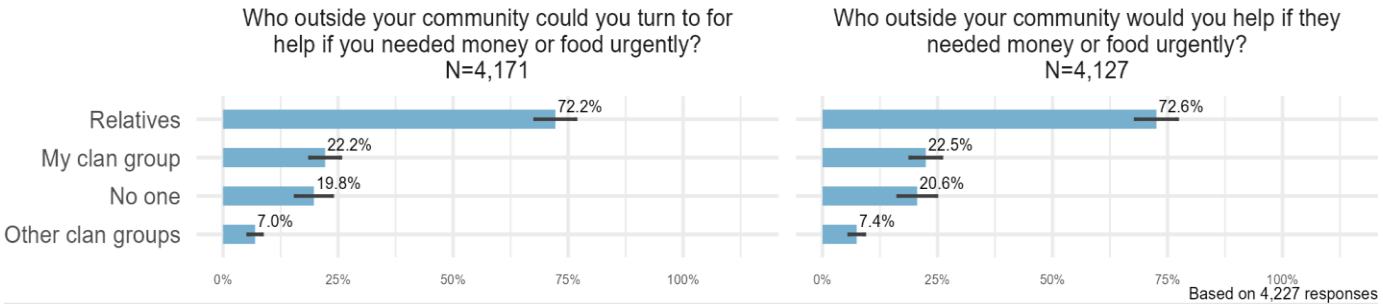


Figure 45: Social Capital outside of the Community



As shown in Figures 43 and 44, minority can households rely and support similar social groups. Specifically, it is most common to lean on and support relatives both within and outside of the community. However, it is slightly more common for minority clan households to rely on their own clan group, relative to how prevalent it is for majority clan households.

Figure 46: Social Capital within the Community for Minority Clan Households

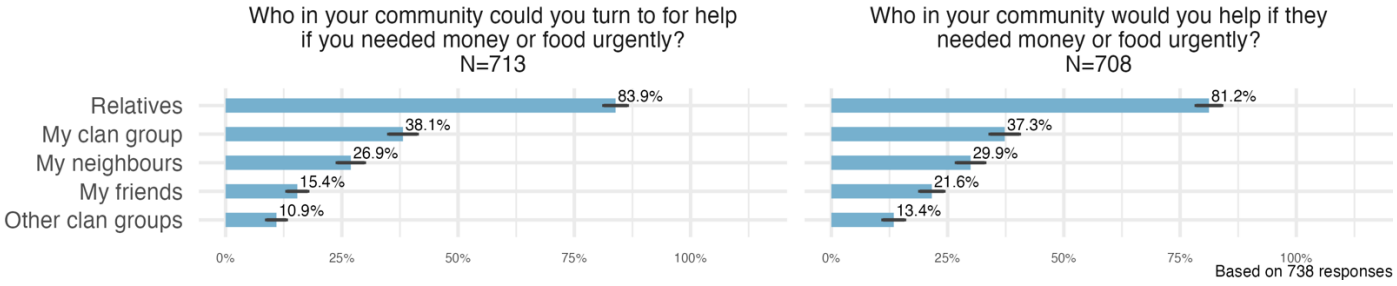
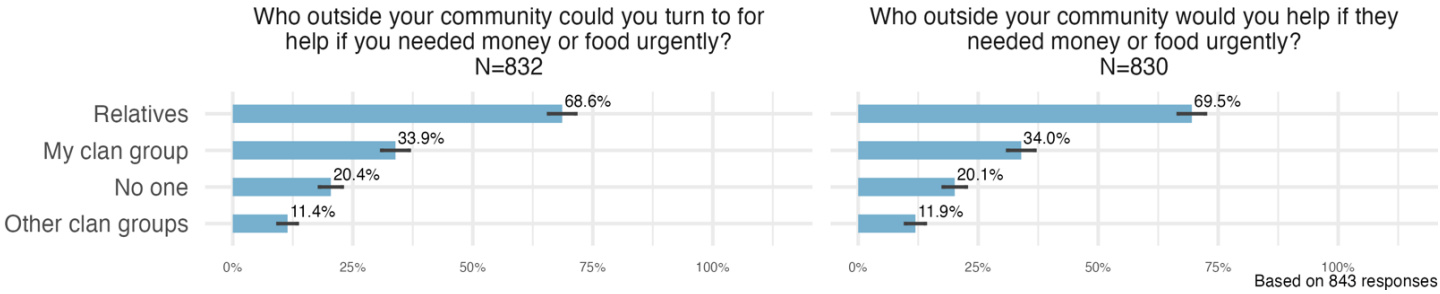
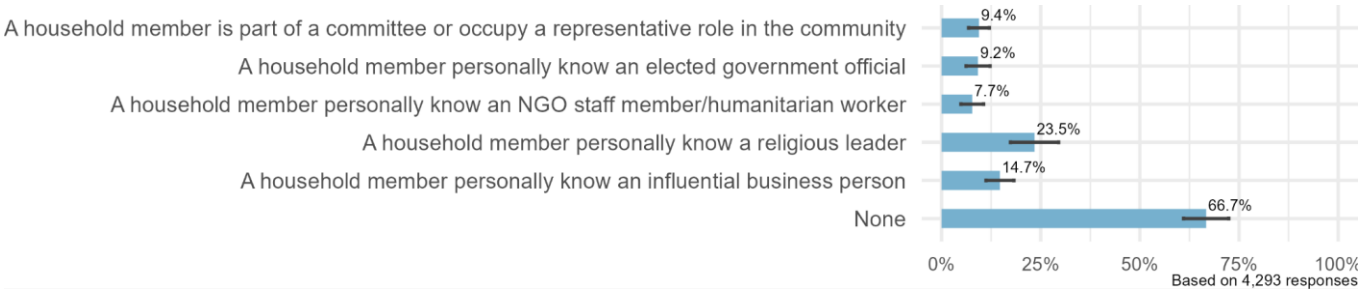


Figure 47: Social Capital Outside of the Community for Minority Clan Households



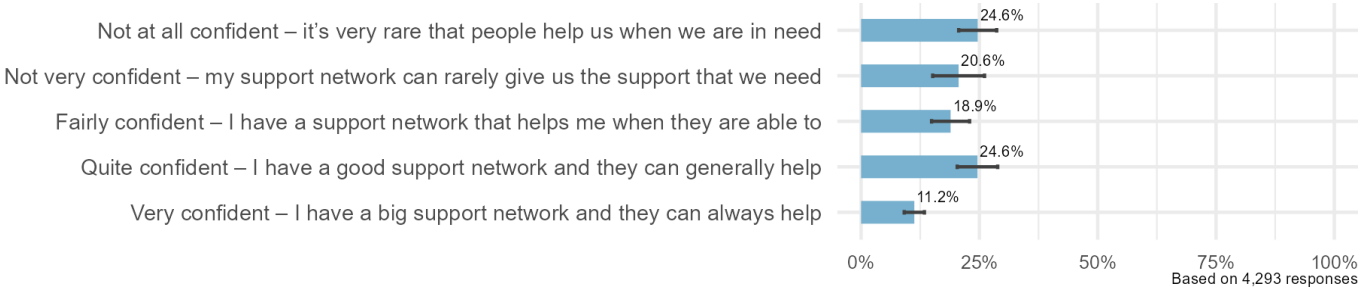
Most households (67%) do not know a person of influence in their community, as shown in Figure 48. If households do know an influential person, it is more common to know a religious leader, with 24% of households reporting that they know an individual of this type.

Figure 48: Types of Individuals Known



Households' confidence in the ability of their social networks to support their recovery varies significantly, as shown in Figure 49. Slightly fewer than half of households (45%) are not all or not very confident that they can rely on their social networks. However, more than one-third of households (36%) are very or quite confident about their network's ability to help them.

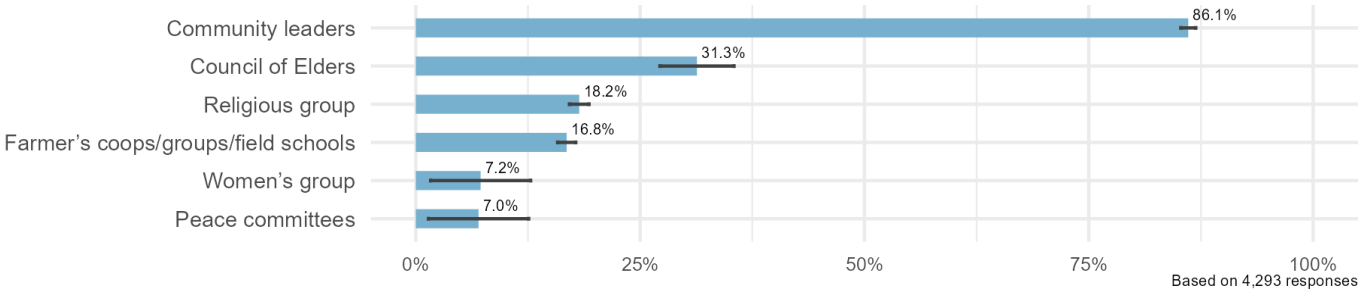
Figure 49: Confidence in Support Networks in Times of Crisis



GROUP PARTICIPATION

Most households (87%) report that community leaders are active in their community. One-third of households (31%) also report Council of Elder groups being active. Religious groups, farmer coops, women's groups, and peace committees are also reported to be active by some households but are less common.

Figure 50: Groups Active in the Community



Households rarely meet with community representatives and largely do not perceive themselves to have influence on the decision-making of local authorities as shown in Figures 48 and 49. The large majority of households (85%) either rarely or never meet with their community representatives. Moreover, over three-quarters of households (78%) perceive they have no or very limited influence on decision-making. Most households (75%) also perceive that local authorities do not support their needs or support very little. Development and strengthening of community groups and linkages with formal actors, as planned through BRCiS III, will hopefully improve households' participation in local governance structures and perception of their efficacy.

Figure 51: How Often Households Meet with Community Representatives

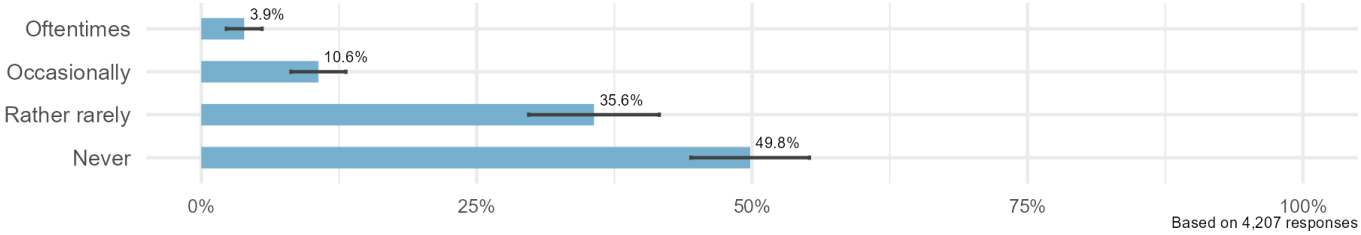


Figure 52: Perceived influence on Decision-Making of Local Authorities

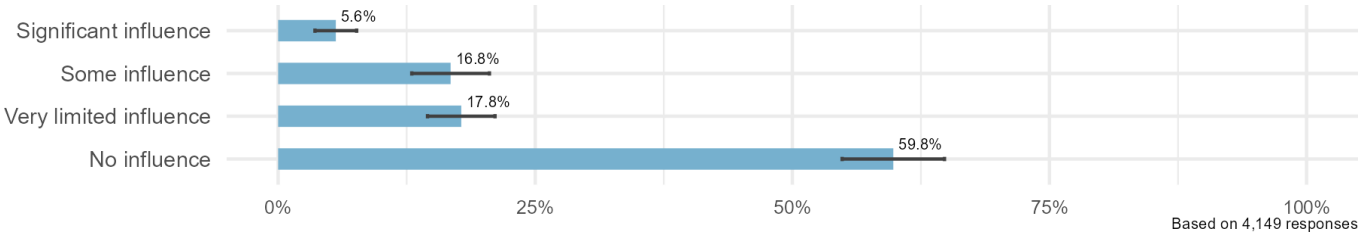
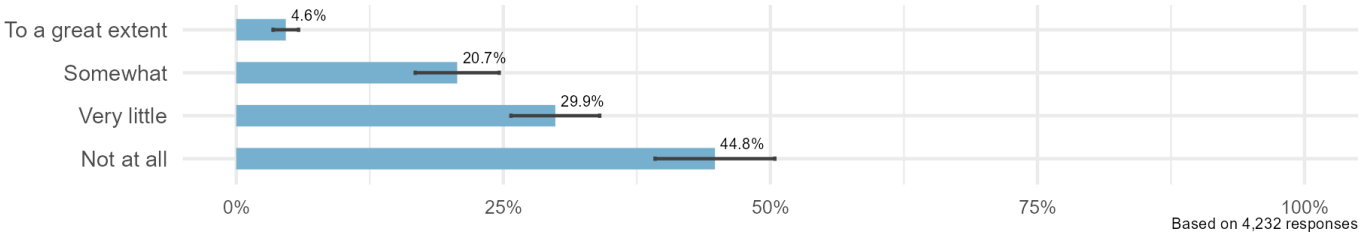


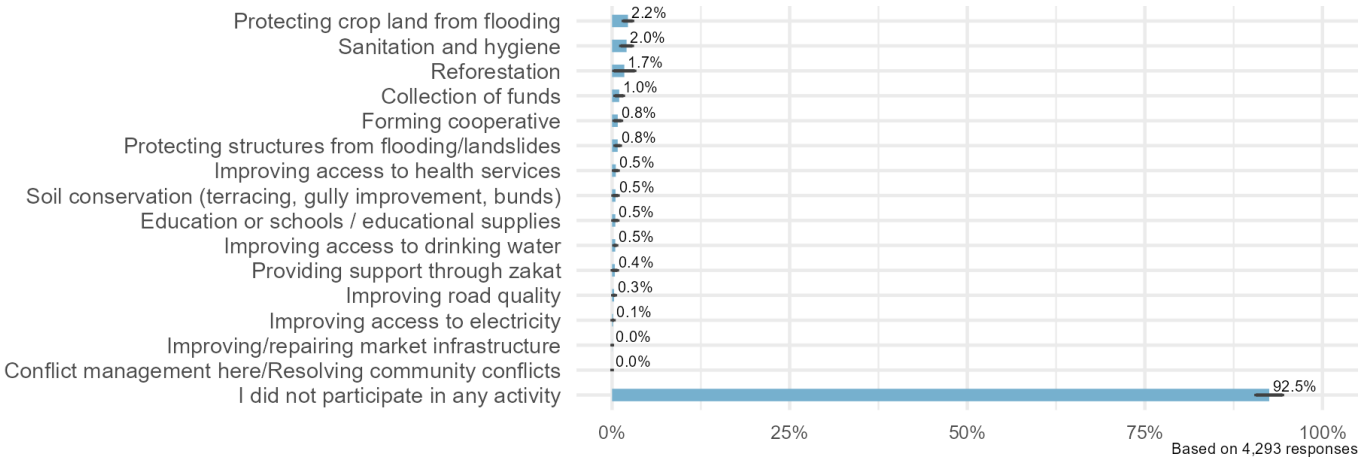
Figure 53: Perception of how much Local Authorities Support Needs of Household



COLLECTIVE ACTION

Households reported rarely having worked with others in their communities to do something for the benefit of their communities, as shown in Figure 54. The large majority of households (93%) did not participate in any activity. Similarly, BRCiS III activities to empower local community groups and increase collective action around ecosystem management will hopefully increase household participation in these activities.

Figure 54: Participation in a Community Activity to Benefit the Community



MIGRATION & REMITTANCES

It is not common for households to have members that have migrated out of their community. Only 5% of households report a member migrating to somewhere else in Somalia and 2% that have migrated to a different country. Remittances are more commonly sent from household members living in different countries than elsewhere in Somalia, though the sample size for this result is small so the finding should be interpreted with caution.

Table 7: Household Migration & Remittances

Outcome	Mean	Upper CI	Lower CI	N
Households that have a member migrated to somewhere else in Somalia	5.12%	4.00%	6.55%	4,293
Households that receive regularly local remittances from a family member living somewhere else in Somalia	6.51%	2.24%	17.47%	191
Households that have a member migrated to another country	1.87%	1.19%	2.92%	4,293
Households that receive regularly international remittances from a family member living in another country	19.43%	3.08%	64.65%	52

HUMAN CAPITAL

The education level of the heads of households of BRCiS III communities is low. As shown in Figure 55, the large majority of households (90%) have no formal education. A more detailed breakdown of education levels can be found in Appendix II. Further, fewer than half of heads of households (44%) can read or write. It is less common for heads of households of minority clan groups to be literate: one-quarter

of these households (27%) reported this. A smaller proportion of minority clan households also have completed primary school education (4%) relative to the majority clan households.

Figure 55: Education of Head of Household

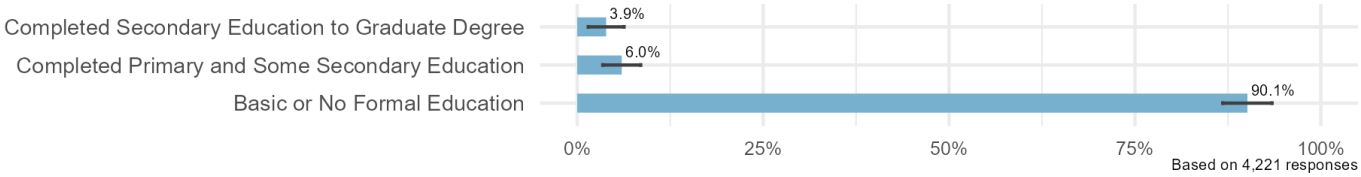


Table 8: Head of Household Literacy

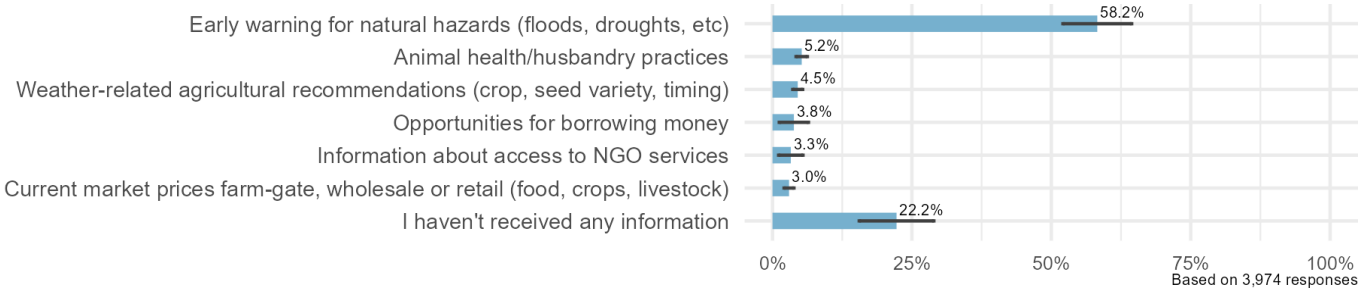
Outcome	Mean	Upper CI	Lower CI	N
Head of households that can read or write	43.77%	39.49%	48.14%	4,219
Minority clan head of households that can read or write	26.79%	24.55%	29.15%	851
Minority clan head of households that have completed primary school	3.57%	2.67%	4.75%	869

ACCESS TO INFORMATION

Household access to information varies depending on the type of information, as shown in Figure 56. Over half of households (58%) report receiving early warning information for natural hazards in the past year. However, as highlighted earlier, this seems to have had limited effectiveness on whether households are aware a shock is coming. Of those that experienced a natural hazard shock and got an early warning for a natural hazard message, about one-third (35%) reported they expected the shock (relative to 15% of households who expected the shock and did not receive the message). Improved Early Warning systems via BRCiS III will hopefully improve the efficacy of these messages.

Other types of information such as information on animal health practices, weather-related agricultural recommendations and opportunities for borrowing money were much less common. Twenty percent of households did not receive any information at all in the past year.

Figure 56: Types of Messages Received in the Past Year



Information comes from a variety of sources, although largely informal sources, as shown in Figure 57. Over a third of households (37%) received information from clan or traditional leaders. Other common sources were neighbors, friends, markets, radio, and religious leaders. More formal sources such as NGOs or humanitarian organizations, TV, government officials or newspapers were less common.

Information is also commonly shared within informal networks as shown in Figure 58. Most households shared information with family, friends, and neighbors.

Figure 57: Sources of Information in the Past Year

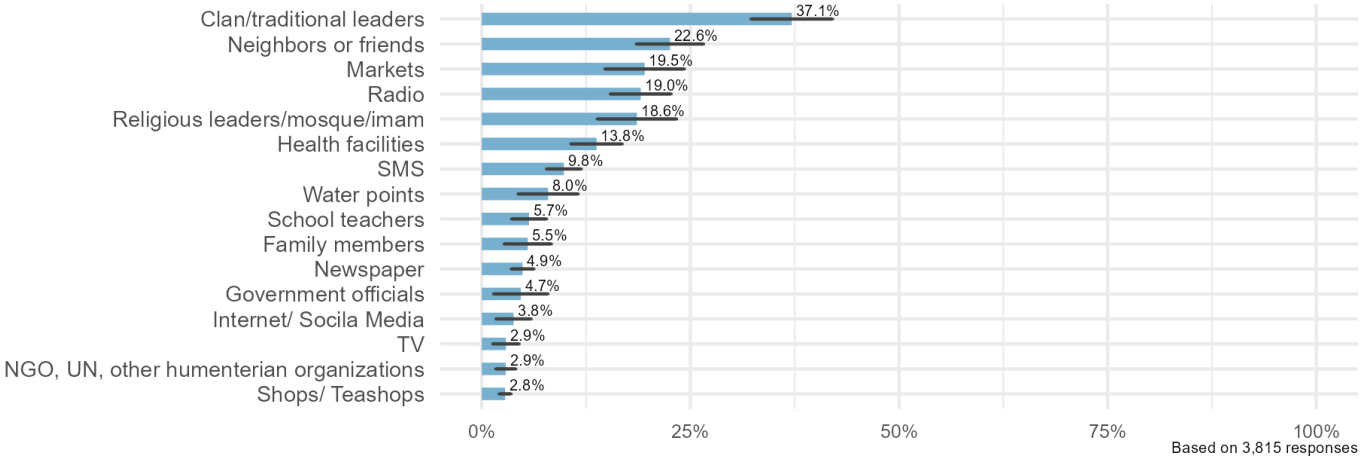
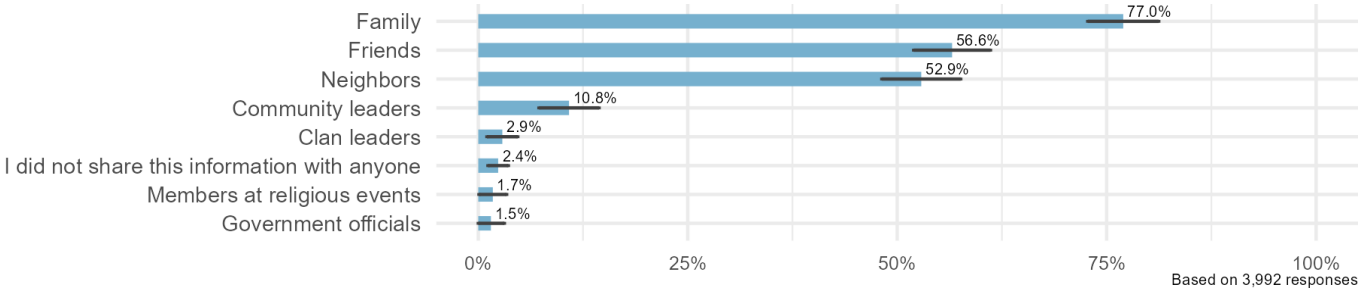
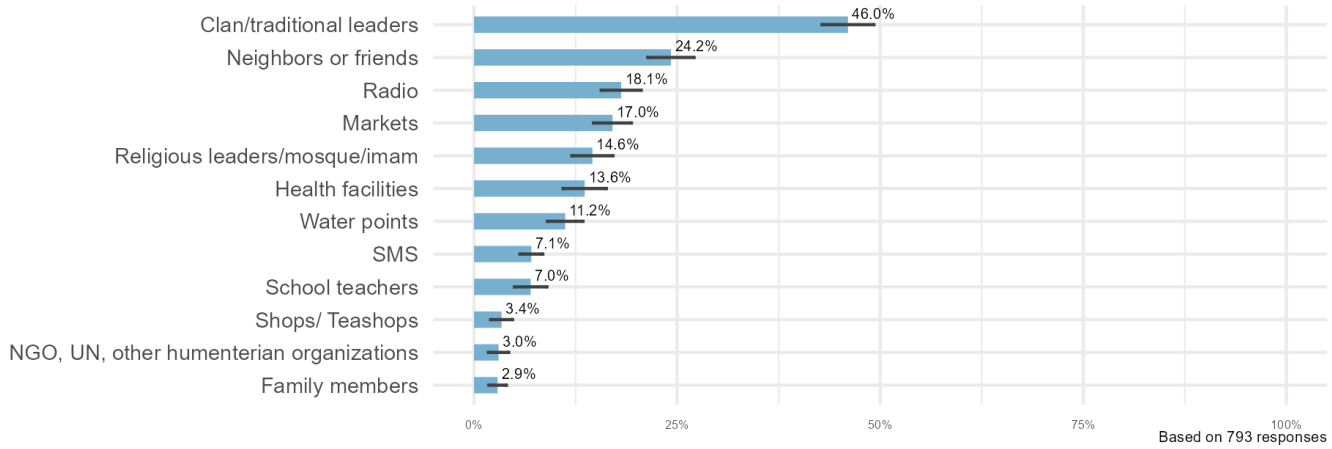


Figure 58: Whom Information was Shared with in Past Year



The sources for information for minority clan households is similar to that of majority clan households. Minority clan households most regularly receive information from clan and traditional leaders, reported by 46% of minority clan households, which is slightly more common than it is for majority clan households. Most information similarly comes from informal sources.

Figure 59: Sources of Information for Minority Clan Households



POWER DYNAMICS WITHIN HOUSEHOLDS

In half of households (53.3%), the male head of household is the primary decision maker, as shown in Figure 60. In a quarter of households (23.6%), the female head of household is the primary decision maker whereas in 20% of households, decisions are made jointly between male and female heads of households.

However, according to women respondents within households, women hold more decision-making power. Figure 61 shows the percentage of women respondents within households who make decisions solely or jointly with her husband across various decision types. Across all decision types, nearly all female respondents surveyed reported that they make this decision solely or jointly with her husband. This divergent finding may reflect different perspectives regarding who makes decisions across respondents or differences in decision making power across different decision types.

Figure 60: Primary Decision-Maker within Households

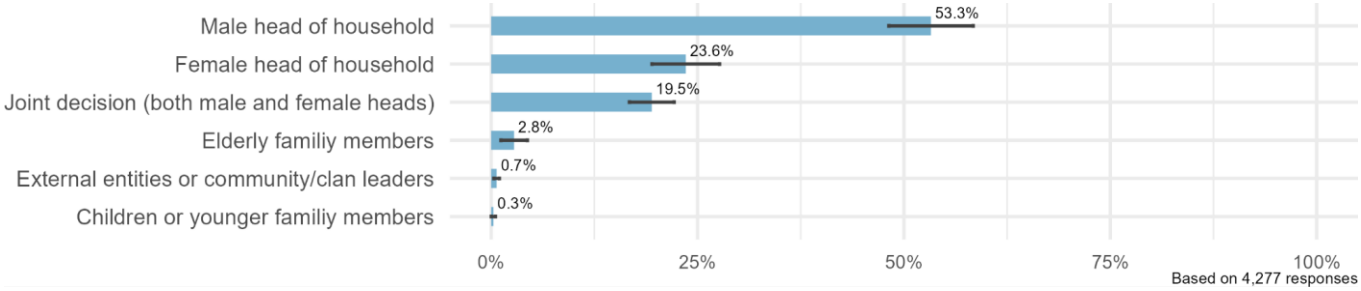
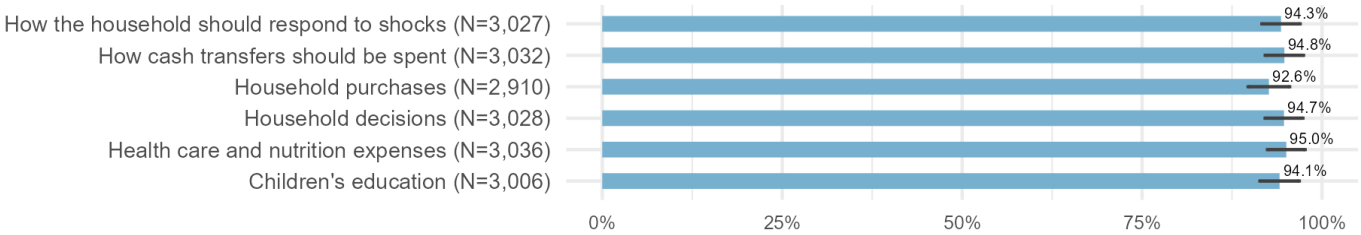
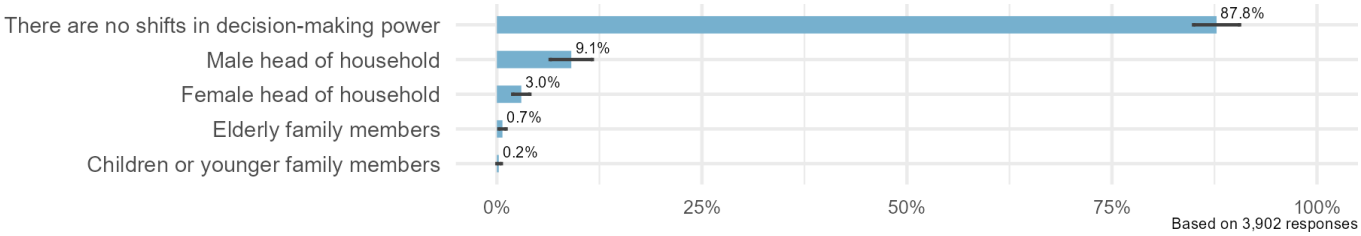


Figure 61: Decisions Made Solely or Jointly by Women in Household



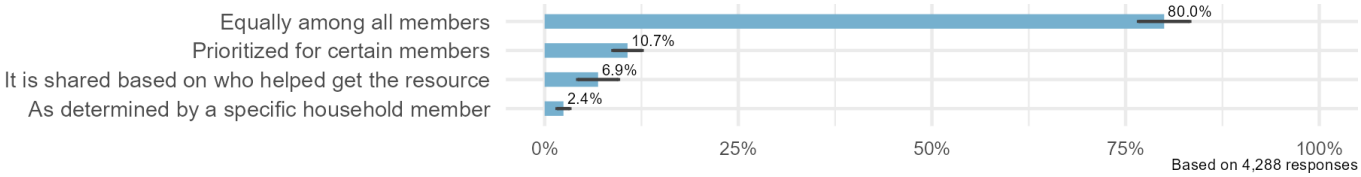
Households state that decision making power is relatively stable over time and does not vary based on the seasonal availability of ecosystem services for the large majority of households (88%), as shown in Figure 62. For the few households where decision making power shifts, male heads of households more commonly become more influential, followed by female heads of household.

Figure 62: Household Member that Becomes More Influential During Seasonal Availability of Ecosystem Services



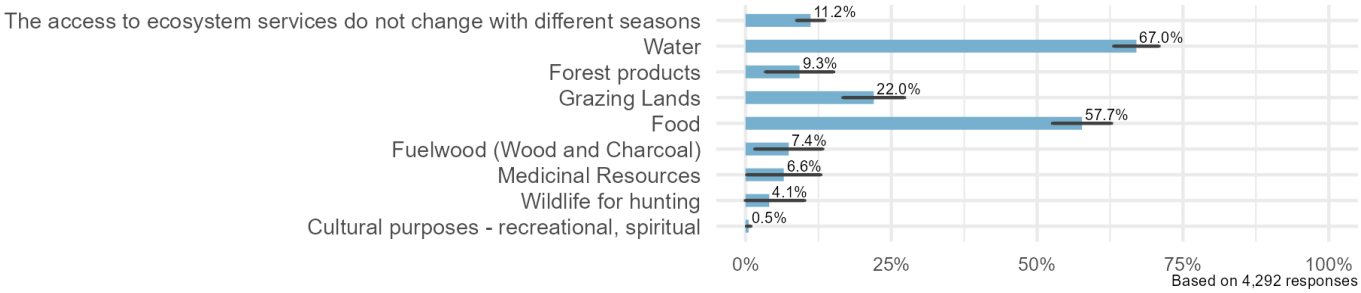
Despite differences in decision making power within the household, benefits are distributed equally across members in the large majority of households (80%) as shown in Figure 63. When not shared equally, resources are either prioritized for certain members or based on who helped procure the resource.

Figure 63: How Benefits are Distributed within Household



Most households observe that access to ecosystem services changes by the season, as shown in Figure 64. Only 11% of households report that access to ecosystem services is stable across the year. Food and water are the most commonly reported ecosystem services where access is variable across seasons, reported by 67% and 58% of households, respectively.

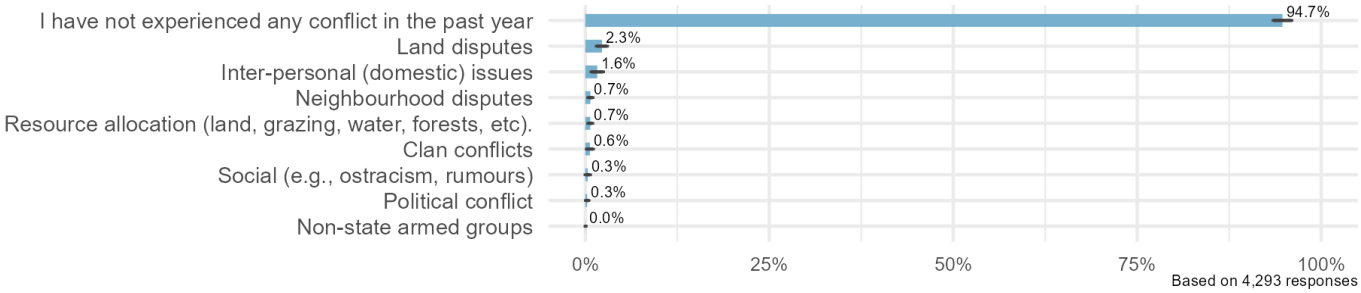
Figure 64: Ecosystem Services where Access Changes Across Seasons



CONFLICT DYNAMICS

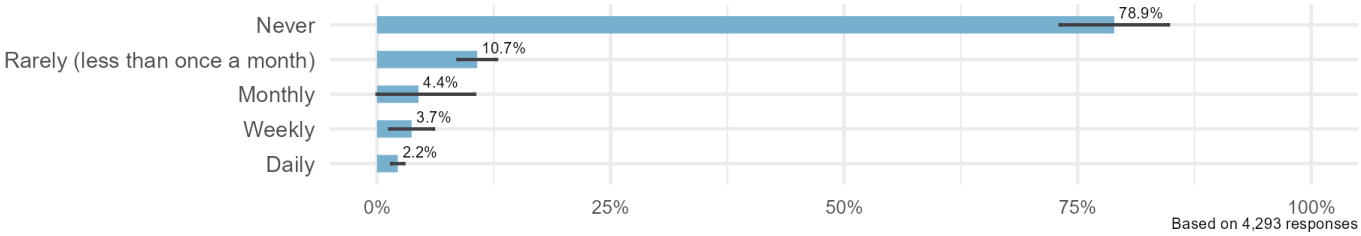
The large majority of households (95%) reported that they did not experience any form of conflict in the past year, as shown in Figure 65. Households are likely under-reporting the prevalence of conflict, given that 11% of households report clan conflict as a shock experienced in the past year. This may be due to perceived sensitivities around reporting conflict occurrence.

Figure 65: Types of Conflict Experienced in Past Year



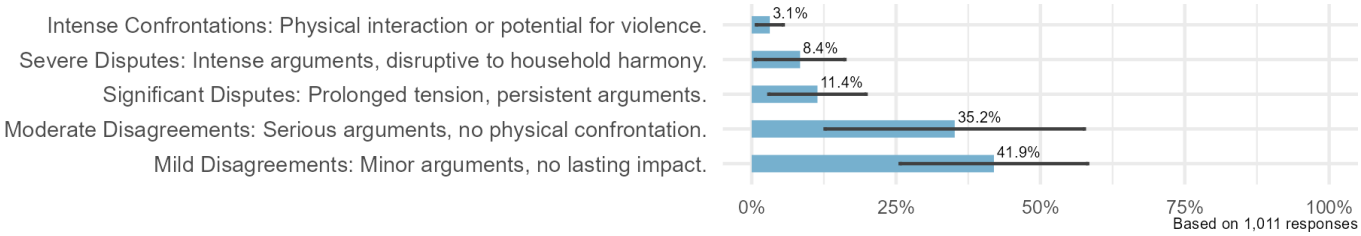
Regarding conflicts occurring specifically in the household, over three-quarters of households (79%) report that they never occur, as shown in Figure 66. For the households that do report conflicts, the frequency ranges between less than once a month (more common) to daily (less common). Again, this may reflect under-reporting due to sensitivity of the question.

Figure 66: Frequency of Conflict within the Household



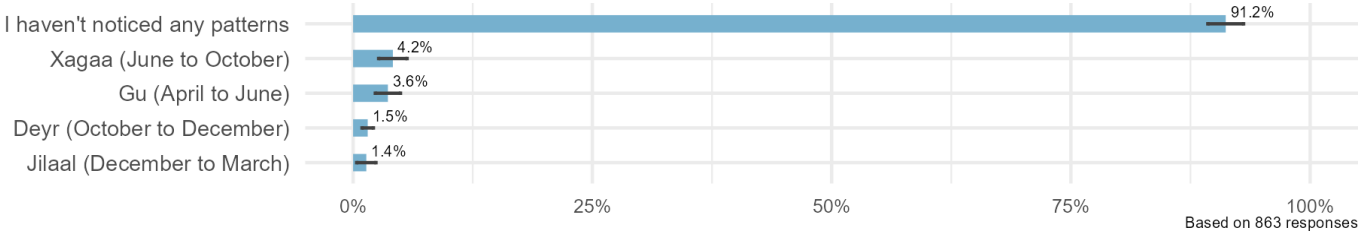
For households that did report conflict occurring within the household, over three-quarters of households (77%) state that the typical intensity of conflict is between mild (minor arguments, no lasting impact) and moderate (serious arguments, no physical confrontation). Few households (12%) state that the conflicts are severe or intense.

Figure 67: Intensity of Conflict within Households



Of the households that report conflict occurring, the large majority (91%) state that there is no correlation in conflicts arising and seasons, as shown in Figure 68. For the small contingent of households that notice patterns, there is no season during which conflict most commonly occurs.

Figure 68: Seasons when Conflicts are More Likely to Occur



COMMUNITY RESILIENCE

Community resilience was measured primarily via the ARC-D tool as described earlier. Community Dialogue Scoring were asked to identify the primary shock for their community and discuss their resilience in terms of that shock. The overwhelming majority of communities (79%) named drought as their primary shock, as shown in Figure 69.[20] Flood was the second most common shock, named by 19% of households.

Figure 69: Primary Shock Identified by Communities

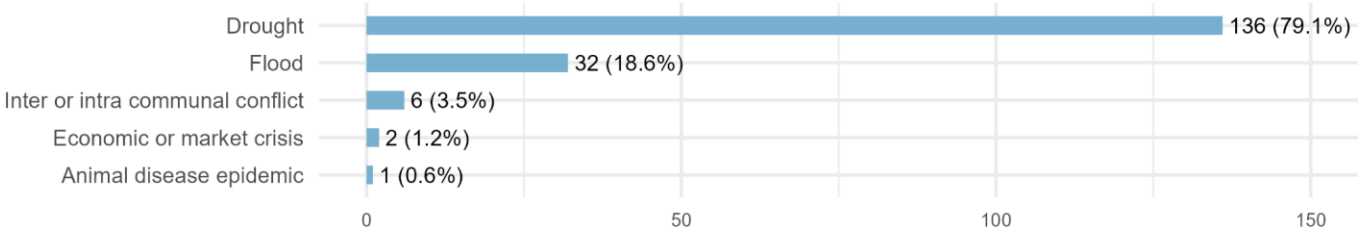
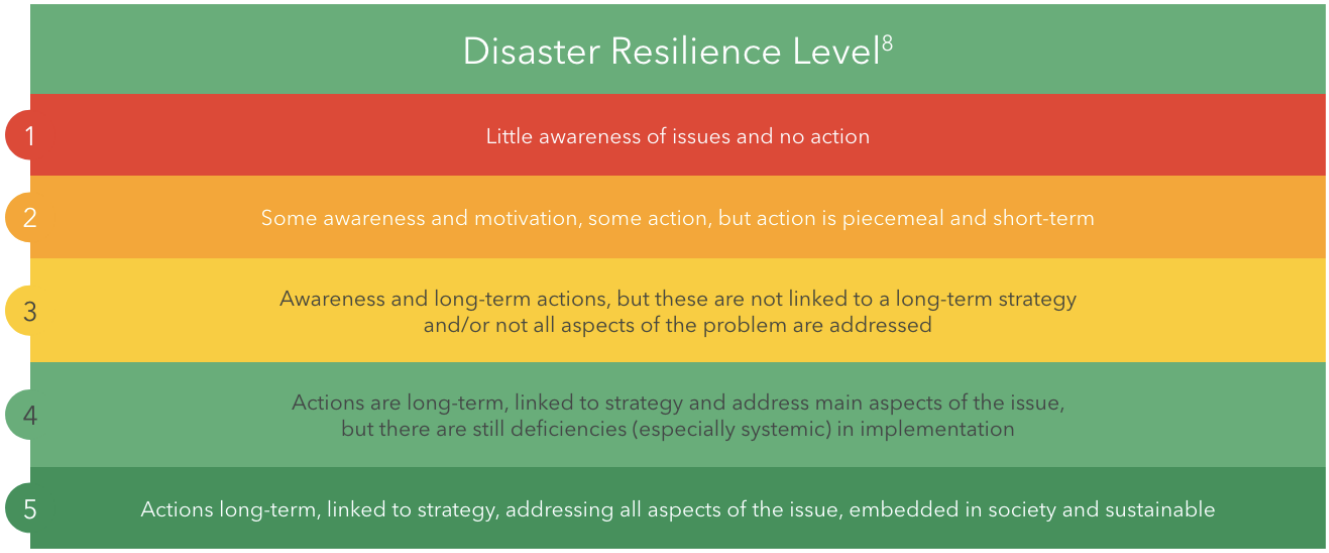


Figure 71 presents the results of how communities self-assessed their resilience to the primary shock. Scores range from one to five with higher scores indicating a higher level of resilience. Figure 70 below outlines how each score is defined according to the ARC-D methodology.

Figure 70: Scores for ARC-D Community Resilience Assessment



Resilience components are organized into four thematic areas. The first is Understanding Disaster Risk, which is based on an understanding of disaster risk in all its dimensions of vulnerability, capacity, exposure of persons and assets, hazard characteristics and the environment.[21] Most communities have little

[20] Note that the percentages do not add up to 100% because households were able to name more than one shock.
[21] Center, Asian Disaster Reduction. "Sendai framework for disaster risk reduction 2015–2030." *United Nations Office for Disaster Risk Reduction: Geneva, Switzerland* (2015).

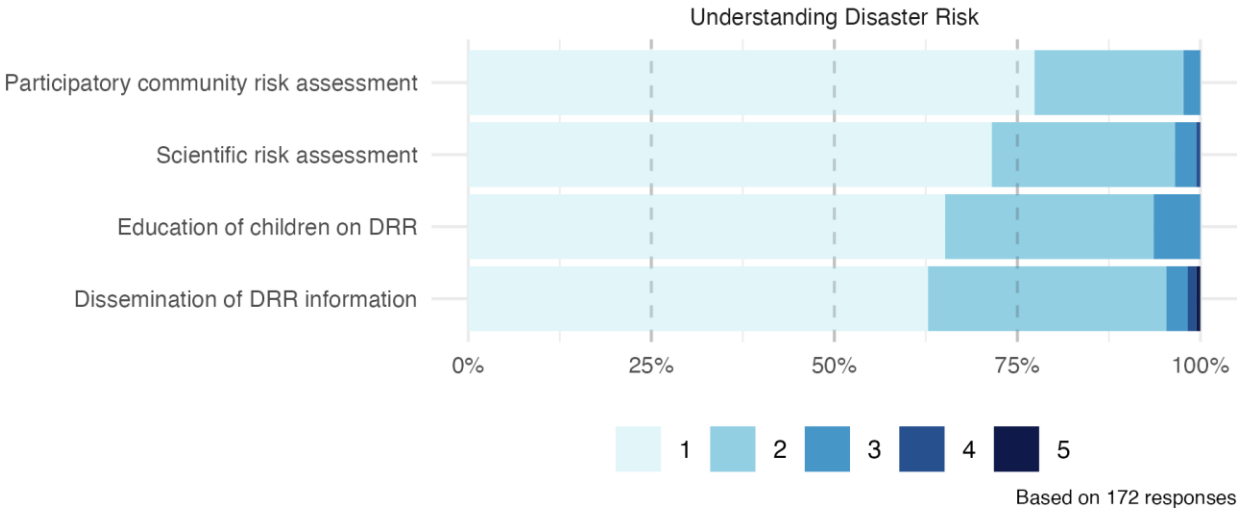
awareness of issues and no action or some awareness, but action is piece-meal and short-term. Most communities have never conducted a risk assessment in a structured and participatory way and have no access to scientific knowledge about risks. Understanding of risk is consistently low across districts, with a lack of participatory and scientific risk assessment, limited dissemination of DRR information, and little to no education of children on DRR. Participants highlighted limited capacity to undertake assessments, access risk information, and educate children on DRR topics, linked to low levels of literacy and a lack of external support. The perception of disasters being a result of divine will and therefore not feasible to anticipate is widespread.

Traditional knowledge plays a key role in understanding risk, particularly in the absence of participatory and scientific assessments. Traditional methods of monitoring conditions and identifying indicators of hazardous events are extremely valuable in providing information that is specific and relevant to the local context, bridging gaps in temporal and geographical granularity of forecasting models, particularly in data scarce environments. However, changes to the environment linked to climate change and ecosystem degradation pose challenges for the continued reliability of these indicators, and necessitate the incorporation of model-based scientific risk information.

Combining different sources of risk information also presents an entry point for building understanding in and trust of risk information, and addressing the sense of helplessness highlighted across communities related to disasters being perceived as inevitable.

Communities are slightly more resilient in terms of education of children on disaster risk reduction, such as in schools or oral tradition, and in terms of dissemination of disaster risk reduction information, including participation in awareness events and trainings. Overall, this suggests that communities do not have institutions or procedures in place for understanding disaster risk. This highlights that the activities BRCiS III has planned to develop and empower community-led structures for identifying high risk shocks is very much needed.

Figure 71: Community Resilience for Understanding Disaster Risk

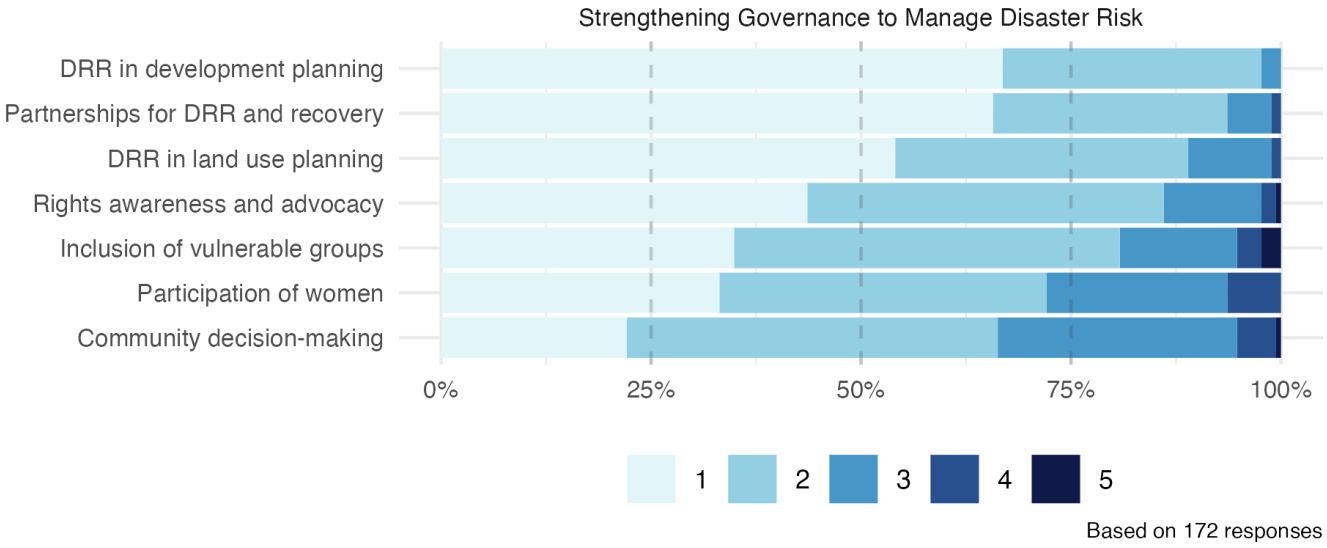


The second thematic area is Strengthening Governance to Manage Disaster Risk, which are resilience capacities necessary to ensure coherence of national and local frameworks of laws, regulations and public

policies that, by defining roles and responsibilities, guide, encourage and incentivize the public and private sectors to take action and address disaster risk.[22] Communities have more resilience in this thematic area than the others, however, there is variation across the components.

Communities in general are more resilient in matters regarding participation and inclusion such as community decision-making, participation of women, and inclusion of vulnerable groups. Though most communities are not in a place where they have actions linked to long-term strategies regarding governance. Communities are less resilient when it comes to considering disaster risk reduction as an integral part of their actions to achieve wider community goals. The majority of communities do not integrate disaster risk reduction into community development planning. Additionally, communities have no partnerships between the community and external actors that can provide funds/resources for DRR and recovery. DRR is largely absent from community development and land use plans, with a focus in discussions on the lack of plans with are formalised and documented, although it is not clear from the data how important formalisation is to community members. BRCiS III planned linkages to humanitarian, development, and government actors will be important to increase resilience in this area.

Figure 72: Community Resilience for Strengthening Governance to Manage Disaster Risk



The third thematic area is Reducing Disaster Vulnerability for Resilience, which relates to public and private investment in disaster risk prevention and reduction through structural and non-structural measures. Community resilience across these capacities varies significantly. In particular, communities are most resilient regarding peace and conflict prevention. For over half of communities, there is a good level of social cohesion and peace within the community and/or with neighboring communities, though occasionally, some tensions escalate into violence. However, some capacities are quite low, particularly with regards to income and asset protection. **Over three-quarters of communities have no access to financial services and do not have any household with an asset base that is sufficiently large, diverse and protected to reduce vulnerability to disaster.** This affirms similar insights from the household survey which found that household asset ownership and access to financial services is very low. The absence of financial services in these communities underscores the importance of financial

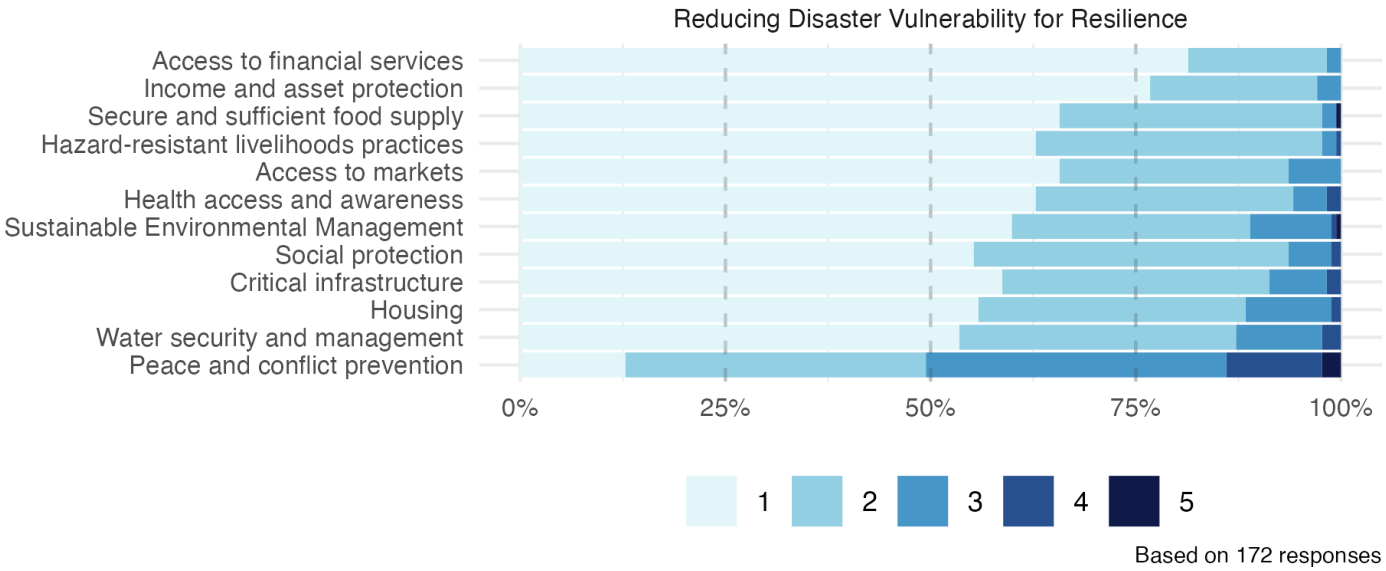
[22] Ibid.

inclusion initiatives to ensure that community members access to essential financial products and services which are affordable and flexible, such as microfinance solutions, mobile banking solutions, community-based savings and loan programs, and insurance products.

There are similar and interdependent challenges facing communities, with high levels of dependency on single sources for food and income, which are highly vulnerable to shocks and affected by unsustainable environmental management practices, and a lack of safety nets either through financial services or social protection, with informal resources and networks playing a vital role.

Discussions with participants highlighted the value of internal sources of resilience, including individual strategies to cope with the impacts of shocks by undertaking different income-generating activities, accessing informal credit, and providing support to each other when crises occur. These all point to resilience capacities which are resourceful and agile. However, in a context of recurring crises which are growing in frequency, severity, and complexity, and continually eroding the coping capacities held by communities, the burden of managing these risks and impacts is increasingly untenable and sustainable external support is needed.

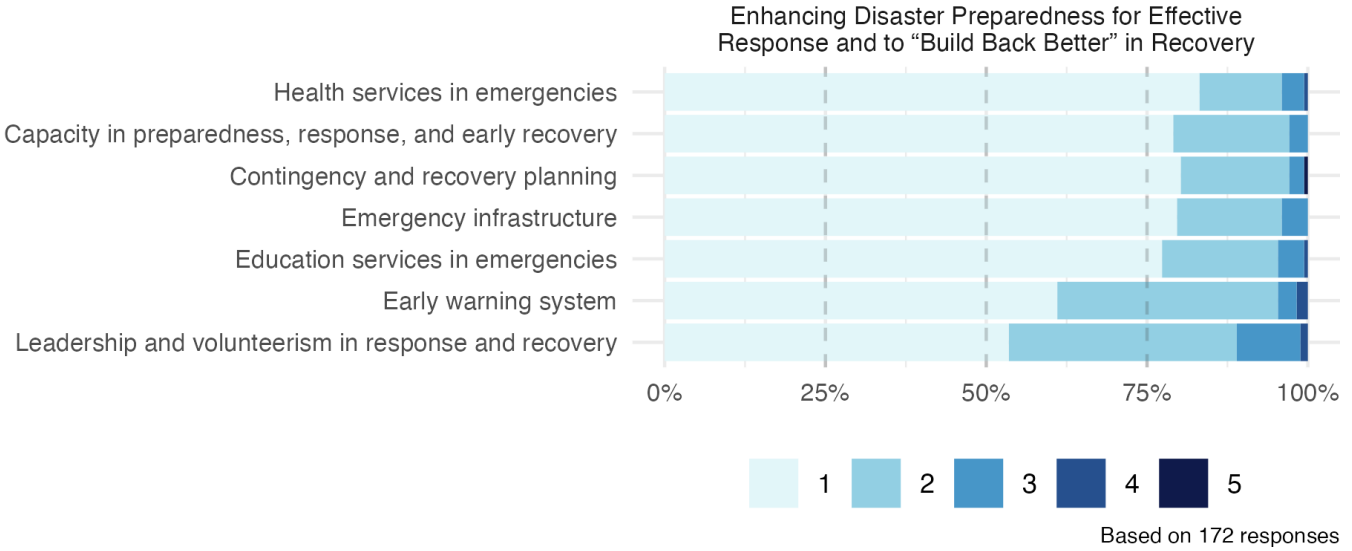
Figure 73: Community Resilience for Reducing Disaster Vulnerability



The fourth thematic area is Enhancing Disaster Preparedness for Effective Response and to “Build Back Better” in Recovery, which relates to strengthening disaster preparedness needs for more effective response and ensuring capacities are in place for effective recovery. Communities are less resilient in this area out of the four thematic areas. Most communities have no access to trained/qualified healthcare services and no organization responsible and capable of emergency preparedness, response and early recovery. Contingency and recovery plans are largely absent, out of date, or unused, and there is a general lack of operational early warning systems to provide time to prepare and respond, and a lack of people in communities with the capacity to undertake preparedness and response measures. Preparedness and response efforts typically start only when disasters occur, leading to reactive rather than proactive measures. Illiteracy and lack of education are common barriers to developing effective disaster plans and responses. Key emergency infrastructure, such as health services, educational

services, and safe shelters are inadequate to meet needs during crises. Communities are marginally more resilient regarding operational early warning systems, where approximately one-quarter of communities have awareness about when a shock may occur, and leadership and volunteerism, where the community plays a somewhat active role in preparedness, response and recovery, but few or some of the affected people and vulnerable groups are reached.

Figure 74: Community Resilience for Enhancing Disaster Preparedness



In addition to the ARC-D, households were asked about various infrastructure and institutions in their communities in the household survey as presented in Table 9. **Overall, access to infrastructure is limited.** Fewer than a quarter of households have regular access to electricity (21%), and public transport (23%), and slightly more have access to internet (26%). Access to institutions is more varied. Two-thirds of households (64%) report having a primary school in the community, though the average distance to the nearest primary school is 2.5 kilometers. Markets are farther: on average the nearest market is nine kilometers away. Almost half of households (48%) report having access to a health services center in the community.

Table 9: Community Resilience Capacities

Outcome	Mean	Upper CI	Lower CI	N
Households with regular access to electricity	20.55%	15.80%	26.28%	4,293
Households with access to internet	25.72%	20.91%	31.20%	4,237
Households served by a public transport system in their communities	22.79%	19.58%	26.36%	4,217
Households stating there is a primary school in the community	64.27%	59.55%	68.73%	4,247
Average distance to the nearest primary school (KM)	2.51	2.12	2.90	1,514
Average distance to the nearest market (KM)	9.29	8.31	10.27	3,687
Households with no access to a market if needed during the last year	33.46%	28.84%	38.41%	4,293
Households with access to a health services center in the community	48.02%	43.55%	52.53%	4,188

TANGO Resilience Capacities

Table 10 presents the TANGO resilience capacity indices which incorporates resilience capacities measured at the household and community level. Resilience capacities are measured as a set of indices, one for each of the three dimensions of resilience capacity—absorptive capacity, adaptive capacity, and transformative capacity—and one overall index combining these three indexes. All indices are measured on a scale of 0-100 where larger numbers indicate higher resilience.

The Absorptive Capacity Index captures a household's ability to minimize exposure to shocks through preventative measures and appropriate coping strategies. This index captures aspects such as access to cash savings, asset ownership, access to remittances, bonding social capital and other capacities that are related to a household's ability to absorb the impact of shocks. **On average, surveyed households score a 5.8 out of 100 in this index, indicating it is very low.** This intuitively makes sense given that as discussed earlier, households have very low access to savings, assets, and remittances. Further, households typically only rely on friends and family friends and not non-relatives in times of need. Households score low on this index across livelihood zones with marginal variation, as shown in Table 11. Households in agro-pastoral areas score slightly higher whereas households in urban and coastal fishery areas score marginally lower.

The Adaptive Capacity Index captures a household's ability to make proactive and informed choices about alternative livelihood strategies based on an understanding of changing conditions. This index captures aspects such as availability of financial resources, diversification of livelihoods, exposure to information, bridging social capital, and aspirations and confidence to adapt, among others. **On average, households score a 30.5 out of 100 in this index, indicating households have stronger adaptive capacities than absorptive capacities, though it is still not high.** Households in agro-pastoral and riverine areas have marginally higher adaptive capacities.

The Transformative Resilience Capacity Index captures the governance mechanisms, infrastructure, community networks, and formal and informal social protection mechanisms that constitute an enabling environment for systemic change. It includes aspects such as availability of markets, access to basic services, access to infrastructure, collective action and bridging and linking social capital among others. **On average, households score a 53.3 out of 100 in this index, indicating household transformative capacities are the strongest of the three, though there is still much room for improvement.** This is likely driven by the fact that the majority of households are in urban areas where access to services such as schools and health services is higher.

Finally, the Resilience Capacity Index takes into account all three Absorptive, Adaptive, and Transformative capacity indices. On average, households score a 31.6 on this index, indicating they have low levels of resilience overall.

Table 10: TANGO Resilience Capacities

Outcome	Mean	Upper CI	Lower CI	N
Resilience Capacity Index	**31.56**	**30.67**	**32.45**	**4,293**
Absorptive Capacity Index	5.84	5.34	6.34	4,293
Adaptive Capacity Index	30.53	29.67	31.39	4,293
Transformative Capacity Index	52.27	51.25	53.28	4,293

Table 11: TANGO Resilience Capacities across Livelihood Zones

Outcome	Urban	Pastoral	Agro pastoral	Riverine	Coastal fishery
Resilience Capacity Index	**30.53 [29.1 - 32.0] (563)**	**28.79 [26.4 - 31.2] (1,423)**	**36.01 [34.9 - 37.1] (1,901)**	**36.55 [35.3 - 37.8] (316)**	**28.36 [25.5 - 31.2] (90)**
Absorptive Capacity Index	4.21 [3.3 - 5.1] (563)	5.55 [4.4 - 6.7] (1,423)	9.05 [7.9 - 10.2] (1,901)	7.79 [6.8 - 8.8] (316)	3.51 [2.6 - 4.4] (90)
Adaptive Capacity Index	29.55 [28.1 - 31.0] (563)	27.87 [25.6 - 30.1] (1,423)	34.78 [33.7 - 35.8] (1,901)	35.54 [34.4 - 36.7] (316)	27.48 [24.7 - 30.3] (90)
Transformative Capacity Index	52.36 [50.4 - 54.4] (563)	49.95 [47.3 - 52.6] (1,423)	54.66 [53.3 - 56.0] (1,901)	53.26 [51.2 - 55.4] (316)	50.55 [47.2 - 53.9] (90)

ECOSYSTEM RESILIENCE

Below we present aspects of resilience at the ecosystem level. These data was generated by ICRAF based on the bi-annual Landsat 8 imagery (2020-2022) and trained on their global soil and vegetation dataset. For each indicator, ICRAF extracted all 30x30 meter pixels within a 200-meter buffer around each household. To generate household level outcomes, we take the average of the pixels within each buffer surrounding each household. Tables 12 and 13 outline the average outcomes across all households and across livelihood zones, respectively.

On average, the soil organic carbon content across households is low, measuring 5.5 grams per kilogram or 0.55%, which is compared to between 10-20 grams per kilogram which is typically considered a healthy rangeland. Soil pH level, however, is close to neutral (7.3 on average), which is ideal for most crops. On average, 75% of the area around households have soil erosion. Tree, forest, and crass cover around households is also low.[23] Several of these results may partly be driven by the fact that

[23] Erosion, tree, forest, and grass prevalence figures represent probabilities.

the majority of households reside in urban areas (since urban communities are on average much larger than rural communities).

Table 12: Ecosystem Resilience Capacities

Outcome	Mean	Upper CI	Lower CI	N
Soil organic carbon content (grams per kilogram)	5.51	5.39	5.62	4,292
Soil pH level: from extremely acidic (0) to extremely alkaline (14)	7.29	7.26	7.31	4,292
Percentage of area around household with soil erosion	75.13	74.10	76.17	4,292
Percentage of area around household with tree cover	10.45	10.02	10.87	4,292
Percentage of area around household with forest cover	0.60	0.56	0.64	4,292
Percentage of area around household with grass	14.04	13.64	14.44	4,292

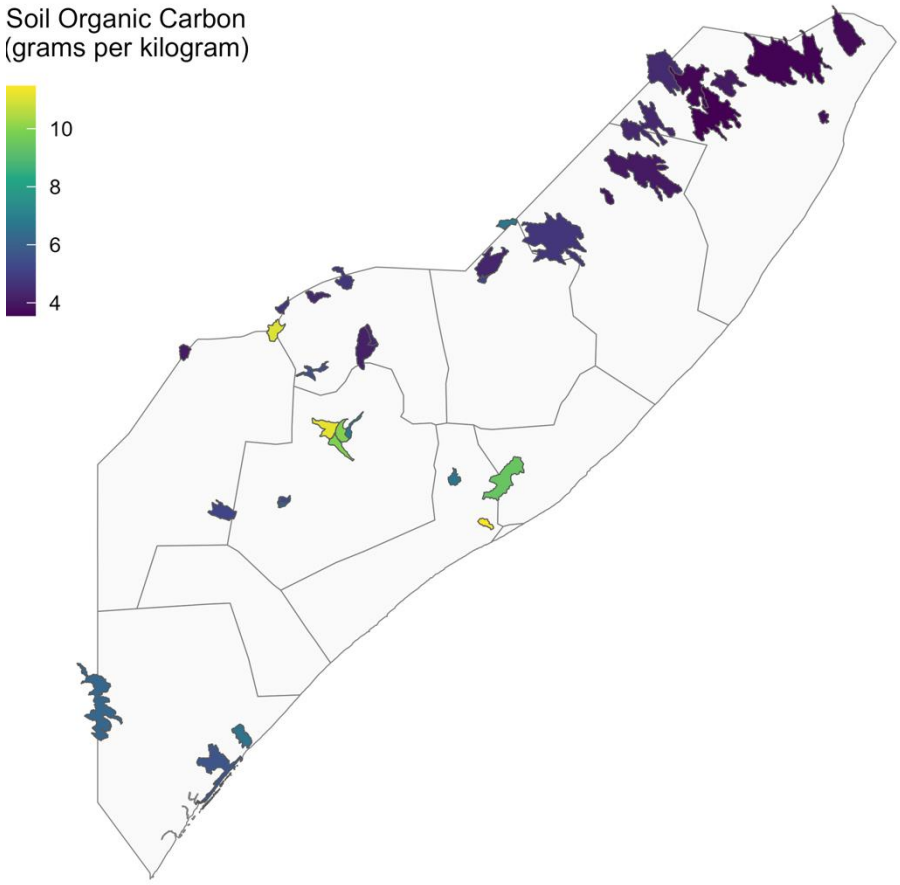
Unsurprisingly, these ecosystem outcomes vary across livelihood zones. Soil organic carbon content is higher in agro-pastoral and riverine areas. Agro-pastoral, riverine, and coastal fishery areas have lower soil erosion and more tree cover and grass.

Table 13: Ecosystem Resilience Capacities across Livelihood Zones

Outcome	Urban	Pastoral	Agro pastoral	Riverine	Coastal fishery
Soil organic carbon content (grams per kilogram)	4.80 [4.6 - 5.1] (563)	4.96 [4.7 - 5.2] (1,423)	7.12 [7.0 - 7.2] (1,901)	7.70 [7.5 - 7.9] (316)	5.76 [5.5 - 6.0] (89)
Soil pH level: from extremely acidic (0) to extremely alkaline (14)	7.35 [7.3 - 7.4] (563)	7.20 [7.1 - 7.3] (1,423)	7.30 [7.3 - 7.3] (1,901)	7.21 [7.2 - 7.2] (316)	6.61 [6.5 - 6.7] (89)
Percentage of area around household with soil erosion	79.04% [76.7 - 81.4] (563)	75.41% [73.4 - 77.4] (1,423)	69.15% [68.2 - 70.1] (1,901)	65.99% [65.1 - 66.8] (316)	62.56% [61.4 - 63.8] (89)
Percentage of area around household with tree cover	8.89% [8.0 - 9.8] (563)	10.10% [9.4 - 10.8] (1,423)	12.66% [12.3 - 13.0] (1,901)	15.09% [14.5 - 15.7] (316)	25.99% [24.7 - 27.2] (89)
Percentage of area around household with forest cover	0.28% [0.2 - 0.4] (563)	0.42% [0.3 - 0.5] (1,423)	0.98% [0.9 - 1.0] (1,901)	2.71% [2.6 - 2.9] (316)	4.26% [3.8 - 4.7] (89)
Percentage of area around household with grass	12.87% [12.0 - 13.8] (563)	13.47% [12.9 - 14.1] (1,423)	17.45% [17.0 - 17.9] (1,901)	10.24% [9.4 - 11.1] (316)	18.97% [17.9 - 20.0] (89)

Figure 75 illustrates the average soil organic carbon content by cluster. Clusters in the northern part of the country have lower organic carbon content than other. Some clusters have over 10 grams per kilogram on average, which is more in line with what is considered a healthy rangeland.

Figure 75: Soil Organic Carbon by Cluster



RESILIENCE SPECTRUM

We now bring all the components of resilience together to discuss overall resilience via our composite level indicator, the Resilience Spectrum. This index considers household, community, and ecosystem level resilience holistically. The Resilience Spectrum is comprised of three sub-indices which map to the three systems that BRCiS III aims to influence: 1) Inclusive, Shock Responsive Leadership, 2) the Natural Ecosystem, and 3) Economic Inclusion and Diversification. Each score ranges from one to five with one being least resilient/stable – five being most resilient/stable.

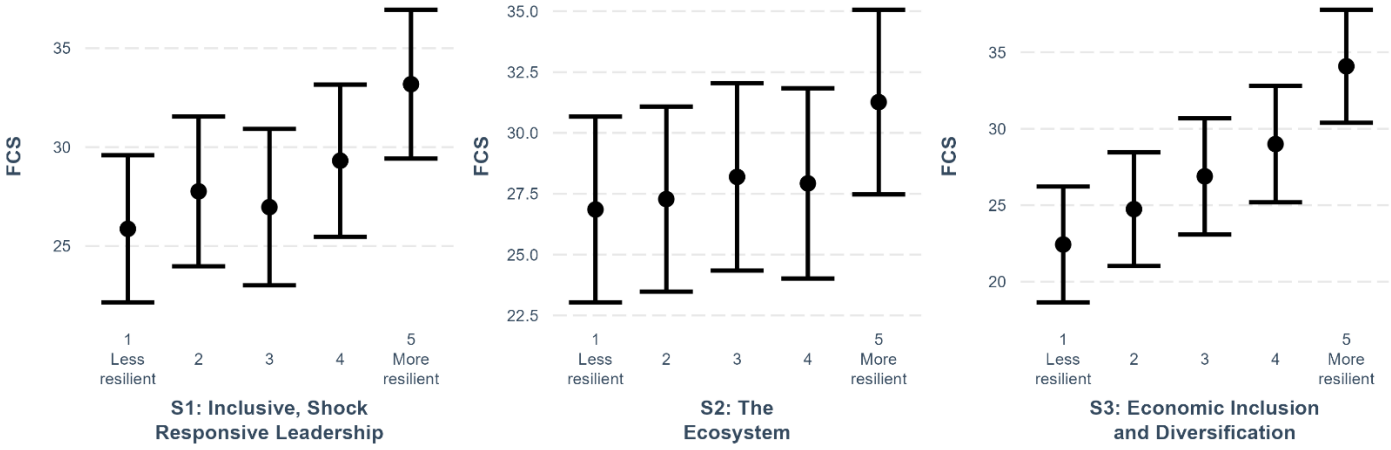
VALIDATING THE RESILIENCE SPECTRUM INDEX

First, as this is a newly developed indicator, we conduct validation tests to assess whether the indicator is indeed capturing resilience. Specifically, we examine how each of the three sub-indices correlates with various food security outcomes. Our hypothesis is that households with higher scores across each system will exhibit better wellbeing outcomes, as more resilient households are better able to withstand and cope with shocks, leading to improved food security outcomes. However, it is important to note that we are examining associations between current capacities and current food security outcomes (given both are

measured at baseline), whereas predicting future food security outcomes may be more telling of the reliability of the index (i.e. using baseline resilience capacities to predict future food security outcomes).[24] Additionally, we control for which districts households reside in, with the assumption that households in areas that are more shock-prone may naturally have worse food security outcomes. As such, it is important to examine the relationship of resilience and food security, holding the level of shock prevalence constant.

Figures 73-76 show the average outcomes for each category of the three system subindices for various food security outcomes. The relationship between each system and the Food Consumption Score is positively correlated. In other words, having a higher Resilience Spectrum score is associated with a higher Food Consumption Score (which indicates a great quantity and diversity of food consumed within the household). The positive association is strongest for the Economic Inclusion and Diversification sub-index. Similarly, the three sub-indices have a negative association with the FIES score, where a greater score indicates less food security. Again, the relationship is strongest for the Economic Inclusion and Diversification sub-index. Finally, the association with the Reduced Coping Strategies Index is overall negative, where a larger score indicates more severe coping strategy behaviors. However, the negative association is not as strong as with the other indicators.[25] Additional correlations of the sub-indices and wellbeing outcomes can be found in Appendix II. **Overall, higher Resilience Spectrum scores are associated with better wellbeing outcomes, suggesting the validity of the Resilience Spectrum to capture resilience.**

Figure 76: Correlation of the Resilience Spectrum Components with the Food Consumption Score (FCS)



[24] We will examine this in the midline and endline reports.
[25] We see the same result with the association between the rCSI and the TANGO resilience indicators. The Resilience Spectrum sub-indices however overall exhibit a stronger negative relationship.

Figure 77: Correlation of the Resilience Spectrum Components with the Food Insecurity Experience Scale (FIES)

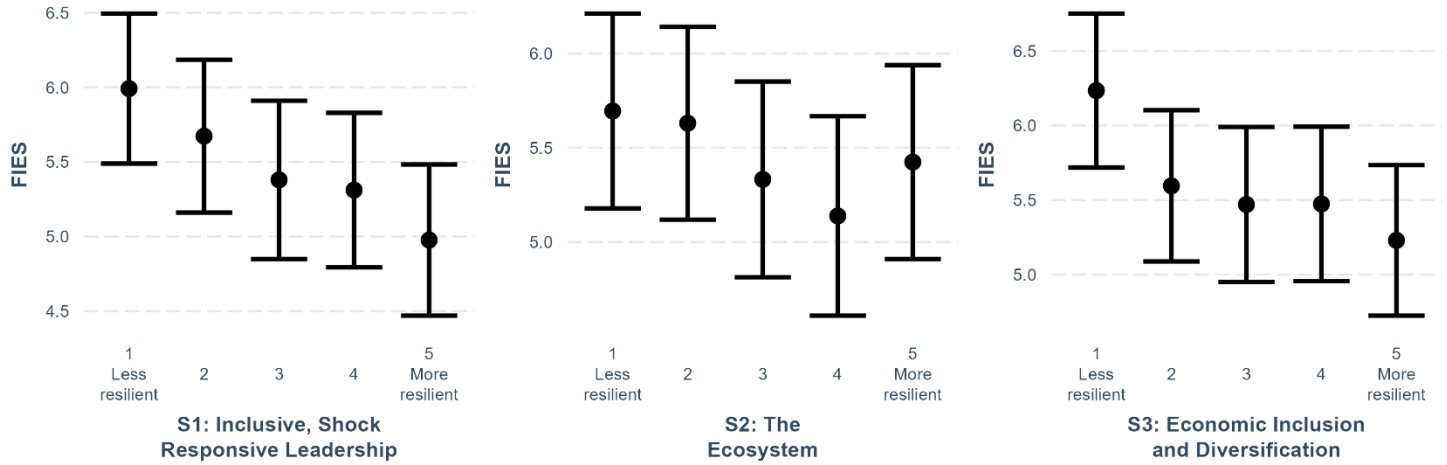


Figure 78: Correlation of the Resilience Spectrum Components with the Reduced Coping Strategy Index (RCSI)

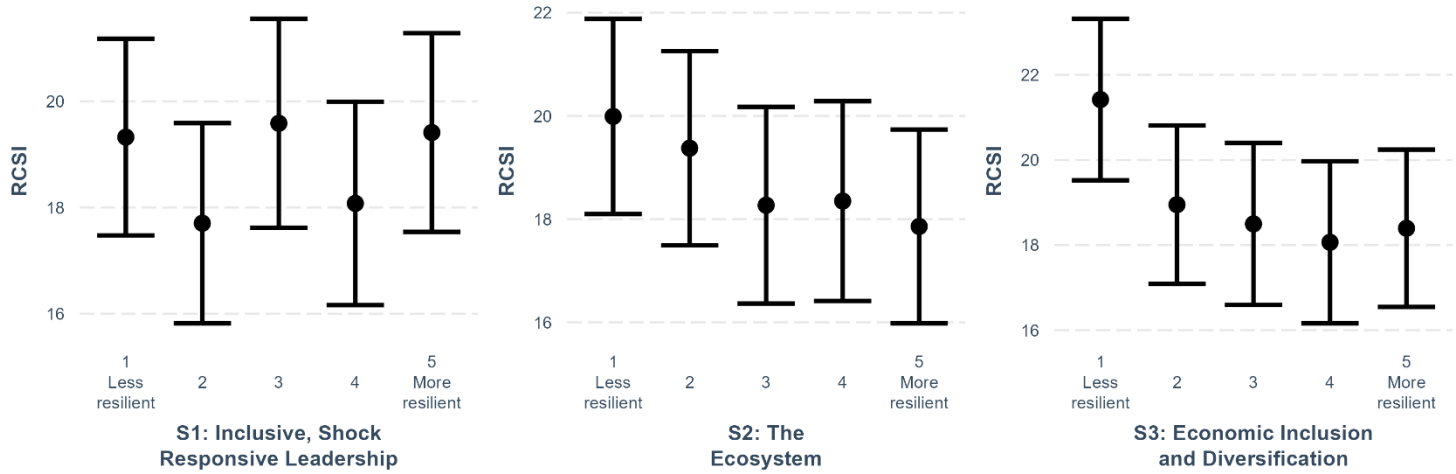
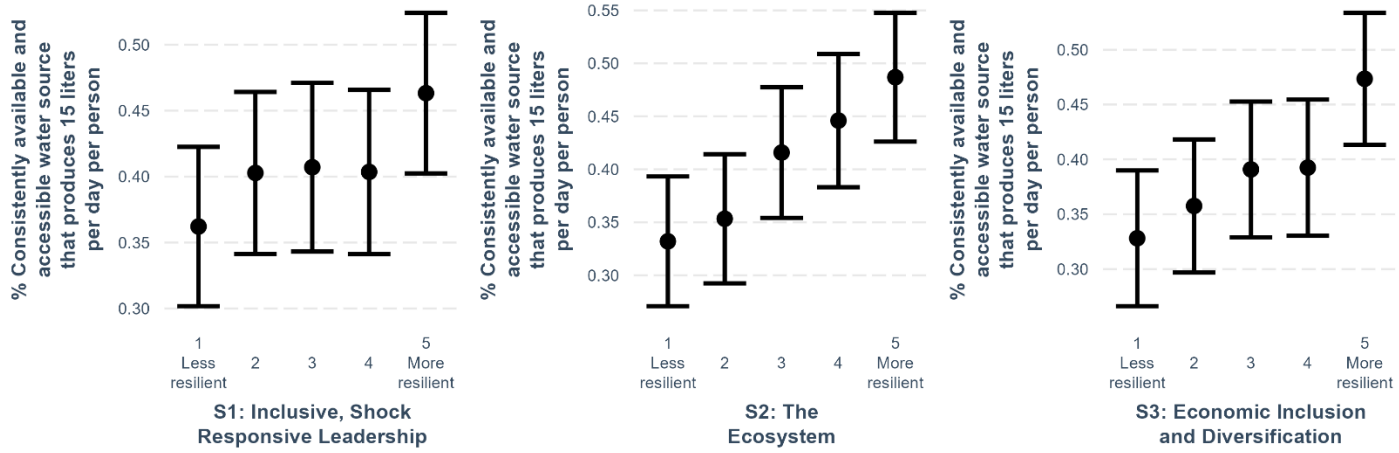


Figure 79: Correlation of the Resilience Spectrum Components with Access to Basic Drinking Water



Resilience Spectrum Findings

We now present the Resilience Spectrum findings. As discussed above, by construction, the average score for the full sample of households is 3.0. As such, we present the scores by livelihood zone and by cluster to illustrate how resilience varies across these areas. In the midline and endline reports, we will present how resilience changes over time for all households and by various geographic areas.

Table 14 shows the average Resilience Spectrum and system-level scores across households residing in each of the five livelihood zones. All scores range from one to five with one indicating lower resilience and five indicating higher resilience. On average, resilience levels are largely similar across the majority of livelihood zones. However, households in urban areas and agro-pastoral areas have slightly higher resilience levels while households in coastal fishery areas have lower levels. While small, the difference in resilience scores across livelihood zones suggests it could be useful to explore the relationship between livelihoods and community resilience. There is also variation in resilience across the different systems for some livelihood zones. For example, urban and agro-pastoral areas have stronger economic inclusion and diversification capacities relative to those of the other livelihood zones. Urban areas also have strong inclusive, shock responsive leadership capacities than other livelihood zones. There is less variation in ecosystem level capacities across the livelihood zones.

Table 14: Resilience Spectrum Scores across Livelihood Zones

Outcome	Urban	Pastoral	Agro pastoral	Riverine	Coastal fishery
Resilience Spectrum Score (1-5)	3.15 [3.1 - 3.2] (563)	3.02 [3.0 - 3.1] (1,423)	3.13 [3.1 - 3.2] (1,901)	3.09 [3.1 - 3.1] (316)	2.84 [2.8 - 2.9] (90)
System 1: Inclusive, Shock Responsive Leadership (1-5)	3.20 [3.1 - 3.3] (563)	3.05 [3.0 - 3.1] (1,423)	3.08 [3.0 - 3.1] (1,901)	3.12 [3.1 - 3.2] (316)	2.88 [2.8 - 3.0] (90)
System 2: The Natural Ecosystem (1-5)	3.08 [3.0 - 3.2] (563)	3.02 [3.0 - 3.1] (1,423)	3.12 [3.1 - 3.2] (1,901)	3.15 [3.1 - 3.2] (316)	3.08 [3.0 - 3.2] (90)
System 3: Economic Inclusion and Diversification (1-5)	3.18 [3.1 - 3.2] (563)	3.00 [2.9 - 3.0] (1,423)	3.18 [3.1 - 3.2] (1,901)	2.99 [2.9 - 3.0] (316)	2.49 [2.4 - 2.6] (90)

Figure 80 and Figure 81 illustrates the Resilience Spectrum Scores by each cluster. Resilience for most clusters ranges between 2.5 and 3.5, indicating that **there is not large variation in resilience across clusters at baseline.** This makes intuitive sense given that the large majority of households are living in shock prone environments and have similar constraints to their resilience capacities (e.g. limited access to financial services, savings, and income, limited community structures for identifying high risk shocks).

However, there is some variation in scores to acknowledge. Notably, NRC-6 has meaningful higher levels of resilience relative to the other clusters, with a score closer to 4. **Interestingly, there is no consistent geographical pattern that divides communities that are marginally more resilient to those that are**

marginally less. In other words, there are many cases where communities that score higher on the Resilience Spectrum are in the same region as those that score lower. This suggests that what may influence the differences in these cluster scores is less geographically driven and rather related to other aspects of the communities within those clusters. This affirms BRCiS III community-driven approach to understanding resilience and tailoring resilience building plans to each community.

Figure 80: Resilience Spectrum Scores across Clusters

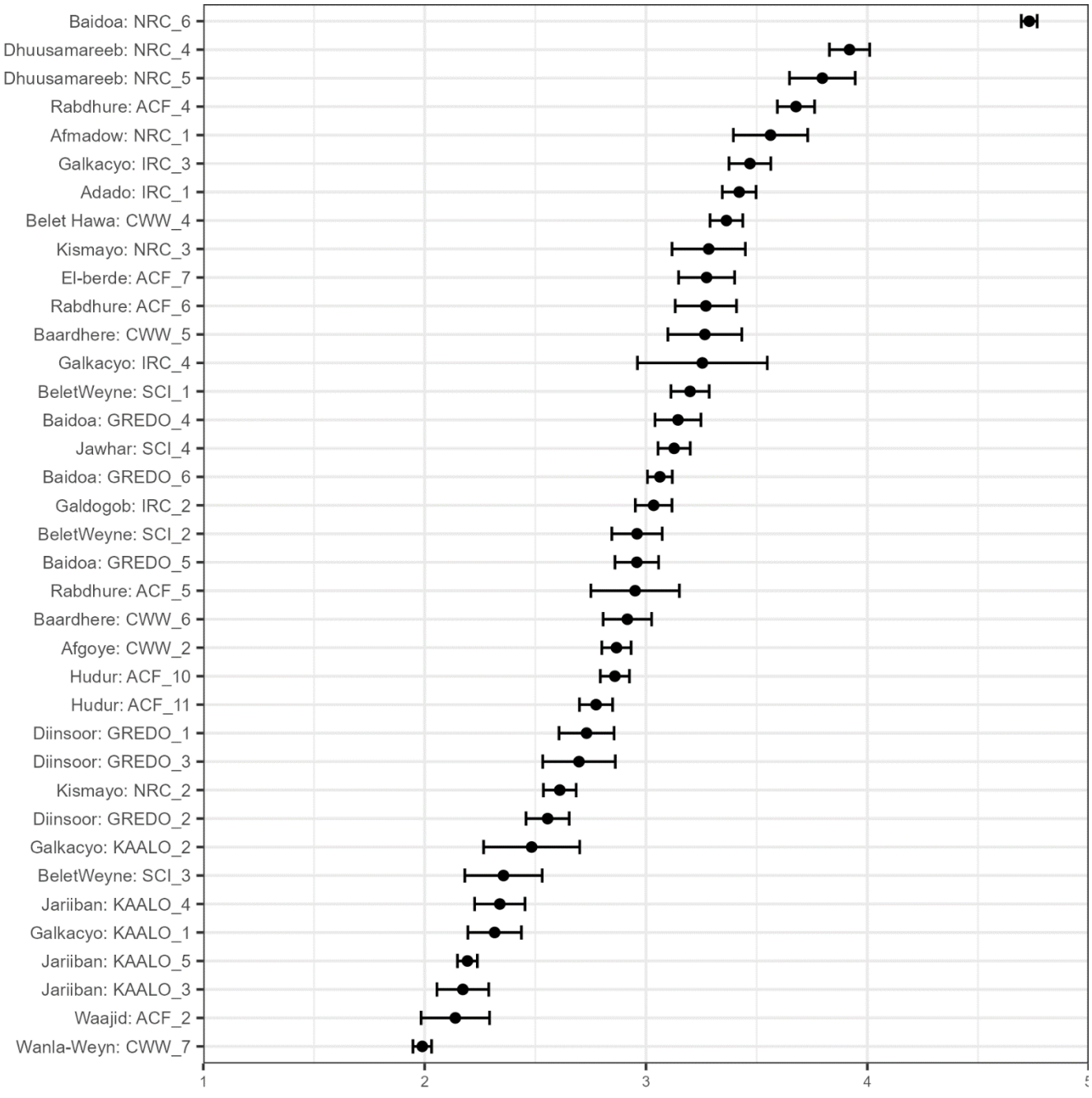
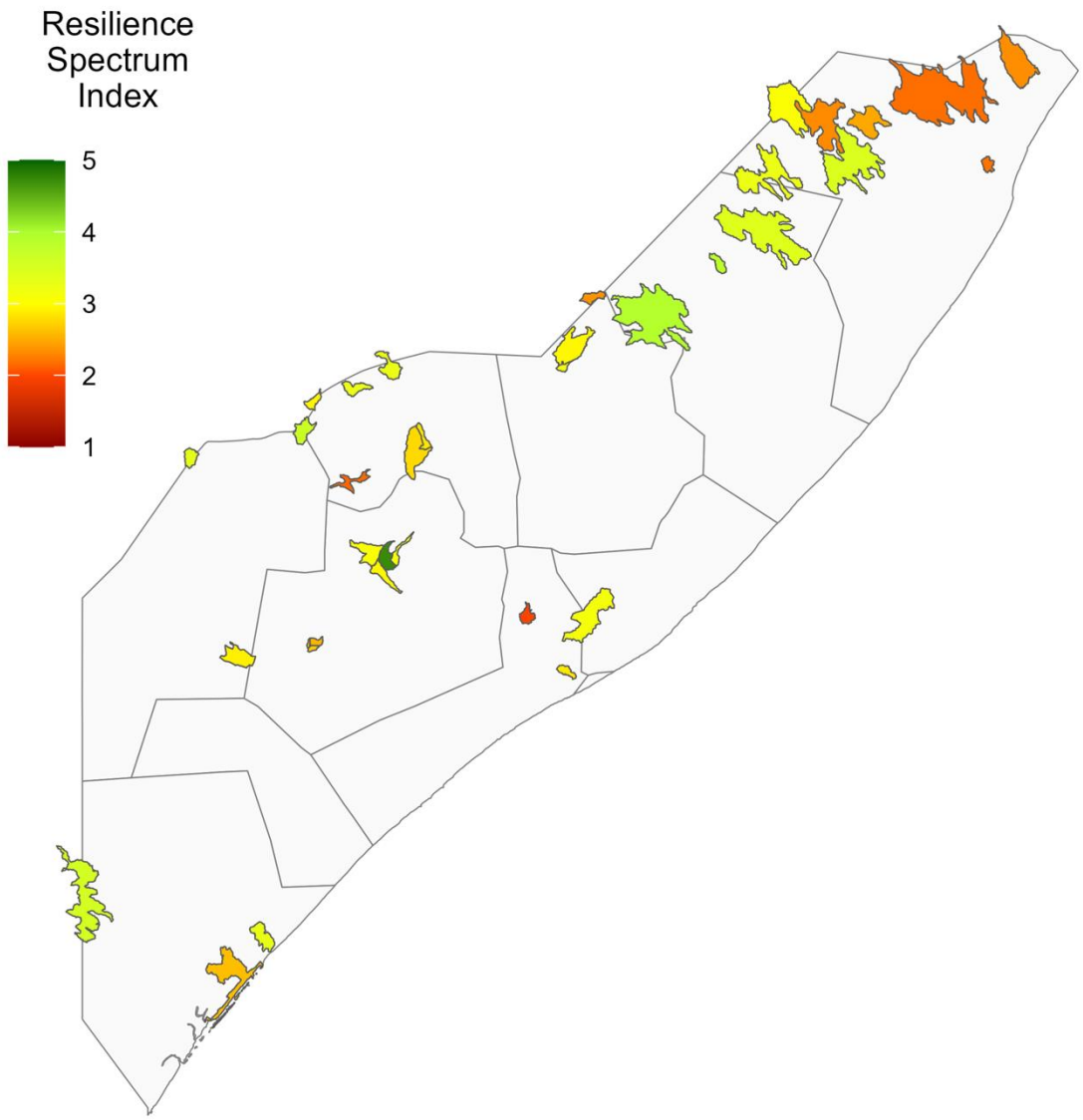


Figure 81: Map of Resilience Spectrum Scores by Cluster

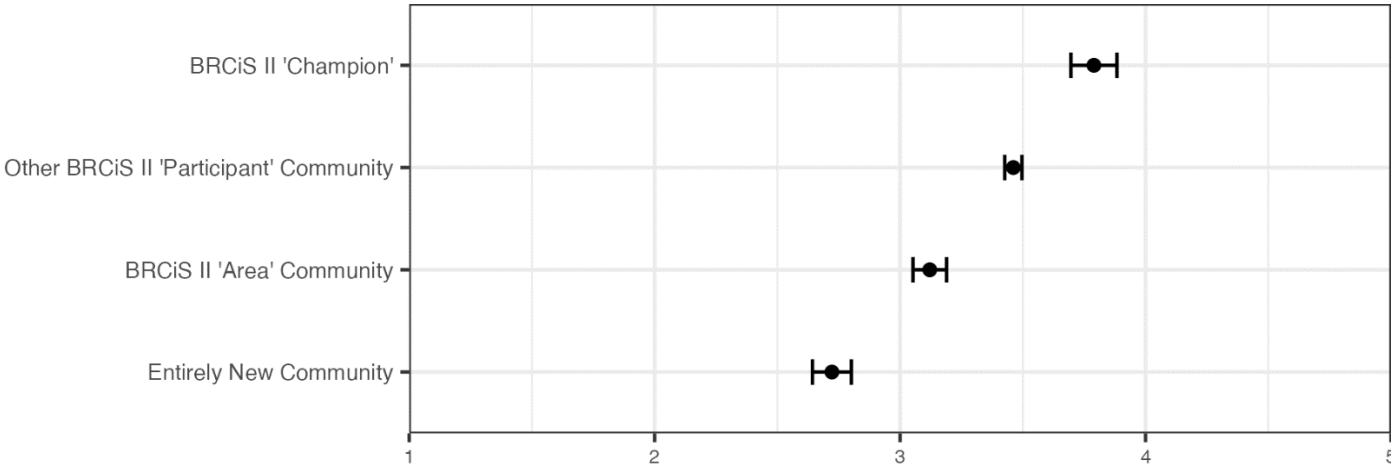


We also explore how the Resilience Spectrum varies across different types of communities. Specifically, we compare:

- **BRCiS II Champions:** BRCiS II participant communities that performed well by existing evidence of investments;
- **Other BRCiS II 'Participant' Community:** BRCiS II participant communities that remain comparatively more vulnerable to shocks and/or have not demonstrated significant resilience gains;
- **BRCiS II 'Area' Community:** Communities part of BRCiS II that received significantly less investment;
- **BRCiS III New Community:** Communities that were not part of BRCiS II in any way.

As seen in Figure 82, resilience scores are correlated with the level of resilience programming a community has received and prior resilience investments it has made. Specifically, BRCiS II 'Champion' communities have the highest resilience scores, followed by Other BRCiS II 'Participant' Communities, and BRCiS II 'Area' Communities. New communities to BRCiS III have the lowest scores of the groups. We see a similar trend across the three system components (figures found in the annex), with the Natural Ecosystem system being the one that most drives the differences between BRCiS II 'Champions'. While it is not possible to draw definitive causal claims regarding resilience programming around this (as there may be something inherently different about the groups of communities that also contribute to differing resilience outcomes), this finding increases confidence in the dividends of early resilience programming.

Figure 82: Resilience Scores across Different BRCiS Communities



To unpack which resilience capacities are different across households with different levels of overall resilience (based on the Resilience Spectrum), we examine characteristics of households across low, medium, and high resilience levels. Specifically, we group households into low, medium, and high Resilience Spectrum scores by dividing the sample in thirds. In other words, the households in the "Low" category are the households in the bottom third of all Resilience Spectrum scores and those in the "High" category have the top third highest scores. The table below shows how these groups of households compare across various household, community, and ecosystem level resilience capacities. Specifically, we show the average capacity levels for each of these three groups. The table has been color-coded to facilitate interpretation: darker blue cells indicate more positive outcomes whereas lighter blue cells indicate less positive outcomes.

Overall, we see intuitive trends for many resilience capacities. **Regarding household resilience capacities, households with higher Resilience Spectrum scores are more likely to have more than one income source, are more likely to have access to productive water, have more social capital, have more productive assets, and are more likely to have household heads that can read and write.** At the community level, households with a higher Resilience Spectrum score consistently have higher ARC-D scores, representing greater community resilience. They are also more likely to have access to a public transport system and a water management committee within their community. At the ecosystem

level, households with higher Resilience Spectrum scores are in areas with less soil erosion and more organic carbon, and are closer to water sources.

In some cases, there are not noticeable differences in the capacities across some of the groups or at times can be less intuitive. For example, households in each of the Resilience Spectrum score brackets have similar numbers of groups active in their community. Additionally, there is no clear pattern regarding households that have access to electricity across the groups. These patterns may indicate that there is less variation in this capacity across households in order to exhibit a meaningful difference across different levels of the Resilience Spectrum score.

Figure 83: Resilience Capacities across High, Medium, and Low Resilience Spectrum Scores

Level	Resilience Capacity	Low	Medium	High
Household	Households that regularly save cash	0.49% [-0.5 - 1.5] (1,415)	0.25% [0.0 - 0.5] (1,398)	2.43% [1.4 - 3.4] (1,409)
	Households with more than one income source	5.40% [3.3 - 7.5] (1,431)	10.74% [7.8 - 13.7] (1,431)	18.29% [12.2 - 24.3] (1,431)
	% of female households involved in economic decision-making	85.57% [80.3 - 90.8] (824)	97.59% [96.4 - 98.7] (773)	96.07% [93.9 - 98.2] (768)
	Households in the community that are currently internally displaced	4.96% [2.5 - 7.4] (1,431)	2.97% [0.7 - 5.2] (1,431)	1.52% [0.0 - 3.1] (1,431)
	Households with consistently available and accessible water source that produces 15 liters per day per person	14.04% [9.0 - 19.1] (1,413)	14.00% [10.6 - 17.5] (1,413)	34.09% [26.9 - 41.3] (1,424)
	Households have access to water for productive use in a normal year	19.74% [14.3 - 25.2] (698)	30.98% [25.9 - 36.1] (779)	45.34% [35.0 - 55.7] (801)
	TANGO Bonding Social Capital Index (0-6)	2.13 [2.0 - 2.3] (1,431)	2.04 [1.8 - 2.3] (1,431)	2.43 [2.3 - 2.6] (1,431)
	TANGO Bridging Social Capital Index (0-6)	1.81 [1.7 - 1.9] (1,431)	1.79 [1.6 - 2.0] (1,431)	2.16 [2.0 - 2.3] (1,431)
	TANGO Linking Social Capital Index (0-5)	0.49 [0.3 - 0.7] (1,431)	0.30 [0.2 - 0.4] (1,431)	0.70 [0.6 - 0.8] (1,431)
	Number of groups active in the community	1.74 [1.2 - 2.2] (1,431)	1.63 [1.4 - 1.8] (1,431)	1.69 [1.6 - 1.8] (1,431)
	Households that meet with community representatives on some frequency	42.20% [28.1 - 56.3] (1,417)	49.54% [41.5 - 57.6] (1,422)	58.10% [50.9 - 65.3] (1,422)
	Household head having some level of education	0.06 [0.0 - 0.1] (1,431)	0.04 [0.0 - 0.1] (1,431)	0.14 [0.1 - 0.2] (1,431)
	Household heads that can read or write	37.18% [27.0 - 47.4] (1,401)	32.54% [26.8 - 38.2] (1,402)	53.18% [45.4 - 60.9] (1,416)
	Number of productive assets	0.21 [0.1 - 0.3] (1,431)	0.68 [0.5 - 0.8] (1,431)	0.70 [0.6 - 0.8] (1,431)
	Number of household assets	3.55 [3.4 - 3.7] (1,431)	3.47 [3.2 - 3.8] (1,431)	4.47 [4.2 - 4.8] (1,431)
Community	ARC D score	25.81	32.01	39.84

		[25.3 - 26.3] (1,431)	[31.2 - 32.8] (1,431)	[39.5 - 40.1] (1,431)
	Households with regular access to electricity	19.97% [2.0 - 37.9] (1,431)	6.31% [3.7 - 8.9] (1,431)	28.07% [20.5 - 35.7] (1,431)
	Households served by a public transport system in their communities	11.29% [7.3 - 15.3] (1,419)	24.33% [18.1 - 30.6] (1,393)	28.74% [21.7 - 35.8] (1,405)
	Households with access to water management committee	26.40% [20.2 - 32.6] (1,431)	39.55% [33.8 - 45.3] (1,431)	44.45% [41.4 - 47.5] (1,431)
Ecosystem	Soil Organic Carbon (grams per kg)	4.65 [4.4 - 4.9] (1,430)	5.87 [5.7 - 6.0] (1,431)	5.82 [5.6 - 6.0] (1,431)
	Percentage area around a household without erosion	80.29 [77.4 - 83.2] (1,430)	71.65 [69.8 - 73.5] (1,431)	73.91 [72.7 - 75.2] (1,431)
	Time required to access water (min)	29.31 [19.3 - 39.3] (1,197)	30.94 [25.2 - 36.6] (1,219)	10.53 [8.4 - 12.6] (1,321)

We further unpack which resilience capacities are most predictive of food security and water access in Section 3.5 Resilience Pathways.

3.4 BRCiS III Outcomes

WELLBEING OUTCOMES

FOOD SECURITY

Table 15 presents various dimensions of food security of the BRCiS III population. On average, households had a Food Consumption Score of 34, which is a measure of the quantity and diversity of the household's diet. Food security as measured by how quantity and diversity of consumption varies across the population, as shown in Figure 84.[26] **Over one-third of households (37%) are classified as poor food security status and another 21% are classified as borderline.** This maps to an IPC food insecurity level of 3+. Fewer than half of households (43%) are classified as having an acceptable level of food security. Food security levels are fairly consistent across livelihood zones as shown in Figure 85.

Table 15: Food Security Outcomes

Outcome	Mean	Upper CI	Lower CI	N
Food Consumption Score (FCS)	34.33	32.39	36.27	4,290
Prevalence of moderate or severe food insecurity according to Food Insecurity Experience Scale (FIES)	75.65%	82.71%	68.59%	4,293
Household Dietary Diversity Score (HDDS)	4.93	4.70	5.16	4,293
Minimum Diversity Diet	2.05%	1.29%	3.26%	630

[26] The classification for the Food Consumption Score is 0-21: Poor; 21.5-35: Borderline; >35: Acceptable.

Table 16: Food Security Outcomes across Livelihood Zones

Outcome	Urban	Pastoral	Agro pastoral	Riverine	Coastal fishery
Food Consumption Score (FCS)	32.28 [29.2 - 35.3] (561)	36.05 [30.0 - 42.1] (1,422)	35.82 [32.4 - 39.2] (1,901)	37.60 [34.1 - 41.1] (316)	31.00 [27.3 - 34.8] (90)
Prevalence of moderate or severe food insecurity according to Food Insecurity Experience Scale (FIES)	73.50% [66.3 - 80.7] (563)	80.90% [77.1 - 84.7] (1,423)	76.71% [73.1 - 80.4] (1,901)	86.67% [79.9 - 93.4] (316)	89.81% [78.1 - 101.5] (90)
Household Dietary Diversity Score (HDDS)	4.71 [4.3 - 5.1] (563)	4.89 [4.2 - 5.6] (1,423)	5.31 [5.0 - 5.6] (1,901)	5.58 [5.2 - 6.0] (316)	4.79 [4.3 - 5.3] (90)
Household Dietary Diversity Score (HDDS)	4.71 [4.3 - 5.1] (563)	4.89 [4.2 - 5.6] (1,423)	5.31 [5.0 - 5.6] (1,901)	5.58 [5.2 - 6.0] (316)	4.79 [4.3 - 5.3] (90)
Minimum Diversity Diet	0.80% [-0.3 - 1.9] (70)	0.00% [0.0 - 0.0] (199)	7.61% [5.1 - 10.1] (271)	1.89% [-1.8 - 5.6] (85)	0.00% [0.0 - 0.0] (5)

Figure 84: Food Security Levels (by the FCS)

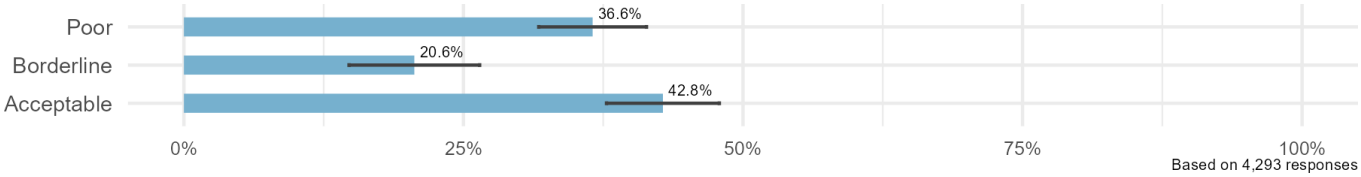
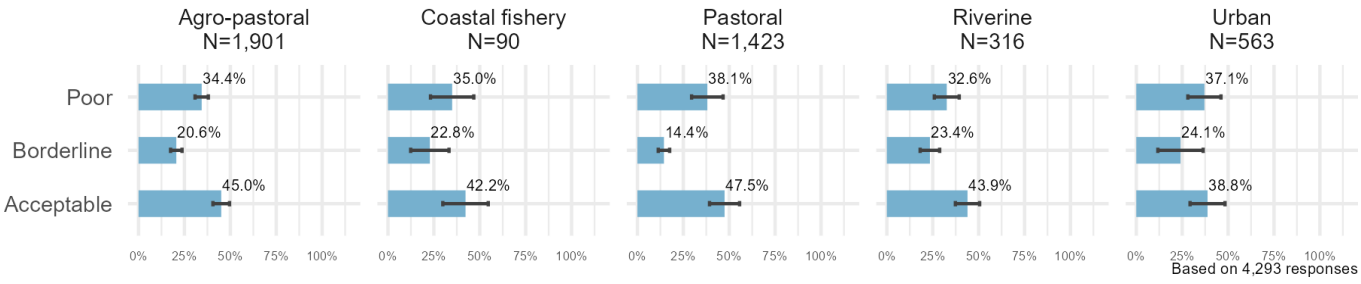
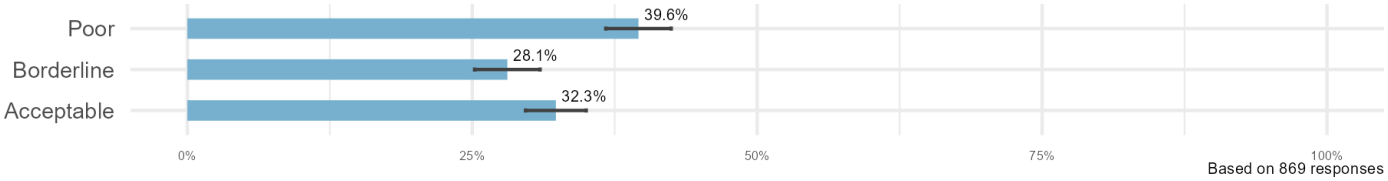


Figure 85: Food Security Levels (by the FCS) across Livelihood Zones



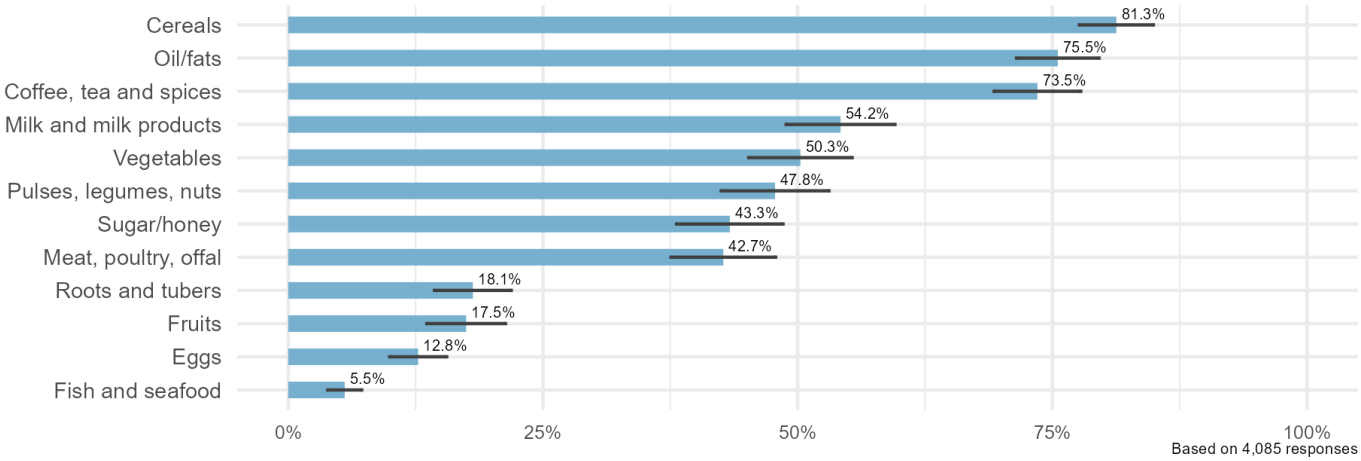
Food security levels are marginally worse for minority clan households relative to majority clan households, as shown in Figure 86. Only a third of households (32%) have an acceptable food security level. While there are similar proportions of households that have poor food security levels, a greater number of minority clan households have borderline food security levels, relative to majority clan households.

Figure 86: Food Security Levels (by the FCS) for Minority Clan Households



Similarly, food security was assessed using the Household Dietary Diversity Score which measures the diversity of food groups (out of 12) eaten over the past 24 hours. On average, households consume foods from 5 different groups. The most common food groups that households consume are cereals, oils/fats, and coffee, tea, and spices, as shown in Figure 87. It is uncommon for households to consume seafood, eggs, fruit, roots, and tubers.

Figure 87: Prevalence of Food Groups Eaten in Past 24 Hours



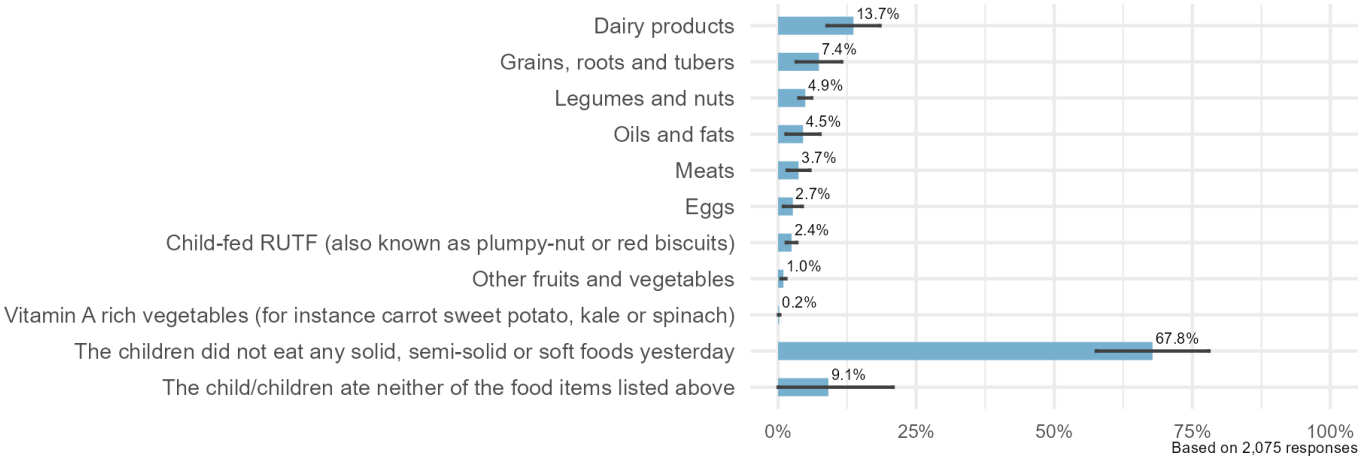
Food security was also assessed using the FIES score which is an experience-based measure of household food insecurity. Three-quarters of households (76%) have either severe or moderate levels of food insecurity according to this index. Almost half of households (47%) have severe food insecurity. People experiencing moderate levels of food insecurity will typically eat low quality diets and might have been forced, at times during the year, to also reduce the quantity of food they would normally eat, while those experiencing severe levels would have gone for entire days without eating, due to lack of money or other resources to obtain food.[27]

Finally, children's nutrition was assessed with the Minimum Dietary Diversity indicator, which is defined as the percentage of children aged 6-23 months who consumed foods from at least five of the eight defined food groups. Of the children who ate solid, semi-sold or soft foods in the past 24 hours, very few (2%) consumed foods from at least five of the food groups. Although two-thirds of children in this age range

[27] Food and Agriculture Organization of the United Nations. (2017). The Food Insecurity Experience Scale: Measuring food insecurity through people's experiences. FAO. https://openknowledge.fao.org/server/api/core/bitstreams/590a3dc9-39b9-40ce-801e-9468f4ae3d32/content

(68%) did not consume solid, semi-solid, or soft foods at all, which may mean that they are still being breastfed.

Figure 88: Food Groups Consumed by Children (aged 6-23 months)



COPING STRATEGIES FOR FOOD SHORTAGES

The Reduced Coping Strategies Index reflects the frequency and severity of coping behaviors that households engage in as a result of food shortage. The index ranges between 0 and 56 where a higher score indicates more frequent and severe coping behaviors being utilized in the past week. On average, households scored an 18 on the index. Across the five coping strategies in the Reduced Coping Strategy Index, households used these strategies commonly - between two and three days in the past week. The most commonly utilized strategy of these was to rely on less preferred and expensive foods. On average, minority clan households engage in similar coping strategies. However, when looking across livelihood zones, minority clan households engage in slightly more severe and regular coping behaviors in pastoral areas relative to majority clan households.

Table 17: Reduced Coping Strategies Index

Outcome	Mean	Upper CI	Lower CI	N
Reduced Coping Strategy Index (0-56) for majority clan households	17.91	16.72	19.10	4,293
Reduced Coping Strategy Index (0-56) for minority clan households	17.09	16.62	17.56	869

Figure 89: Number of Times Coping Strategies Used in Past 7 Days

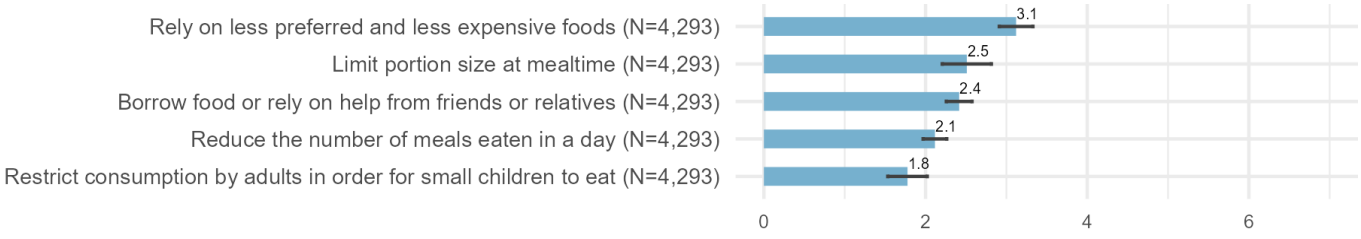
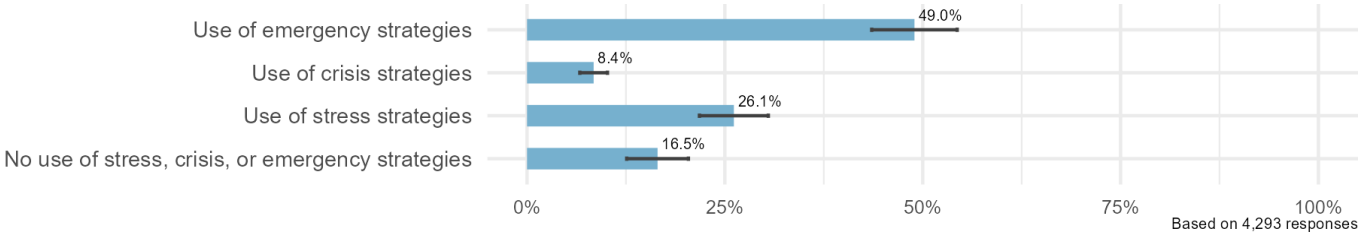


Table 18: Reduced Coping Strategies across Livelihood Zones

Outcome	Urban	Pastoral	Agro pastoral	Riverine	Coastal fishery
Reduced Coping Strategy Index for majority clans	20.61 [15.8 - 25.4] (272)	15.92 [14.2 - 17.6] (667)	17.10 [16.1 - 18.1] (928)	19.52 [17.5 - 21.5] (161)	16.61 [12.6 - 20.6] (47)
Reduced Coping Strategy Index for minority clans	16.35 [15.0 - 17.7] (141)	19.77 [18.4 - 21.1] (201)	15.57 [14.8 - 16.3] (459)	20.94 [18.5 - 23.4] (68)	16.35 [15.0 - 17.7] (141)

Coping strategies were also measured using the Livelihood Coping Strategies Index which considers households' medium and longer-term coping capacity in response to lack of food or money to buy food and their ability to overcome challenges in the future. **Coping strategies to mitigate food shortages are common and households implement strategies with varying degrees of severity**, as shown in Figure 90. This figure illustrates the prevalence of different coping strategies as measured by the Livelihoods Coping Strategy Index with strategies ranging from stress (less severe) to emergency (very severe). Stress-level strategies include borrowing money and spending savings, indicating a reduced ability to deal with future shocks. Crisis strategies, such as selling productive assets, directly reduce future productivity. Emergency strategies, such as selling one's land or livestock, also affect future productivity but are more difficult to reverse.[28] Half of households (49%) implemented at least one emergency strategy in the past 30 days. Only 17% of households did not implement any stress, crisis, or emergency coping strategies in the past 30 days.

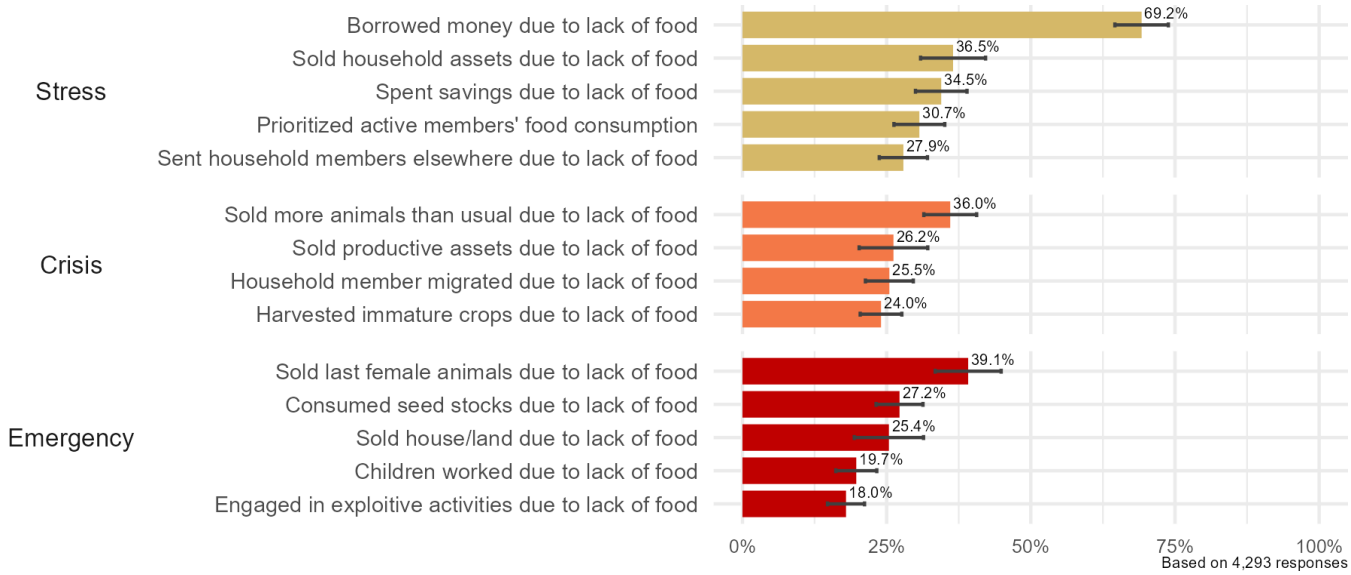
Figure 90: Prevalence of Types of Coping Strategies used for Food Shortages



Borrowing money is the most common strategy, reported by over two-thirds of households (69%), which is consistent with the most common income increasing coping strategy as reported earlier. Households also implement other strategies that range from stress to emergency level such as selling assets (36% of households), selling more animals than usual (36%), and selling the last female animals (39%). All strategies were implemented by approximately 20% of households at least once in the past month, which is indicative of the fragile and challenging environment households reside in.

[28] https://data-in-emergencies.fao.org/pages/afg_r3_storymap_lcs

Figure 91: Livelihoods Coping Strategies



SELF RELIANCE

Self-reliance is defined as the social and economic ability of a household to meet its essential needs in a sustainable manner.[29] The Self Reliance Index is a measure used to quantify this aspect, particularly for refugee and displaced populations. It captures key aspects of self-reliance including housing, food, healthcare, and education, among others.[30] The score ranges from one to five where a higher score indicates more resilience. **On average, households score a 1.6 on the Self-Reliance Index, which indicates a low level of self-reliance.** Minority clan households score marginally worse on this index, indicating lower self-reliance.

Table 19: Self Reliance Index

Outcome	Mean	Upper CI	Lower CI	N
Self-Reliance index (SRI) (1-5) for majority clan households	1.86	1.81	1.92	4,293
Self-Reliance index (SRI) (1-5) for minority clan households	1.72	1.69	1.74	869

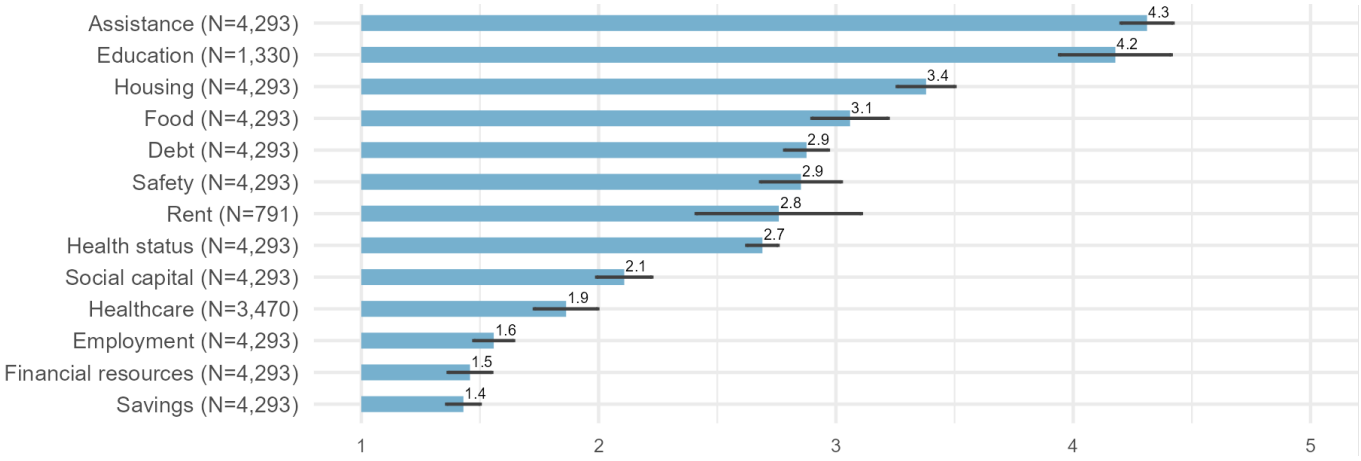
[29] Seff, Ilana, Kellie Leeson, and Lindsay Stark. "Measuring self-reliance among refugee and internally displaced households: the development of an index in humanitarian settings." *Conflict and Health* 15.1 (2021): 56.
[30] The complete list of domains is: housing, food, education, healthcare, health status, safety, employment, financial resources, assistance, debt, savings, and social capital.

Table 20: Self Reliance Index across Livelihood Zones

Outcome	Urban	Pastoral	Agro pastoral	Riverine	Coastal fishery
Self-reliance index (SRI) (1-5) for majority clan households	1.85 [1.7 - 2.0] (563)	1.98 [1.9 - 2.1] (1,423)	1.77 [1.7 - 1.8] (1,901)	1.86 [1.8 - 1.9] (316)	1.77 [1.6 - 1.9] (90)
Self-reliance index (SRI) (1-5) for minority clan households	1.76 [1.7 - 1.8] (141)	1.72 [1.7 - 1.8] (201)	1.71 [1.7 - 1.7] (459)	1.70 [1.6 - 1.8] (68)	1.76 [1.7 - 1.8] (141)

However, reliance across the dimensions varied significantly, as pictured in Figure 92. Households are much more reliant in assistance, which indicates that they do not rely on much external assistance, and education, which indicates that most school age children are in school than other dimensions. However, households are significantly less self-reliant in savings, which indicates that most have no savings or sellable assets, which is consistent with the findings in Section 3.3 that few households own assets or have savings. Similarly, households have low self-reliance in financial resources, which indicates that they have limited resources to cover their basic needs. Finally, they also have low self-reliance in employment indicating that few households are employed and most rely on temporary or casual work opportunities.

Figure 92: Self Reliance Scores across Domains



ACCESS TO WATER

The majority of households have reliable access to an improved water source during non-drought periods.[31] Most households (79%) have access to an improved water source and slightly fewer (82%) have access to a source that is within a 30-minute trip distance. As shown in Figure 93, the types of water sources across households vary. Further, most households (86%) have access to a source that can

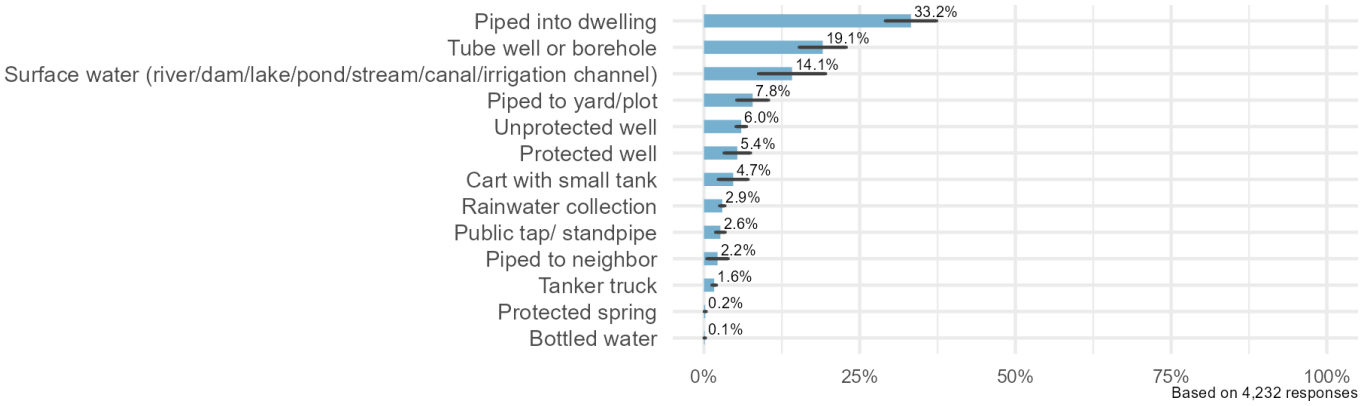
[31] A source that is likely to provide safe and uncontaminated water. This includes piped drinking water (whether piped into the dwelling, yard/plot, neighbor, or accessed through a public tap/standpipe), tube well/borehole, protected dug well, protected spring, rainwater collection, water supplied by tanker truck or cart with a small tank, and bottled water.

provide at least 15 liters per person per day. However, in order to provide water access, households must use multiple sources: only one-third of households (33%) use water from the same source year-round. **When all those aspects of drinking water are taken into account, only one-quarter of households (23%) have access to an improved, nearby water source that consistently provides 15 liters per day per person.** Additionally, access to water for productive use is much more limited: only 20% of households have access to water for this use.

Table 21: Access to Water During Non-Drought Periods

Outcome	Mean	Upper CI	Lower CI	N
Households using an improved water source	79.23%	74.75%	83.09%	4,293
Households with water source 30 minutes or less roundtrip including waiting time	82.20%	79.87%	84.31%	3,739
Households with water available from the same source year-round	32.73%	28.95%	36.74%	4,293
Households with water source with at least 15 liters per person per day	85.71%	83.88%	87.36%	3,918
Access to basic drinking water with at least 15 liters per person per day	23.21%	20.02%	26.74%	4,254
Households with access to water for productive use	20.35%	17.82%	23.14%	4,293

Figure 93: Types of Water Sources used by Households



Drinking water access varies by livelihood zone, as illustrated in Table 22. Access to improved water sources is lowest for households in riverine areas and highest in agro-pastoral and coastal fishery areas. However, coastal fishery households rarely are able to access water from the same source year round. It is more common for households in urban and pastoral areas to have water within a 30 minute roundtrip. Taking all these aspects into account, access to basic drinking water is overall low across areas but lowest in coastal fishery areas and highest in urban in pastoral areas.

Table 22: Access to Water During Non-Drought Periods by Livelihood Zone

Outcome	Urban	Pastoral	Agro pastoral	Riverine	Coastal fishery
Households using an improved water source	84.73% [73.0 - 96.4] (563)	90.72% [89.1 - 92.3] (1,423)	80.76% [78.3 - 83.3] (1,901)	71.52% [66.0 - 77.0] (316)	91.45% [85.3 - 97.6] (90)
Households with water source 30 minutes or less roundtrip including waiting time	86.48% [81.3 - 91.6] (502)	90.05% [88.2 - 91.9] (1,283)	65.98% [62.0 - 69.9] (1,587)	74.04% [69.3 - 78.8] (307)	72.75% [60.9 - 84.6] (60)
Households with water available from the same source year-round	35.98% [27.1 - 44.9] (563)	34.73% [26.1 - 43.4] (1,423)	24.53% [20.9 - 28.1] (1,901)	35.56% [29.1 - 42.0] (316)	2.20% [-1.0 - 5.4] (90)
Households with water source with at least 15 liters per person per day	91.56% [89.1 - 94.0] (497)	87.99% [82.8 - 93.2] (1,331)	72.16% [68.6 - 75.7] (1,709)	83.08% [77.8 - 88.3] (307)	65.56% [53.3 - 77.8] (74)
Access to basic drinking water with at least 15 liters per person per day	28.68% [20.7 - 36.6] (552)	26.00% [18.4 - 33.6] (1,405)	12.88% [10.0 - 15.8] (1,887)	19.73% [14.6 - 24.9] (316)	0.73% [-0.7 - 2.2] (90)

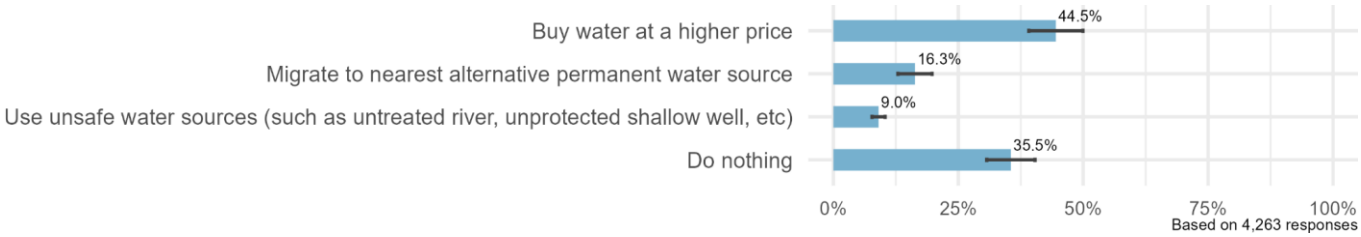
However, water access during drought decreases. Only one-third of households (31%) are able to use their main water source during drought periods. The majority of households still have a water source within a trip distance of 30 minutes or fewer, but access decreases to 73% of households. Only 12% of households can access water for productive use during drought periods. **This is especially important to highlight as 79% of communities identified drought as their primary shock.** Lack of water also plays a role in household livelihoods.

Table 23: Access to Water During Drought Periods

Outcome	Mean	Upper CI	Lower CI	N
Households that can use the same water source during a drought	30.87%	26.53%	35.57%	4,293
Households that have water source during drought within 30 minutes or less roundtrip including waiting time	72.55%	70.60%	74.42%	3,683
Households that can access water for productive use during drought	11.94%	10.60%	13.43%	4,293

Households' strategies to cope with limited water access varies, as seen in Figure 94. The most common strategy is buying water at a higher price, reported by 45% of households. However, over one-third of households (36%) are not able to do anything.

Figure 94: Coping Strategies for Water Access During Drought



FOOD PRODUCTION

Figure 95 shows the percentage of households that grew five kilograms or more of various groups in the past year. On average, few households are growing crops. However, this varies significantly by livelihood zone as shown in Figure 96. Crops are most commonly grown in agro-pastoral areas. Sorghum is the most popular crop grown by 18% of households in these areas.

Figure 95: Crops Grown by Households

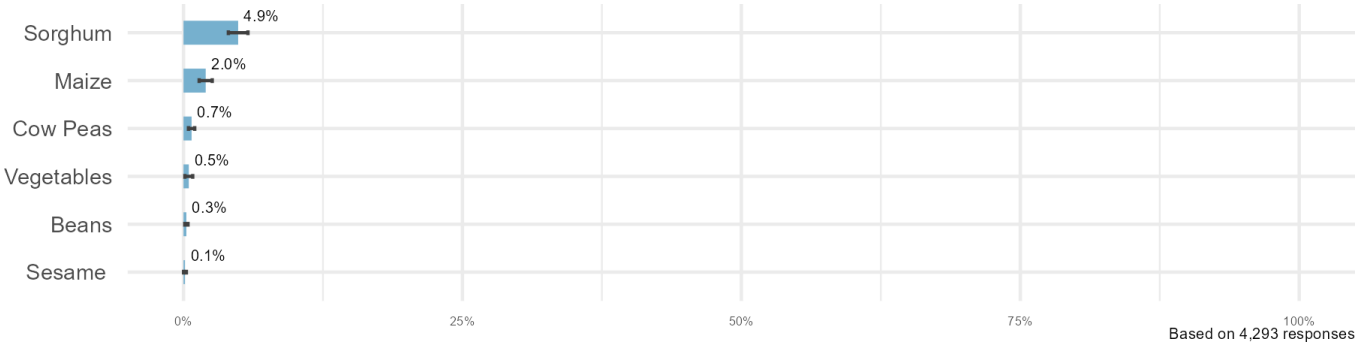
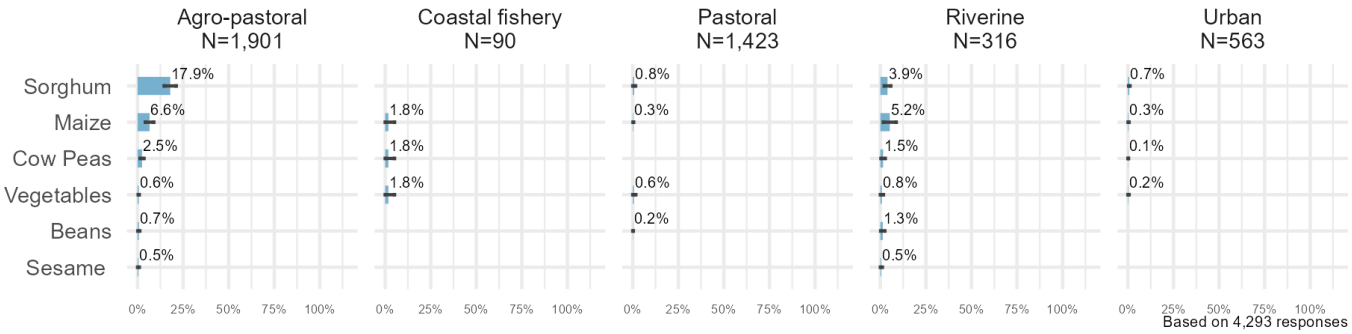


Figure 96: Crops Grown by Households by Livelihood Zones



It is more common for households to produce milk as shown in Figure 97. Producing goat's milks is most common, produced by 17% of households. There is also variation in milk production as shown in Figure 101. Goat's milk is most commonly produced in pastoral areas.

Figure 97: Milk Produced by Households

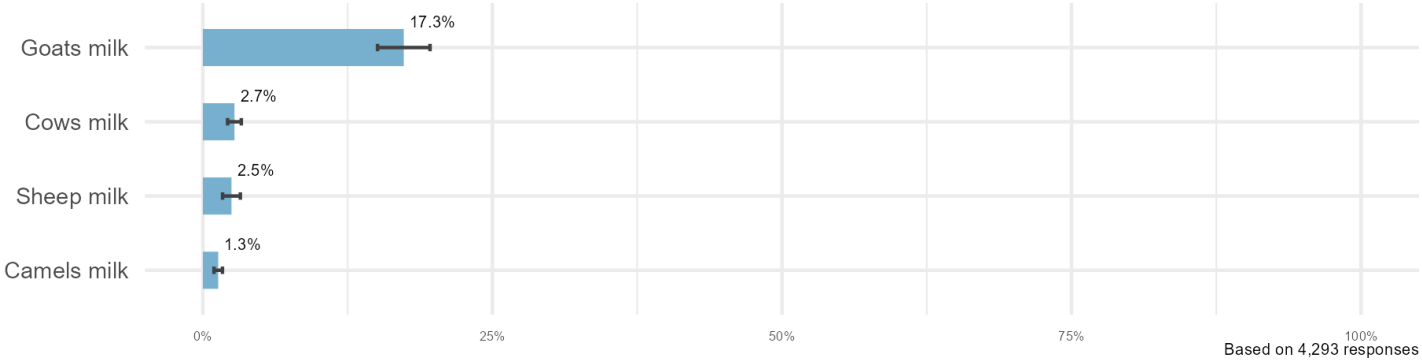
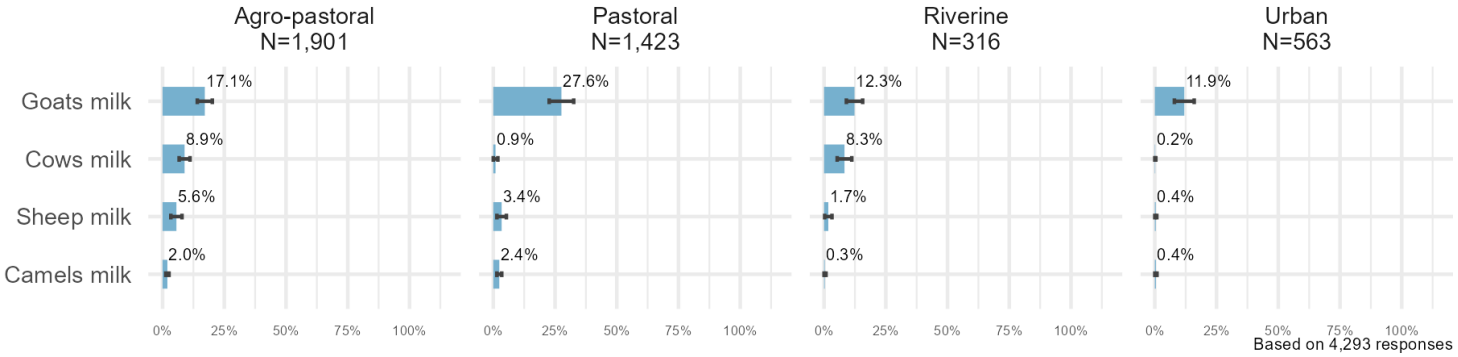


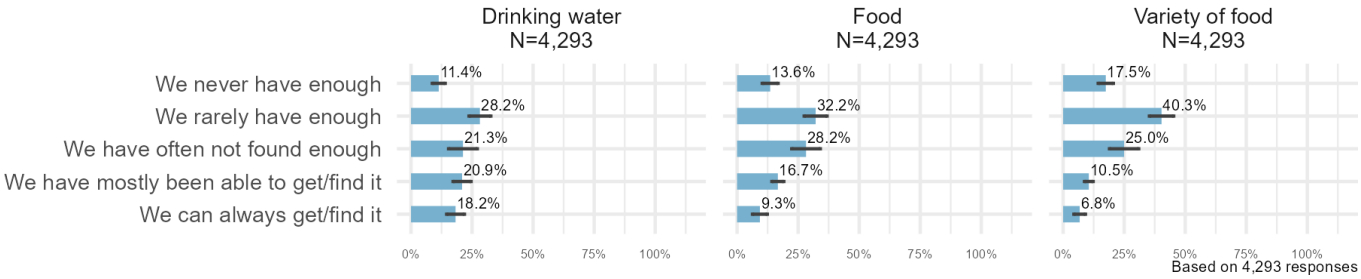
Figure 98: Milk Produced by Household by Livelihood Zone



ABILITY TO MEET NEEDS

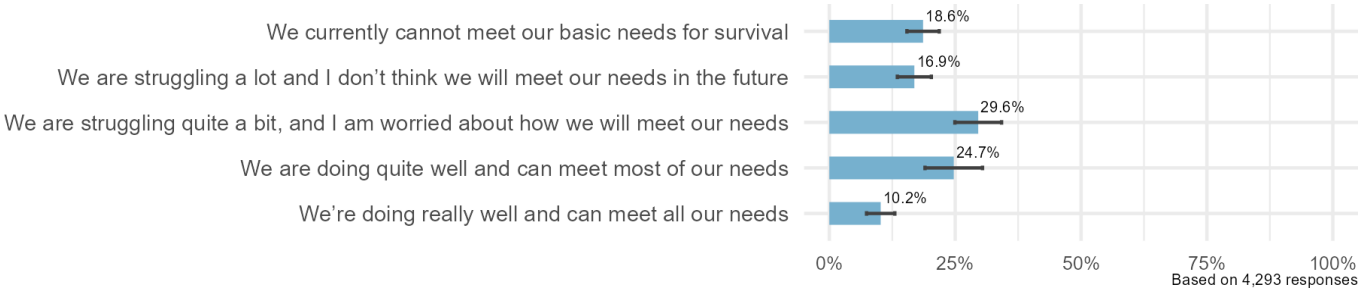
Households' perceived ability to meet their needs also varies across households, though more commonly households struggle to meet their needs. Over half of households (58%) rarely or never have enough variety of food and slightly fewer than half of households (46%) rarely or never have enough food at all. Forty percent of households rarely or never have enough drinking water. More households are able to mostly meet their drinking water needs than food needs.

Figure 99: Households' Perceived Ability to Meet Needs



Households' perceived wellbeing also varies. A third of households (36%) are really struggling and either currently cannot meet their needs or will not meet them in the future. One-third of households (30%) are struggling somewhat, and another third (35%) are doing well and can meet their needs.

Figure 100: Perceived Wellbeing of Household



PSYCHOLOGICAL OUTCOMES

We also assessed various aspects of households' psychological wellbeing. First, households were asked various questions about their perceived ability to adapt to challenges and unforeseen circumstances. Respondents are asked to rate statements corresponding with their beliefs about the importance in various aspirations being "Very important" to 4 being "Not important at all."[32] Across nine aspirational statements, on average, respondents rated between very important to somewhat important, indicating a high level of aspiration.

We also generated the Generalized Self-Efficacy Scale, which is a measure used to assess optimistic self-beliefs used to cope with a variety of demands in life.[33] Similarly, respondents are asked to rate statements about their confidence and resourcefulness on a scale of 1 "Not true at all" to 4 "Exactly true."[34] Respondents have a moderate level of resourcefulness with an average rating of statements ranging between "Hardly true" and "Moderately true."[35]

Finally, we generated the WHO Well-being index, which is a widely-used measure to assess psychological wellbeing and screen for depression.[36] Respondents are asked to rate the occurrence of five statements about their general mindset during their daily life on a scale of 0 "At no time" to 5 "All of the time."[37] The score ranges from 0 which represents worst possible, whereas a score of 100 represents best possible quality of life. On average, households score 39, indicating that their perceived quality of life is on the poorer end of the spectrum.

Table 24: Psychological Outcomes

Outcome	Mean	Upper CI	Lower CI	N
Aspirations and confidence to adapt index (1-4)	1.38	1.34	1.41	4,288
Generalized Self-Efficacy Scale (1-4)	2.66	2.59	2.73	4,269
WHO-5 Well-being Index (0-100)	39.44	37.16	41.68	4,131

BRCiS III LOGFRAME OUTCOMES

BRCiS has identified several impact, outcome, and intermediate outcome indicators to track progress on throughout the project period. As such, we report the baseline levels of these indicators in Table 25 below. These will be used as a starting point from which to measure change over the next five years. A disaggregation of these outcomes by livelihood zone can be found in Appendix III.

[32] Examples of these aspirations include "to have enough food for me and my family" and "to have multiple income sources"
[33] *Schwarzer, R., & Jerusalem, M. (1995). Generalized Self-Efficacy scale. In J. Weinman, S. Wright, & M. Johnston, Measures in health psychology: A user's portfolio. Causal and control beliefs (pp. 35-37). Windsor, UK: NFER-NELSON.*
[34] Example statements include "I can always manage to solve difficult problems if I try hard enough" and "I am confident that I could deal efficiently with unexpected events."
[35] Two questions from the 10-question scale were accidentally excluded from the survey. As such, we calculate the index by taking the average across statements rather than the total.
[36] *WHO. (1998). Wellbeing Measures in Primary Health Care/The Depcare Project. WHO Regional Office for Europe: Copenhagen.*
[37] Example statements include "I have felt cheerful in good spirits" and "I have felt calm and relaxed."

Table 25: BRCiS III Logframe Outcomes

Category	Outcome	Mean	Upper CI	Lower CI	N
Impact	Percentage of households in need of humanitarian assistance according to IPC levels 3+[38]	57.16%	52.88%	61.33%	4,293
	Households in the community that are internally displaced by shocks[39]	--	--	--	--
Outcome	Communities that have achieved at least "Medium Resilience" on the ARC-D scale, disaggregated by shock type reported in the ARC-D tool	*Disaggregated by shocks below*			
	Households with consistently available and accessible water source that produces 15 liters per day per person	23.21%	20.02%	26.74%	4,254
	TANGO Bridging Social Capital Index	1.97	1.89	2.06	4,293
	TANGO Bonding Social Capital Index	2.25	2.17	2.34	4,293
	TANGO Linking Social Capital Index	0.48	0.41	0.54	4,293
	Female headed: TANGO Bonding Social Capital Index (0-6)	2.22	2.10	2.35	2,484
	Female headed: TANGO Bridging Social Capital Index (0-6)	1.95	1.84	2.07	2,484
	Female headed: TANGO Linking Social Capital Index (0-5)	0.38	0.33	0.44	2,484
	Male headed: TANGO Bonding Social Capital Index (0-6)	2.30	2.19	2.41	1,809
	Male headed: TANGO Bridging Social Capital Index (0-6)	2.00	1.88	2.12	1,809
	Male headed: TANGO Linking Social Capital Index (0-5)	0.62	0.49	0.74	1,809
Intermediate Outcome	% Household have access to water for productive use in a normal year	35.58%	30.98%	40.46%	2,278
	% Household with "acceptable" Food Consumption scores (FCS)	42.84%	38.67%	47.12%	4,293
	% of households with moderate or severe hunger (Food Insecurity experience - FIES)	75.65%	82.71%	68.59%	4,293
	Reduced Coping Strategies Index	17.91	16.72	19.10	4,293
	% of households not using any "severe", "crisis" or "emergency" coping strategies in the Livelihoods Coping Strategies Index (LCSI)	8.52%	6.59%	10.95%	3,186
	% households use of soap or ash for cleaning hands	62.85%	57.43%	67.98%	2,388
	Average total agricultural production in last 12 months (kg)	69.68	60.47	78.88	490
	Average total yield (kg per hectare)	46.62	38.96	54.28	351
	Average goats weekly milk production per goat	1.71	1.37	2.06	1,063
	Average monthly income in the last year per income earner (USD)	107.81	99.80	115.82	2,570
	% of households with more than 1 income source	12.88%	10.42%	15.81%	4,293
	Self-reliance index	1.58	1.53	1.64	4,293

[38] This corresponds to households with Food Consumption Scores of borderline and below. Borderline Food Consumption Scores map to IPC Phase 3 (Crisis) as per FAO/FSNAU 2006. Integrated Food Security and Humanitarian Phase Classification: Technical Manual Version 1.0. Nairobi. FAO/FSNAU Technical Series IV.

[39] This indicator has been removed from the baseline report given the challenges in measuring this with the current available data. Specifically, we are able to observe whether households are currently displaced in BRCiS communities and whether previously displaced households have returned, but we are not able to observe households that have left and have not returned. This information will be collected in the midline and endline by speaking with community leaders to gather approximate figures on the number of households that have been displaced.

Households that regularly save cash	1.36%	0.96%	1.92%	4,222
% of female households involved in economic decision-making	93.92%	92.35%	95.19%	2,365
% of clients/households using formal financial services	0.40%	0.22%	0.75%	4,222

Table 26 presents the outcome indicator for "*Communities that have achieved at least "Medium Resilience" on the ARC-D scale, disaggregated by shock type reported in the ARC-D tool.*" Communities are categorized by minimal, low, medium, approachable resilience and resilience, which corresponds to the percentage of their assigned scores across the 30 different resilient capacities.[40] The scores are disaggregated by the primary shock type identified by communities. Currently, very few communities have medium resilience.

Table 26: Communities that have Achieved Medium Resilience by Shock Type

Shock	Minimal resilience	Low resilience	Medium resilience	Approachable resilience	Resilience	Total
Drought	58.02% (94)	40.74% (66)	1.23% (2)	0.00% (0)	0.00% (0)	162
Flood	64.21% (61)	33.68% (32)	2.11% (2)	0.00% (0)	0.00% (0)	95
Animal disease epidemic	26.32% (5)	73.68% (14)	0.00% (0)	0.00% (0)	0.00% (0)	19
Human disease epidemic	35.29% (6)	64.71% (11)	0.00% (0)	0.00% (0)	0.00% (0)	17
Inter/intra conflict	78.57% (11)	21.43% (3)	0.00% (0)	0.00% (0)	0.00% (0)	14
Economic or market crisis	66.67% (8)	33.33% (4)	0.00% (0)	0.00% (0)	0.00% (0)	12
Crop infestation disease	87.50% (7)	12.50% (1)	0.00% (0)	0.00% (0)	0.00% (0)	8
State involved conflict	0.00% (0)	100.00% (1)	0.00% (0)	0.00% (0)	0.00% (0)	1
Landslide	100.00% (1)	0.00% (0)	0.00% (0)	0.00% (0)	0.00% (0)	1

KPI 4 Outcomes

One of the indicators that will be reported over the course of BRCiS III *key performance indicator 4* (KPI 4)[41], "*Number of people whose resilience has been improved as a result of ICF*" as per 3As model[42]. This is an FCDO International Climate Finance KPI. The indicator is meant to convey changes in climate resilience that have been positively influenced by the BRCiS III program. This measure is operationalized as: "improvements in individuals' capacities to adapt, anticipate and/or absorb climate-related shocks and stresses."

To create the KPI 4 indicator, first targets must be set for a set of indicators that map to each of the components of the 3A model. It was decided that contextually based targets will be set that are informed by the baseline levels for each indicator. Using these targets, the KPI 4 indicator will be constructed and reported in the midline and endline rounds.[43]

[40] 0-30% corresponds to minimal resilience, 31-50% corresponds to low resilience, 51-70% corresponds to medium resilience, 71-90% corresponds to approachable resilience, and 91-100% corresponds to resilience.

[41] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/835527/KPI-4-number-people-resilience-improved1.pdf

[42] https://odi.org/en/publications/the-3as-tracking-resilience-across-braced/

[43] A detailed description for how the KPI 4 indicator will be constructed can be found in the Baseline Inception Report.

Table 27 presents the baseline levels for each of these indicators and the corresponding 3A capacity that they map to. As a next step, Causal Design and BRCiS will use these results to establish appropriate targets for each of these indicators based on a level of change in the indicator that is reasonable over the course of BRCiS III.

Table 27: Indicators for setting KPI 4 Targets

	Outcome	Mean	Upper CI	Lower CI	N
Absorptive capacity	Utilizing coping strategies of either increasing savings or putting aside grains/fodder	5.15%	3.90%	6.78%	4,148
	Average perceived severity of impact on food consumption from shocks experienced (1-4)	3.56	3.50	3.61	3,724
	Average perceived severity of impact on income from shocks experienced (1-4)	3.59	3.54	3.63	3,723
	Average perceived severity of impact on water from shocks experienced (1-4)	3.53	3.36	3.71	830
	Average perceived severity of impact on health from shocks experienced (1-4)	3.37	3.31	3.44	3,718
	Households with access to early warning information for natural hazards	0.52	0.48	0.57	4,293
	Perceived ability of household to recover from shocks (1-5)	1.45	1.33	1.58	4,193
	Households participating in any of the following activities: soil conservation activities, flood diversion structures (i.e., protection of land/infrastructure from flooding), planting trees on communal land, or improving access to health services	5.17%	3.92%	6.79%	4,293
	TANGO Bridging Social Capital Index	1.97	1.89	2.06	4,293
	TANGO Bonding Social Capital Index	2.25	2.17	2.34	4,293
Adaptive capacity	TANGO Linking Social Capital Index	0.48	0.41	0.54	4,293
	Households with consistently available and accessible water source that produces 15 liters per day per person	23.63%	20.42%	27.17%	4,250
	Number of income sources	1.08	1.04	1.11	4,293
	Number of categories of assets household owns	5.28	5.11	5.45	4,293
	Number of household members contributing to income	1.23	1.18	1.28	3,962
	Reduced Coping Strategies Index	17.91	16.72	19.10	4,293
	Households that have learned in the past year a new skill to respond to shocks	5.69%	4.08%	7.90%	4,293
	Households that have increased savings as coping mechanism to respond to shocks	3.78%	2.62%	5.42%	4,123

3.5 Resilience Pathways

A key research question is understanding which resilience capacities are critical to mitigate the effects of shocks on wellbeing. While our methodology is not set up to establish which capacities can be causally attributed to wellbeing outcomes, we attempt to explore the relationship between resilience capacities and

wellbeing outcomes through examining which capacities are more correlated with food security and access to drinking water.

To do this, we leverage machine learning algorithms to identify key relationships between all variables and their interactions collectively.[44] This allows us to examine the relationship between a capacity and food security or access to drinking water while holding all other capacities constant. **We need to take caution in not over-interpreting these patterns since they are correlational; we cannot say whether a particular variable caused households to be more or less food secure or have improved access to safe water.** For instance, we may observe that owning more assets is an important variable for predicting household food security. However, this is not sufficient to claim that increasing household asset ownership will lead to better food security outcomes. It may be that owning more assets is correlated with one or several other variables that are driving food security, such as wealth, local village infrastructure, or other factors. The prediction algorithms cannot distinguish between which variables are true 'drivers' versus 'proxies', and if two highly correlated variables exist in the data, then the algorithm will essentially randomly choose which one to include. For this reason, any interpretation of the specific variables used in a prediction algorithm is only suggestive. That being said, we can identify which variables are used most frequently in our prediction models, which is a proxy for relative predictive importance. These findings may provide insights on capacities that may be important for household resilience, but again, should be interpreted with caution.

First, we assess which capacities are most predictive of food security. Specifically, we examine the relationship between resilience capacities and whether a household's Food Consumption Score indicates that they have poor food security.[45] Figure 101 shows the top 15 resilience capacities (out of 75 included in our model) that are associated with food security. In particular, assets are highly correlated with a household's food security status. In Figure 102 below, we plot the relationship between the top four capacities and food security.[46] Both household and livestock assets have a negative relationship with whether a household has poor food security. Notably, both have a sharp negative relationship with poor food security and then the relationship becomes less steep, more so for livestock assets. Specifically, there is a larger decrease in food insecurity as households move from two to three consumption assets and from zero to one livestock assets, than from a larger number of those assets. Again, this does not imply that supplying households with assets will improve their food security, but rather that households with more assets generally seem to be more food secure.

Aspects of the natural ecosystem also are highly predictive of a household's food security status such as percentage of the area around a household with forest, percentage of the area around a household with grass, percentage area without erosion, the soil's organic carbon content, and proximity to water. In Figure 102, we illustrate the relationship between the percentage of the area around a household with forest and whether it has poor food security. The graph shows that even marginally more area with forest around a household is associated with improved food security. Interestingly, the opposite relationship is found for grass, meaning more grass is associated with more food insecurity, which may

[44] Specifically, we use a random forest model.
[45] In other words, we have operationalized this into a binary indicator where 1 indicates that a household has an Food Consumption Score lower than 21 and 0 for a score 21 or higher.
[46] Additional plots can be found in Appendix III.

reflect being in a rural area. Another possibility is more grass may reflect fewer livestock to graze indicating the challenges of recovering for people that depend on livestock. Less soil erosion and closer proximity to water are both positively associated with improved food security (pictured in Appendix III).

Figure 101: Top 15 Resilience Capacities Most Predictive of Food Security

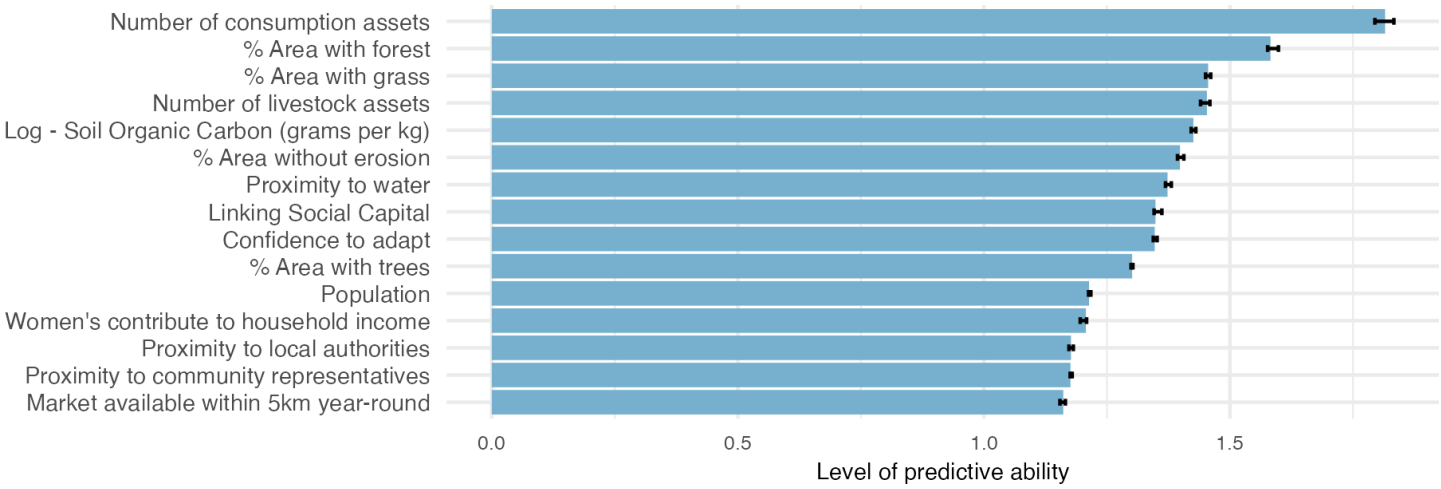
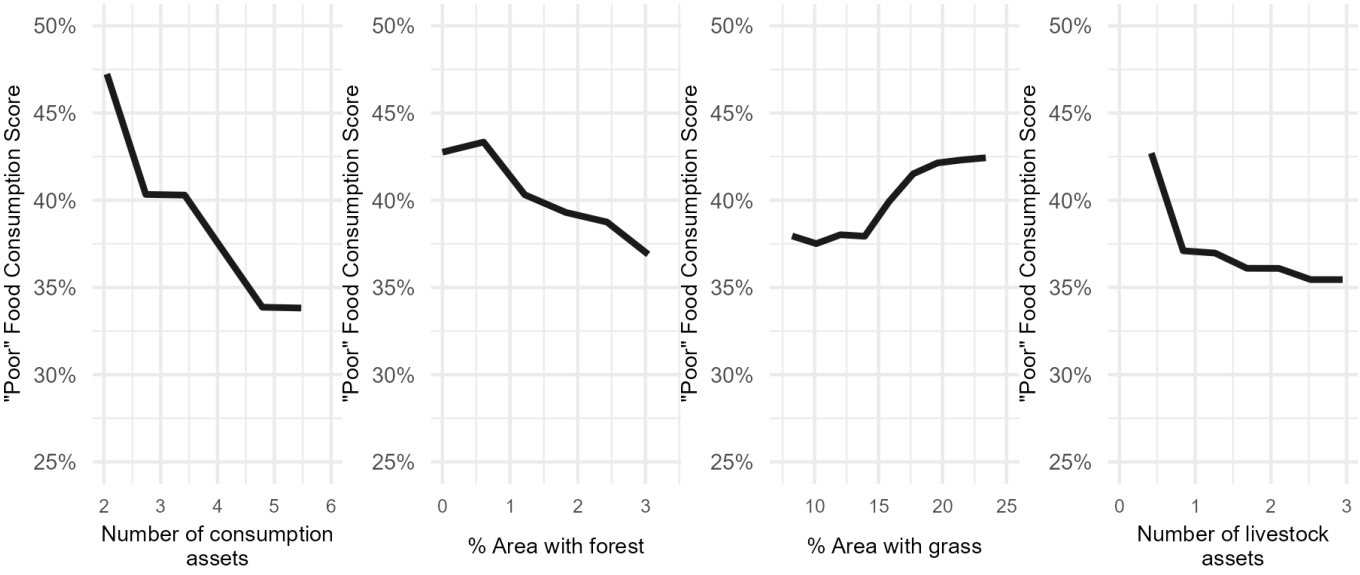
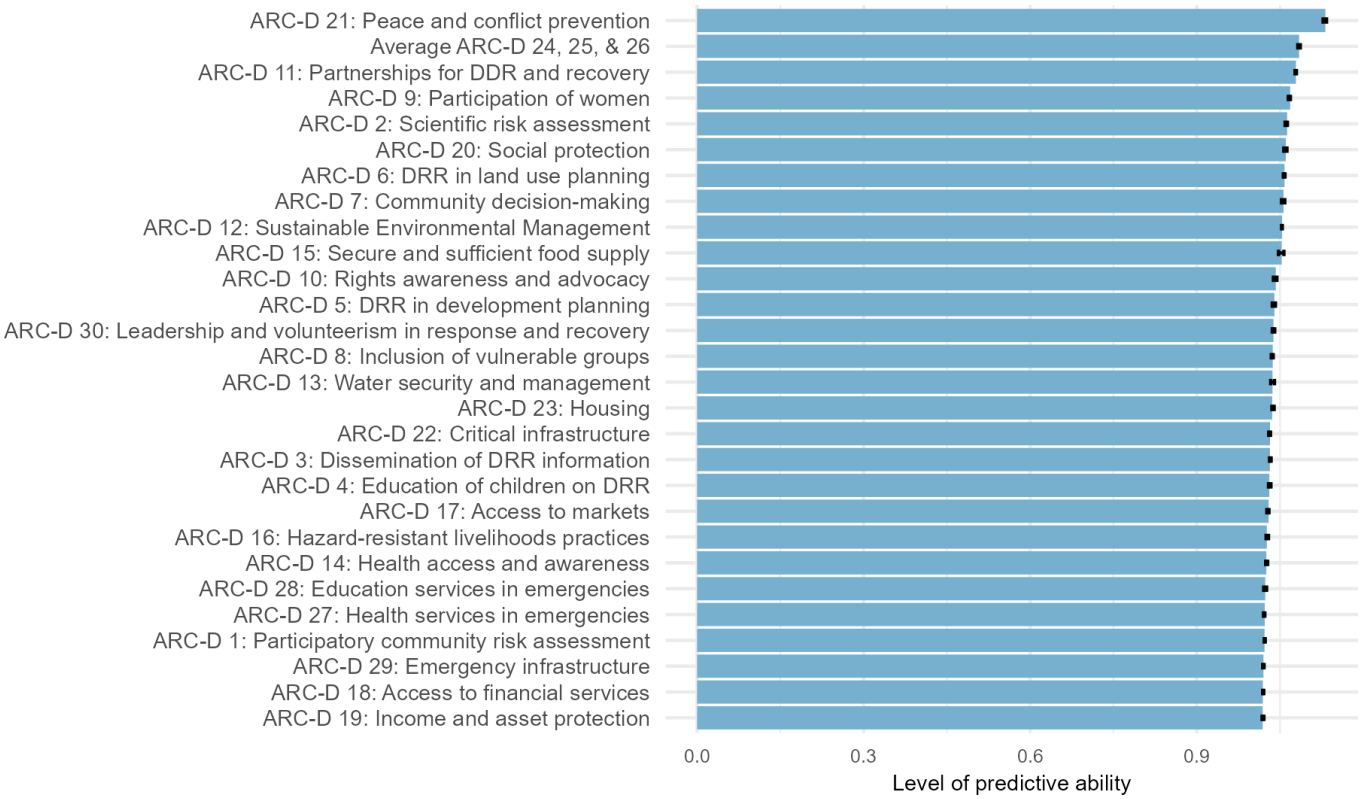


Figure 102: Relationship of Most Predictive Capacities with Food Security



Below we include a similar plot, but this time we specifically examine the relationship between community level resilience capacities (as measured by the ARC-D components) and food security. Figure 103 shows that the community resilience aspects as measured by the ARC-D are all highly predictive of a household's food security status. There is no component in particular that dominates the others in terms of its predictive ability.

Figure 103: Predictive Ability of ARC-D Components and Food Security



We conduct a similar exercise but now examine the relationship between resilience capacities and a household's access to drinking water.[47] Figure 104 shows the top 15 resilience capacities (out of 75 included in our model) that are associated with having access to drinking water. In **this case, ecosystem-related capacities are most predictive of drinking water access: the soil's organic carbon content, the percentage of the area around the household with trees, grass, and forest, proximity to water, and percentage of the area around the household without soil erosion**. The population size ? of a community where the household resides is also highly predictive of its access to drinking water, which is likely a proxy for whether it is in an urban or rural community.

In Figure 105, we plot the relationship of the top four most predictive capacities with drinking water access (holding all other capacities constant).[48] The first panel illustrates the relationship between the soil's organic carbon content and a household's access to drinking water. It should be noted that since we are taking the log of the organic carbon content variable, this plot is interpreted as the increase in a household's access to drinking water, from the *percentage change* in soil's organic carbon content. We see that there is an initial negative relationship between the organic carbon content and drinking water access but then it becomes positive with higher levels of organic carbon content. There is a similar relationship between the area around a household with trees and drinking water access. Our measurement of proximity to water, which reflects how close the source of water is, correlates positively with access to drinking water. Finally, the population size of a community is highly predictive of water

[47] Basic drinking water considers the type of water source, the proximity to the water source, the reliability of the water source to consistently produce water, and whether it produces at least 15 liters per person per day.
[48] Additional plots can be found in Appendix III.

access, with larger populations associated with better drinking water access, and a stronger association as population increases. This could reflect how water access is very associated with whether communities are rural or urban or also that households choose to live close to water.

Figure 104: Top 15 Resilience Capacities Most Predictive of Access to Drinking Water

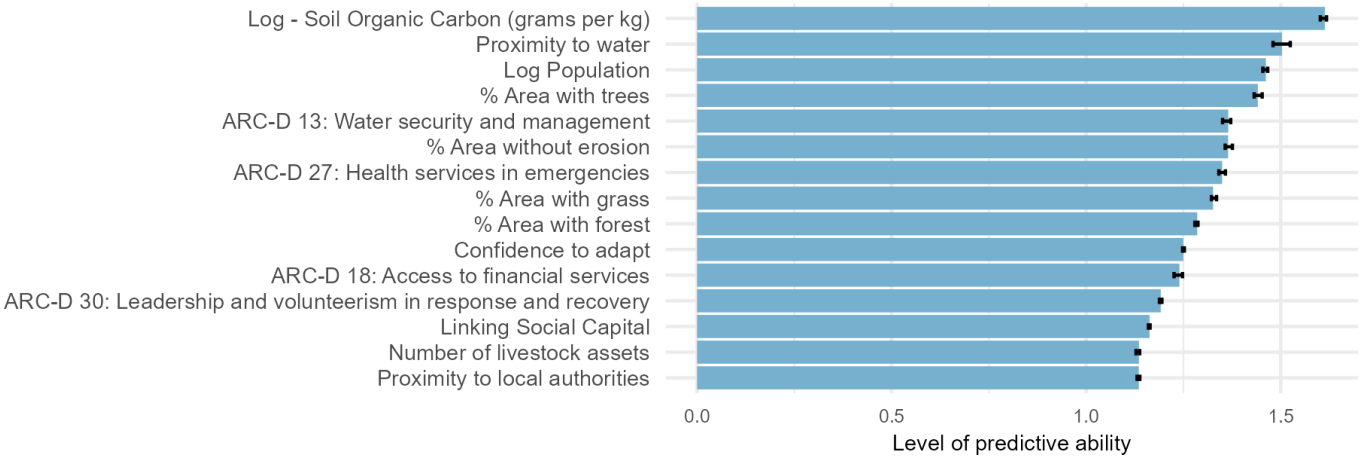
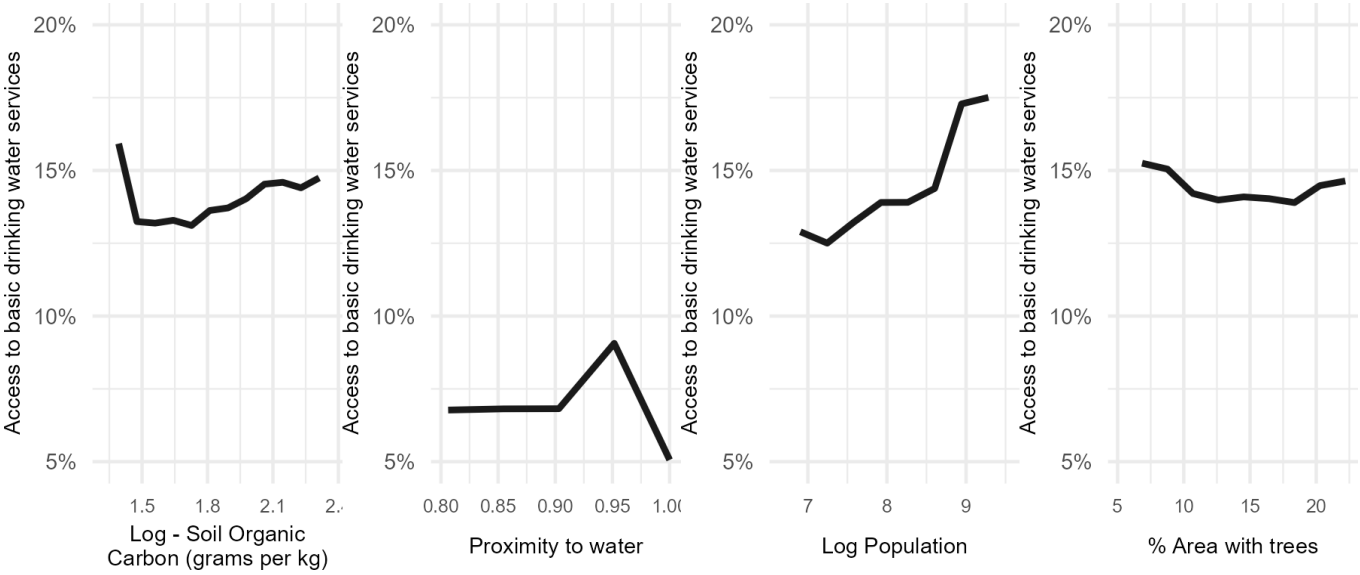


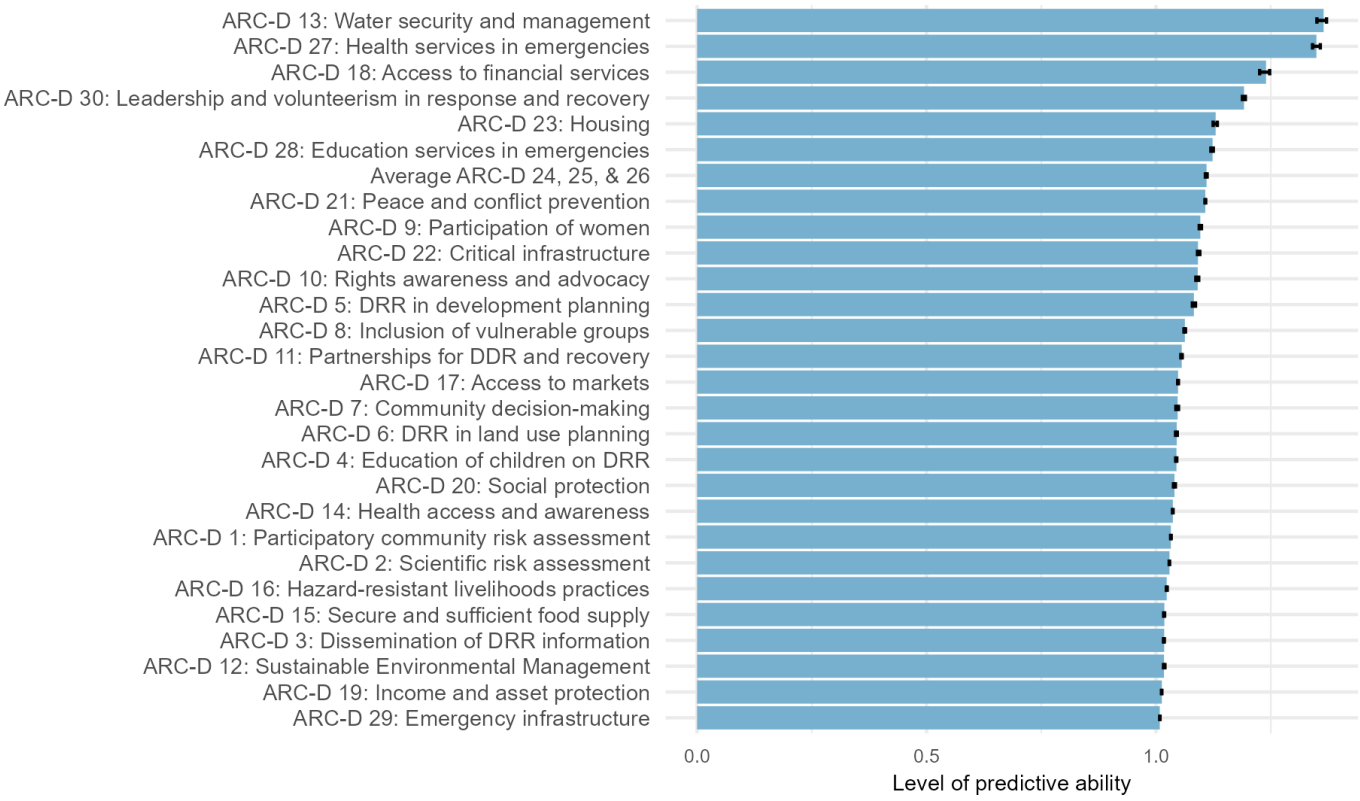
Figure 105: Relationship of Most Predictive Capacities with Access to Drinking Water



As we did with food security, we specifically examine how community resilience capacities are associated with access to drinking water. In this case, we see that specific capacities are more strongly associated with drinking water access, namely whether communities have water security and management services, whether there are health services in emergencies, whether there are financial services, and if the community's leadership and volunteerism in response and recovery. As shown in Appendix III, these capacities are all strongly positive related with improved access to drinking water. Again, this does not mean that supporting communities with these services will improve their access to water, but rather

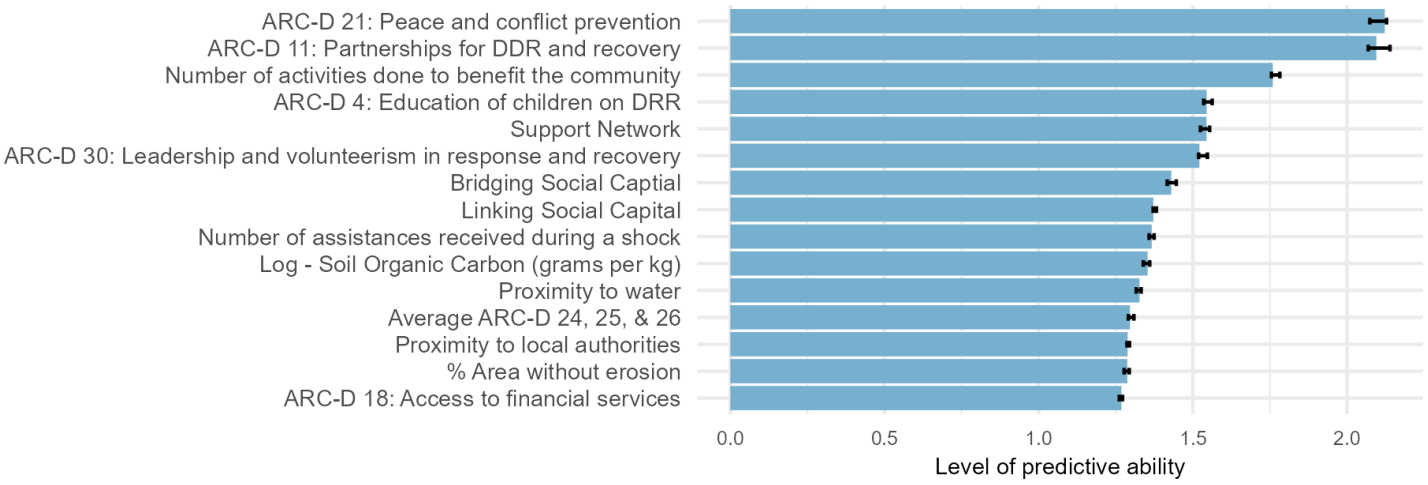
communities that have these services have better access, which may be due to them being better resourced communities overall, such as being in urban areas.

Figure 106: Predictive Ability of ARC-D Components and Access to Drinking Water



In Figure 107, we plot the 15 most predictive resilience capacities of coping strategies, as measured by the Reduced Coping Strategies Index. Interestingly, several of the community resilience capacities are most predictive in this case: the community's conflict prevention and mitigation mechanisms and whether the community has external partnerships for disaster risk reduction. The level of collective action the household participated in is also highly predictive of the number of coping strategies utilized.

Figure 107: Top 15 Resilience Capacities Most Predictive of Reduced Coping Strategy Index



4.0 DISCUSSION

The findings above illuminate several takeaways about the resilience capacities of BRCiS III communities. Lack of financial resources and access to financial services is a major constraint for households. Virtually no households regularly save, and most own few productive or livestock assets. This lack of financial resources severely limits households' ability to absorb the impact of shocks, with 80% citing lack of savings as their primary constraint to preparing for future shocks.

Despite these financial constraints, social ties within communities are strong, with households regularly relying on relatives for help in times of need. However, social capital beyond immediate networks is limited. Despite strong social cohesion and peace within and among BRCiS III communities, there is a notable lack of collective action and engagement with local governance structures. Few households participated in community-benefiting activities with others in the past year, and although community leaders are perceived as active, households rarely meet with them and feel they have little influence over decision-making.

Community decision-making structures exhibit moderate inclusivity of vulnerable groups and women, but lack effective mechanisms for identifying disaster risks and linking with high-level actors for support. While vulnerable groups and women are actively represented in community disaster risk reduction and recovery decision-making, resulting decisions and actions sometimes fail to address their specific needs and priorities. Furthermore, the majority of communities lack procedures for understanding and identifying high-risk shocks, indicating a gap in risk management strategies.

Findings suggest that the soil quality around households is poor, with low carbon content and high levels of erosion. The analysis also highlights that ecosystem characteristics such as soil carbon content and erosion level among other attributes are some of the most predictive characteristics of food security and water access, which suggests that ecosystems are important for these outcomes. Aspects of ecosystem quality will be further explored once ICRAF's data collection exercise has completed.

Overall, resilience levels across households are low, with minimal ability to absorb shocks, adapt livelihoods, and limited governance mechanisms, infrastructure, community networks, and formal and informal social protection mechanisms. Interestingly, there is minimal variation in resilience levels across livelihood zones, suggesting that geographic context does not significantly influence resilience.

The findings underscore the need for tailored and contextually-adaptive resilience-building interventions that address the specific challenges faced by vulnerable households and communities in BRCiS III clusters. In particular, the findings both validate certain BRCiS III programming priorities as well as highlight areas where additional investigation may be valuable:

- **Access to finance services and opportunities for income-generating livelihoods is a clear gap but a better understanding of the specific barriers to higher savings and diversified income streams may be useful.** A key finding of the baseline report was that access to savings, assets, and financial services is very low across households. As BRCiS has highlighted, when communities have increased access to financial assets from income, savings and affordable credit, they can better meet household needs and increase investment in resilience capacities. This underlines the importance of expanding and strengthening household asset reserves and income generating opportunities. However, it is not clear from the baseline findings what the current barriers to these outcomes are. For example, are savings low because of behavioral or institutional factors? Why do opportunities for self-employment not already exist? These types of insights can help refine whether the proposed approach of strengthening financial inclusion networks and facilitating access to business support services to support income generation are the right pathways to improving these outcomes.

- **Strengthening community decision-making advocacy structures and linking to external actors is needed but may possibly be limited by contextual factors.** The baseline report found that the majority of communities do not have procedures in place for understanding and identifying high risk shocks. Further, most communities have no partnerships between the community and external actors that can provide funds or resources for disaster risk reduction and recovery. This highlights that the planned development of community networks to identify and advocate for resilience needs as well as linking these networks with local and national authorities as well as humanitarian and development actors could help fill this gap. However, it is also important to note that the baseline found that collective action within communities is currently low, that it is uncommon for households to meet with community leaders, and most households perceive themselves to have no influence over decision making. It is unclear what drives these findings, for example, whether households are not partaking in activities to benefit the community because those opportunities do not exist or because appetite for these types of activities is low. Nevertheless, these contextual factors would likely influence the effectiveness of this BRCiS III implementation plan so it will be important to monitor as these activities take place.

- **Strengthening ecosystems through natural resource management appears to be a critical activity but programming teams should also keep in mind possible contextual barriers.** The baseline report found that soil quality around households is relatively poor and access to safe, reliable drinking water is limited. Additionally, access to water for productive use is much more limited: only 20% of households have access to water for this use. While a more in-depth analysis

of the ecosystem was limited with the available data, findings suggest that ecosystem strengthening would still be beneficial, especially around water management and soil preservation. However, relatedly, low collective action in communities may signal other contextual factors that might influence willingness to participate in participatory activities.

- **Consider revisiting the mechanism within Early Warning, Early Action systems.** Considering the anticipated frequency and severity of shocks, increasing communities' ability to forecast shocks to better prepare for them is critical. This is affirmed by the baseline finding that most households still do not anticipate natural hazard shocks before they occur: more than two-thirds of households who experienced flooding or drought did not expect it. However, even for households that reported hearing messages about natural hazards, most still did not expect the shock to occur. Further, most households do not have a plan to prepare for future shocks, though they cite financial constraints as the key barrier. While it is unclear from the baseline data whether the lack of preparation is behaviorally-related, this may be an important contextual factor to dig deeper into to ensure the effectiveness of Early Warning mechanisms.

- **Additional research on primary constraints to better food security may be valuable.** The baseline found that food security of households is overall low and that households regularly engage in coping strategies to manage these food shortages. However, the baseline was limited in its ability to unpack the drivers of food insecurity, whether access, availability, or demand for different types of food groups (with regards to food security indicators that measure diversity of food groups). As such, it may be useful to conduct additional inquiry around this point to validate whether enhancing food production systems and promotion of nutrition practices are the appropriate mechanisms to improve food security.

Additionally, there were several important learnings to consider ahead of midline and endline data collection:

- **Reconsider depth versus breadth of midline and endline survey instruments.** The baseline instrument was long (over two hours) and covered many indicators across different sectors. While this allows us to learn about outcomes across different domains, it does not allow us to dive deeply into the mechanisms of any particular outcome or dig into certain learning questions (e.g. around programming for minority clan households) more deeply. Given that a key learning goal is to understand to what extent and how BRCiS III programming is contributing to changes in outcomes, it may be worth revisiting the structure of the instrument. For example, without a comparison group of households, we are limited in our ability to make claims about the causes of changes in outcomes. The more data that can be collected on the hypothesized causal pathways in the Theory of Change (ideally supported by qualitative work), the more effectively we can probe on what is contributing to changes in outcomes. Our recommendation is to focus on depth over breadth in the midline: focus on a subset of key outcomes for BRCiS and related intermediate outcomes and other questions that will help us understand the Theory of Change pathway or other key learning questions. This of course needs to be balanced with collecting the indicators that are required for reporting purposes. If BRCiS has available resources, additional qualitative work to complement this would likely be valuable.

- **Revisit approach for measuring percentage of BRCiS households displaced by shocks for midline and endline data collection rounds.** The baseline data collection revealed the challenges of measuring the logframe impact indicator "*Percentage of households displaced from BRCiS III communities by shocks."* Specifically, we are able to observe whether households are currently displaced in BRCiS III communities and whether previously displaced households have returned, but we are not able to observe households that have left and have not returned. This information will be collected in the midline and endline by speaking with community leaders to gather approximate figures on the number of households that have been displaced.

- **Revisit approach for measuring agricultural production indicators.** The data collected on household agricultural yield (i.e. quantity of various crops produced in the past year) were noisy. This required considerable cleaning of the data and eliminating of outlier values. The current yield indicators are generated from three pieces of information: the quantity produced by crop, area of arable land, and percentage of land dedicated to a specific crop. The data from the baseline suggests that this information is challenging for farmers to recall accurately. One option for reducing the noise in these indicators is to instead generate a binary variable rather than continuous indicators on overall yield. For example, "Have you planted X crop?" If yes, "Did you plant more than 10kg (or any other relevant threshold)?" Other questions could include the number of household members involved in farming activities or whether the planted corps were used for selling. These questions, while not providing precise yield estimates, can be informative and likely would require the same or less time than collecting detailed yield data.

- **Consider whether collecting income data is adding value.** The household income data was equally noisy, leading to imprecise and potentially inaccurate estimates of income. Measuring income in these contexts is very challenging due to highly seasonal income (e.g. agriculture, casual labor) and no administrative records. Rather than measuring overall household income, it may be more useful to target specific income streams that BRCiS is specifically aiming to increase, such as from self-employment. Measuring income from specific sources, especially from which income is relatively more regular, will likely lead to more reliable estimates.

- **Revisit conflict dynamics module.** The household survey included newly designed questions around conflict experienced within the household. The findings revealed that there are possibly measurement challenges with this module as a very low percentage of households reported that they experienced any form of conflict in the past year. This finding diverged from the percentage of households reporting conflict as a type of shock experienced in the past year. It is not clear what is driving this discrepancy, whether it be comprehension or translation issues or sensitivities around reporting different types of conflict. Regardless, it may be worth conducting some cognitive interviews with households to understand how they are answering these questions.

- **Refine questions on perceived impact of shock.** The household survey includes several questions on the impact households perceived on various domains of their wellbeing from shocks. These were Likert scale questions with values ranging from no to high impact. The usefulness of this question structure is not clear as there is little variation in responses (most respondents stated moderate to high impact), and it is not clear what the specific impact is that underpins those values. It may be worth considering the specific effects of certain shocks that BRCiS is interested in, for

example, "Have any livestock died in the last year due to disease or lack of food?" These insights will likely be more useful for programming teams.

APPENDIX I: RESILIENCE SPECTRUM SCORE DEVELOPMENT

Below we outline in further detail the steps for generating the Resilience Spectrum Score.

STEP 1: MAP HOUSEHOLD, COMMUNITY, AND ECOSYSTEM RESILIENCE INDICATORS TO THE THREE SYSTEMS

As a first step, Causal Design mapped the indicators collected in each of the household, community, and ecosystem to the three main systems BRCiS III intends to influence. The three systems are defined as following:

- **Inclusive, Shock Responsive Leadership:** This system focuses on structuring work streams around local leadership systems. It emphasizes the development of leadership structures that are both inclusive and capable of responding effectively to various shocks. The primary goal is to enable communities to sustainably manage and prioritize their needs, particularly in times of crisis, through robust and participatory engagement. It ensures that leadership is equipped to handle emergencies, distribute resources efficiently, and make informed decisions that benefit the entire community.
- **The Ecosystem:** This system revolves around local ecosystems, specifically targeting water use and sustainable food production/systems. It is critical for providing vital ecosystem services that sustain life and livelihoods, like clean water, healthy soil, and productive land. It aims to fortify the natural resilience of the community against environmental challenges, ensuring that they can continue to thrive even under adverse conditions.
- **Economic Inclusion and Diversification:** This system aims to strengthen economic resilience in crisis-affected populations. The focus is on equipping people for employment, supporting business growth and creation, enhancing skills, and expanding access to financial services. The system's primary objective is to ensure equitable access to economic opportunities and financial assets for all community members. This economic diversification is essential for resilience, as it reduces dependency on single economic activities or sectors and prepares the community to withstand economic shocks.

STEP 2: COMBINE SYSTEM INDICATORS INTO INDIVIDUAL SCORES

As BRCiS envisioned that this methodology would include individual scores on a scale of 1 to 5 (one being least resilient/stable – five being most resilient/stable) for each of the three main systems, we next combine each system's group of indicators into a single score. We construct these scores using an inverse covariance weighting approach. This approach first requires transforming indicators so they are all directionally consistent. For example, if for one indicator a larger score indicates a positive outcome, whereas for a second indicator, a lower score indicates a positive outcome, we would multiply one of these indicators by -1. We then combine all variables into a single index and determine the relative weight for each variable based on the information content of each. If two variables are highly correlated (e.g. infrastructure and basic services in the community), they each will receive less weight than a variable that is less correlated with the others (e.g. equitable gender decision making). The final weights for each indicator are outlined in Appendix II. We would then rescale each of these indexes to a range of 1 to 5.

STEP 3: DEVELOP WEIGHTS FOR THE THREE SYSTEMS

We then developed weights for each of the three system scores based on the anticipated impact of that system on resilience. In other words, if the Inclusive, Shock Responsive Leadership is expected to be more influential on resilience than the Ecosystem, it should receive a higher weight.

To determine these weights, we leveraged the extensive contextual expertise of the BRCiS team and other external stakeholders with extensive experience in Somalia resilience programming.

To define the weights, we posed the following question to the respondents:

> *"You have 100 coins to allocate among the three key systems of the BRCiS III program. These coins represent the resources of the program in terms of budget, staff, time, and effort. Your allocation should reflect your view on which systems are most crucial for achieving higher community resilience in Somalia, which will lead to reduced humanitarian needs and displacement.*
>
> *As you distribute the resources represented by 100 coins, please reflect on your experience in Somalia or similar environments and consider how each system can improve the community's ability to manage shocks."*

Studies have shown that when allowed to discuss responses with others and recalibrate, individuals improve the accuracy of their forecasts.[49] As such, we organized a focus group discussion of BRCiS stakeholders to discuss and debate their responses. At the beginning of the discussion, participants will be asked to complete a quick in-meeting survey on how much weight they believe each system should have. The answers will be displayed during the meeting to allow participants to see what others think. Following this, we will invite participants to share their perspectives on the scores by posing the following question:

> *"Currently, on average, the group has assigned a weight of 'X' to the 'Y' system. Do you think it should be higher, lower, or the same as this value? Why or why not?"*

At the end of the meeting, participants again will answer the original survey individually now that they have had time to deliberate with each other, and these responses will inform the final weights. Following the focus group discussion, we decided to expand the sample size of respondents by sharing the survey with a group of external stakeholders. In total, the weights are generated from input from 25 respondents including both BRCiS internal and external stakeholders. The weights were generated by taking the average of responses for each system and are listed in Table 28.

[49] Mellers, Barbara, et al. "Identifying and cultivating superforecasters as a method of improving probabilistic predictions." *Perspectives on Psychological Science* 10.3 (2015): 267-281.

Table 28: Weights for Resilience Spectrum Sub-Indices

System	Weight
Inclusive, Shock Responsive Leadership	32
Natural Ecosystem	38
Economic Inclusion & Diversification	30

STEP 4: COMBINE SYSTEM-LEVEL INDICES INTO A FINAL RESILIENCE SPECTRUM SCORE

As a final step, we aggregate the three system indices to generate the final Resilience Spectrum score, in other words:

$$\text{Resilience Spectrum} = W_1 \times S_1 + W_2 \times S_2 + W_3 \times S_3$$

Where W_1, W_2, and W_3 are weights ranging from 0 to 1, representing the importance of the three systems, such that the range of the Resilience Spectrum is between 1 and 5. The final score is defined at the household level but can be aggregated to the cluster level or higher. In other words, each household will have a unique Resilience Spectrum score. However, while at the household level, the score will reflect household, community, and ecosystem resilience capacities for the community and ecosystem in which that household resides.

APPENDIX II: RESILIENCE SPECTRUM SCORE INDEX WEIGHTS AND VALIDATION

WEIGHTS FOR THE RESILIENCE SPECTRUM SUB-INDICES

Below we present the final weights that were generated through the inverse-covariance matrix weighting method for each of the three sub-indices in the Resilience Spectrum.

Figure 108: Weights for Indicators in Inclusive, Shock Responsive Leadership System

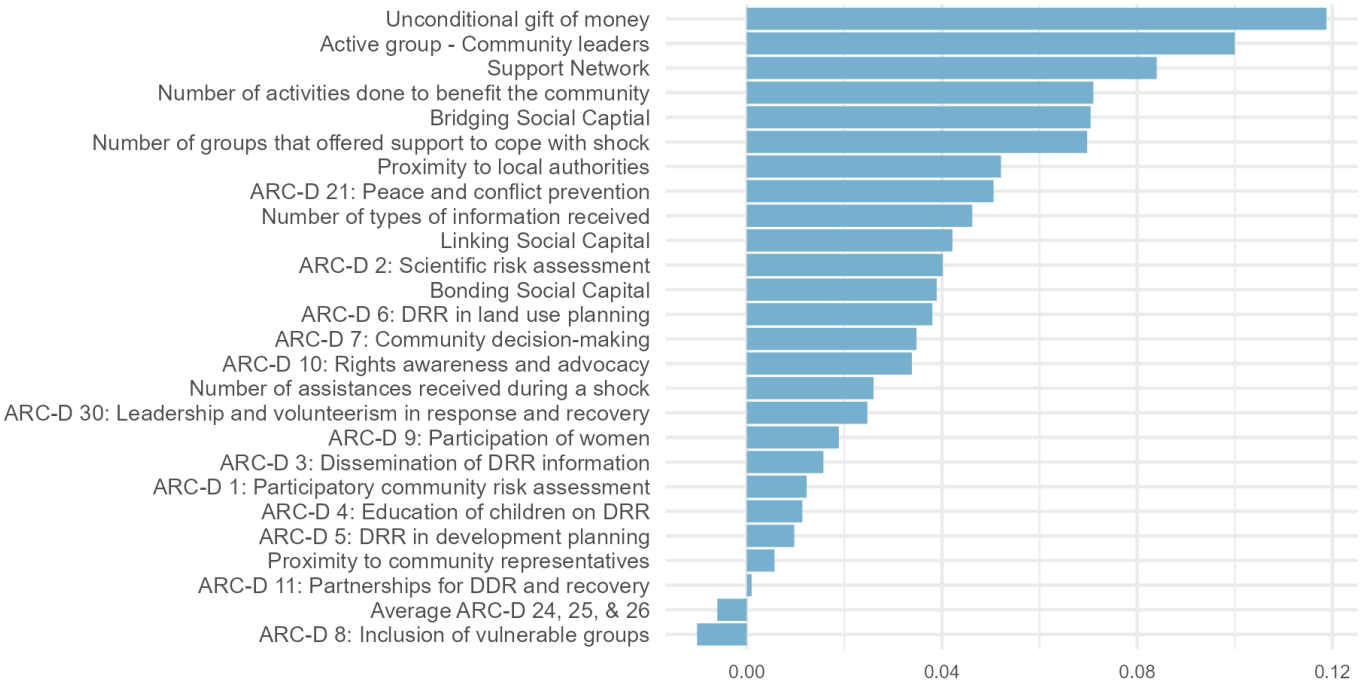


Figure 109: Weights for Indicators in the Natural Ecosystem System

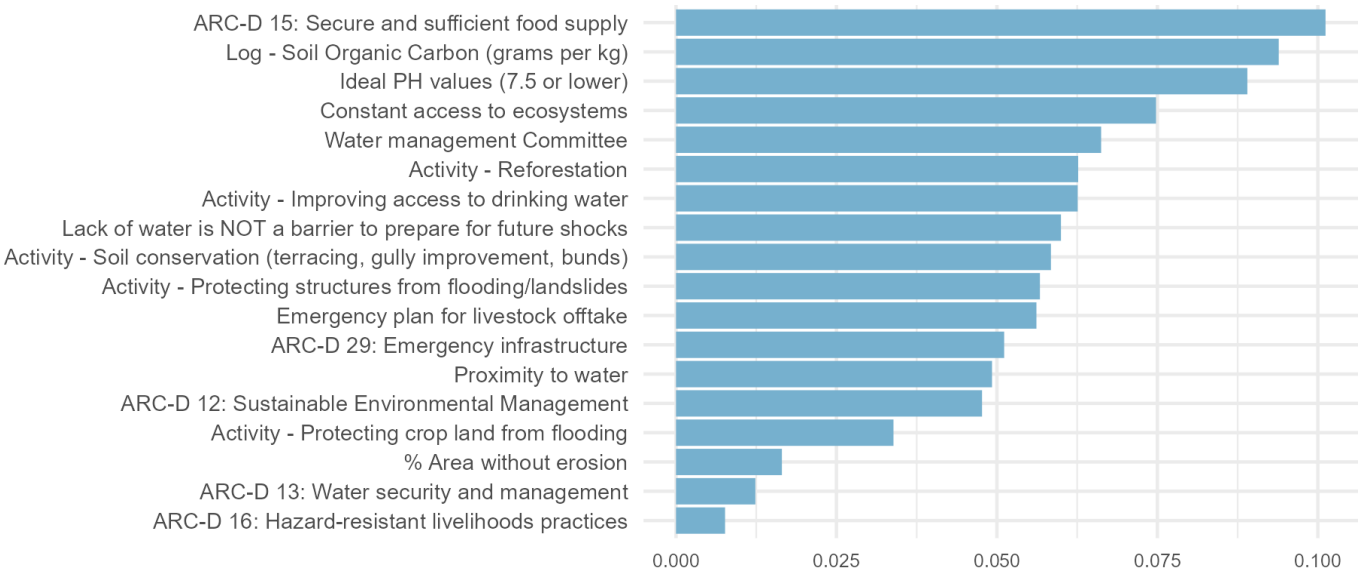
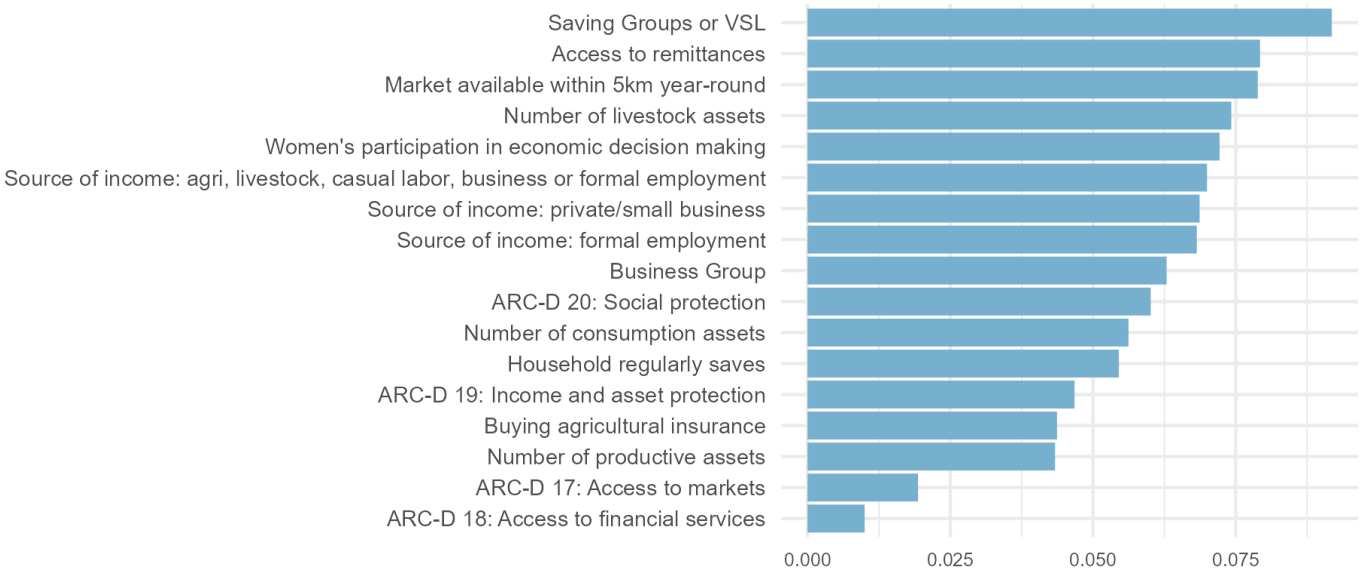
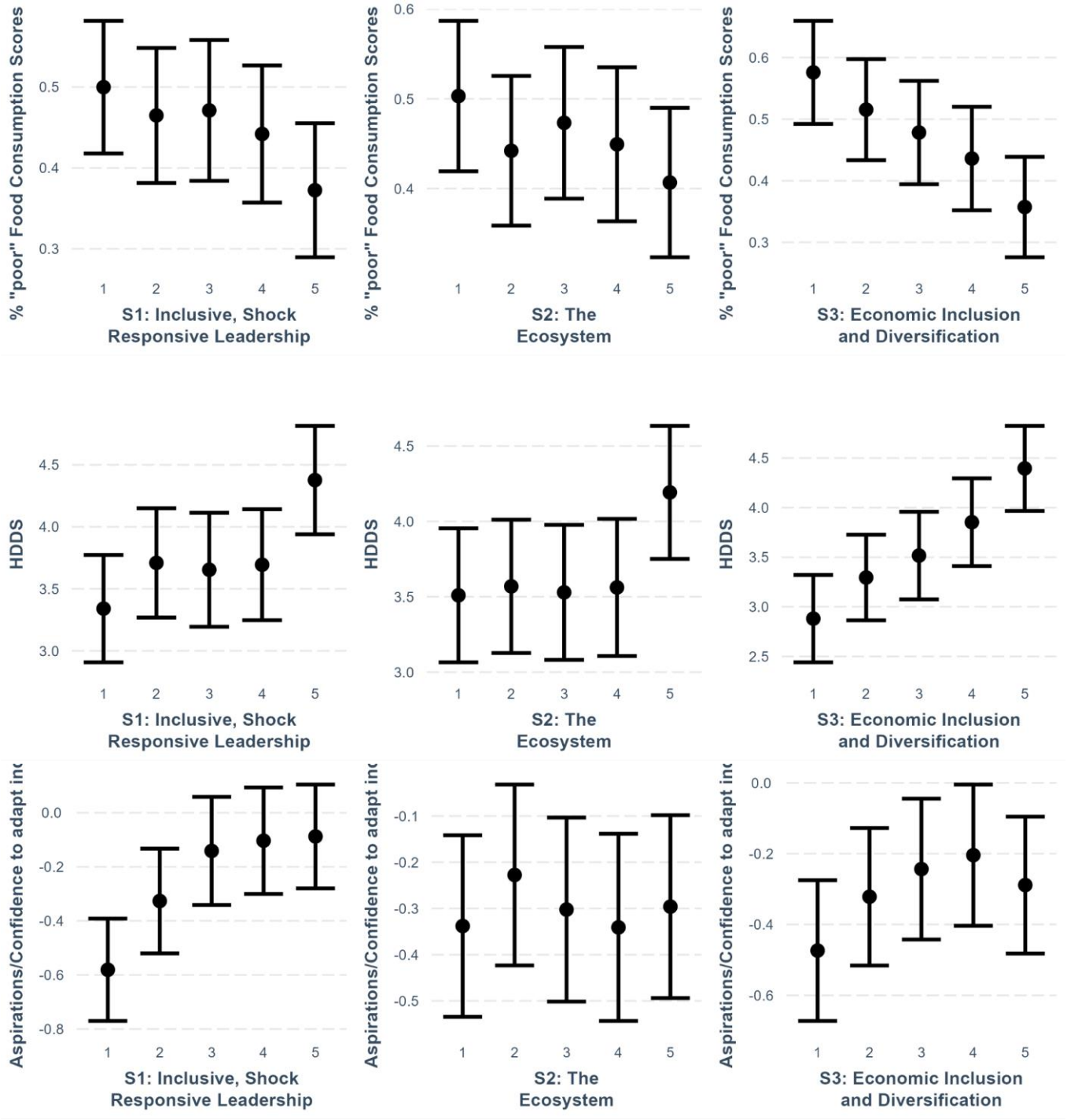
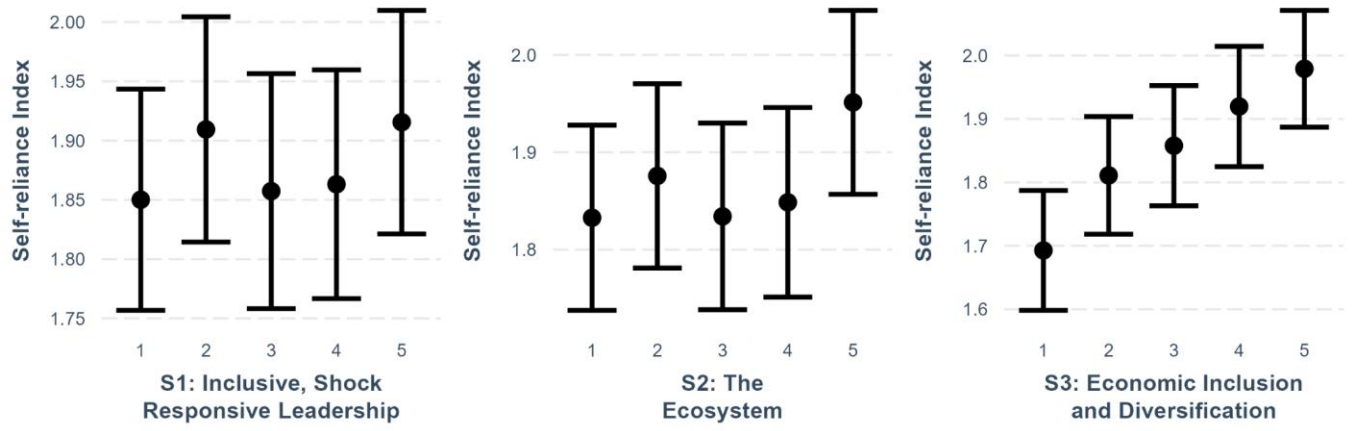


Figure 110: Weights for Indicators in Economic Inclusion & Diversification System



Further Validation of the Resilience Spectrum Score




Self-reliance Index
2.00
1.95
1.90
1.85
1.80
1.75
1 2 3 4 5
S1: Inclusive, Shock Responsive Leadership
Self-reliance Index
2.0
1.9
1.8
1 2 3 4 5
S2: The Ecosystem
Self-reliance Index
2.0
1.9
1.8
1.7
1.6
1 2 3 4 5
S3: Economic Inclusion and Diversification

APPENDIX III: SUPPLEMENTARY FINDINGS

Below we include several supplemental findings.

Figure 111: Clusters where Minority Households were Identified for the Sample

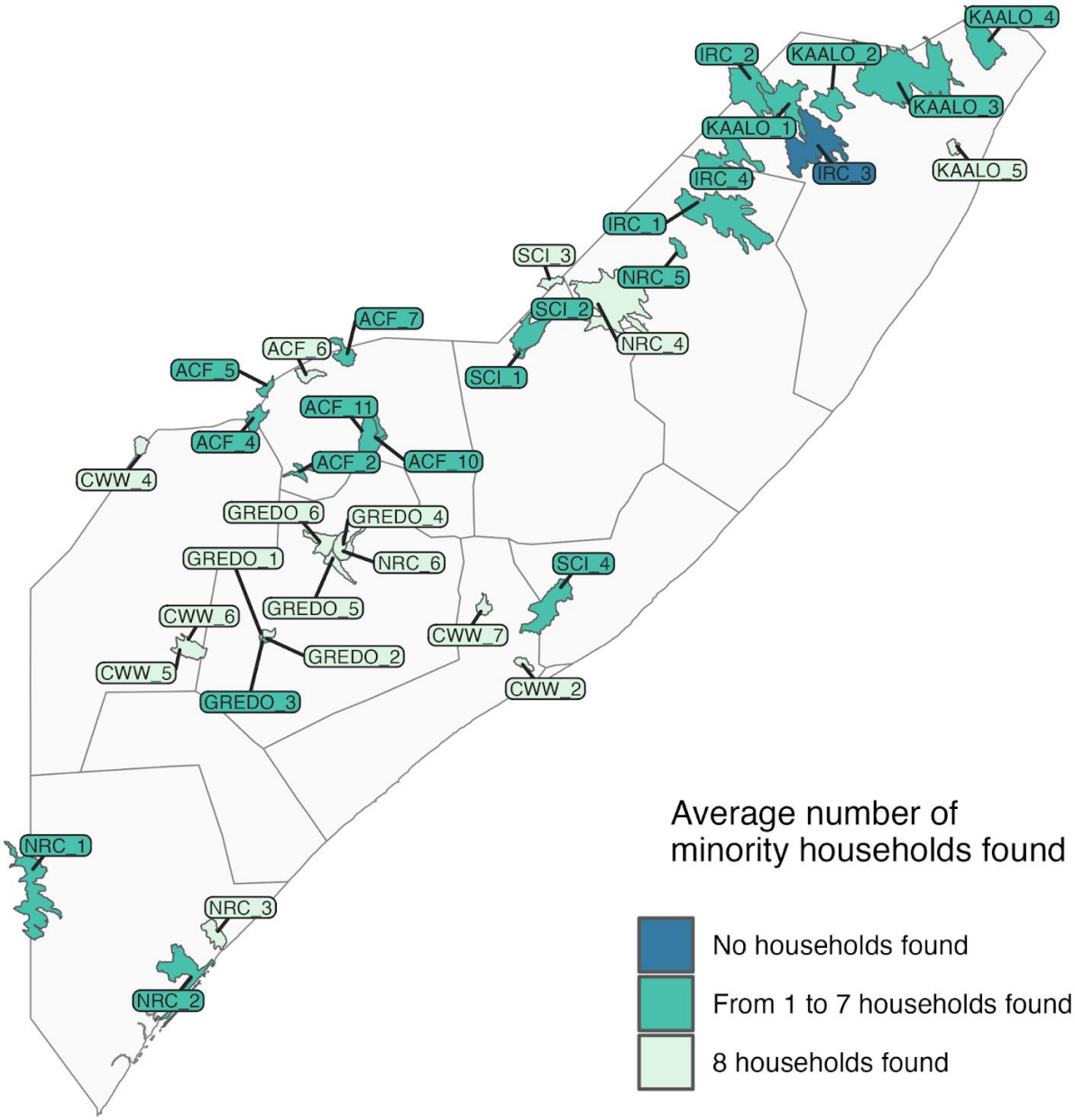


Figure 112: Education Level of Head of Household

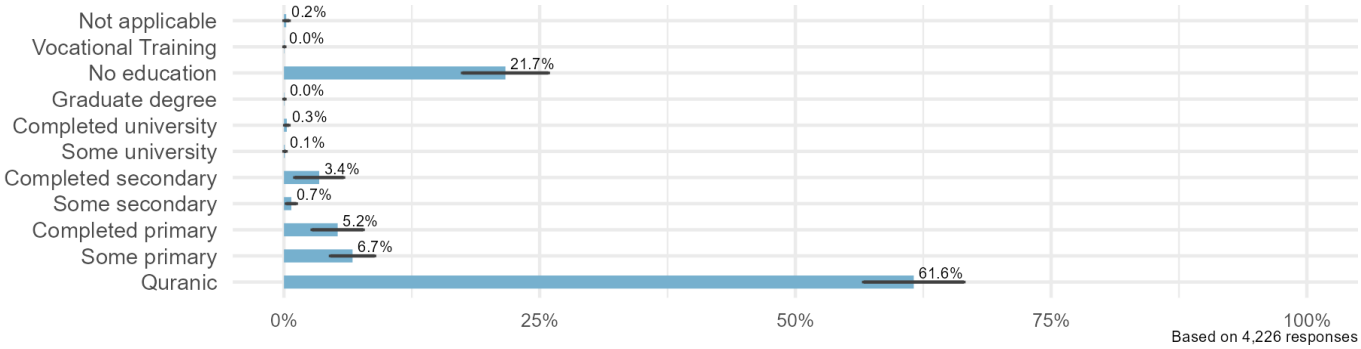


Figure 113: Social Capital within the Comunity for Urban Areas

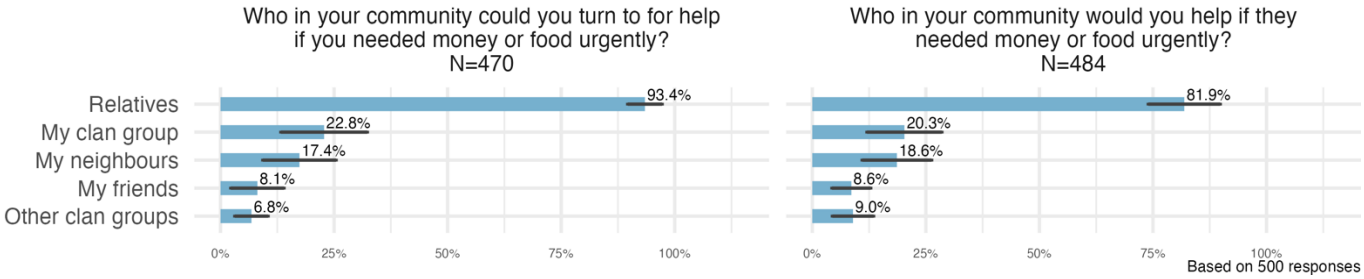


Figure 114: Social Capital Outside of the Community for Urban Areas

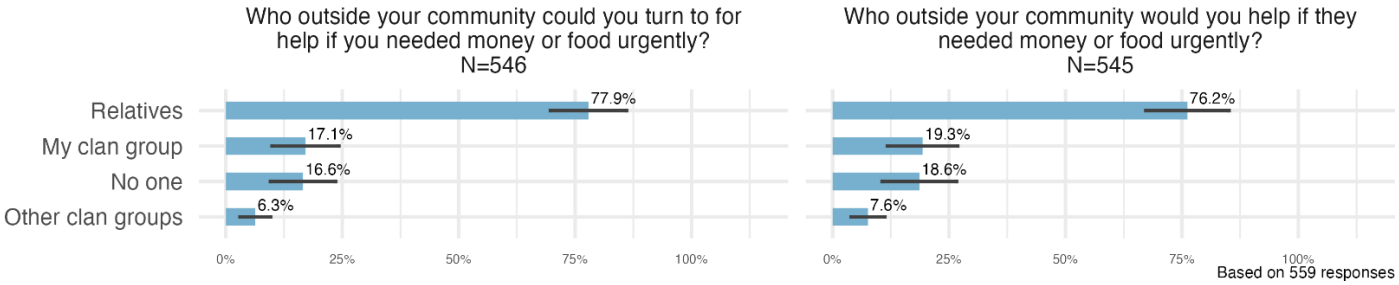


Figure 115: Social Capital within the Community for non-Urban Areas

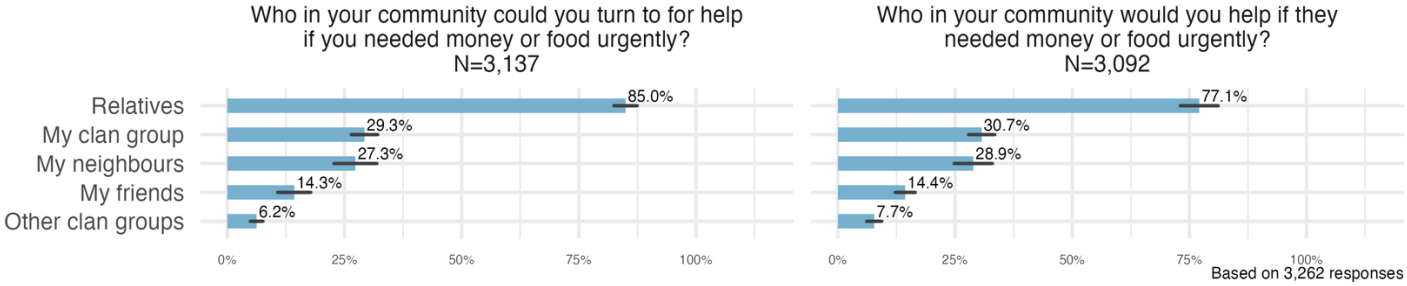


Figure 116: Social Capital Outside of the Community for non-Urban Areas

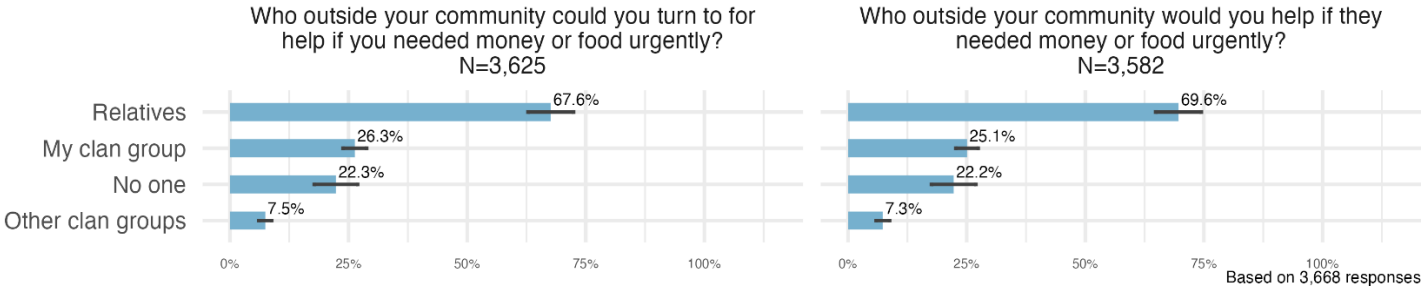


Table 29: BRCiS Logframe Outcomes by Livelihood Zone

Outcome	Urban	Pastoral	Agro pastoral	Riverine	Coastal fishery
Percentage of households in need of humanitarian assistance according to IPC levels 3+	61.19% [51.7 - 70.7] (563)	52.54% [44.4 - 60.7] (1,423)	54.96% [50.4 - 59.5] (1,901)	56.07% [49.5 - 62.7] (316)	57.76% [45.4 - 70.1] (90)
% Household in the community that are displaced due to shocks	---	---	---	---	---
% of communities that have achieved at least "Medium Resilience" on the ARC-D scale, disaggregated by shock type reported in the ARC-D tool	*Included here due to sample size limitations*				
% Consistently available and accessible water source that produces 15 liters per day per person	28.68% [20.7 - 36.6] (552)	26.00% [18.4 - 33.6] (1,405)	12.88% [10.0 - 15.8] (1,887)	19.73% [14.6 - 24.9] (316)	0.73% [-0.7 - 2.2] (90)
Female headed: TANGO Bonding Social Capital Index (0-6)	2.36 [2.1 - 2.6] (375)	1.87 [1.6 - 2.2] (881)	2.41 [2.3 - 2.6] (1,036)	2.56 [2.4 - 2.8] (137)	2.23 [1.8 - 2.7] (55)
Female headed: TANGO Bridging Social Capital Index (0-6)	2.11 [1.9 - 2.3] (375)	1.61 [1.4 - 1.9] (881)	2.12 [2.0 - 2.3] (1,036)	2.10 [1.9 - 2.4] (137)	1.76 [1.3 - 2.2] (55)
Female headed: TANGO Linking Social Capital Index (0-5)	0.34 [0.2 - 0.4] (375)	0.41 [0.3 - 0.5] (881)	0.41 [0.3 - 0.5] (1,036)	0.64 [0.5 - 0.8] (137)	0.10 [0.0 - 0.2] (55)
Male headed: TANGO Bonding Social Capital Index (0-6)	2.08 [1.9 - 2.3] (188)	2.43 [2.2 - 2.7] (542)	2.61 [2.4 - 2.8] (865)	2.52 [2.3 - 2.8] (179)	2.31 [1.8 - 2.8] (35)
Male headed: TANGO Bridging Social Capital Index (0-6)	1.82 [1.6 - 2.1] (188)	2.16 [2.0 - 2.3] (542)	2.25 [2.1 - 2.4] (865)	1.94 [1.7 - 2.2] (179)	1.79 [1.3 - 2.3] (35)
Male headed: TANGO Linking Social Capital Index (0-5)	0.72 [0.5 - 1.0] (188)	0.36 [0.2 - 0.5] (542)	0.66 [0.4 - 0.9] (865)	0.49 [0.4 - 0.6] (179)	0.20 [0.0 - 0.4] (35)
% Household have access to water for productive use in a normal year	31.89% [10.2 - 53.6] (157)	36.22% [22.8 - 49.6] (303)	32.30% [27.8 - 36.8] (1,569)	61.45% [53.9 - 69.0] (245)	0.00% [0.0 - 0.0] (4)

% Household with "acceptable" Food Consumption scores (FCS)	38.81% [29.3 - 48.3] (563)	47.46% [39.3 - 55.6] (1,423)	45.04% [40.5 - 49.6] (1,901)	43.93% [37.3 - 50.5] (316)	42.24% [29.9 - 54.6] (90)
Prevalence of moderate or severe food insecurity according to Food Insecurity Experience Scale (FIES)	73.50% [66.3 - 80.7] (563)	80.90% [77.1 - 84.7] (1,423)	76.71% [73.1 - 80.4] (1,901)	86.67% [79.9 - 93.4] (316)	89.81% [78.1 - 101.5] (90)
Reduced Coping Strategies Index	19.40 [16.6 - 22.2] (563)	15.50 [14.0 - 17.0] (1,423)	17.67 [16.9 - 18.4] (1,901)	19.03 [17.7 - 20.4] (316)	17.63 [15.1 - 20.2] (90)
% of households not using any "severe", "crisis" or "emergency" coping strategies in the Livelihoods Coping Strategies Index (LCSI)	13.23% [6.4 - 20.1] (356)	6.92% [4.6 - 9.3] (1,013)	4.44% [2.7 - 6.1] (1,520)	2.06% [0.6 - 3.5] (258)	11.92% [-0.3 - 24.1] (39)
% households use of soap or ash for cleaning hands	58.94% [44.9 - 73.0] (330)	70.08% [63.6 - 76.6] (893)	60.71% [54.6 - 66.8] (929)	68.90% [62.4 - 75.4] (221)	19.82% [-8.4 - 48.0] (15)
Average total agricultural production in last 12 months (kg)	49.08 [23.4 - 74.7] (24)	66.75 [20.7 - 112.8] (28)	74.89 [62.5 - 87.3] (401)	33.91 [24.7 - 43.1] (36)	39.00 [39.0 - 39.0] (1)
Average total yield (kg per hectare)	23.01 [11.3 - 34.7] (17)	80.14 [71.5 - 88.8] (20)	48.98 [37.3 - 60.6] (280)	18.30 [12.8 - 23.8] (33)	19.50 [19.5 - 19.5] (1)
Average goats weekly milk production per goat	2.04 [1.0 - 3.1] (92)	1.07 [0.8 - 1.3] (571)	2.21 [1.6 - 2.9] (343)	3.67 [2.0 - 5.3] (56)	0.05 [0.1 - 0.1] (1)
Average monthly income in the last year per income earner (USD)	121.60 [102.4 - 140.8] (312)	121.88 [106.3 - 137.4] (774)	77.32 [64.4 - 90.2] (1,207)	111.91 [93.7 - 130.1] (227)	61.71 [50.8 - 72.6] (50)
% of households with more than one income source	11.15% [5.1 - 17.2] (563)	9.97% [4.7 - 15.2] (1,423)	18.70% [15.4 - 21.9] (1,901)	17.38% [11.5 - 23.3] (316)	17.90% [8.0 - 27.8] (90)
Self-reliance index	1.58 [1.4 - 1.7] (563)	1.71 [1.6 - 1.8] (1,423)	1.44 [1.4 - 1.5] (1,901)	1.48 [1.4 - 1.5] (316)	1.47 [1.4 - 1.6] (90)
Households that regularly save cash	0.94% [0.2 - 1.7] (556)	1.11% [-0.1 - 2.3] (1,398)	2.54% [1.2 - 3.8] (1,865)	1.09% [0.0 - 2.2] (314)	0.00% [0.0 - 0.0] (89)
% of female households involved in economic decision-making	96.09% [93.6 - 98.6] (360)	91.95% [88.5 - 95.4] (836)	92.57% [89.0 - 96.2] (982)	93.58% [89.7 - 97.4] (133)	97.51% [92.7 - 102.3] (54)
% of clients/households using formal financial services	0.45% [-0.2 - 1.1] (556)	0.21% [-0.1 - 0.5] (1,398)	0.47% [0.2 - 0.8] (1,865)	0.83% [-0.1 - 1.8] (314)	0.00% [0.0 - 0.0] (89)

Table 30: BRCiS Logframe Indicators for Female Headed Households

Outcome	Mean	Upper CI	Lower CI	N
% Household with "poor" or "borderline" Food Consumption scores (FCS)	60.11%	55.64%	64.41%	2,484
% Household in the community that are displaced due to shocks	---	---	---	---
% Consistently available and accessible water source that produces 15 liters per day per person	25.70%	21.95%	29.85%	2,459
Female headed: TANGO Bonding Social Capital Index (0-6)	2.22	2.10	2.35	2,484
Female headed: TANGO Bridging Social Capital Index (0-6)	1.95	1.84	2.07	2,484
Female headed: TANGO Linking Social Capital Index (0-5)	0.44	0.38	0.50	2,484
% Household have access to water for productive use in a normal year	36.46%	29.42%	44.14%	1,215
% Household with "acceptable" Food Consumption scores (FCS)	39.89%	35.59%	44.36%	2,484
Reduced Coping Strategies Index	17.29	16.21	18.36	2,484
% of households not using any "severe", "crisis" or "emergency" coping strategies in the Livelihoods Coping Strategies Index (LCSI)	9.14%	6.82%	12.16%	1,850
% households use of soap or ash for cleaning hands	58.20%	54.07%	62.21%	1,388
Average total agricultural production in last 12 months (kg)	60.65	50.59	70.71	252
Average total yield (kg per hectare)	45.95	32.90	59.00	174
Average goats weekly milk production per goat	1.70	1.22	2.18	599
Average monthly income in the last year per income earner (USD)	91.19	84.70	97.68	1,464
% of households with more than 1 income source	11.04%	8.71%	13.90%	2,484
Self-reliance index	1.82	1.77	1.87	2,484
Households that regularly save cash	1.63%	1.04%	2.54%	2,454
% of female households involved in economic decision-making	93.92%	92.35%	95.19%	2,365
% of clients/households using formal financial services	0.52%	0.23%	1.13%	2,454

Table 31: KPI 4 Indicators by Livelihood Zone

Outcome	Urban	Pastoral	Agro pastoral	Riverine	Coastal fishery
TANGO Bonding Social Capital Index	2.23 [2.1 - 2.4] (563)	2.04 [1.8 - 2.3] (1,423)	2.49 [2.4 - 2.6] (1,901)	2.54 [2.4 - 2.7] (316)	2.26 [1.9 - 2.6] (90)
TANGO Bridging Social Capital Index	1.98 [1.8 - 2.2] (563)	1.78 [1.6 - 2.0] (1,423)	2.17 [2.0 - 2.3] (1,901)	2.01 [1.8 - 2.2] (316)	1.77 [1.4 - 2.1] (90)
TANGO Linking Social Capital Index	0.60 [0.4 - 0.8] (563)	0.45 [0.3 - 0.6] (1,423)	0.56 [0.4 - 0.7] (1,901)	0.64 [0.5 - 0.8] (316)	0.18 [0.1 - 0.3] (90)
Utilizing coping strategies of either increasing savings or putting aside grains/fodder	3.58% [0.1 - 7.0] (540)	2.83% [1.7 - 4.0] (1,378)	10.16% [7.5 - 12.9] (1,830)	7.94% [5.2 - 10.7] (310)	4.12% [-1.5 - 9.7] (90)
Average perceived severity of impact on food consumption from shocks experienced (1-4)	3.47 [3.3 - 3.6] (469)	3.62 [3.6 - 3.7] (1,280)	3.54 [3.5 - 3.6] (1,870)	3.76 [3.7 - 3.8] (316)	3.54 [3.4 - 3.7] (90)
Average perceived severity of impact on income from shocks experienced (1-4)	3.52 [3.4 - 3.6] (471)	3.67 [3.6 - 3.7] (1,281)	3.53 [3.5 - 3.6] (1,870)	3.78 [3.7 - 3.9] (316)	3.52 [3.4 - 3.6] (90)
Average perceived severity of impact on water from shocks experienced (1-4)	3.72 [3.5 - 4.0] (64)	3.35 [3.2 - 3.5] (408)	3.41 [3.3 - 3.6] (261)	3.19 [3.0 - 3.4] (72)	3.69 [3.5 - 3.9] (25)
Average perceived severity of impact on health from shocks experienced (1-4)	3.22 [3.1 - 3.4] (469)	3.49 [3.4 - 3.6] (1,281)	3.40 [3.3 - 3.5] (1,866)	3.65 [3.6 - 3.7] (316)	3.59 [3.5 - 3.7] (89)
% Access to early warning information for natural hazards	0.49 [0.4 - 0.6] (563)	0.46 [0.4 - 0.5] (1,423)	0.60 [0.5 - 0.7] (1,901)	0.85 [0.8 - 0.9] (316)	0.41 [0.3 - 0.5] (90)
Ability of household to recover from shocks (1-5)	1.35 [1.0 - 1.7] (522)	1.45 [1.2 - 1.7] (1,385)	1.61 [1.5 - 1.7] (1,880)	1.61 [1.3 - 1.9] (316)	1.73 [1.5 - 2.0] (90)
% Household participating in any of the following activities: soil conservation activities, flood diversion structures (i.e., protection of land/infrastructure from flooding), planting trees on communal land, or improving access to health services	0.97% [0.4 - 1.5] (563)	4.13% [1.9 - 6.4] (1,423)	14.40% [8.6 - 20.2] (1,901)	5.36% [2.5 - 8.2] (316)	5.10% [0.0 - 10.2] (90)
% Access to improved water source	84.73% [73.0 - 96.4] (563)	90.72% [89.1 - 92.3] (1,423)	80.76% [78.3 - 83.3] (1,901)	71.52% [66.0 - 77.0] (316)	91.45% [85.3 - 97.6] (90)
% Access to source on the household premises or within a 30-minute round trip	86.48% [81.3 - 91.6] (502)	90.05% [88.2 - 91.9] (1,283)	65.98% [62.0 - 69.9] (1,587)	74.04% [69.3 - 78.8] (307)	72.75% [60.9 - 84.6] (60)

% Consistently available and accessible water source that produces 15 liters per day per person	28.68% [20.7 - 36.6] (552)	26.00% [18.4 - 33.6] (1,405)	12.88% [10.0 - 15.8] (1,887)	19.73% [14.6 - 24.9] (316)	0.73% [-0.7 - 2.2] (90)
Number of income sources	1.03 [1.0 - 1.1] (563)	1.01 [0.9 - 1.1] (1,423)	1.23 [1.2 - 1.3] (1,901)	1.17 [1.1 - 1.2] (316)	1.18 [1.0 - 1.3] (90)
Number of categories of assets household owns	4.50 [4.2 - 4.8] (563)	4.69 [4.2 - 5.2] (1,423)	7.07 [6.7 - 7.4] (1,901)	7.88 [7.3 - 8.4] (316)	4.07 [3.5 - 4.6] (90)
Number of household members contributing to income	1.05 [1.0 - 1.1] (509)	1.04 [0.9 - 1.2] (1,326)	1.61 [1.5 - 1.7] (1,744)	2.09 [1.9 - 2.3] (312)	1.15 [1.0 - 1.3] (71)
Reduced Coping Strategies Index	19.40 [16.6 - 22.2] (563)	15.50 [14.0 - 17.0] (1,423)	17.67 [16.9 - 18.4] (1,901)	19.03 [17.7 - 20.4] (316)	17.63 [15.1 - 20.2] (90)
% Have learned in the past year a new skill to respond to shocks	6.70% [2.0 - 11.4] (563)	4.70% [2.4 - 7.0] (1,423)	5.08% [3.3 - 6.8] (1,901)	5.27% [2.5 - 8.0] (316)	2.06% [-2.0 - 6.1] (90)
% That have increased savings as coping mechanism to respond to shocks	2.96% [-0.5 - 6.4] (536)	1.75% [0.9 - 2.6] (1,366)	6.94% [4.5 - 9.4] (1,823)	7.19% [4.6 - 9.8] (310)	4.29% [-1.5 - 10.1] (88)

Figure 117: Shock Responsive, Inclusive Leadership System across BRCiS III Communities

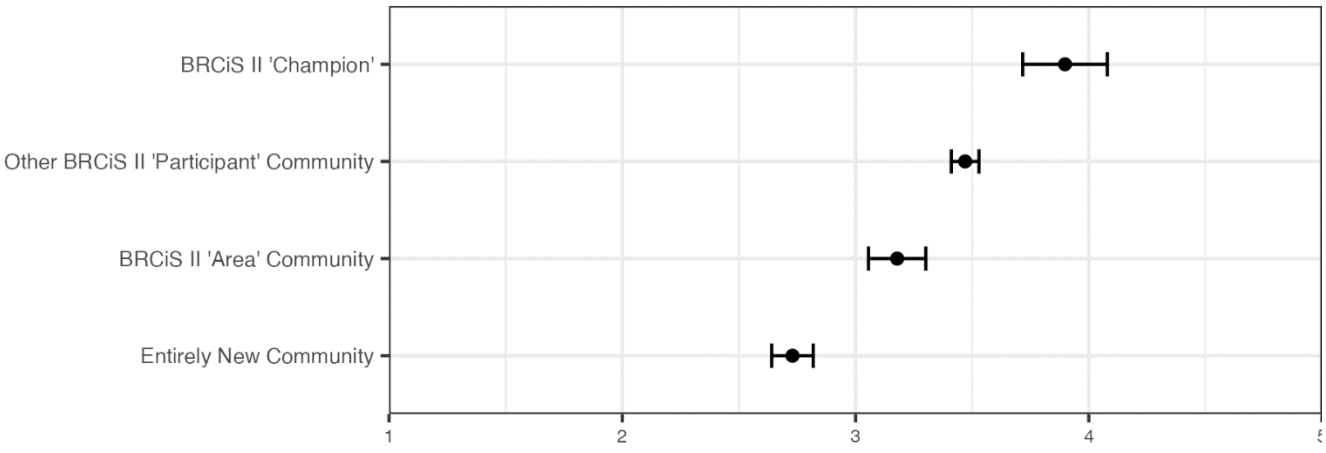


Figure 118: The Natural Ecosystem across BRCiS III Communities

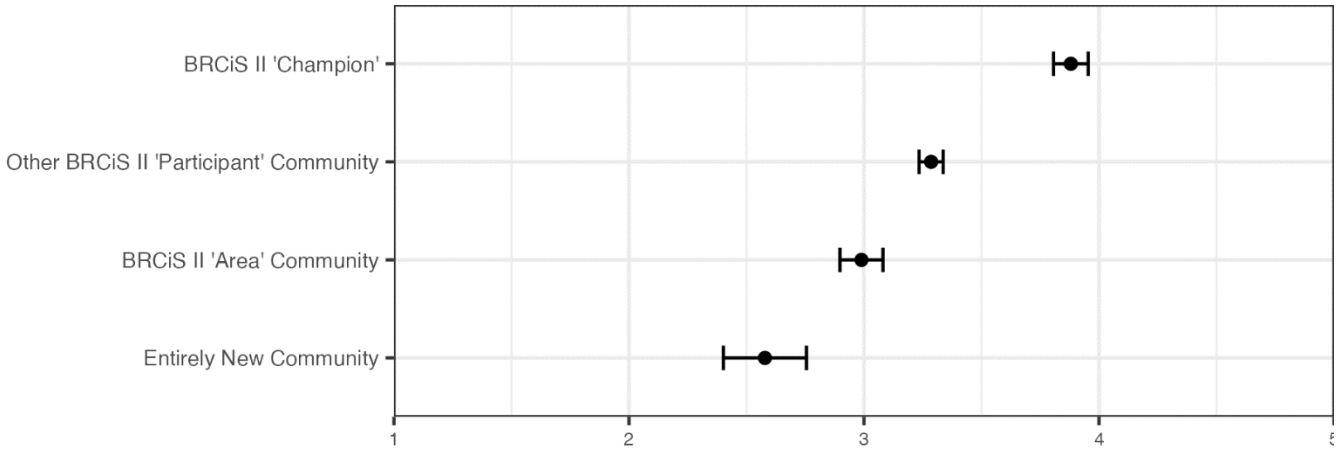


Figure 119: The Market System & Financial Inclusion System across BRCiS III Communities

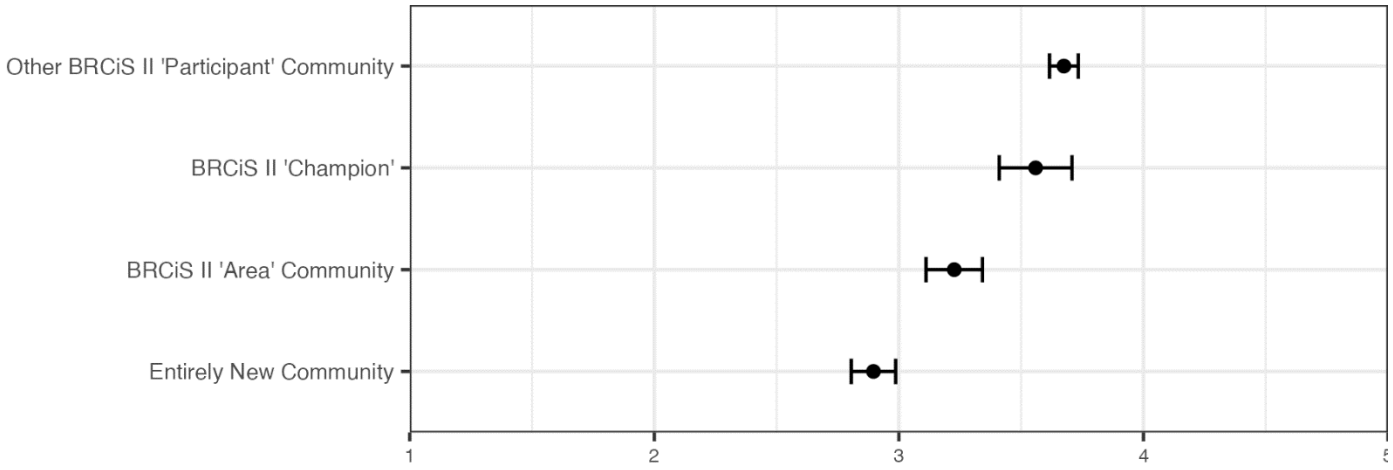


Figure 120: Relationship between Resilience Capacities and Food Security

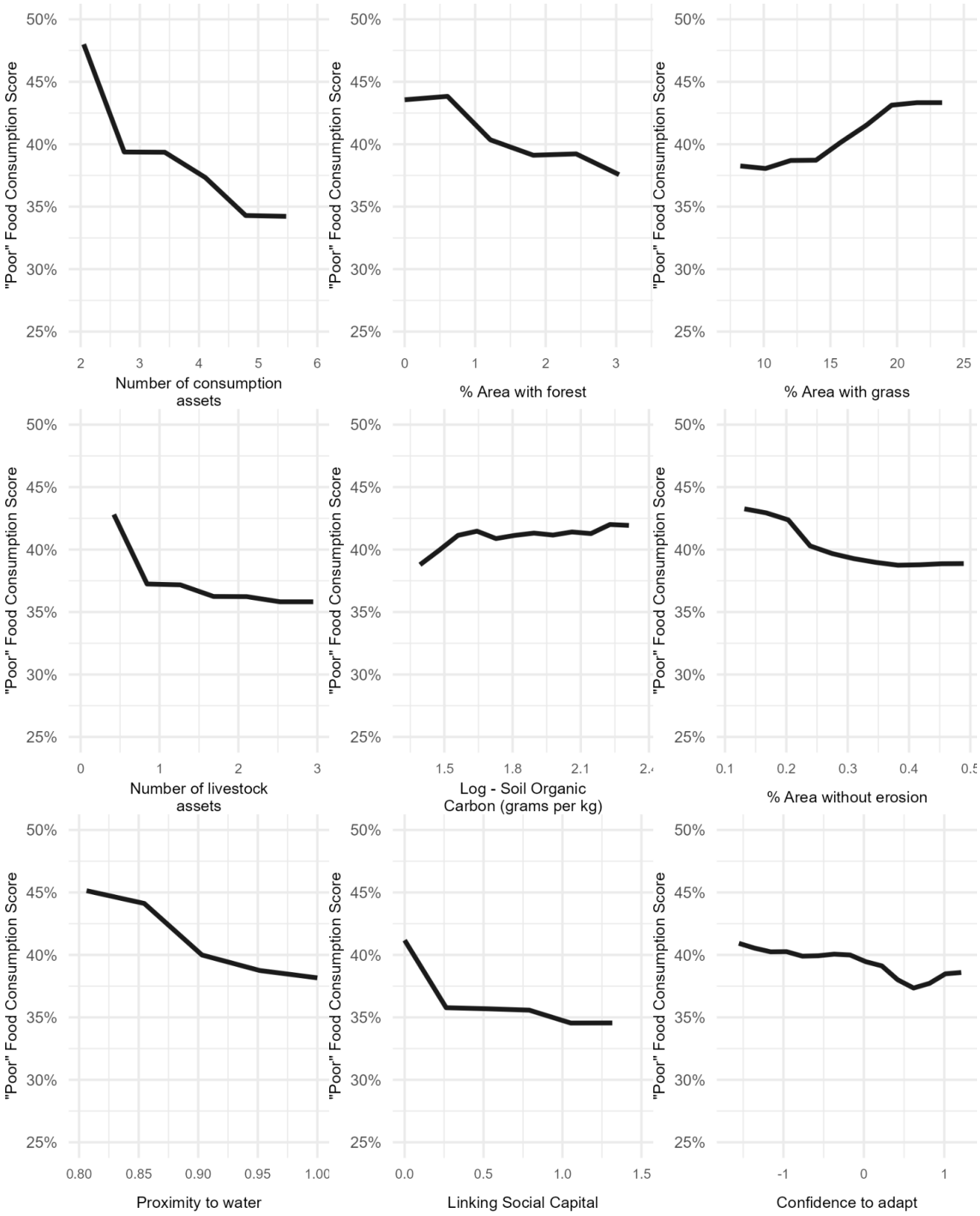
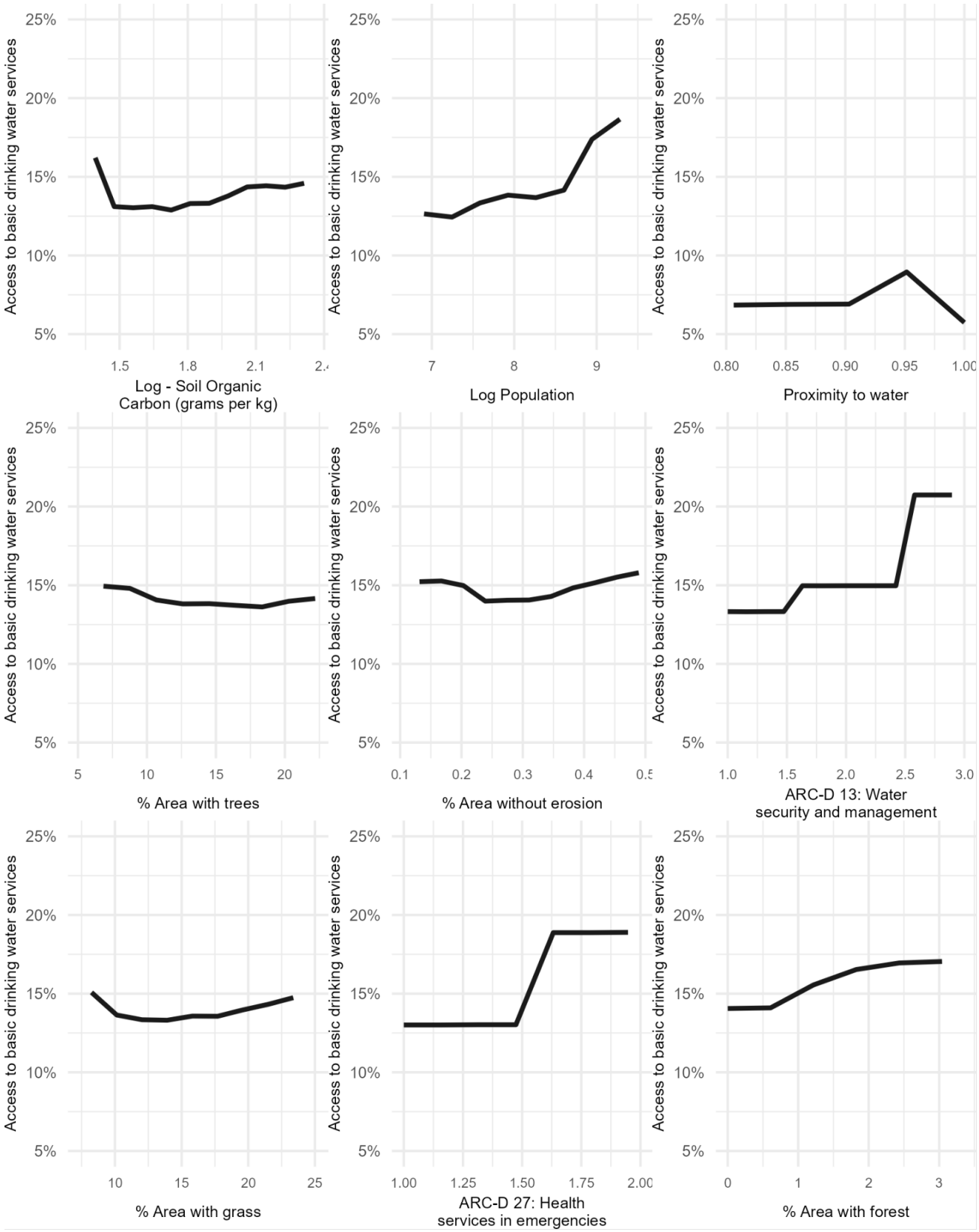


Figure 121: Relationship between Resilience Capacities and Access to Drinking Water



APPENDIX IV: BRCiS III RESILIENCE MEASUREMENT TERMS OF REFERENCE

BRCiS Consortium

Consultancy to conduct Mixed-Method Resilience Measurement

for the Building Resilient Communities in Somalia (BRCiS) III Project

Terms of Reference

1. Background of assignment

Building Resilient Communities in Somalia (BRCiS) is a consortium of national and international organizations – Action Against Hunger (ACF), CESVI, Concern Worldwide (CWW), GREDO, the International Rescue Committee (IRC), KAALO, Save the Children, and Norwegian Refugee Council (NRC) as lead agency. BRCiS' objective is to work across the humanitarian-development divide, supporting marginalized communities in disaster-prone, rural Somalia to become more resilient to shocks and stressed, including as a result of climate change. BRCiS approach is contextually adaptive, focused on the specific shocks, needs, and priorities of individual communities. BRCiS was established in 2013 and is now implementing projects funded by multiple humanitarian and development donors in more than ten regions of Somalia. [50]

BRCiS Consortium is implementing BRCiS III, a five-year resilience project funded by FCDO, in more than twenty districts in South and Central Somalia. The long-term objective of BRCiS III project is to contribute to reduced severity of humanitarian needs and displacement in Somalia by supporting marginalized communities in disaster-prone, rural Somalia to have sufficient social, financial, and environmental assets to better cope with shocks and stresses and adapt to the effects of climate change. To achieve this outcome, BRCiS will implement a series of layered and sequenced, mutually reinforcing outputs designed to strengthen the systems most likely to support rural communities in Somalia to cope with high impact shocks and stresses in the short term and adapt to climate change in the medium to longer term. BRCiS III is designed and delivered at area-level with a focus on those that are most vulnerable and marginalized. This means that investments are made from a multi-sectoral perspective to generate systemic change and transformational resilience gains. These systems are local leadership systems that dictate how communities plan for shocks and distribute assistance; the natural ecosystem, capable of providing life- and livelihood-sustaining ecosystem services like water, healthy soil and productive land and market systems that provide equal, inclusive economic opportunities, financial assets, and inclusion.

[50] https://www.nrc.no/what-we-do/brcis-consortium---building-resilient-communities-in-somalia/

This ToR outlines the objectives, methods, and deliverables required for this study.

2. Objectives, Scope of Work and BRCiS III Resilience Measurement Methodology

Resilience is the ability of a household, community, and systems to cope with, adapt to, and recover from adverse shocks and stresses, such as natural disasters, economic or social crises, or other emergencies. Measuring community resilience is important for understanding the strengths and weaknesses (resilience capacities) of a community in the face of shocks and stresses, and for identifying areas for improvement (resilience pathways).

BRCiS has already designed the basis of its resilience measurement methodology for the BRCiS III project. BRCiS will adopt an aggregated, mixed-method measurement methodology for assessing the extent to which individual HHs, communities, and the systems on which they rely become more resilient to shocks and stresses. The planned approach includes a three-part assessment approach (household, community, and environment) that is then aggregated into a composite "Resilience Spectrum" score. This will include the following data collection approaches:

1. Household resilience measurement (baseline, midline, endline): BRCiS III will use household quantitative surveys to assess resilience capacities at the individual household level. BRCiS has an existing household survey tool from past programs that draws on the TANGO resilience measurement framework.[51] The consultants will review the existing household resilience measurement tools/questionnaires, support roll out the baseline, midline, and endline surveys and lead the household baseline, midline, and endline data analysis and reporting.

2. Community resilience measurement (baseline, midline, endline): BRCiS III will use the Assessment of Resilience of Communities to Disaster (ARC-D) tool[52] to assess the collective resilience capacities of communities where the project works. This process is closely integrated with BRCiS III's community engagement protocols [53]. GOAL[54], the agency developed the ARC-D tool, will provide the necessary technical support and guidance. The consultants will familiarize themselves with the ARC-D tool, review and contextualize the ARC-D questionnaire into the other resilience measurement surveys including household resilience measurement, lead the ARC-D baseline, midline, and endline data analysis and reporting.

3. Ecosystem Resilience measurement (baseline, midline, endline): BRCiS III will assess each ecosystems' natural characteristics and dynamics of human access and use such as status of degradation, prevalence of resource-based conflict, and other dynamics pertaining to use of these resources, including social and

[51] https://www.tangointernational.com/resilience.html
[52] https://www.goalglobal.org/other-programme-priorities/disaster-resilience/
[53] https://p-fim.org/
[54] https://www.goalglobal.org/who-we-are/

gender-based inclusion/exclusion through BRCiS' partnership with the World Agroforestry Centre/ICRAF[55]. The resilience measurement consultants will contribute to analysis as required.

While the findings of each of the three levels of BRCiS' resilience measurement will be individually compelling, BRCiS wishes to further aggregate these three analyses into a composite system-level resilience measurement methodology that we have termed the "Resilience Spectrum." BRCiS envisions that this methodology will include individual scores on a scale of 1 to 5 (one being least resilient/stable – five being most resilient/stable) for each of the three main systems BRCiS III intends to influence: Inclusive, Shock Responsive Leadership, the Ecosystem, and Economic Inclusion and Diversification (as a subset of the market system) and that data from the three data collection approaches detailed above will be mapped across these systems to inform the scoring. BRCiS would like to then weight these systems by anticipated impact and aggregate them for a final score per target area between one and five. The major work of the consultant(s) will be to develop this Resilience Spectrum methodology and operationalize it as baseline.

The analysis of all three components of the assessment and the aggregated Resilience Spectrum Scoring will be presented in one single report at baseline, midline, and endline. Some of the project learning and research questions to answer using the baseline, midline and endline surveys include:

- What is the profile of BRCiS III project target areas, including demographic characteristics, socio-economic status, cultural norms, and other relevant contextual factors, and how does this profile impact the design and implementation of the project?
- What types of shocks and stress do target communities experience the most? What is the frequency, duration, and severity (only for recurrent and shocks of greatest impact) of these shocks and stresses?
- How do specific shocks and stresses differentially affect vulnerable groups and households within communities (particularly marginalized groups, women, elderly, and disabled persons) within households? In what ways should resilience-building interventions be tailored to them?
- How do households in target communities typically prepare to respond to and recover from various shocks? What are the primary coping strategies used, how do they vary over time (seasonality), are they positive or negative?
- What are existing levels of resilience capacities in target communities? What are the factors that contribute to or detract from community resilience?
- What are the resilience pathways for improving target communities' resilience level? Which resilience capacities are critical to mitigate the negative effect of shocks on wellbeing?
- How do BRCiS activities contribute to increased resilience in the communities it serves?
- Which activities have the most positive and lasting impact on resilience?
- Which resilience capacities matter in BRCiS target areas to improve the design of future resilience-building interventions?

[55] https://www.worldagroforestry.org/

The BRCiS Consortium is looking to engage with a team of consultants for the below objectives:

1. Lead on the household resilience measurement survey using TANGO resilience measurement framework (Household Baseline, Midline, and Endline surveys): The consultants are required to do the following tasks:
    - Review existing household resilience measurement tools, suggesting any necessary changes in collaboration with BRCiS Consortium.
    - Ensure that TANGO household baseline survey included the required information for UK international climate finance (ICF) result especially *key performance indicator 4* (KPI 4)[56], "*Number of people whose resilience has been improved as a result of ICF*" as per 3As model[57].
    - Support the roll out of the household baseline, midline, and endline surveys including training the BRCiS Consortium Members on the baseline, midline, and endline data collection tools.
    - Provide necessary technical guidance and support during the baseline, midline, and endline surveys data collection.
    - Clean the collected household baseline, midline, and endline surveys data, analyze it, and prepare the household resilience report disaggregated by target area (district level).
2. Support the community resilience measurement using ARC-D tool (Community Baseline, Midline, and Endline Surveys): GOAL, (the agency which developed the ARC-D tool), will provide the necessary technical support and guidance required for the ARC-D assessment. The data collection will be conducted by the BRCiS field teams. The consultants are required to do the following tasks:
    - Review and contextualize the ARC-D tool questionaires and do the necessary changes in collaboration with GOAL and BRCiS Consortium.
    - Support the roll out of the community baseline, midline, and endline surveys.
    - Clean collected community baseline, midline, and endline surveys data (ARC-D), analyze it and prepare the community resilience report disaggregated by target area as per ARC-D resilience spectrum.
3. Engage with the World Agroforestry Centre/ICRAF to understand the ecosystem resilience measurement framework and ecosystem baseline, midline, and endline reports.
4. Review and improve the final Resilience Spectrum scoring qualitative methodology for holistic system resilience measurement based on aggregation of household (TANGO), community (ARC-D), and environmental (Ecosystem) analysis and operationalize it in the baseline, midline, and endline surveys. BRCiS is seeking a compiled baseline/midline/endline survey report that will include all household,

[56] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/835527/KPI-4-number-people-resilience-improved1.pdf
[57] https://odi.org/en/publications/the-3as-tracking-resilience-across-braced/

community, and environmental baseline components within one narrative rather than separate reports from the consultant.

5. Develop user friendly interactive dashboard to visualize the baseline survey findings for all BRCiS target areas including target areas resilience spectrum, existing resilience capacities, and recommended resilience pathways for each community for future reference and update this dashboard in midline and endline.

4. Deliverables

The expected outcomes of the BRCiS III baseline, midline, and endline resilience measurement study are:

- Inception report that outlines the developed resilience spectrum, research questions, detailed sampling and data analysis methods, deliverables and detailed workplan.
- Revised data collection tools for both household (TANGO) and community (ARC-D) surveys.
- 3 pagers on Composite system-level resilience measurement methodology termed “Resilience Spectrum”.
- Baseline, Midline, and Endline surveys training tool kit and one pager
- Final baseline, midline, and endline 5 pager reports per project target area (approximately a total of 30 target areas), resulting from the joint analysis of the HH survey, the ARC-D and the ecosystem information (doc and ppt).
- Executive summary of the final baseline, midline, and endline reports (15 pagers each survey) in both English and Somali for local actors’ consumption.
- User friendly dashboard to track target areas’ resilience and baseline, midline, endline surveys’ findings.
- Baseline, midline, and endline Survey Data sets

Baseline Survey Deliverables and Tentative Timeline

Deliverables	**Number of consulting days allocated**	***Tentative Timeline***
Inception Report	10	Oct 2023
Revised baseline data collection tools	10	Oct 2023
Baseline survey training	2	Oct 2023
Household and Community Baseline data collection by BRCiS Consortium members and Ecosystem baseline by BRCiS Consortium members and ICRAF	0	Nov and Dec 2023
Household and Community baseline surveys data Cleaning and analysis	30	Jan 2024

Report Writing (doc and ppt format)	20	Feb 2024
Feedback-sharing and revision of reports	5	Feb 2024
User friendly interactive dashboard	15	March 2024
Baseline survey findings Presentation and Dissemination workshops	3	April 2024
Sum of total days anticipated	***95 days***	All activities to be completed before end of April 2024

Midline Survey Deliverables and Tentative Timeline

Deliverables	**Number of consulting days allocated**	***Tentative Timeline***
Inception Report	10	Oct 2025
Revised midline data collection tools	5	Oct 2025
Midline survey training	2	Oct 2025
Household and Community Midline data collection by BRCiS Consortium members and Ecosystem midline data by BRCiS Consortium members and ICRAF	0	Nov and Dec 2025
Household and Community midline surveys data Cleaning and analysis	30	Jan 2026
Report Writing (doc and ppt format)	20	Feb 2026
Feedback-sharing and revision of reports	5	Feb 2026
Updating baseline interactive dashboard	5	March 2026
Midline survey findings Presentation and Dissemination workshops	3	April 2026
Sum of total days anticipated	***80 days***	All activities to be completed before end of April 2026

Endline Survey Deliverables and Tentative Timeline

Deliverables	**Number of consulting days allocated**	***Tentative Timeline***
Inception Report	10	Oct 2027
Revised endline data collection tools	5	Oct 2027
Endline survey training	2	Oct 2027
Household and Community Endline data collection by BRCiS Consortium members and Ecosystem Endline data by BRCiS Consortium members and ICRAF	0	Nov and Dec 2027
Household and Community endline surveys data Cleaning and analysis	30	Jan 2028
Report Writing (doc and ppt format)	20	Feb 2028
Feedback-sharing and revision of reports	5	March 2028
Updating midline interactive dashboard	5	April 2028
Midline survey findings Presentation and Dissemination workshops	3	May 2028
Sum of total days anticipated	***80 days***	All activities to be completed before end of May 2028

5. Supervisor

The supervisor of the consultant is the BRCiS M&E Manager. More generally, the Consultants will collaborate with the Consortium's management unit, FCDO programme team, FCDO MEL provider, and with relevant Consortium Members M&E and Project management Groups to produce and publish the commissioned deliverables.

6. **Estimated duration of the contract**

It is estimated that the contract will take approximately 255 working days between October 2023 and May 2028.

7. Official travel involved

This is primarily a home-based assignment, but the selected consultant is required to travel to the Somalia to present the final baseline, midline, and endline reports and interactive dashboard. The Consultants will cover all travel costs until they reach Mogadishu, including visa, tax, and flight costs, and NRC will support in country costs including transportation, security, accommodation, and meals.

8. Application Procedures and Requirements

The consulting firm interested are expected to provide following documentation:

a. A cover letter introducing the consultant. The cover letter should introduce the team composition and specify the role to be played by each team member.

b. A technical proposal of no more than 10 pages outlining how to execute the task with a clear framework, methodology and timelines. Proposed methodology should demonstrate a clear understanding of the ToR (Terms of Reference) (resilience measurement, sampling, data collection and analysis strategy/methods)

c. Resume of each team member

d. Evidence of experience conducting similar assignments (Samples of similar work) is required.

e. Proposed budget indicating consultancy fee, logistics cost and all other auxiliary costs in USD.

Qualifications or specialized knowledge and/or experience required

- An advanced university degree (Master's) in Quantitative & Qualitative Social Sciences, Economics, Econometric and cost analysis, Statistics, or a related technical field(s) is required. Ph.D. is preferred
- At least **8-10 years** of experience in **Resilience Measurement for climate resilience programmes or related projects.**
- Substantial research work in resilience or a related field with a geographical focus on Sub-Saharan Africa, preferably on the drylands of the Horn of Africa.
- Extensive experience both in qualitative and quantitative methods demonstrated through publications in resilience research or a related field.

- **Extensive knowledge in TANGO[58] resilience measurement framework and GOAL ARC-D toolkit[59] is required.**
- **Experience in 3As[60] resilience measurement framework, and UK International Climate Finance results [61]is an asset.**
- Intense methodological experience in both experimental and quasi-experimental evaluation methods, including specific expertise in statistical matching demonstrated through publications (ideally peer-reviewed).
- Previous experience in similar assignments in Somalia is an asset.
- **Previous experience designing and implementing panel studies is required**.

Submission

Consultant/firm that meet the requirements mentioned above are invited to submit detail technical proposal and financial proposal on or before **(5 weeks after ToR is published)** and should be addressed to so.procurement@nrc.no referencing **'Mixed-Method Resilience Measurement for the Building Resilient Communities in Somalia (BRCiS) III project'** in the subject of the email.

[58] https://www.tangointernational.com/resilience.html
[59] https://resiliencenexus.org/arc_d_toolkit/what-it-is/
[60] https://odi.org/en/publications/the-3as-tracking-resilience-across-braced/
[61] https://www.gov.uk/government/publications/uk-climate-finance-results