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Baseline Study of the Enhancing Resilience and Economic Growth in Somalia Program

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Save the Children

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TECHNICAL ASSISTANCE to NGOs

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List of Acronyms

A/PFS	Agro/pastoralist field school
AMISOM	African Union Mission in Somalia
BCC	Behavior change communication
CAP	Community action plans
CCA	Climate change adaptation
CFW	Cash for work
CHP/W	Community health promoter/worker
CLTS	Community Led Total Sanitation
CRS	Catholic Relief Services
CSI	Coping strategies index
CVCA	Climate vulnerability and capacity analysis
(CM-)DRR	(Community-managed) disaster risk reduction
EHA	Essential hygiene action
ENA	Essential nutrition action
EW(S)	Early warning (system)
EWC	Early warning committee
FFP	Office of Food for Peace (USAID)
FFS	Farmer field school
FGD	Focus group discussion
HDDS	Household dietary diversity score
HDI	Human development index
HFIAS	Household food insecurity and access score
HFS	Household food security
HH	Household
IDPs	Internally displaced people
IGAs	Income generating activities
IP	Implementing partner
KII	Key informant interview
KM	Knowledge management
LBPN	Luuq Business Promotion Network
NERAD	Somaliland's National Environment Research and Disaster Preparedness and Management Authority
NRM	Natural resource management
ODA	Official development aid
ODK	Open Data Kit
OFDA	Office of Foreign Disaster Assistance (USAID)
PCA	Polychoric factor analysis
PDRAs	Participatory disaster risk assessments
PMERL	Participatory monitoring evaluation reflection and learning

PPP	Public private partnerships
PPS	Probability proportional to size
PROGRESS	Program to Enhance Resilience in Somalia (CRS)
PSGs	Peace-building and state-building goals
RC	Resilience committee
REAL	Resilience and Economic Activity in Luuq (WV)
SC(I)	Save the Children (International)
SFG	Somalia Federal Government
(S)GBV	(Sexual and) gender-based violence
SILC	Savings and internal lending committee
SO	Strategic objective
SomReP	Somalia Resilience Program
STORRE	Somalia Towards Reaching Resilience (CARE)
TANGO	Technical Assistance to Non-Governmental Organizations (TANGO)
ToC	Theory of change
TOPS	Technical and Operational Performance Support
TOT	Training of the trainers
TU/DRLA	Tulane University's Disaster Resilience Leadership Academy
UCT	Unconditional cash transfer
UN	United Nations
USAID	United States Agency for International Development
VC	Village council
VDC	Village development committee
VSLA	Village savings and loans association
WASH	Water, sanitation and hygiene
WV	World Vision

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Executive Summary

Study Overview

The *Enhancing Resilience and Economic Growth in Somalia Program* (2014-2017), supported by the USAID Office of Foreign Disaster Assistance (OFDA), Office of Food for Peace (FFP), and the East Africa Regional Mission (EA), with a combined total commitment of nearly $14 million, is designed to support and build resilience to recurrent shocks among target households and communities in Somalia. The program is carried out through distinct but complementary projects of three implementing partners (IPs): CARE, Catholic Relief Services (CRS), and World Vision (WV). The program divides the overarching goal into three interlinked purposes:

1. Increase the capacity of households and communities to adapt to recurrent shocks;
2. Build on the ecological, social, and economic capital of households and communities; and
3. Increase learning of communities, implementers, USAID, and stakeholders (with Tulane University).

The program approach is founded on integrated humanitarian-development programming and commits to understanding responses to shocks and improving the three resilience capacities: *absorptive* (the extent to which households and communities are able to minimize exposure to shocks and to recover quickly after exposure), *adaptive* (the ability of households and communities to respond to changing conditions by making active and informed choices about their lives and their diversified livelihood strategies), and *transformative* (broader system-level changes that enable sustained resilience through the support of functioning state and governance systems). The program focuses primarily on building absorptive and adaptive capacity, with a limited focus on transformative capacity. By supporting the three resilience capacities, the program works to increase resilience, defined as the ability to mitigate, adapt to, and recover from shocks and stresses.

This report presents the findings of the mixed-methods baseline study designed through a collaborative baseline workshop with program stakeholders in September 2015, and then conducted from March-May 2016, with study implementation and analysis guided by TANGO International. The study aims to measure household and community resilience while increasing local contextual understanding; additionally, the study aims to provide a baseline for key outcome and resilience indicators. It is a population-based study with three strata that correspond to the three project areas, and thus, the study does not provide beneficiary level indicators for the projects. The study builds upon TANGO's experience implementing similar resilience studies in Ethiopia, Uganda, Kenya, Niger, and Burkina Faso.

Methodology

The baseline study incorporates both quantitative and qualitative components. Through household and community survey modules, the quantitative component provides baseline estimates of program indicator values (reported in Appendix 2) and measures of household and community resilience capacities that are statistically representative of the project areas. The qualitative component aims to understand households' perceptions of the factors that impact their resilience and their reasons for adopting particular coping or adaption strategies to deal with recurrent shocks, as well as to further illuminate the quantitative results.

Quantitative data collection followed a two-stage cluster sampling design, stratified by the geographic operational areas of the three projects and aligned with FANTA Sampling Guidelines. Ultimately, 680 households were surveyed in each program area. This sample size is sufficiently large to permit the detection of a 20 percent decrease in food security between baseline and endline in each of the three project areas. Data analysis included weighting of data to adjust for unequal probabilities of selection. These weights accounted for the differences between the initial population estimates of villages used in the selection of villages and revised village population figures obtained during field work. Quantitative results presented in the report have been disaggregated according to project area and wealth category (poorest, middle, and richest). Wealth categories are terciles of the wealth index (computed following Demographic Health Survey guidelines), which is comprised of information about ownership of consumption assets, productive assets and livestock as well as housing, water and sanitation, and is considered a measure of household well-being.

The qualitative component focused on capturing information about resilience capacities at household, inter-household and community levels. Topical outlines were developed by TANGO in collaboration with USAID and IP staff. Researchers sought perspectives from men and women, and the research was carried out among a sub-set of communities included in the overall quantitative sample. Communities were randomly selected to represent all project districts and reflect the diversity of the project area. Data were captured using a matrix approach in order to enable identification of important patterns in responses and explanatory contextual information; this approach also allows triangulation of responses across the data sources. Qualitative researchers gathered data from a combination of focus group discussions (FGDs), key informant interviews (KIIs), and participatory tools. Six villages per project area were visited: with four FGDs conducted per village, FGD participants totaled 560 community members (48 percent female), as well as 12 KIIs per project area (47 percent female).

Several challenges were encountered in the implementation of the study that should be considered when interpreting the results. The scope of work called for the survey to serve dual purposes of measuring resilience indicators and providing baseline values for each distinct set of project indicators. The combination of these distinct purposes led to unavoidable compromises in the survey design, as well as a very long survey instrument. One of the compromises made was that questions related to women's empowerment were asked only of spouses of male heads of household, not any other women in the household. This limits the ability to generalize results to all females across the respective program areas. Additionally, there are two limitations related to the sampling. First, the survey sampled from the entire Beled Amiin community only to discover from CRS later that activities are implemented in one section of the community, but the households of Beled Amiin are still weighted to the larger area. TANGO has run analyses to check the results including and omitting this community; nonetheless, the weighting of this community should be kept in mind when interpreting indicator results for the entire sample. Secondly, the WV urban sample, with clusters sampled from the entire Luuq town, may not represent the actual area where the project implementation has been focused since the baseline. This was brought to TANGO's attention during the drafting of the report; thus, WV stakeholders should take this into account when interpreting results for their project area.

Context

Throughout its contemporary history, Somalia has been mired in protracted crises. Longstanding political instability, violent conflict, and reoccurring climate emergencies such as drought and flooding have resulted in widespread displacement and recurrent crisis: an estimated one-fifth of Somalia's population has been impacted by forced displacement, both within and outside of Somalia. Civil warfare and political struggles led to the rise of the militant group al-Shabaab. This prevented humanitarian and development operations from reaching the South Central region, which was most severely affected by the extreme drought and famine of 2010-2012. Key indicators of human and economic development provide a glimpse of this challenging context for building resilience: Somalia's gross domestic product per capita is among the lowest in the world; youth unemployment is at 67 percent; the Human Development Index ranks Somalia among the eight least developed countries or territories in the world; basic public services are very limited; life expectancy is 55 years; and Somalia ranks fourth lowest in the world on the Gender Inequality Index. Yet, Somaliland, in the northern region, has sought to function autonomously, constructing relatively stable government structures and services that operate independently of the Somalia Federal Government. Somaliland has thus experienced greater peace and socio-economic development in recent years in comparison with the South Central region. To address the cyclical and complex nature of food and livelihood insecurity in Somalia combined with the exacerbating effects of climate change, it is essential to build the resilience capacities of households and communities while enhancing longer-term resilience to food security shocks.

Project area profiles

STORRE. CARE's *Somalia Towards Reaching Resilience* (STORRE) Project targets 25,440 beneficiaries in 20 villages in Badhan and Erigavo, two districts of the northern Sanaag region of Somaliland. Some of the main

project activities currently underway include the establishment of Village Savings and Loan Associations (VSLAs), distribution of agricultural tools, and the development of cash-for-work activities.

STORRE is primarily rural, with rural households comprising 75.3 percent of the sampled program area. Most households are pastoralist, and livestock assets are owned by 77.8 percent of STORRE households; thus, most households do not engage in crop production. Livestock-owning STORRE households also have larger average herd sizes than in other areas: for example, the median number of sheep and goats for STORRE households is 20 and 16, respectively, while the other project area households range from 3-10 animals. Livestock owners graze animals on communal pastures year-round, but many households report decreased water availability for livestock compared to last year. Of the three wealth strata identified by the study – richest, middle, and poorest – STORRE has a marginally higher proportion of poorest households than the other project areas, with 43.5 percent of sampled households classified as "poorest". STORRE houses are generally more durable and long-lasting, with the highest prevalence of solar lamps (37.3 percent) as compared to houses in the other project areas, but STORRE members have the lowest access to improved drinking water sources (41.9 percent) or improved sanitation (25.1 percent).

PROGRESS. CRS is implementing the *Program to Enhance Resilience in Somalia* (PROGRESS), which targets 96,000 beneficiaries in 33 villages located within three districts, Belet Hawa, Baidoa and Afgooye, across three regions of southern Somalia. PROGRESS is currently supporting Savings and Internal Lending Communities, nutrition and hygiene trainings, Participatory Disaster Risk Assessments, among other activities.

PROGRESS is made up primarily of peri-urban households, which comprise 61.3 percent of the sampled program area. Poorest households make up 38.4 percent of total PROGRESS households, and some household assets are owned by only a small percentage of households in the area: for example, 13.2 percent own kerosene lamps, and 19.9 percent have a radio. Heads of PROGRESS households have the least education overall: 79.9 percent have never attended school, while 13.7 percent have some incomplete primary school education. PROGRESS households are primarily engaged in farming, and productive farming assets are more widely owned in this project area than in the others. Nearly half (46.1 percent) of PROGRESS households possess agricultural land, 33.1 percent have an animal cart, 20.0 percent a manual stone grain mill, 18.1 percent an individual granary, and 55.4 percent own a hoe; these figures are all much higher than corresponding figures in the other project areas. Households in the PROGRESS area also engage in some livestock ownership, usually selling livestock commodities in regional/district markets.

REAL. WV is implementing *Resilience & Economic Activity in Luuq* (REAL), a three-year project integrated within USAID's longer-term SomReP, for 23,600 beneficiaries in 14 villages (9 riverine agro-pastoral, three pastoral, one IDP camp, and one peri-urban host community) in the Luuq district of southern Somalia. The REAL project is currently implementing several project activities, including the formation of Farmer Field Schools, various trainings surrounding health, nutrition, hygiene and sanitation, and distribution of tools and seeds to women's groups for the purpose of establishing kitchen gardens.

REAL is primarily urban.[1] Urban households comprise 75.6 of the sampled program area, and there is a slightly smaller proportion of poorest households (37.8 percent) than in the other project areas. Of all three project areas, REAL households have the highest number of members on average. They have the highest access to improved drinking water sources and improved sanitation and the highest ownership of household assets such as charcoal stoves and radios, but the lowest access to electricity. Livelihood activities are varied, ranging from wage labor to small shops, and households engage in crop production if possible, depending upon their access to land and finances for agricultural inputs.

[1] At the time of drafting this report, it was brought to the study team's attention that REAL programming may have shifted away from the original primarily urban target area from which this study sample was based. Thus, the REAL stakeholders should take that into account when interpreting these study results for their project area.

FINDINGS

Shock exposure and impact

> *"This village suffers very much because of the drought and its effects. The absence of rainfall caused water shortages, which resulted in dry farms and death of our livestock. This leads to major issues, like the inability to afford the basic necessities of life."*
> *Women's savings group, STORRE*

The vast majority of households across project areas experienced at least one shock in the past year. Poorest households report the highest exposure to shocks. Program-wide, all areas are susceptible to environmental shocks such as drought and late or variable rainfall, as well as livestock disease, food price fluctuations, and un/underemployment. Over the past year, REAL and STORRE households experienced a similar set of shocks, though more STORRE households have been faced with drought in the year before the survey. PROGRESS households experienced all of the aforementioned shocks, with the significant addition of shocks related to military conflict and trade disruptions.

The poorest households across projects are significantly more likely to experience a severe decline in food consumption following a shock, and shocks affect women disproportionately. As explained through qualitative interviews, drought and flooding can lead to loss of productivity among livestock and crops, as well as disease outbreaks; environmental shocks can also increase unemployment and migration away from home communities, or lead to inter-community conflict as people compete for scarce resources. The potential for conflict is exacerbated by insecurity and the stress of the military presence, which is primarily reported in PROGRESS areas. The main ongoing stressors across project areas are the lack of health facilities and schools. There are also gendered effects of shocks. Women are particularly vulnerable to malnutrition, disease outbreaks, and the added burden of fetching water from distant sources during times of water scarcity. As unemployment/underemployment and migration lead to increases in the prevalence of divorce or migration of male income-earners, women increasingly seek further income-generating activities (IGAs) in order to provide for the household. The lack of adequate health facilities for women and children thus negatively impacts the financial resources of the household, as women's malnutrition, illness or injury compromises their ability to generate income. The rising prominence of women's savings groups means that income generation by women is critical to the larger community as well.

> *"Unemployment has affected us badly…The mothers of the house are the bread winners of this village."*
> *Focus group with women, PROGRESS*

Responses to shocks

Over the past five years, assistance to households to deal with shocks is reported at low levels. Reports at baseline of past assistance range from 10.6 percent of households (PROGRESS) to 15.9 percent (REAL) and 17.7 percent (STORRE). Of the assistance that is provided, food aid from organizations is the most common type across project areas. Experiences with humanitarian assistance are variable across communities. Those that have benefited from more extensive NGO programming are able to enumerate those interventions that have improved their lives; for example, some STORRE communities report benefits from such activities as building dams and schools or vocational training. Some REAL and PROGRESS communities were isolated from all assistance during the drought of 2011 due to insecurity in the region, and now report positive impacts of the assistance that has been provided in recent years by a variety of local and international NGOs. Still, communities across projects report that inconsistent or one-off assistance may not have a large or positive impact.

Wealthier households employ more positive coping strategies to deal with drought or late/variable rainfall, and community leaders mobilize support for vulnerable households. Sending livestock in search of pasture is the main coping strategy reported. STORRE households cite the ability to borrow money from various sources. PROGRESS and REAL households are able to access new wage labor for income during times of drought, likely due to their closer proximity to urban, peri-urban or

market centers, yet they also report the negative coping strategy of reducing food consumption. Recovery and the types of strategies employed by households is also associated with wealth. The wealthier households are more likely to employ strategies that do not have longer-term detriments, such as one member of the family moving or temporarily migrating, selling household or productive assets, or taking a loan from a moneylender in order to recover; while poorer households that have not recovered are more likely to reduce their food consumption or to have taken their children out of school. Overall, recovery levels are low: the percentage of households reporting full recovery from drought, for example, is just 1.2 percent for STORRE households (in the midst of drought), 18.5 percent for PROGRESS, and 8.9 percent for REAL.

The qualitative study describes other actions taken to mitigate the effects of shocks, which include asking for assistance from NGOs, government, or relatives in bigger cities, or taking loans from savings groups, and selling livestock and farm products for income to buy food. Communities across projects report that community leaders organize collective contributions to assist the most vulnerable households. Communities decide together when and how to deal with shocks, although some communities feel that their capacity to take action is limited or prevented due to lack of resources.

Resilience capacities

The resilience capacities–absorptive, adaptive and transformative–are a set of conditions, attributes, or skills that allow households and communities to manage or recover from shocks. In this report, indicators are incorporated into indexes of the three resilience capacities, and then combined into an overall index. The richest households across all project areas have the most absorptive capacity. The low levels of household and livestock assets and of human capital in the PROGRESS area have decreased their scores for absorptive and adaptive capacity indexes. The REAL area scores significantly higher than other project areas for the transformative capacity index, with access to more urban structures. Access to services and infrastructure are the most important variables of this index, while governance and communal natural resources scored very low (factor scores) and were dropped from the final estimation of transformative capacity.

Absorptive and adaptive resilience capacities. Household resilience capacities comprise the elements of absorptive and adaptive capacities, measured by several indicators: social capital; aspirations and confidence to adapt; economic sources; and human capital and access to information.

While social supports within the family or village groups are reportedly strong, the social capital index levels are low, overall, with linking social capital nearly non-existent. Social capital refers to the social resources that are available to support people's livelihoods and well-being in times of shock, including political institutions or informal social interactions. Just over one-quarter of PROGRESS households have received or given any kind of assistance both within (bonding) and outside their villages (bridging) within the last 12 months, which is even lower in the other project areas. For this study, social capital is divided into three general types and is based on hypothetical responses on whether a household "could" give or receive assistance in times of crisis: *Bonding* social capital refers to the bonds between family and community members within the same village. Across projects, FGDs report that bonding social capital takes place through the sharing of resources such as food and money within their communities to assist in recovery from shocks and stresses. This sharing is prioritized for the most vulnerable people and households within the community. B*ridging* social capital, or the connections between members of different communities or groups, occurs most often in this context when households receive remittances or support from relatives. *Linking* social capital refers to vertical interactions that cross explicit, institutionalized, and formal boundaries in society, and is nearly non-existent across projects. Although qualitative data show that many households do rely upon social support, the overall social capital indexes are low across projects. These low scores can be attributed to the reliance of program households on assistance from people within their own family group, friends, or sub-clan; rarely do they seek assistance outside of these boundaries. This may also show that the

> *"The closer the relative the more they help each other."*
> *Religious leaders. REAL*

social capital measure should be expanded for future research in Somalia to better capture the level of daily sharing that is taking place.

Households' aspirations and confidence is related to other factors of having the enabling conditions, resources and capacity to adapt. Psychosocial measures such as self-esteem, personal agency and aspirations have been linked to the ability of the poor to take actions to improve their material well-being. The aspirations and confidence to adapt index scores are low across projects, showing neutral agreement by the responding household heads with both positive and negative statements about control over the circumstances and future of their lives. As shown by other psychosocial research, this may be a reflection of households' measured confidence in relation to the external barriers they know exist in the way of their pursuits. Qualitative findings show that across projects people perceive household financial capacity and close community relationships as the main contributors to household level confidence to adapt. Additionally, some focus groups reveal simultaneous beliefs in controlling one's own future outcomes while trusting in God to provide, which also may be reflected in the low or neutral scores of this index.

Resilience capacities are strengthened by economic sources, but households are challenged to effectively diversify their livelihoods and to save. Livelihood diversification allows households to turn to alternate income and food sources if their primary livelihood is compromised by a shock; however, across projects, households report only one to two livelihood activities on average. Yet, households find their main livelihood productivity decreased due to both drought and floods. STORRE and PROGRESS households, for example, have attempted to diversify by turning to ownership of small businesses and shops, but low incomes throughout the community prevent others from patronizing these businesses. REAL households report few changes in their livelihood activities in recent years. Beyond livelihoods diversity, financial resources can also be used to increase household incomes and provide protection from shocks. Across the program area, the prevalence of cash savings is low. Richer households are more likely to have cash savings, but less likely to have borrowed cash from others.

Human capital and access to information are further indicators of household resilience capacity, but very low across the projects at baseline. In this study, human capital is measured through adult literacy, education level, trainings received, and access to information. Human capital means that working-age household members are able to use information and other resources to respond and adapt to shocks; access to information and trainings enables households to put such human capital to use to build household economic capital. Adult literacy, primary and continued education levels are low across projects. PROGRESS area adults are much less likely to be literate or to have completed at least some primary school than the adults of other project areas. The prevalence of adults who have received any training ranges from just 1.8 percent (PROGRESS) to 2.6 percent (STORRE). Access to information regarding weather events is also low. According to the qualitative data, lack of education is viewed as one of the main ongoing stressors and barriers to achieving resilience across communities.

Transformative resilience capacities. Community resilience capacities relate mainly to the elements of transformative capacity, which is measured by access to: markets, infrastructure and basic services; communal natural resources; safety nets and disaster risk reduction (DRR); and community mobilization and governance—though the index score does not include the indicators for communal natural resources and governance due to the low levels reported across the sample.

Access to markets was scored from 0 to 6, representing the proximity of communities to markets for livestock, agricultural products, and agricultural inputs. STORRE communities scored lowest (3.0), not a surprising finding as the STORRE area is more geographically remote. Access to services (primary school, health center, and veterinary services) was scored from 0 to 3, with the highest score (2.0) found in REAL communities, with greater access to primary schools and health centers; again, this is not unexpected given the more urban context of the REAL area. Veterinary services were nearly non-existent across communities. Access to infrastructure was scored from 0 to 4 and only ranged from 1.2 (PROGRESS) to 1.7 (REAL).

Scores for access to communal natural resources were also similar across project areas: on a scale of 0 to 4, both STORRE and PROGRESS scored 2.5, while REAL scored 2.8.

Communities were scored on both formal and informal safety nets. The formal safety net score is a count of institutions in the community that provide food and/or housing and other types of assistance; this score was near zero across projects. The informal safety net score measured different types of community organizations providing safety nets, such as business associations, women's groups, or savings groups. On a scale of 0 to 8, STORRE scored the highest (3.2), while PROGRESS was near zero. The disaster planning and mitigation index measures perceptions of community preparation for shocks and institutional disaster planning and response. Across all areas, these values are low, from -0.2 (STORRE) to 0.4 (PROGRESS). Findings from the qualitative data show the two most common strategies of reducing and mitigating shocks among STORRE households are (1) storage of livestock fodder and water, and (2) helping one another through collective actions such as savings groups. PROGRESS households take actions, such as using sandbags to protect their homes against floods, but find limited success with developing safety nets due to a lack of basic infrastructure; REAL households report very few actions taken to prepare for or mitigate shocks.

Households report low levels of collective actions taking place in their communities to protect or maintain community assets. The most common collective action reported by STORRE households (25.7 percent) is soil conservation, while both PROGRESS and REAL households report improving access to health services (7.0 percent and 5.8 percent, respectively). Just over half of program communities report holding open community meetings. Across projects, nearly all FGDs believe their community leaders are effective at organizing support for the community to recover from and adapt to shocks. However, some FGDs report distrust of community leaders due to a perception that leaders have distributed resources insufficiently.

> *"We don't have any savings for this drought so that's why we are not responding well."*
>
> *Leader of women's savings group, STORRE*

Focus groups from all project areas consider access to health services and safe drinking water, basic services, and infrastructure—elements of transformative capacity—to be crucial for building resilience to shocks. Other identified solutions included access to agriculture inputs, veterinary services, and food aid (REAL); flood prevention, employment and job creation, and access to education (PROGRESS); and access to markets, education, and latrines (STORRE). Interviews with communities also explain that water and health are the basics for human survival, and without these, achieving resilience will be impossible. Additionally, they link these foundational development priorities to gender issues; in particular, they note that maternal and child health is linked to the survival and productivity of the household.

Gender and resilience

To capture women's empowerment at the household level, female spouses of male household heads were asked a range of questions surrounding their participation in household decision-making, confidence, awareness and participation in community groups, borrowing and savings, and mobile phone ownership.

Household wealth status and resilience capacity status are related to women's decision making role in the household. Overall, men are the primary household decision-makers, but the majority of women report that they have participated in decisions on all surveyed decision topics over the past 12 months. Women of the poorest households are the most likely to participate in household decision-making for nearly all topics, while women of the richest households more commonly participate in decisions surrounding major household expenditures or inputs for agriculture or livestock. Household resilience capacity may also be related to decision making: women in higher-resilience capacity households tended to make decisions jointly with their spouses on minor household expenditures, but also were the sole decision-maker for using remittances and issues of nutrition for the children. Yet, during stress times women's decision making on food and nutrition for the household slightly decreases across project areas. Additionally, women were not very likely to have cash savings: 6.9 percent of STORRE women have savings, 1.1 percent

of PROGRESS women and 1.8 percent of REAL women. In contrast, nearly half of the women report borrowing cash in the past 12 months. Though across projects, women in the poorest and lower-resilience capacity households are more likely to borrow. The majority of women across all project areas report owning their own cell phone, which is also related to higher-resilience capacity households.

Participation of women and vulnerable groups at the community level can be improved. At the community level, about half of women surveyed report that they can influence important decisions in their communities, with the highest proportion (61.6 percent) in the REAL area. Across all projects, the proportion of women participating in village meetings, as reported by surveyed community leaders, is higher than the proportion of participating youth, another vulnerable group. However, participation for both groups is not common among the majority of communities. Qualitative findings show that nearly all community FGDs perceive women's input in decision-making to be beneficial for the household. Savings groups have enabled women to contribute to their communities by increasing their participation in processes for community decisions and collective actions; this has built women's confidence and contributed tangible benefits to communities. Some FGDs report that although community leadership roles and committees may include women, they may also leave women out of decision-making processes for various reasons, including religious beliefs or women being perceived as too vulnerable to take part.

Links between resilience capacity, ability to recover from shocks and household food security

Regression analysis was applied exploring the relationships between resilience capacity indexes as determinants of food security and shock recovery. All regression specifications controlled for structural household-level and community-level characteristics, including generalized exposure to shocks.

Positive relationship shown between food security and overall resilience capacities, yet, only transformative capacity is related to households' abilities to recover from low rainfall shock. Using the Household Food Insecurity Access Scale (HFIAS) as a measure of food security, this study found that adaptive capacity and transformative capacity are related to better food security outcomes; while absorptive capacity, however, does not exhibit a relationship with food security. The overall resilience index is positively related to food security. When taking a closer look at the underlying components of the household resilience capacities (absorptive and adaptive) and their relationship with food security, the study finds that household savings, livestock assets, linking social capital, human capital and access to information are all positively associated with food security. Bonding social capital is associated with lower food security, indicating that it is a proxy for high need. Nearly all of the underlying components of transformative resilience capacity are positively related to food security: access to markets, basic services and to infrastructure. Similar analysis revealed a much weaker relationship between the resilience capacities and recovery from drought or late/variable rainfall. Only transformative capacity is positively correlated to recovery from these shocks. The underlying components of the resilience capacity indexes that show a meaningful relationship with recovery are: access to infrastructure, access to markets, assets index, and aspirations. Several components are inversely related to recovery; however, the study team suspects that these negative associations are reflective of targeted interventions to more vulnerable households, or are just spurious correlations.

Conclusions

This study achieved the following objectives:

1. To understand the project's implementation context, particularly local populations' strategies and local capacities for resilience, and factors that affect household and community resilience;
2. To develop community- and household-level indices for comparing resilience across communities and households, identifying characteristics and practices of communities and households that are more and less resilient and most vulnerable to common shocks and climate change, and understanding the relationships between household and community resilience;

3. To establish a baseline against which results of an endline can be compared to assess changes in household and community resilience and the plausible contribution of USAID-funded activities to those changes;
4. To test and refine the theories of change on which planned project activities are based; and
5. To add to the existing body of knowledge on resilience.

The baseline context for building resilience is bleak overall, but there are community strengths in coping with shocks to build upon. The three project areas are distinct with respect to their urbanization and livelihood profiles, but the basic socio-economic conditions across project areas are extremely poor. Households' exposure to shocks and stresses –particularly climactic shocks–are frequent and widespread, subsequent recovery from these shocks is weak, and overall levels of resilience capacities are low. There are various local capacities, strengths and positive coping strategies that support household and community recovery from shocks that this program builds upon, such as traditional savings and storage practices, strong social cohesion and mutual support, and women's participation in household and community decision-making. Though, some of these strategies have been weakened by recurrent shocks.

Resilience capacities across project areas highlight the link between household and community-level resilience, as well as the importance of household wealth/assets in the face of shocks. While all three resilience capacities, absorptive, adaptive, and transformative, are generally low in all three program areas, results show that transformative capacity is associated with higher levels of food security and recovery from drought/variable rainfall shocks. Access to markets, basic services, and to infrastructure are the main components of transformative that are positively related to these resilience outcomes. Conversely, there was no relationship detected between the household resilience capacities indexes and the resilience outcomes; though, some elements of the household level capacities were positively correlated with food security or recovery such as livestock and asset ownership, household savings, linking social capital, human capital and access to information. In all, transformative capacity is strongly related to both adaptive and absorptive capacity, serving as the founding for building the household resilience capacities.

Programming implications. A summary of key findings and their implications for project theories of change and resilience programming are as follows:

Livelihood diversification and household assets/income: Diversification out of pastoral and agro-pastoral livelihoods currently shows limited opportunities. The study finds that diversification or adding on IGAs does not improve resilience, rather it is a coping strategy. *Programming should continue to support productivity of the main pastoral and agro-pastoral livelihoods, e.g., the field schools model, livelihood inputs, animal and crop health services. While productivity is low due to shocks, there is a need for more cash-based programming like cash for work. Programming that promotes IGAs should be carefully analyzed to determine the market opportunities of the activity that could bring positive benefits to households.*

Safety nets: Savings groups are important safety nets, but recurrent shocks may weaken their impact. The study shows exposure to shocks is high and resilience capacities are very low. Savings groups serve as a critical safety net for households and communities. The need to respond to repeated shocks compromises their ability to provide this service. *Programming should continue to support savings groups as providers of safety nets, and savings groups need additional resources to be able to provide emergency support along with making investments in community assets in the face of repeated shocks.*

Disaster risk management: Access to information is very low, and early warning information may not be trusted. The study shows access to all types of information is low across households, and some early warning campaigns have not been trusted. As information dissemination continues throughout the program, an increase in access to information at endline is expected. *Projects should monitor how the information is accessed by households and used by communities.*

Community governance: Community leadership is crucial for building social capital and promoting collective actions in the face of shocks. The qualitative study shows that strong community leadership in the

face of shocks is key to community mobilization to prepare and to respond, but also that in some instances women, including the most vulnerable, are not able to fully participate in community governance structures. Women's savings groups, in particular, have launched women into leadership roles, and have served as means to promote informal collective initiatives and community safety nets, and to promote social capital. P*rogramming should continue to support/and monitor female savings groups and female committee roles as they are linked to meaningful leadership of women in governance structures.*

Health and nutrition promotion: Health and nutrition messaging without access to health services and water may not improve health behavior or outcomes. The study shows that household access to healthcare (particularly maternal and child health) and access to improved water sources are very limited. Focus groups across projects named lack of access to water, sanitation facilities and healthcare as ongoing shocks and stressors. *Health and nutrition promotion should focus on those behavior changes that may be possible given the major gaps in the enabling environment.*

Natural resource management: NRM is an important area for collective action, to support and improve sustainable livestock production. Study findings show the importance of crop and livestock production as livelihood activities with positive benefits to households. Findings also affirm that NRM helps to strengthen social capital, local governance and peace-building. *Projects should continue to provide support for community management of water sources and pastures as means to strengthen resilient livelihoods.*

A final point on programming relates to community members concerns voiced during the study showing the need for improved messaging to target area households that communicates the benefits of community-level interventions that may be expected at the household level.

Research implications. This study has contributed to the body of knowledge on resilience, with various lessons learned for future research and resilience measurement strategies, including:

- ✓ Identifying which particular investments have the greatest impact in terms of eliminating barriers to women's resilience is an important issue for further study
- ✓ Improving tools to measure social capital, particularly to capture particular characteristics of social capital in the Somali context
- ✓ Exploring new measures for aspirations and governance with particular relevance to the Somali context
- ✓ Refining the measurement of resilience capacities in contexts where those capacities are generally very low and exhibit little variation among sampled households and communities

The wider research implications are that resilience measurement must be carefully tailored to take into consideration the particular characteristics of the study regions. This point was clearly brought out in the Somalia context, which is quite extreme in a number of aspects: exposure to extreme and long-term climatic variations and stresses, very disruptive and long-term civil unrest and resulting limits on formal government structures and services, unpredictable and destructive terrorist activities of al-Shabaab, as well as the Somali cultural characteristics and dimensions of inter-personal relationships and trust, organized strongly along clan lines. Further research is needed to better incorporate these aspects into resilience measurement in Somalia, and the particular types of information needed to measure resilience capacities must be expanded to appropriately capture variations in context across a wide spectrum. On the other hand, the technique for measuring resilience capacity indexes must also be robust enough to perform in situations where the variations in the underlying variables may be quite low in the measured population.

The findings from this study have a number of implications for future sequencing and layering of resilience programming strategies in Somalia. Until transformative resilience capacities can be improved, including infrastructure, market access and access to basic services across the three program areas, the findings support continued efforts to provide relief from the frequent shocks and stressors experienced by households. Any activities that might promote increased social capital and collective actions, building on the strengths and resilience capacities of Somali communities, could help bridge the gap left by the absence of formal governance and help build a foundation from which future community resilience could be formed.

Chapter 1 Introduction

The primary purpose of this study is to promote understanding of the factors influencing household and community resilience in Somalia that may guide ongoing and future humanitarian and development programming. The study aims to measure key dimensions of resilience at the household and community levels while increasing understanding of the local contexts where activities are implemented for the purposes of refining program strategies and design. The secondary purpose is to provide a baseline for key outcome and resilience indicators.

The following objectives further elaborate the goal of the study:[2] Conclusions related to each objective may be found in Chapter 11.

- Objective 1: To understand the project's implementation context, particularly local populations' strategies and local capacities for resilience, and factors that affect household and community resilience;
- Objective 2; To develop community- and household-level indices for comparing resilience across communities and households, identifying characteristics and practices of communities and households that are more and less resilient and most vulnerable to common shocks and climate change, and understanding the relationships between household and community resilience;
- Objective 3: To establish a baseline against which results of an endline can be compared to assess changes in household and community resilience and the plausible contribution of USAID-funded activities to those changes;
- Objective 4: To test and refine the theories of change on which planned project activities are based; and
- Objective 5: To add to the existing body of knowledge on resilience.

The Enhancing Resilience and Growth in Somalia Program

The *Enhancing Resilience and Economic Growth in Somalia Program* (2014-2017) is designed to support and build resilience to recurrent shocks among target households and communities in Somalia. This program is supported by the USAID Office of Foreign Disaster Assistance (OFDA), Office of Food for Peace (FFP), and the East Africa Regional Mission (EA), who have committed a combined total of nearly $14 million to the program over three years (2014-2017). The program is implemented through the separate but complementary projects of three implementing partners (IPs): CARE, World Vision (WV), and Catholic Relief Services (CRS). Though each IP has established its own separate results framework with project-specific purposes and outcomes (see Appendix 4), these frameworks stem from a common program goal to increase the resilience of target households and communities to recurrent shocks. The program aims to achieve this overarching goal through three interlinked purposes:

4. Increase the capacity of households and communities to adapt to recurrent shocks;
5. Build on the ecological, social, and economic capital of households and communities; and
6. Increase learning of communities, implementers, USAID, and other stakeholders (with Tulane University).[3]

The program approach is based on integrated humanitarian-development programming and a long-term commitment to understanding responses to shocks and improving the three resilience capacities: absorptive, adaptive and transformative. Absorptive capacity refers to disaster risk management, or the

[2] USAID. 2014. Somalia Baseline Scope of Work (SOW).
[3] USAID. 2014. Somalia Baseline Scope of Work (SOW).

extent to which households and communities are able to minimize exposure to shocks and to recover quickly after exposure. Adaptive capacity relates to the ability of households and communities to respond to changing conditions by making active and informed choices about their lives and their diversified livelihood strategies. Transformative capacity refers to broader system-level changes that enable sustained resilience through the support of functioning state and governance systems.[4]The *Enhancing Resilience and Economic Growth in Somalia Program* and its three distinct IP projects are designed to primarily build absorptive and adaptive capacity, with a more limited focus on transformative capacity in the context of weak public systems, and instead a focus on supporting community collective actions.

STORRE Project

CARE's *Somalia Towards Reaching Resilience* (STORRE) Project targets 25,440 beneficiaries in 20 villages in Badhan and Erigavo, two districts of the northern Sanaag Region in Somaliland. CARE works with communities to identify negative coping strategies which are utilized in times of increased vulnerability, and which have a long-term detrimental effect on households. CARE also acknowledges that gender is an important factor in understanding vulnerability and resilience. Thus, the STORRE project promotes resilience-building by focusing on three key areas based on the following theory of change (ToC): if households and communities can increase their capacity to identify, monitor, and plan for shocks and stresses, and if vulnerable households are equipped with knowledge and have increased their asset base and strengthened or diversified their livelihoods, and if this occurs within a context of improved governance that represents women and other marginalized groups, then communities and households will demonstrate increased resilience to shocks and stresses.[5]

The STORRE project is founded upon one overarching goal: "Inclusive resilience strengthened in households and communities in Sanaag region." This goal is served by three purposes:

- Purpose 1: *Households adapt livelihoods and practices to adjust to shocks, stresses and opportunities.* Sub-purposes focus on promoting livelihoods diversity, household assets, and household adoption of health behaviors.
- Purpose 2: *Gender responsive, inclusive community governance and institutions function to strengthen resilience and reduce risk*. Sub-purposes include community provided safety nets, community infrastructure and natural resources, Community Action Plans (CAPs), Village Councils (VCs), Participatory Monitoring, Evaluation, Reflection, and Learning (PMERL) participation, and Community Early Warning Systems (CEWS).
- Purpose 3: *Enhanced resilience learning of communities, implementers, USAID and others*. Sub-purposes aim to ensure shared resilience learning between stakeholders, in addition to decision-making and project implementation processes which are continually informed by lessons learned.

Table 12-75 (see Appendix 4) provides details of the status of STORRE activity implementation at the time of data collection. As of March 2016, activities corresponding to each purpose were underway, including: the establishment of VSLAs, the provision of nutrition and hygiene trainings, and distribution of agricultural tools (Purpose 1); the development of cash-for-work activities, and holding a workshop in Erigavo for VCs to link with district officials (Purpose 2); and early warning systems training activities (Purpose 3), among others. The status of this project's implementation should be considered when interpreting the results of this study.

[4] Frankenberger, T., et al. 2012.
[5] Note: discussion of the project ToCs in relation to this study's findings is provided in Section 11.

PROGRESS Project

CRS is implementing the *Program to Enhance Resilience in Somalia* (PROGRESS), which targets 96,000 beneficiaries in 33 villages located within three districts across three regions of southern Somalia. This project aims to enhance resilience through three interwoven purposes based on the ToC that if target households and communities increase their capacity to adapt to reoccurring shocks, and if they strengthen ecological, social, and economic capital, and if these occur within a robust learning network of communities, implementers, USAID, and other key stakeholders, then the program goal of increased resilience will be achieved.

The PROGRESS project is based upon one overarching goal: "Increased resilience of 16,000 Somali households and target communities to recurrent shocks in Belet Hawa, Baidoa and Afgooye." The goal of PROGRESS is subdivided into three purposes:

- Purpose 1: *Increased institutional capacity of target communities to adapt to shocks and stresses.* Sub-purpose: effective implementation of planned risk management and contingency plan activities.
- Purpose 2: *Increased capacity of male and female members of 16,000 households to adapt to economic, nutrition, ecological and social shocks*. Sub-purposes include diversified livelihood options and productive assets, improved nutrition practices, increased sustainable Natural Resource Management (NRM) practices, and increased peace and social cohesion.
- Purpose 3: *Enhanced resilience learning of communities, implementers, USAID and others.* Sub-purposes aim to promote sharing of resilience learning between stakeholders, and decision-making and project implementation continually informed by lessons learned.

Table 12-76 (see Appendix 4) provides a picture of the status of PROGRESS activity implementation at the time of data collection. As of March 2016, activities corresponding to each purpose were in progress, including: Participatory Disaster Risk Assessments (Purpose 1); the formation of Savings and Internal Lending Committees (SILC), and various trainings conducted such as for nutrition and hygiene, NRM practices and conflict resolution (Purpose 2); and the creation of district-level resilience frameworks (Purpose 3), among others. The status of this project's implementation should be considered when interpreting the results of this study.

REAL Project

WV is implementing *Resilience & Economic Activity in Luuq* (REAL), a three-year project integrated within USAID's longer-term SomReP, for 23,600 beneficiaries in 14 villages (nine riverine agro-pastoral, three pastoral, one IDP camp, and one peri-urban host community) in the Luuq district. The REAL project aims to improve the resilience of households and communities in southern Somalia to recurring shocks by enhancing their ability to cope with drought (absorptive capacity), adapt livelihoods to changing conditions (adaptive capacity), and strengthen the local enabling environment for long-term systemic change (limited transformative capacity), with a focus on gender.

REAL is defined by one central goal: "Increased resilience of Luuq households and communities to recurrent shocks." The goal is supported by three purposes:

- Purpose 1: *Households and communities function to actively manage vulnerability, and risk to shocks and stresses.* Sub-purposes include: increased capacity to mitigate against risk, and improved preparedness to respond to shocks.
- Purpose 2: *Increased human, ecological and economic well-being of households and communities in Luuq.* Sub-purposes aim to improve health and livelihoods of beneficiaries.

- Purpose 3: *Robust learning by communities, implementers, USAID and others.* Sub-purposes aim to increase resilient behaviors among households and community governance structures, and to apply research to adaptive project management.

Table 12-77 (see Appendix 4) elaborates upon the status of REAL activity implementation at the time of data collection. As of March 2016, activities corresponding to each purpose were in progress, including: the formation and meetings of the Luuq Business Promotion Network (Purpose 1); formation of Farmer Field Schools (FFS) in nine villages, women's groups in the 14 project villages received tools and seeds to begin kitchen gardens, and various trainings conducted on health, nutrition, hygiene and sanitation(Purpose 2); and the documentation of community feedback to identify key lessons (Purpose 3), among others. The status of this project's implementation should be considered when interpreting the results of this study.

What is Resilience Capacity and Why Resilience in Somalia?

Resilience and Resilience Capacity Defined

Resilience and resilience capacity are two complementary but discrete cornerstones of this program. It is therefore important to understand each of these key concepts and the distinction between them.

The *Enhancing Resilience and Economic Growth in Somalia Program* conceptualizes resilience according to the USAID definition, which states that resilience is "the ability of people, households, communities, countries, and systems to mitigate, adapt to, and recover from shocks and stresses in a manner that reduces chronic vulnerability and facilitates inclusive growth."[6]Following this definition, household resilience is the ability of a household to mitigate, adapt to, and recover from shocks and stresses. In addition to household resilience, this report considers the baseline state of community resilience. Community resilience is defined as follows: "A community is resilient when it can function and sustain critical systems under stress; adapt to changes in the physical, social, and economic environment; and be self-reliant if external resources are limited or cut off."[7]A primary feature of community resilience is the ability of communities to effectively combine social capital and collective action in response to shocks and stresses.

Resilience, therefore, is defined as the ability to manage or recover. *Resilience capacities* are a set of conditions that are thought to enable households to achieve resilience in the face of shocks. At the household level, resilience capacities can be classified into three categories:

- Absorptive capacity relates to disaster risk management, the ability of households and communities to minimize exposure to shocks if possible and to recover quickly after exposure.
- Adaptive capacity refers to the ability of households and communities to make active and informed choices about their lives and their diversified livelihood strategies based on changing conditions.
- Transformative capacity relates to governance mechanisms, policies/regulations, infrastructure, community networks, and formal safety nets that are part of the wider system in which households and communities are embedded. Transformative capacity refers to system-level changes that enable more lasting resilience.[8]

[6] USAID. 2012.
[7] Frankenberger, T., et al. 2013.
[8] Frankenberger, T., et al. 2012.

Given their complexity, measuring the resilience capacities requires combining a variety of indicators of the underlying concepts relevant in a particular setting into one overall indicator. These resilience measures are detailed in Appendix 1.

Country Context Related to Resilience in Somalia

Overview of food security context. The past two decades in Somalia have been marked by protracted crises. Of the 10.8 million people living in Somalia,[9] an estimated 953,000 people were classified as acutely food insecure during the first half of 2016. Of those facing food insecurity, 68 percent are internally displaced persons (IDPs).[10] Ten out of 12 IDP settlements are marked by Serious or Critical levels of Global Acute Malnutrition.[11] The large number of people displaced and living with recurrent crisis has resulted from longstanding political instability, violent conflicts and reoccurring climate emergencies.[12] An estimated one-fifth of Somalia's population has been impacted by forced displacement; due to the protracted nature of forced migrations and internal displacement across Somalia, refugee and IDP camps are evolving into urban areas.[13] This directly relates to resilience because the low absorptive capacity of many Somalis leaves them vulnerable to these repeated shocks and unable to quickly recover from one shock before they are impacted by another.

Political situation and conflict. Somalia's population is subject to cycles of increased vulnerability due to a complex situation of institutional and system breakdown, including government failures, deterioration of productive infrastructure, lack of basic services, market volatility and unchecked environmental degradation.[14-17] Following a government coup in 1991, clan-based civil warfare and struggles for political control left a power vacuum that allowed the militant group al-Shabaab to become the most powerful insurgent group in Somalia by 2009. Al-Shabaab took control of much of South Central Somalia, but in recent years the African Union Mission in Somalia (AMISOM) has taken back numerous districts of South Central, creating buffer zones for humanitarian operations.[18]

Somaliland, in the northern region, has experienced greater peace and socio-economic development in comparison with the South Central region in recent years. Somaliland has sought to function autonomously, constructing relatively stable government structures and services that operate independently of the Somalia Federal Government (SFG). However, the liberation movement that led to the emergence of Somaliland (1987-1991) produced hundreds of thousands of Somali IDPs, as well as refugees who became displaced upon their repatriation to Somalia.[19] Somaliland's development over the past two decades has been limited by a lack of access to aid and investments; continuing clan conflict over water and grazing rights as well as political control of disputed areas in the region; severe rangeland degradation; and increasing climate-related shocks.[20]

Environment and shocks. From 2010 to 2012, Somalia experienced what was described as the country's worst drought in 60 years. Nearly four million people were left without access to basic food

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[9] World Bank. 2014.
[10] Food Security and Nutritional Analysis Unit (FSNAU).2016. . FSNAU and FEWS NET Technical Release.
[11] FSNAU. 2016. FSNAU Quarterly Brief, June .
[12] FSNAU, 2016. FSNAU Quarterly Brief, June .
[13] UNHCR and the World Bank Group. 2015.
[14] FAO, UNICEF and WFP. 2012. [Food and Agriculture Organization; United Nations Children's Fund; World Food Programme]
[15] World Initiative for Sustainable Pastoralism (WISP). 2008.
[16] Humanitarian Policy Group (HPG). 2006.
[17] Levine, S. 2011.
[18] See: http://amisom-au.org/
[19] International Organization for Migration (IOM). 2014.
[20] Eubank, N. 2011.

and non-food items necessary for survival. The majority of those affected were in the South Central region of the country, the most inaccessible region for humanitarian agencies due to insecurity and control by al-Shabaab. An estimated 260,000 people died during the famine; half of these were children under the age of five.[21] Recurrent environmental disasters constitute a primary cause of displacement in Somalia.[22,23,24] Seventy-one percent of Somalis depend on rain-fed crops and livestock production, rendering them highly vulnerable to droughts and floods. Severe flooding in the first half of 2016 led to further displacement.[25] Agro-pastoral livelihoods, including nomadic pastoralists, are further impacted by land degradation, soil erosion, deforestation, unmanaged surface water run-off, and gully erosion.[26]

Adaptive capacity is limited: many people, particularly women, are unable to make active and informed choices based on changing conditions, and even among those who have diversified their livelihoods, those varied livelihoods are often susceptible to the same shocks and stresses.[27] Harmful coping strategies such as the distress selling of productive assets is common during periods of rain failure, as subsistence farmers and their households attempt to make up earnings lost due to poor harvest. These coping strategies can result in greater long-term vulnerability and the possible migration or displacement of families, further eroding household resilience capacities.[28,29,30]

Human development, including gender issues. Overall, Somali development and humanitarian indicators are among the lowest in the world. The 2015 gross domestic product was estimated at US$551.9 per capita, among the lowest in the world.[31] Unemployment is widespread, especially among youth. The rate of unemployment for those between the ages of 14 and 29 is 67 percent (74 percent for females and 61 percent for males).[32] The calculated Human Development Index (HDI) value given to Somalia was 0.285, ranked among the eight least developed countries or territories in the world with data available for Somalia.[33] Basic public services are very limited; life expectancy is 55 years, and an estimated one in five children die before the age of five due to a host of factors ranging from malnutrition to preventable infectious diseases.[34] Apart from Somalia's tradition of seasonal and pastoralist mobility, the population has seen increased movement, including rural-urban migration and displacement (both within and outside of Somalia) due to protracted conflict and environmental shocks—as described in the paragraphs above.[35] Somalia's ranking on the Gender Inequality Index is the fourth lowest in the world at 0.776, reflecting the severe exclusion and inequality Somalian women face across all indexes – health, employment, and labor market participation. Sexual and gender-based violence (S/GBV) is widespread and many women suffer from human rights violations.[36] The oppression of women should be seen as more than the marginalization of a vulnerable group, but as an important

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[21] BBC News. 2013. Somali famine 'killed 260,000 people.' 2 May.
[22] Internal Displacement Monitoring Centre (IDMC). 2015.
[23] Ginnett, J. and T. Franck. 2014.
[24] FSNAU. 2013. Lower Shabelle Baseline Report. November.
[25] FSNAU. 2016. FSNAU Quarterly Brief, June.
[26] SFG. 2012.
[27] Mercy Corps and TANGO International, 2013.
[28] FSNAU. 2013.
[29] Ginnett, J. and T. Franck. 2014.
[30] FSNAU. 2011. Somalia Food Security & Nutrition Quarterly Brief, October.
[31] World Bank Data, 2016.
[32] World Bank. 2014.
[33] The HDI score was calculated by UNDP Somalia using the 2010 data. When comparing this calculated value to HDI values currently available for all countries in 2013, Somalia ranks below Niger which is 187 out of 187 countries in the ranking.
[34] UNICEF. 2015. Somalia Annual Report 2014.
[35] IOM. 2014.
[36] UNDP. 2012.

untapped adaptive capacity: female involvement in household decision-making has been strongly linked with greater dietary diversity and fewer negative coping mechanisms in Somalian households.[37]

Government response and capacity building. The SFG is constrained in their ability to address Somalia's recurrent shocks and stressors and to provide support that builds human and social capital among the Somali people. However, recent steps have been taken to address these growing concerns. In 2013, the government signed a New Deal Compact with the international community that outlines ways to revitalize the country, providing the framework for future development goals. The New Deal is based on the following peace-building and state-building goals (PSGs): inclusive politics, security, justice, economic foundations, services and revenues.[38] These goals and actions would serve to increase Somalia's transformative capacity by enabling households and communities to utilize mechanisms such as government services, infrastructure, and market systems to enhance their long-term resilience.

In line with the PSGs of the New Deal, an organizing framework for 2014-16 was created to help the country shift its focus from humanitarian assistance to more long-term sustained economic development and poverty alleviation. The SFG anticipates supporting the estimated $222 million expenditure by increasing domestic revenues and using international aid,[39] on which they are heavily reliant. It is estimated that Somalia has received over one billion US dollars in official development aid (ODA) in recent years. A majority of this aid has historically been earmarked for short-term humanitarian assistance; currently, however, increasing proportions of ODA are directed toward longer-term development-oriented goals. Given the cyclical and complex nature of food and livelihood insecurity in Somalia combined with the effects of climate change, it is widely acknowledged that ad hoc and short-term responses will inevitably fail to address the underlying causes of protracted crises in the country. The Somali population has proven to be fairly resilient through their perseverance, entrepreneurialism, solidarity and mobility;[40] now, it is crucial that humanitarian and development stakeholders support the resilience capacities of households and communities while enhancing longer-term resilience to food security shocks among chronically vulnerable populations of Somalia.[41]

Purpose and Organization of this Report

This report presents the findings of a mixed-methods baseline study conducted from March-May 2016 that aimed to: identify and measure key indicators of household and community resilience for comparison at end of program; to explore and test relationships across indicators through the development of context-specific indexes; to measure indicators of key project outcomes and impacts (see Appendix 2 for project indicators, but note that the study does not include beneficiary level project indicators); and to contribute to better understanding and future programming strategies on resilience.

This report begins with Chapter 2, presenting the *Enhancing Resilience and Growth in Somalia Program* baseline survey quantitative and qualitative data collection and analysis methodologies. Chapter 3 provides an overview of the broad key characteristics of project areas in terms of urban/rural and wealth categories to be considered in the interpretation of the results. As outlined below, Chapters 4-10 present the main findings of the study, integrating responses from the household and community leader survey and the qualitative study. Finally, Chapter 11 presents key findings and conclusions of this resilience analysis for the Somalia context.

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[37] Mercy Corps and TANGO International. 2013.
[38] SFG, Ministry of Finance. n.d. New Deal.
[39] SFG. 2013. Economic Recovery Plan 2014-2015.
[40] FAO, UNICEF and WFP. 2012.
[41] Frankenberger, T., et al. 2012.

The objectives and organization of the report include:

- Describe demographics, assets and livelihoods of households in the target area (Chapter 4);
- Describe the shock exposure of households and communities, including the degree of shock exposure, the types of shocks households are exposed to, and gendered impact of shocks and stresses (Chapter 5);
- Describe household and community responses to shocks and coping strategies (Chapter 6);
- Describe the baseline status of household resilience capacities (Chapter 7);
- Describe the baseline status of community resilience capacities and examine the relationship between household and community resilience capacities (Chapter 7);
- Explore the ways in which women's participation and decision-making affects household and community resilience capacities, responses to shocks, and final outcomes (Chapter 8);
- Examine household and community resilience capacities in relation to a measure of their perceived ability to recover from the shocks, and final outcomes of households, particularly with regard to food security (Chapter 9); and
- Identify the main factors contributing to improved resilience in the Somalia context, utilizing multivariate analysis to explore links between resilience capacity, the ability to recover from shocks, and household food security, and discuss how these results compare to previous resilience studies (Chapter 10).
- Provide final conclusions around the study objectives and discuss the implications for ongoing and future programming (Chapter 11).

Chapter 2 Methodology

The baseline study adopts a mixed-method approach, incorporating both quantitative and quantitative components. The purpose of the quantitative component to provide baseline estimates of program indicator values and measures of household and community resilience capacities that are statistically representative of the intervention areas of the *Enhancing Resilience and Growth in Somalia Program*. Thus, it is a population-based study with the three strata representing the three project areas. It should also be noted that this study does not provide beneficiary level indicators for the projects. The purpose of the qualitative component is to obtain richer detail about households' perceptions of the factors that affect their resilience and the reasons why they adopt particular strategies to shocks and stresses, as well as to provide supporting evidence to triangulate with the qualitative results.

Quantitative Data Collection and Analysis

Sample Design

The sample of households for the baseline survey follows a two-stage cluster sampling design. The sample is stratified by the geographic operational areas of the three projects. The sample is of sufficient size to detect change from baseline to endline at the level of project area in as many of the indicators as possible, but practical in size so that the survey can be completed at the budgeted cost and timeframe.

The FANTA Sampling Guide[42] was used to calculate a sample size capable of detecting a 20 percent (10 percentage points) reduction in the food insecurity indicator over the three-year project intervention. The minimum sample size required per stratum (IP operational area) is computed as follows:

$$n = D[(Z_{\alpha} + Z_{\beta})^2 \frac{p_1(1-p_1) + p_2(1-p_2)}{(p_2 - p_1)^2}]N_f$$

where:

n = required minimum sample size per survey round or comparison group (strata)

P_1 =proportion of households achieving threshold value of an outcome indicator, 50 percent = 0.50[43] at benchmark comparison (baseline)

P_2 =the expected level of the outcome indicator at endline for the program area such that the quantity (P_2 - P_1) is the size of the magnitude of change it is desired to be able to detect 10 percentage point reduction = 0.40

Z_{α} =the Z-score corresponding to the degree of confidence with which it is desired to be able to conclude that an observed change of size (P_2-P_1) would not have occurred by chance (α - the level of statistical significance for one-tailed test), 95 percent = 1.645

Z_{β} =the z-score corresponding to the degree of confidence with which it is desired to be certain of detecting a change of size (P_2-P_1) if one actually occurred (β - statistical power), 80 percent = 0.840.

D = Design effect[44] for food insecurity indicator that was considered in baseline = 2.0

N_f = Non-response factor (assuming a 10 percent non-response rate) = 1.10

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[42] Magnani, R. 1999. Sampling Guide, Food and Nutrition Technical Assistance III Project (FANTA III).

[43] P attains its maximum value when P_1 is 0.50.

[44] The loss of effectiveness by the use of cluster sampling, instead of simple random sampling, is the design effect. The design effect is basically the ratio of the actual variance, under the sampling method actually used, to the variance computed under the assumption of simple random sampling.

Based on these parameter values, the minimum required sample size per stratum is 666 households. A total of 20 clusters was selected from each of the three strata and 34 households selected from each cluster). Therefore, the target sample per stratum was adjusted to 680.

Selection of clusters. In the first stage of sampling, the clusters (program operational villages or neighborhoods in larger towns) were selected using probability-proportional-to-size (PPS) method[45]. It should be noted that each cluster does not necessarily represent a different village because of large differences in population size for some peri-urban villages compared to rural target villages. As a result, more than one cluster may be selected in a single peri-urban area or larger town. The urban-rural proportion of the sample represents the urban-rural proportion of the total population in the operational areas. The list of clusters and villages/towns selected for the quantitative survey is provided in Table 12-3 Appendix 3.

The community survey was conducted in each village or town that was selected in the first stage selection of clusters for the household survey.

Selection of households. Households within each selected cluster were selected randomly using a systematic random-walk method. To apply the random-walk method correctly, the data collection teams were required to get idea about the geographical characteristics and accurate estimates of the number of households in the sampled cluster. To do this, teams started with a printed Google map of the individual cluster. The team then identified the village boundaries to create a hand-sketched location map. They worked with knowledgeable villagers to estimate the total number of households within the cluster. The teams identified structures (houses, businesses, and other structures) and landmarks using transact-walk techniques. Based on this information, the team leader calculated the skip value (the number of households that each enumerator would skip in the selection process to apply the systematic random-walk method) and direction of data collection team movement.

Selection of respondents. Household head or primary male/female decision-maker was the respondent for collection of information at the household level that includes access to services, assets, social capital, household hunger, shocks/stress and resiliency. In particular, questions related to household dietary diversity were asked to the person who usually cooks food at the household. The woman in the household who is the spouse of the household head was asked the questions related to women's empowerment. Refer to the 2.3 Limitations for explanation of the constraints of this female respondent sample.

Data Collection

In each of the three project areas, three data collection teams and one quality control officer were engaged to implement data collection process. Each field team comprised four interviewers (two males and two females) guided by a team leader. A male and female pair of interviewers jointly conducted household interviews in order to avoid the need to have female respondents interviewed by male interviewers and vice versa. An interviewer pair completed three interviews in a day. A data collection team spent six days to complete 34 interviews in a cluster. It took approximately two months starting from 24 March 24 2016 to complete all 2,040 interviews in all three project areas.

Starting from 28 February 2016, ten days of training was organized in Hargeisa for the Training of Trainers (TOT) participants (team leaders and quality control officers) for the household and community surveys. The TOT training sessions were divided into two parts. During the first four days, the participants received training on the general rules of conducting surveys, sampling, and interviewing

[45] This selection method ensures that the probability of selecting any household is identical for households in a project area. In larger clusters the chance that any single household will be selected is smaller, but this is offset by the fact that larger clusters have a greater chance of being selected in the PPS procedure.

using a paper copy of the questionnaire. In the next four days, the participant practiced using smart phones with Open Data Kit (ODK) survey software. Training included role-plays and mock tests. After eight days of classroom training, the TOT participants did a field practice for one day in two villages near Hargeisa. The TOT participants then repeated this training for the interviewers.

The use of smart phones and electronic questionnaires improved data quality. The ODK software allows data validation rules and consistency checks to be built in. Data quality was also maintained by supervisors reviewing records every day. Enumerators corrected errors (if necessary) prior to uploading the data to a remote server. TANGO also monitored data quality, reviewing daily uploads and provided feedback to the survey implementation and management team for necessary corrections and adjustments.

Data Analysis

The ODK datasets (XML format) were converted into an STATA (Version 13) and SPSS (Version 20) database for data management and analysis.

Weighting of data for analysis. Household weights adjust for unequal probabilities of selection. Computing weights for analysis follows methods described by Magnani (1999). Weights are equal to the inverse of the probability of selection.

The strata-level weight is calculated using the following formula:

Total population (households) across 3 program areas / population in program area i (i=1 to 3).

Cluster sampling weights were used for analysis to adjust the difference of population estimates used in PPS sampling and population estimates used during actual field work. The FANTA Sampling Guideline was also used to calculate the cluster weights. A total sample weight was then calculated by including a strata-level weight that accounts for the unequal probability of selection due to varying population sizes across stratum (program areas).

The cluster level weight is determined according to the following formula:

1/Pi, where

Pi = (m * Mi/M) * k/Ni

m = number of sample clusters chosen

Mi = measure of size for the ith cluster from sample frame

M = total measure of size for the survey universe (M = ∑ Mi)

k = constant number of households chosen per cluster

Ni = total number of households in the ith cluster i.e., Mi updated in field with estimated or actual count of households.

The total sample weight applied as part of the data analysis is the product of the strata-level weight and cluster weight.

Tables in this report include weighted statistics and unweighted sample size. To apply the statistics to the population in each program area, multiply the statistic by the weight in the following table:

Table 2-1: Sampling weights for each program area

Project Area	weight	sample size	Initial HH population estimates	Revised HH population estimates
STORRE	7.0	680	4,945	4,741
PROGRESS	19.5	680	5,814	13,265
REAL	15.1	680	7,080	10,249

Disaggregation of results. Results are presented in tables disaggregated by project areas (STORRE, PROGRESS and REAL) and the wealth index terciles (poorest, middle and richest). The three project areas are in quite distinct parts of Somalia, with different agro-climatic, social, political, and economic conditions. Variations in results across the three project areas may reflect differences in these contextual factors across the three project areas. The profiles of these project areas are described in Chapter 3.

Comparison of results across wealth terciles provides insights into the ways in which economic status is either reflected in or may help to explain the observed differences in the indicators. The wealth index is a composite measure of quantities owned of livestock, productive assets, consumption assets, and housing characteristics using principal-component factor analysis (PCA).[46] Use of PCA as a method to construct wealth indexes, and the subsequent use of wealth index categories as a descriptive statistic technique, has precedent in the Demographic and Health Surveys.[47] Wealth categories are terciles of the wealth index. The terciles were computed using unweighted data for the entire area (three projects combined), so that each category covers one-third of the population. Appendix 1.5 provides a table of the factor scores for each of the underlying assets comprising the wealth index. The factor scores represent the relative contribution of each asset to the overall wealth index.

This evaluation also uses an asset index in analyses of responses to shock. The asset index is different from the wealth index. It is based on assets only (without housing characteristics, improved water, or improved sanitation). The reason for using this reduced asset index is that it is a measure of assets households could potentially sell or use in the event of a shock.

Table 2-2 below contains mean values of the wealth index across wealth terciles. Overall, wealth is extremely low across the sample as measured by the wealth index. The total sample mean of the index which ranges from 0-100 is 0.5.

Table 2-2: Mean wealth index, by wealth tercile

Mean	Total	Poorest	Middle	Richest
Wealth index (0-100)	5.9	0.9	4.2	11.9
n	*2005*	*669*	*668*	*668*

Results of statistical significance tests across sampled categories are reported in order to provide more robust interpretation of results disaggregated by program areas and wealth index categories. In Chapters 2 to 9, statistical differences across categories are indicated by superscripts above the values reported in the tables. Two values in different subcategories (whether project areas or wealth categories) that have the same superscript are significantly different at the 95 percent level of confidence.

[46] Separate asset based factor analyses were calculated for each project area, but examination of the results indicated that a wealth index calculated using the total sample was more appropriate for this study.
[47] Rutstein, S.O. and K. Johnson. 2004. The DHS Wealth Index.

In Chapter 10, results from regression analyses are reported using stars to represent statistical significance at the 0.05(*), 0.01(**) and 0.001(***) levels. The stars represent statistical significanceof tests that the coefficients in the regression models are different from zero.

It should be noted that the sample design, based on the scope of work, did not allow for further disaggregation and analysis within a particular project area.

Qualitative Data Collection and Analysis

Qualitative methods are key to understanding situational awareness of the drivers of resilience and providing a deeper understanding of the processes and interrelationships relevant to household and community resilience. The purpose of the qualitative study was to contextualize, compliment and deepen understanding of the findings of the quantitative study in a sub-sample of communities from the quantitative sample in all three project areas.

Design and Methods

The qualitative component focused on capturing information about resilience at household, inter-household, and community levels. Qualitative information helped contextualize measurement dimensions, provided an understanding of local concepts and definitions of resilience, and enabled a better understanding of the perceived significance of changes that are measured quantitatively. The qualitative component of the baseline also captured information about reasons why households and communities make particular decisions to respond to shocks and is crucial for interpreting the outcome estimates and findings from the quantitative data. Finally, the qualitative information provides preliminary evidence and explanation for how the project activities that have already started implementation have influenced the risk-reduction and adaption strategies pursued by men and women, and communities to cope with recurrent shocks. Topical outlines were developed by TANGO in conjunction with USAID and IP staff. See the Supplementary Annex for the qualitative tools.

Research techniques. The qualitative researchers gathered data from separate focus group discussions (FGDs) of men and women, and from sub-groups of interest where they exist at the community level (e.g., religious leaders, savings groups, community leaders, elders, etc.). Participatory tools and techniques (e.g., Venn diagrams, resilience ranking, direct observation) were used as needed to promote maximum engagement of respondents. The qualitative teams also interviewed key informants (KII) in each project area.

A total of 72 FGDs were conducted across the program areas, including 560 community member participants (292 males/268 females). FGDs were conducted among groups representative of gender and age dimensions (e.g., elders, male youth, adult women, elder women, etc.) for each community. The average FGD group size was eight individuals. Separate focus groups were conducted with male and female respondents in each community. Focus group facilitators were guided by the topical outline but were trained to remain flexible in time and structure. The primary areas of discussion for FGDs included the nature of shocks and stresses experienced by the community and common responses to them, with particular emphasis on household engagement with formal and informal support networks, and factor's influencing the community' capacity for collective action.

A total of 36 KIIs were conducted, 12 per project area. The qualitative teams sought to interview one male and one female KII per village. KIIs were conducted simultaneously or immediately following FGDs, but the same individual would not participate in both. Key informants were selected based on their special knowledge of some aspect of the population being surveyed, including: community leaders, religious leaders, savings group leaders, village heads, etc.). KIIs helped with the development of more detailed qualitative project area profiles, as well as providing information useful for cross-checking

information gained from the FGDs. The main themes explored with key informants to complement the household and community surveys were: perceptions of resilience programs and their coherence with community needs, community social capital and governance structures, among other topics.

Sampling methods. Qualitative research was carried out among a sub-set of communities included in the overall quantitative sample. This ensured that analysis of qualitative data provided complementary explanations of results arrived at through quantitative analysis.

The first step of the qualitative sampling included using a random-number generator to select six communities per project (and two substitute/back-up communities per project) as a sub-set of the quantitative PPS sample. Secondly, across project areas efforts were made to ensure the selected communities for the qualitative sample: 1) represent all project districts; and 2) reflect the project area diversity in terms of livelihoods and ecological zones, and differing access to services. For that second step, each IP identified key community characteristics from which the sampling criteria would be based. The primary selection criterion is livelihood zone, followed by secondary factors that may differ by IP such as district governance (Somaliland only), accessibility to services or markets, and variations across communities in livestock assets. Due to security conditions (for the areas in southcentral) that restricted access to some communities at the time of data collection, there were pre-selected substitute communities that also filled the sampling criteria.

Using the above sampling methodology, the following six villages per project area were included in the qualitative study:

Table 2-3: Qualitative sampling, list of villages by project area

#	STORRE		PROGRESS		REAL	
	District	Village	District	Village	District	Village
1	Erigavo	Jiidali	Afgooye	Bulalow	Luuq town	Bulamusley
2	Erigavo	Doonyaha	Afgooye	Bulo-Madiina (riverine back-up used)	Luuq town	Aakaaro
3	Erigavo	Dhoob	Afgooye	Donka	Luuq	Shirgalool
4	Badhan	Xingalool	Baidoa	Aliyow Muumin	Luuq	Jazeera IDP Camp
5	Erigavo	Carmale	Baidoa	Aawdiinle	Luuq	Garbolow (agro-pastoral backup used)
6	Badhan	Sibaayo	Belet Xaawo	Odaa	Luuq	Shaatilow (pastoral backup used)

Data Collection

Qualitative researcher training. The qualitative team consists of 12 qualitative researchers divided into three teams of four, one team per project area. The teams were hired by Forcier. The teams were gender-balanced and had relevant research experience, and they included Somali nationals with knowledge of the study area. Training was conducted in Hargeisa for three days: 5-7 March 2016. The training started with an introduction of the team members and orientation to the protocols expected for ethical human subjects research and to comply with standards of the hiring firm; then, the training focused on the team gaining an initial understanding of the goals and objectives of the program. Specific sessions were also devoted to providing team members with a sound conceptual understanding of resilience at the household and community levels and the means of qualitatively assessing it. Training participants were given ample time to become familiar with the qualitative research instruments (topical outlines) and interactive techniques. They provided input to ensure that topical outline questions were contextualized and well-translated, and then the tools were pre-tested in small groups and revised prior to commencement of data collection. The final stages of training were devoted to reviewing qualitative team roles, responsibilities and logistics, and then becoming familiar with the recording devices used for cross-checking during data collection.

Data collection and data management. Within days of training completion, the first qualitative team departed Hargeisa and travelled to the STORRE project area to begin qualitative data collection. The other two teams travelled to the south to begin shortly thereafter. Qualitative data collection was conducted across the program from approximately 13-29 March 2016.

Due to the nature of the evaluation being such that TANGO contributed remotely to the fieldwork led by Forcier, several data management techniques were used to ensure high quality qualitative data: 1) Supervision: there was one extra day in the field in the first village visited by the teams to allow for real-time instruction and feedback to be given by Forcier/TANGO before moving on to complete the remaining fieldwork. The Forcier team leads and project coordinators continued to observe the qualitative data collection in order to advise near real-time adjustments on a regular basis. 2) Quality notes revised through recordings: qualitative data were collected in pairs to allow one researcher to take notes during the conversation, and these notes were then transferred/ typed into matrices that followed the topical outline. For each day of qualitative data collection, nearly a full day of time was allotted to type the interview notes and fill out the matrices. The qualitative team members with Forcier continuously translated (to English) and synthesized data gathered while in the field. These matrix notes in English were reviewed by Forcier staff and if deemed complete sent on for review by the TANGO consultant. The TANGO consultant reviewed and added clarifying questions, for which the researchers listened to the audio recordings of the interview to respond and make corrections as necessary. This quality assurance process for the qualitative data took place from April-May 2016.

Data Analysis

Matrix approach for analysis. As mentioned above, the matrix approach ensured that all team members were recording information consistently and in a manner that directly responded to key research questions. Capturing qualitative data in matrices enables identification of important patterns in responses and specific contextual information that helps to explain quantitative data. Developing qualitative data matrices also allows responses from focus groups, key informants, households, and others to be triangulated to determine whether information is reliable and representative of the project area. Data in qualitative matrices can be compared to identify differences in perception between groups based on gender, location, or social status. Before analysis of qualitative information began, the data were aggregated by TANGO into qualitative data matrices by project area. During the analysis, completed matrices helped to ensure that qualitative information was concisely and coherently integrated with the presentation of quantitative survey results in the final report.

Limitations

A number of challenges were encountered before and during the course of fieldwork. One general challenge has been that the survey has had to serve two different purposes. First, the scope of work identified as the overall purpose of the survey to measure resilience indicators and related information, particularly exposure to shocks, household food security outcomes. In addition to this purpose, the implementing partners expected that the baseline survey would also provide benchmark values of their project indicators. Combination of these distinct purposes resulted in a number of problems in the design of the survey. It was not possible to measure all requested project indicators exactly as specified by the implementing partners, so compromises had to be made. Furthermore, the sample design was not appropriate to measure all proposed project indicators at acceptably high levels of statistical accuracy. The combination of these two purposes also led to a very long survey instrument, and interview times became quite long.

Obtaining reliable household population estimates for the communities served by the three separate programs proved difficult. These population estimates are critical inputs used as part of the sampling design for this evaluation. Under the PPS procedure for selecting clusters, population estimates determine the probability of a community being included in the sample and inaccurate estimates will

alter these probabilities rendering the sample less representative of the beneficiary population being evaluated. Forcier Consultants, the local survey firm, updated population estimates during field work. The revised estimates were used to compute sample weights used in the data analysis. The sample weights correct for the inaccurate estimates used as part of the initial sample frame and improve the statistical representativeness of the results presented, with one caveat. One particular village in the PROGRESS program area, Beled Amiin in Gedo, required a significant revision in household population estimate – from an estimated 480 households to 13,500 households. The sample weight necessary to adjust for the revised population estimates results in Beled Amiin accounting for 32.5 percent of the total weighted sample and the PROGRESS program area accounting for 83.9 percent of the total sample. Households for the survey sample were randomly selected from the entire Beled Amiin area. After the fieldwork was complete and analysis underway, TANGO staff noticed the large weight for households in Beled Amiin and contacted CRS. CRS reported that they were implementing only in one section of Beled Amiin. However, because sampled households came from a larger area, they were weighted to represent that larger area. As a check on the results, descriptive and multivariate analyses were run twice for the PROGRESS program area: (1) including Beled Amiin and (2) without Beled Amiin[48]. The report contains results including Beled Amiin. There were few significant differences.

It should also be noted that the REAL project area results for this baseline may not represent the actual area where the project has focused its efforts. The REAL baseline sampling was based on the list of target villages provided by the IP. The list included clusters within Luuq townhe PPS procedure means that areas with larger populations have a higher probability of being included in the sample. Because of this, the majority of the REAL sample was drawn from the urban clusters. During the drafting of this report, it was brought to the study team's attention that REAL programming may have changed. Thus, the REAL stakeholders should take that into account when interpreting these results for their project area.

Finally, response rates for household survey Module 22 on women's decision making were particularly low–less than 50 percent. This was partially due instances where there was no woman present at the household available to be interviewed at the time the enumerators were implementing this final portion of the survey. For roughly 30 percent of households, a woman was available to be interviewed, however was not eligible for this module, as this module was only given to women who were not identified as the head of household. Another limitation that should be noted with this agreed design of interviewing a primary female decision-maker or spouse of household head for Module 22 is that the women's empowerment findings do not represent all females of the household (e.g., widows, younger females).

[48] Results from analyses omitting data from Beled Amiin:

- Shock exposure in the PROGRESS area had the most changes, overall exposure decreased, exposure to floods/heavy rains, late/variable rainfall, conflict, trade disruptions, cholera diarrheal outbreaks, displacement of household, death of income earner, unemployment/underemployment all decreased.
- Assets. Productive assets—of 15 productive assets, two changed. A larger share of households owned hoes and agricultural land. The asset index (mean) increased; Of ten livestock assets, donkey ownership increased.
- Livelihoods—of 19 livelihoods, farming increased; four decreased (salaried work decreased, small shop/kiosk, domestic services, and begging).
- Household hunger decreased.
- No changes to social capital.
- No changes to recovery or household food security.
- No changes to household demographics or housing conditions.
- Changes to results from multi-variate equations for both overall and PROGRESS area were lower levels of significance for some explanatory variables (with 0.01 significant level or higher), and loss of significance for some variables with 0.05 significance level.

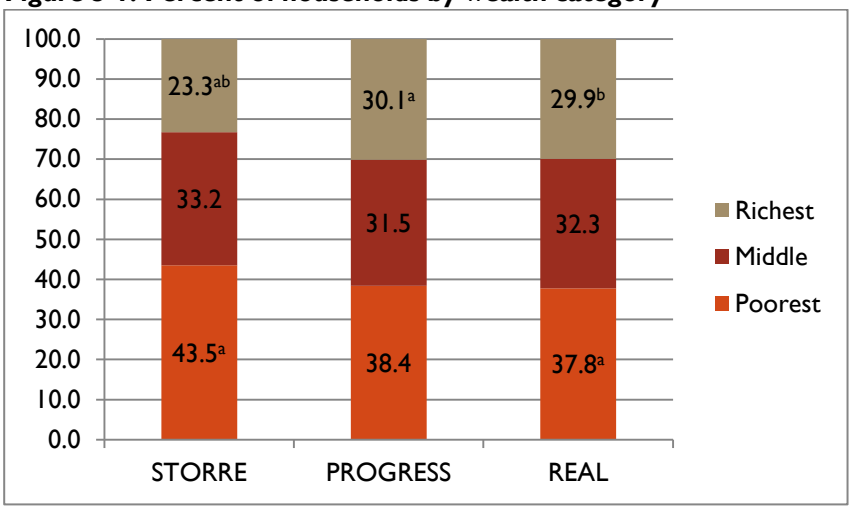
FINDINGS

The chapters that follow present the findings of the study. At the end of each chapter there is a summary of key findings.

Chapter 3 Key Characteristics of Project Areas

As shown in Figure 3-1, the distribution of the project populations across wealth categories do not differ much from project area to project area. Figure 3-1 shows the categories across program areas. The STORRE area has a slightly larger poor population as compared to the REAL area, and fewer households in the "richest" category. Overall, the distribution of wealth looks remarkably similar across the three program areas.

Figure 3-1: Percent of households by wealth category

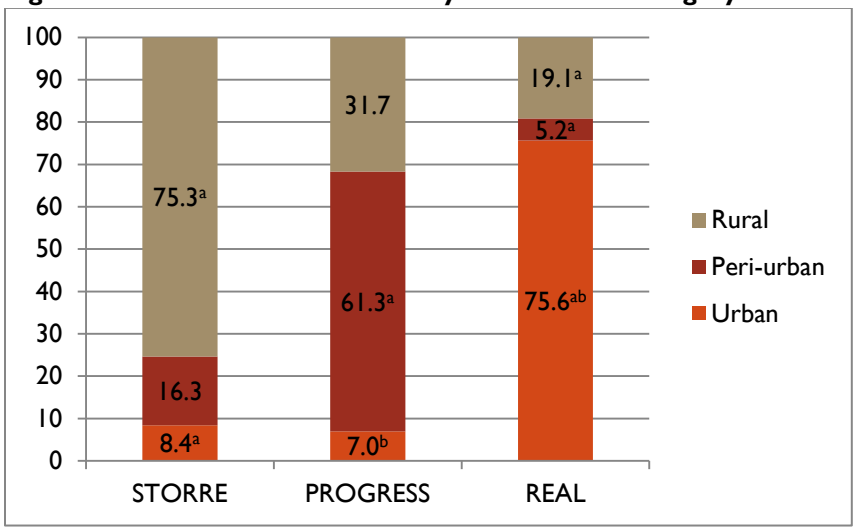


Alphabetic superscripts show statistically significant differences between projects at the 0.05 level for each wealth category.
See corresponding table in Appendix 3.

Figure 3-2 demonstrates the degree of urbanization across program areas. The program is comprised of areas with very different urbanization profiles. Villages sampled for this study were characterized as urban, peri-urban or rural based on the following criteria: (see Table 12-3 in Appendix 3 for a listing of the sampled villages by urbanization category)

- Urban: cities with stronger infrastructure, including business centers, government offices, health care services, secondary schools and options for more advanced education;
- Peri-urban: either neighborhoods on the outskirts of cities, or smaller cities with weaker infrastructure; peri-urban areas have some shops, lower level schools, and fewer health care options (no hospitals, likely only a maternal and child health facility at most), and there are no government offices or major business centers; residents also have livestock in their homes; and
- Rural: very little infrastructure, and pastoralism/farming are the dominant livelihoods. Rural areas require travel to village centers to access shops, health care, education and markets.

Figure 3-2: Percent of households by urbanization category



Alphabetic superscripts show statistically significant differences between projects at the 0.05 level for each urbanization category.

These are key characteristics of the different project areas that should be considered while interpreting the results of this report.[49] In sum, the STORRE villages sampled are located in mainly rural areas (75.3 percent) and have a disproportionate share of the poorest households (43.5 percent). In contrast, PROGRESS communities are predominately peri-urban (61.3 percent) and the REAL project is operating mostly in urban areas (75.6 percent). While the proportion of the poorest households is highest in the STORRE area, it is not markedly different, even if statistically significant, from those seen in the PROGRESS and REAL areas (43.5, 38.4, and 37.8 percent, respectively). Given the different urbanization profiles of the three program areas, one might expect to see an even larger proportion of the poorest households located in the STORRE area due to the rural concentration of households in that area. One potential mitigating factor could be that STORRE is operating within Somaliland, which has long-term functioning government and presumably higher levels of public goods and infrastructure, as compared to the Interim Jubba and Interim Southwest Administrations in which REAL and PROGRESS are operating.

CHAPTER 3 SUMMARY OF KEY FINDINGS

- **The three project areas align with the urbanization categories of urban, peri-urban and rural.** Although the three project areas are markedly different in their urbanization profiles, the distribution of wealth is similar across all project areas.
  - **STORRE is primarily rural.** Rural households make up 75.3 percent of the sampled program area. Poorest households comprise 43.5 percent of the total.
  - **PROGRESS is primarily peri-urban.** Peri-urban households make up 61.3 percent of the sampled program area. Poorest households comprise 38.4 percent of the total.
  - **REAL is primarily urban.** Urban households make up 75.6 percent of the sampled program area. Poorest households comprise 37.8 percent of the total.

[49] At the time of drafting this report, it was brought to the study team's attention that REAL programming may have shifted away from the original primarily urban target area from which this study sample was based. Thus, the REAL stakeholders should take that into account when interpreting these study results for their project area.

Chapter 4 Description of Household Demographics, Assets and Livelihoods

Chapter 4 lays the foundation for latter discussions on resilience and resilience capacities by providing an overall profile of program households related to their demographics, housing characteristics, assets and wealth status, livelihoods production and migration history.

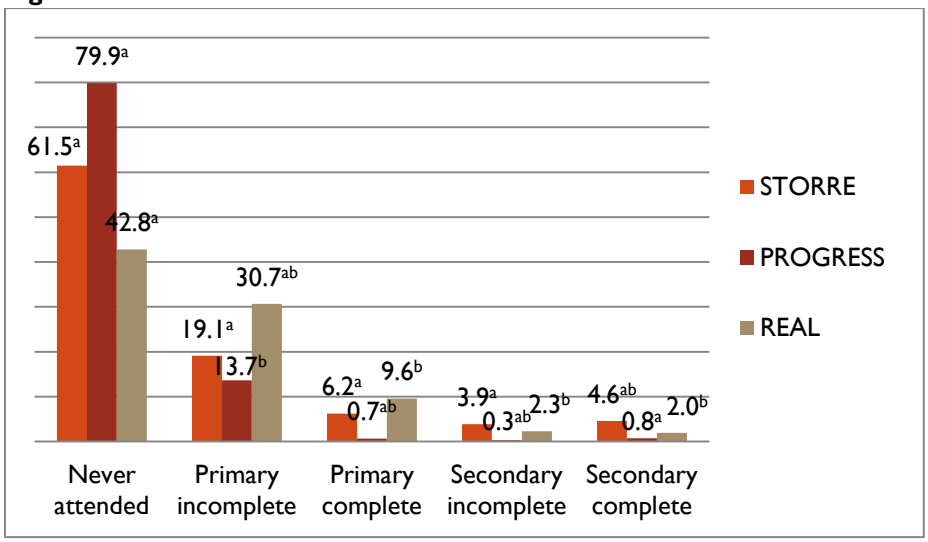
Demographics and Housing Characteristics

This chapter provides an overview of basic household demographics. The household roster collected information on the age, sex, education level, literacy, and marital status of each household member. The data on education and literacy for all adult members of the household are used in the human capital index, an indicator of adaptive resilience capacity (see Appendix 1.6).

Demographics. REAL households are larger by about one member on average (7.3) than STORRE households (6.3). Female-headed households comprise 3.2 percent of STORRE households, 4.6 percent of PROGRESS households and 1.3 percent of REAL households, with no significant difference across project areas. The prevalence of divorce among the household heads is lower in the PROGRESS area (3.2 percent) compared to the other areas (REAL: 5.8 percent; STORRE: 7.1 percent); yet, being widowed as a household head is more common for the PROGRESS area (12.7 percent) as compared to STORRE with 7.9 percent of widower heads (see Table 12-4 in Appendix 3).

The education levels of heads of household are low across the program area (Figure 4-1). PROGRESS area heads of household have significantly less education overall, with 79.9 percent of the heads with no schooling, as compared to 61.5 percent in STORRE area and 42.8 percent in REAL area. While the actual proportion is still low, significantly more STORRE area heads of household have attained secondary level education (4.6 percent) as compared to 2.0 percent in REAL area and 0.8 percent in PROGRESS area.

Figure 4-1: Education level of household head



Alphabetic superscripts show statistically significant differences between projects at the 0.05 level for each education level.
See corresponding table in Appendix 3.

Table 4-1 shows the percent of children and youth of program households by schooling and literacy levels. While about two-thirds of STORRE and REAL youth can read or write by the time they are in the 14-18 age group, only 19.7 percent of those ages of PROGRESS youth are literate. The prospects

for education for PROGRESS area children are also very low. At the age of 13 when it is expected the child has finished primary,[50] 71.6 percent of PROGRESS 13 year-old children have had not schooling. The completion of primary education is low across projects: 13.3 percent of STORRE 13 year-olds have completed primary, 1.0 percent of those in PROGRESS, and 9.6 percent in REAL. Secondary education is even less common across project areas.

Table 4-1: Child education and literacy

Schooling and literacy (%)	Program area		
	STORRE	PROGRESS	REAL
Children ages 6-13			
Can read or write	37.8	16.7	46.4
n (all children ages 6-13)	*1121*	*1056*	*1322*
No schooling	32.5	71.6	28.1
Some primary	50.0	19.6	42.2
Completed primary	13.3	1.0	9.6
Some mosque education	2.5	7.8	20.0
n (children age 13 only)	*120*	*102*	*135*
Children ages 14-18			
Can read or write	66.7	19.7	67.5
n (all children ages 14-18))	*570*	*427*	*590*
No schooling	35.2	73.3	37.0
Some primary	35.2	20.9	34.8
Completed primary	16.4	4.7	10.9
Some secondary	8.6	1.2	6.5
Completed secondary or higher	2.3	0.0	0.7
Other literacy program	1.6	0.0	0.7
Some mosque education	0.8	0.0	8.7
n (children age 18 only)	*128*	*86*	*138*

Note: Sample includes all children of these age groups listed in the household roster. Results are not weighted.

Housing. Housing characteristics can provide important insight into wealth and health status of families in Somalia.[51] The households report a two-room dwelling on average across the program. Thatch is the most common type of roofing material used across the program, which is the traditional Somali hut, and the floors are often just the earth. In terms of differences in housing materials across project areas, STORRE homes are generally more likely to use wood and mud for roofs and to not use less-durable materials like plastic sheeting or tarps as compared to the project areas in the south; they are also more

[50] The ages for when Somali children are expected to have completed primary (13 years) and secondary (18 years) are taken from a UNICEF joint strategy document with Somalia Ministry of Human Development and Public Services (2013-2016).

[51] A global study conducted by Bradley and Putnick (2012), which included Somalia Micro-Indicator Cluster Survey data, found that households in all of the high-HDI countries had quality of housing at least a half standard deviation higher than the grand mean, and households in all the low-HDI countries had quality of housing at least a half standard deviation lower than the grand mean (Somalia falling in the low-HDI category). Quality of housing included drinking water, toilet facilities, household flooring material, cooking and refrigeration. Higher scores on these five items were all indicative of a healthier and safer home environment for children under five.

likely to have flooring beyond the bare earth, laying down materials such as stones or mats (see Table 12-5 in Appendix 3).

Table 4-2 shows that an improved drinking water source is accessible to 41.9 percent of STORRE, 47.5 percent of PROGRESS and 65.3 percent of REAL households. Roughly half of the poorest households across project areas have access to an improved drinking water source, which is primarily a protected public well among the poorest STORRE households, piped water into public tap for the poorest PROGRESS households, and piped water into yard or dwelling for the poorest REAL households (see Table 12-6 in Appendix 3) The prevalence of improved sanitation ranges from a quarter (25.1 percent) of households in the STORRE area to one-third (33.3 percent) in the PROGRESS area and 53.4 percent in the REAL area. Only 16.5 percent of homes have access to electricity, and the poorest homes have significantly less access to electricity (3.8 percent) than the middle wealth status (16.5 percent) or richest (32.8 percent) homes.

Table 4-2: Household access to improved drinking water source, improved sanitation and electricity

Housing	Program area			Wealth categories		
	STORRE	PROGRESS	REAL	Poorest	Middle	Richest
Improved drinking water source (%)	41.9	47.5	65.3	53.3	37.5	57.9
Improved sanitation facility (%)	25.1	33.3	53.4	24.4 [a]	44.9 [a]	40.7
Houses with electricity (%)	15.7	17.0	13.4	3.8 [ab]	16.5 [a]	32.8 [b]
n	*672*	*663*	*672*	*669*	*668*	*668*

Alphabetic superscripts show statistically significant differences at the 0.05 level.
See corresponding table in Appendix 3.

The analysis by household wealth category shows the following links between poverty and various household characteristics:

- The heads of the poorest households are more likely to be widowed or divorced, and less likely to be married.
- The heads of the poorest households are less likely to have completed primary school or to have received any religious education.
- The poorest households are more likely to use plastic tarps for roofing instead of the more durable or water-proof corrugated iron or cement used by wealthier households, and their floors are more often made of bare earth.
- The poorest households have less access to electricity than wealthier households.

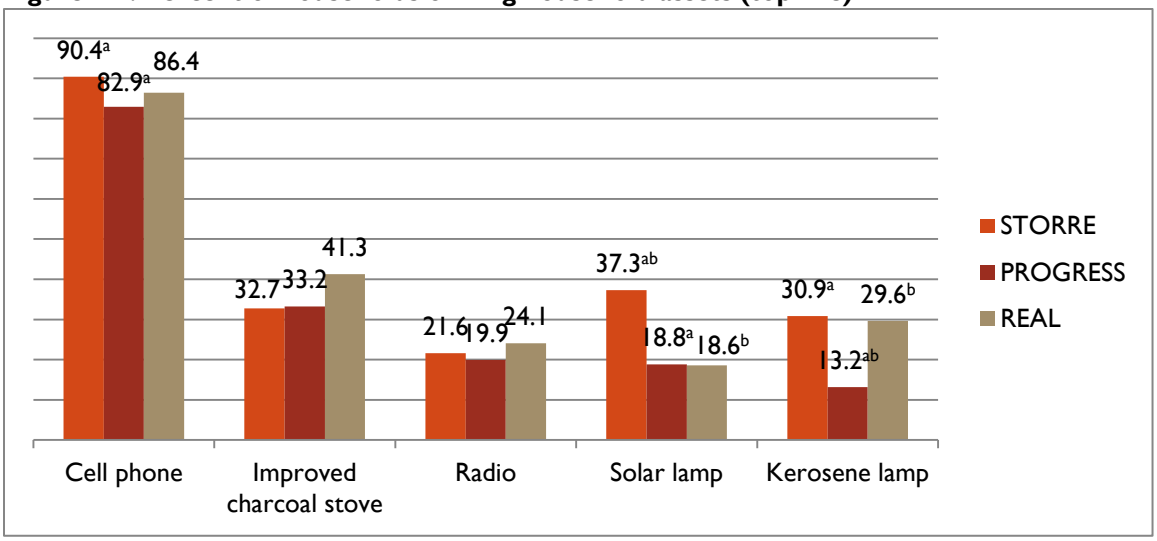
Household, Productive and Livestock Assets

Household assets. Figure 4-2 shows ownership of household assets for the top five assets. With the astounding availability of cellular networks in Somalia despite lack of other infrastructure,[52] cell phone communication is widespread (82.9 to 90.4 percent across projects). About one-third or more of households in each project area own an improved charcoal stove and at least one in five own a radio. Solar lamp ownership is most common in the STORRE area (37.3 percent, as are solar panels: see Table

[52] For market penetration of telecomm services, see: https://www. Budde.com. Au/Research/Somalia-Telecoms-Mobile-and-Broadband-Statistics-and-Analyses

12-7 in Appendix 3), as compared to the other areas, and ownership of kerosene lamps is less prevalent in the PROGRESS area (13.2 percent).

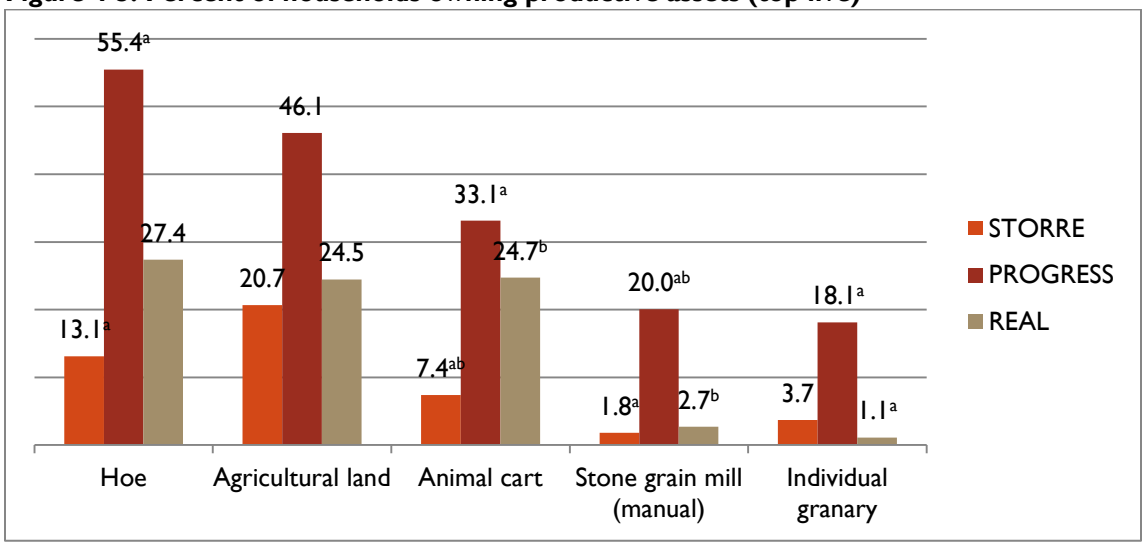
Figure 4-2: Percent of households owning household assets (top five)



Alphabetic superscripts show statistically significant differences between projects at the 0.05 level for each asset.
See corresponding table in Appendix 3.

Productive assets. Productive assets are more widely owned in the PROGRESS area, as shown in Figure 4-3, not surprising, as an area requiring productive tools and inputs for the predominant livelihood of farming.

Figure 4-3: Percent of households owning productive assets (top five)



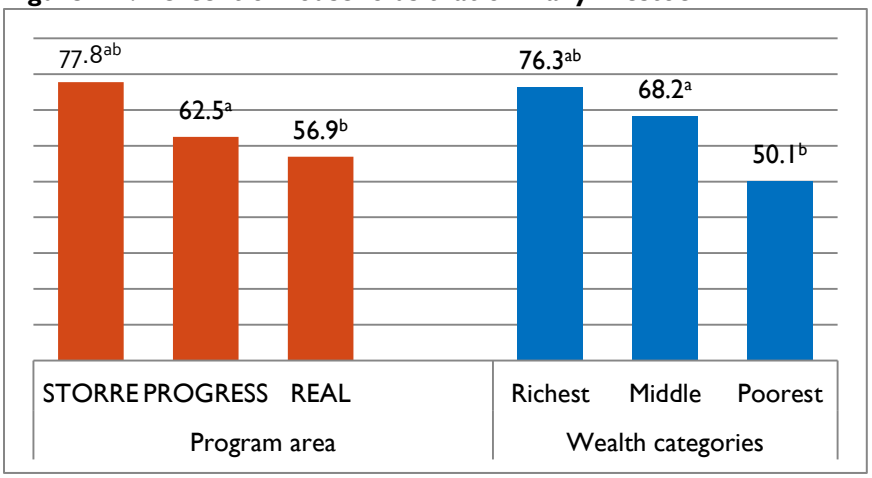
Alphabetic superscripts show statistically significant differences between projects at the 0.05 level for each asset.
See corresponding table in Appendix 3.

Livestock assets. Livestock ownership is another important indicator of wealth in the Somali context, with the livestock sector as the largest contributor to Somali livelihoods.[53] Figure 4-4 shows that STORRE households are significantly more likely to own any livestock (77.8 percent), which is not a surprising finding as it is primarily a pastoralist area, this compared to 62.5 percent in the PROGRESS

[53] See: http://www.fao.org/somalia/programmes-and-projects/livestock/en/

area and 56.9 percent in the REAL area. Wealthier households are more likely to own livestock; over three-quarters (76.3 percent) of the richest households own livestock.

Figure 4-4: Percent of households that own any livestock



Alphabetic superscripts show statistically significant differences at the 0.05 level across program area and wealth category.
See corresponding table in Appendix 3.

More STORRE households tend to own goats (95.6), sheep (70.8 percent), and camel (32.0) than the other project areas; STORRE herds of goat and sheep are also significantly larger on average (16-20). Many PROGRESS (60.9 percent) and REAL (50.0) households own poultry, compared to just four percent of STORRE households. There are not significant differences across the projects in ownership of donkeys, cattle or oxen (see Table 12-10 in Appendix 3).

There are low levels of livestock sales in the past 12 months overall. The wealthier households among the program population have sold more goats (median of five goats in the past year compared to three among the poorest households). Another significant difference is that PROGRESS households not only own fewer sheep, but have also sold fewer sheep than the other project areas (median of three sheep sold in past year versus five for other project areas) (see Table 12-12 in Appendix 3).

Livelihood Profiles

Table 4-3 shows the top livelihood activities reported by households as sources of their food or income over the last 12 months. The STORRE livelihood profile is characterized by livestock production activities (40.1 percent), as the project communities are primarily pastoralist. The main livelihood of the PROGRESS area is farming, including crop production and sales, reported by 45.6 percent of the households. It is notable that while livestock are typically the symbols of wealth in the Somali context, the data show crop production as a livelihood activity associated with the richest households across the program (77.8 percent). The REAL area is comprised of a range of livelihood profiles such as non-agricultural wage labor (20.9 percent), farming (17.3 percent) and small shops (16.2 percent), which makes sense with the project area including urban and rural communities. Low levels of program households report remittances as a major source of livelihood support.

Table 4-3:Household main livelihood activities (top reported) in last 12 months

Livelihoods (%)	Program area			Wealth categories		
	STORRE	PROGRESS	REAL	Poorest	Middle	Richest
Farming/crop production and sales	10.6 [a]	45.6 [a]	17.3	14.5 [a]	41.2 [a]	77.8 [a]
Non-agricultural wage labor	6.8 [a]	14.4	20.9 [a]	17.6 [a]	20.4 [b]	7.3 [ab]
Livestock production and sales	40.1 [ab]	10.0 [a]	15.2 [b]	5.1	17.3	14.8
Agricultural wage labor	0.9 [ab]	7.0 [a]	5.6 [b]	10.1	4.8	4.8
Small shop/kiosk	14.5 [a]	4.3 [ab]	16.2 [b]	7.4	6.4	4.8
Salaried work (non-agricultural)	8.0	5.1 [a]	12.1 [a]	6.9	6.7	5.1
Domestic services	0.4 [a]	4.6 [a]	0.7	10.5 [ab]	0.2 [a]	0.0 [b]
Remittances	4.4	2.0 [a]	5.3 [a]	4.7 [ab]	1.2 [a]	1.3 [b]
n	*680*	*680*	*680*	*669*	*668*	*668*

Note: Columns do not sum to 100 due to multiple response.
Alphabetic superscripts show statistically significant differences at the 0.05 level.
See corresponding table in Appendix 3.

It should be noted that the table above (Table 4-3) shows the main livelihood activities reported by households as providing their sources of food or income in the year before the survey. See Table 12-43 in Appendix 3 for the full picture of livelihood activities conducted by households, even if not major food or income sources for the family.

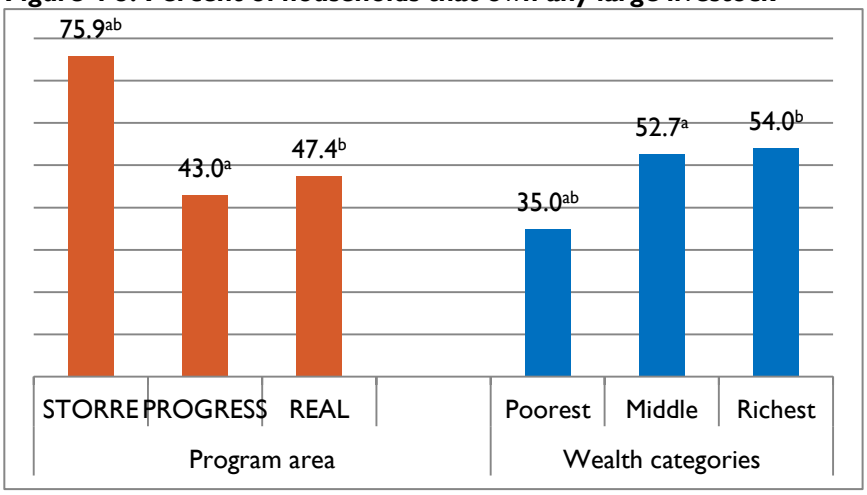
Livestock Production

This chapter describes livestock production, including the context of water and fodder availability during rainy and dry seasons, and the sales of livestock related commodities.

Livestock Water and Fodder Availability

Water and fodder availability discussed in this section pertains to larger livestock only, as the ability of the livestock to produce and their overall health is dependent on the provision of water and fodder. Figure 4-5 shows the percent of households that own any camel, cattle, goats or sheep. Three-quarters of STORRE households (75.9 percent) own larger livestock, compared to less than half of households in each of the other project areas. While there is not a difference between the middle and richest wealth categories in ownership of larger livestock, the poorest households are less likely to own these animals.

Figure 4-5: Percent of households that own any large livestock

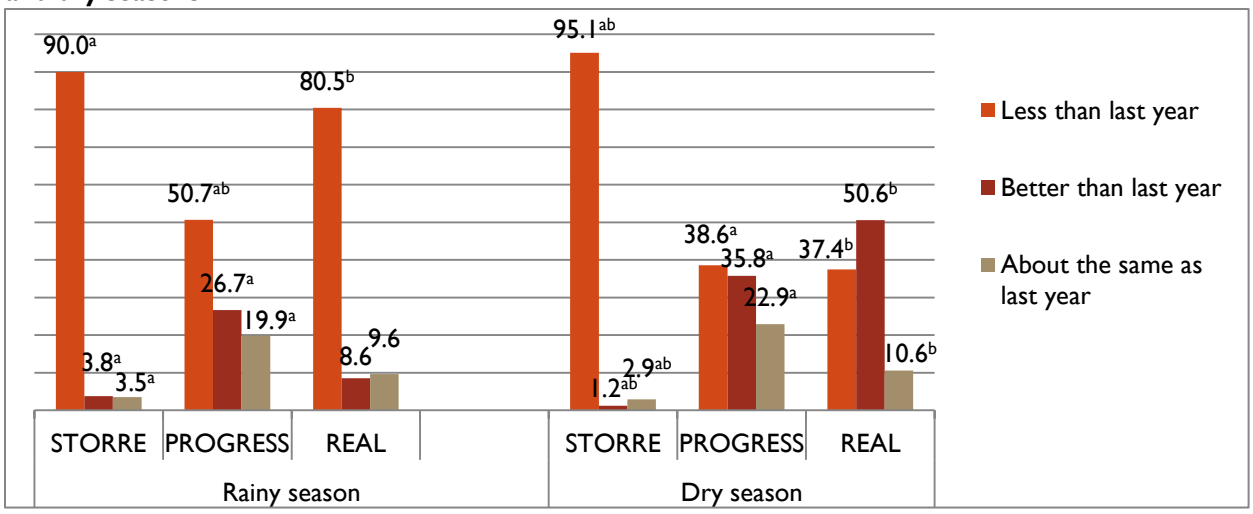


Includes households that own any camel, cattle, goats or sheep.
Alphabetic superscripts show statistically significant differences at the 0.05 level across program area and wealth category.
See corresponding table in Appendix 3.

Livestock food availability. In the rainy season, most households across projects that own larger livestock graze the livestock on communal pastures (see Table 12-13 in Appendix 3). In the dry season, the PROGRESS (61.1 percent) and REAL (76.7 percent) livestock owners rely more on purchased feed, while fewer STORRE livestock owners tend to purchase feed (15.1 percent) and instead continue to rely on both communal and private pastures.

Most households report that their livestock food source was less available compared to last year, a finding across all project areas and wealth categories, and the primary reason reported was prolonged drought (see Table 12-14 and Table 12-15 in Appendix 3). As shown in Figure 4-6, STORRE livestock owners reported less livestock food source availability (90.0 percent during the rainy season; 95.1 percent during the dry season) compared to PROGRESS and REAL livestock owners. A smaller percentage of households across project areas reported better livestock food source availability compared to last year, which was mostly attributed to better rainfall.

Figure 4-6: Percent of households reporting livestock food availability compared to last year in rainy and dry seasons



Includes households that own any camel, cattle, goats or sheep.
Alphabetic superscripts show statistically significant differences between project areas at the 0.05 level for each comparison to last year (less, better, about the same) and by rainy and dry season.
See corresponding tables in Appendix 3.

Livestock water availability. The primary livestock water sources vary across project area and by rainy or dry season, reflecting some of the regional differences between the north and south (see Table 12-16 in Appendix 3). STORRE livestock owners use ponds/dams, shallow wells and *berkads* in the rainy season; in the dry season they shift away from ponds/dams, in particular, to relying on boreholes and water tankers. The PROGRESS and REAL livestock owners both use rivers/streams as their primary livestock water source during the rainy season, which makes sense if the rivers of the south are flowing after the rains. In the dry season, PROGRESS livestock owners seek out a variety of other water sources such as *berkad*, borehole and shallow well, while REAL livestock owners continue to use the river/stream source.

The livestock water availability shows a similar trend to that discussed for food availability above (see Table 12-17 and Table 12-18 in Appendix 3). STORRE livestock owners, in particular, have faced less water availability compared to last year (90.8 percent in the rainy season, 93.4 percent in the dry season) and compared to the other project areas. Again, the primary reason for shortages of livestock

water across the projects is less rainfall, during both the rainy season and the dry season (i.e., when surface water left from rain is used).

Livestock Commodities

Across livestock commodities, milk and milk products from cattle, sheep, goats and camels were produced in greater abundance in the last three years than the meat and skin/hides from those animals. When comparing across wealth categories, the richest households are more likely to produce livestock commodities than the poorest or middle households (see Table 12-19 in Appendix 3). Sales of commodities by producing households are low across the project areas. The only livestock commodities with increasing sales over the past three years for most (over half) of the producers of that area are: sheep/goat milk and milk products in STORRE (61.3 percent) and REAL (63.5 percent) areas; sheep/goat meat in the STORRE area[54] (57.0 percent); and eggs in the REAL area (51.4 percent) (see Table 12-21 in Appendix 3).

Livestock commodity sales generally take place in local markets for STORRE producers, and for PROGRESS and REAL producers, in regional or district markets (with the exception of eggs, which are sold locally) (see Table 12-22 in Appendix 3). Sales of these commodities through producer groups are very low, overall.

Crop production

Cultivation and Crop Sales

As discussed previously in Chapter 4 Livelihood Profiles, the PROGRESS area livelihood is primarily farming and crop production, with some farming conducted in the REAL AREA and much less in STORRE; also the richer households across the program are producing crops. For those PROGRESS and REAL households not engaged in crop production, the main reasons are no access to land and lack of money; whereas STORRE households are not producing crops due to lack of interest, among other reasons (see Table 12-24 in Appendix 3).

Across projects, most households producing crops report that the amount of cultivable land has stayed the same in the past year (see Table 12-25 in Appendix 3). The top crops produced in the last growing season before the survey were: sweet potato (52.8 percent) and sorghum (33.8 percent) in the STORRE area; millet (72.5 percent) and peppers (63.3 percent) in the PROGRESS area; and maize (63.5 percent) and sweet potato (53.8 percent) in the REAL area. However, these were not necessarily the top crops reportedly sold in each project area (see Table 12-27 in Appendix 3).

Agricultural Practices

Table 4-4 shows the improved agricultural production practices used by crop-producing households in the past year. Crop diversification and soil fertility practices are most commonly used among STORRE area farming households. Minimum tillage is the most commonly employed practices in the PROGRESS and REAL areas.

[54] The STORRE IP notes that the political crisis in the Middle East, Yemen in particular, has caused a decrease in the livestock exports from Badhan and Erigavo districts that would be shipped to that region, which is an external factor that may be affecting these results.

Table 4-4: Percent of farming households using improved production practices

Type of practice (top10)	Program area		
	STORRE	PROGRESS	REAL
Households having used the practice in the last 12 months (%)			
Minimum tillage	23.7 [ab]	41.4 [a]	50.6 [b]
Crop diversification	42.0	31.9	42.0
Cropping system	28.1	20.3	28.5
Soil and water conservation	36.1 [a]	15.7 [a]	24.4
Integrated pest management	21.3	14.0	26.1
Improved storage practices	4.3 [a]	17.5 [a]	7.5
Soil fertility	37.5 [a]	12.7 [a]	20.2
Hay making	27.8 [a]	14.6	7.8 [a]
Improved livestock husbandry practices	28.3 [a]	9.3 [a]	24.9
Drip or micro-irrigation	11.8	9.2	12.6
n	*138*	*509*	*147*

Alphabetic superscripts show statistically significant differences at the 0.05 level.
See corresponding table in Appendix 3.

Migration

Table 4-5 shows households reporting that at least one member of their household has migrated to somewhere else in Somalia or to another country (outside Somalia), and if remittances are received by those migrated persons. Across the projects, less than one in ten households have a family member who moved to an urban area within Somalia in the last 12 months, with slightly more migrations reported to rural areas. PROGRESS households (37.3 percent) are more likely to receive remittances from those internal movements as compared to the other project areas. In the last 10 years, households with at least one family member who has migrated abroad ranges from 4.2 percent in the STORRE area to 9.1 percent in PROGRESS, from which few households are receiving remittances. Looking at the wealth analysis, the poorest households are more likely to have members who have migrated.

It should be noted that these migration results from the household survey do not reflect temporary migrations of household members who have left to find work or to find water and pasture for livestock but whom then returned. These results also do not track entire households that have migrated away from the community. Migration as an impact of shock exposure is discussed in Chapter 5 Qualitative Findings on Shock Exposure and Impacts, and migration as a coping strategy to deal with shocks is discussed in Chapter 6 Household Coping Strategies.

Table 4-5: Household migration and remittances inside and outside of Somalia

Migration	Program area						Wealth categories					
	STORRE		PROGRESS		REAL		Poorest		Middle		Richest	
HH with one or more members migrating: (%)												
Inside Somalia (last 12 months)												
Urban	9.0	*672*	8.9	*652*	6.2	*672*	10.9 [a]	*665*	9.7	*663*	4.3 [a]	*664*
Rural	13.3	*672*	11.8	*652*	6.6	*672*	17.9 [ab]	*665*	7.4 [a]	*663*	6.4 [b]	*664*
Outside Somalia (last 10 years)	4.2	*669*	9.1	*644*	5.3	*673*	14.3 [ab]	*661*	5.4 [a]	*658*	4.4 [b]	*663*

Table 4-5: Household migration and remittances inside and outside of Somalia

Migration	Program area						Wealth categories					
	STORRE		PROGRESS		REAL		Poorest		Middle		Richest	
HH receiving remittances from those members who have migrated: (%)												
Inside Somalia	10.6 [a]	*130*	37.3 [ab]	*71*	13.2 [b]	*87*	37.9	*105*	31.0	*92*	27.6	*90*
Outside Somalia	^	*29*	^	*27*	25.9	*38*	39.2	*36*	^	*22*	55.7	*36*

Alphabetic superscripts show statistically significant differences at the 0.05 level.

CHAPTER 4 SUMMARY OF KEY FINDINGS

- **Demographics and housing characteristics are variable across project areas and wealth strata.** The poorest households are more likely to have divorced or widowed household heads, lower education, non-durable housing materials, and less access to electricity or improved sanitation facilities.
  - **Demographics.** REAL households have the most members (7.3 on average). The proportion of female-headed households is not significantly different among project areas. Heads of the poorest households are more likely to be widowed or divorced as compared to the other wealth categories.
  - **Education**. Education levels of household heads are low across all areas, and PROGRESS household heads have the least education overall. Heads of poorest households are less likely to have completed primary school or any religious education.
  - **Housing materials.** STORRE houses are generally made of more durable material and are more likely to feature improved flooring than those in other project areas. Poorest households are more likely to have bare-earth flooring and plastic roofing, and with less access to electricity than wealthier households, and the poorest households have less access to improved sanitation.
  - **Housing infrastructure.** Access to both improved drinking water sources and improved sanitation are highest for REAL and lowest for STORRE households. Access to electricity varies widely across wealth categories (ranging from 3.8 percent in the poorest households to 32.8 percent in the richest households).
- **Household, productive and livestock assets are variable across project areas.** Cell phone ownership is high across program households. PROGRESS households own more productive assets, and STORRE households own more livestock. These differences in asset ownership are consistent with the differences in livelihood profiles across the project areas.
  - **Household assets.** In terms of communications, the majority of households in all project areas own cell phones, and about one-fifth own a radio. Roughly one-third of households in all project areas own an improved charcoal stove. STORRE households have significantly higher ownership of solar lamps than other areas. Kerosene lamps are owned by about 30 percent of STORRE and REAL households, but only 13.2 percent of PROGRESS households.
  - **Productive assets.** Productive assets, such as hoes, agricultural land or animal carts, are more widely owned among PROGRESS households than the other project areas.
  - **Livestock assets.** Livestock assets are more widely owned among STORRE households. Over three-quarters of the wealthiest households own livestock, and wealthier households have sold more livestock in the past year compared with poorer households.
- **Each project area is characterized by a different livelihood profile, and the wealthier households across the program engage in crop production.** STORRE households are

more likely to be pastoralist, engaged in livestock production. PROGRESS area households are engaged in farming (including crop production and sales); the REAL area comprises a range of main livelihood activities from wage labor to small shops. While livestock ownership is typically associated with wealth in Somalia, these data show that crop production is the livelihood activity associated with the richest households across the program.

- **The production of large livestock is increasingly difficult with less availability of water and fodder than the previous year.** Large livestock ownership is more likely among the middle and richest wealth categories, and most common among STORRE households. The richest households are more likely to produce commodities, yet sales are low across project areas.
  - **Livestock food availability.** Across all project areas, livestock owners graze animals on communal pastures during the rainy season. STORRE households continue to graze there during the dry season, but REAL and PROGRESS households turn to purchased feed. Most households report that livestock food sources have decreased since the previous year.
  - **Livestock water availability.** Primary water sources in the dry season vary across project areas, most commonly boreholes and water tankers for STORRE households, *berkad* and shallow wells for PROGRESS households, and continued reliance on rivers/streams from the rainy season in the REAL area. Households report decreased water availability compared to last year, particularly in the STORRE area.
  - **Livestock products.** The richest households are more likely to produce livestock products. Sales of livestock products are low across the project areas, with the exception of increasing sales of sheep/goat milk and milk products for STORRE and REAL areas, sheep/goat meat for STORRE, and eggs for REAL. Product sales usually occur in local markets (STORRE) or regional/district markets (PROGRESS and REAL).
- **Crop production practices vary across project areas according to regional livelihood preference as well as access to land and money.** PROGRESS and REAL households engage in crop production when land and finances allow, while STORRE households not currently farming are less interested. Crop-producing households across projects report that the amount of cultivable land has been stable in the past year. Improved agricultural practices are utilized by crop-producing households across projects to varying degrees.
- **Migration to other areas within or outside of Somalia occurs in a small proportion of households across project areas, also with low levels of remittances in return.** Across wealth categories, the poorest households are more likely to have household members who have migrated. There are no significant differences in migration patterns between project areas, though in terms of remittances from the migrated household member, PROGRESS households are more likely to receive support from migrations within Somalia.

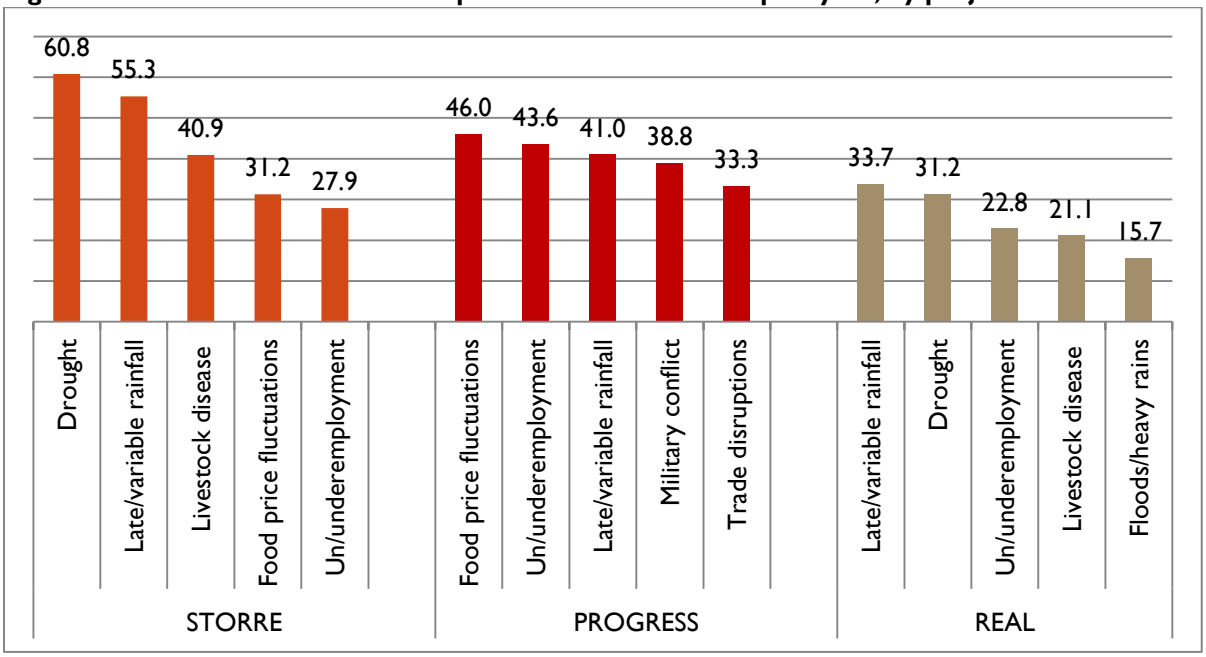
Chapter 5 Shock Exposure and Impacts

Perceptions-Based Household Shock Exposure and Impacts

Shock exposure. The shock exposure index description may be found in Appendix 1.1. Households were asked about their experience of various shocks over the last year prior to the survey and over the past five years, which captures the time period since the major drought of 2011.

The vast majority of households across projects experienced at least one shock in the past year, ranging from 71.7 percent in the REAL area to 94.3 percent in PROGRESS (see Table 12-33 in Appendix 3). Figure 5-1 provides a picture of the prevalence and variety of shocks facing households across the project areas in the past year. The STORRE project area in general appears to have been the most susceptible to shocks, with a diverse set of "downstream" climate shocks that affected households in this area. The main shock facing STORRE households in the last year was drought (60.8 percent), which was reported more often in STORRE than the other project areas. STORRE households also experienced late or variable rainfall, livestock disease, food price fluctuations and un/underemployment. PROGRESS households in the past year were affected by a broader array of shocks including military conflict (38.8 percent) and trade disruptions (33.3 percent), in addition to climate shocks (late/variable rainfall: 41.0 percent) and its downstream stressors affecting nearly half of the households (e.g. un/underemployment and food price fluctuations). PROGRESS households were also more likely to experience measles outbreaks compared to households of the other project areas. REAL households experienced a similar set of shocks experienced by households of the STORRE area, although at prevalence rates of roughly half. REAL households reported exposure to late or variable rainfall (33.7 percent), drought (31.2 percent) and un/underemployment (22.8 percent) in the last year, among others.

Figure 5-1: Percent of households exposed to main shocks in past year, by project

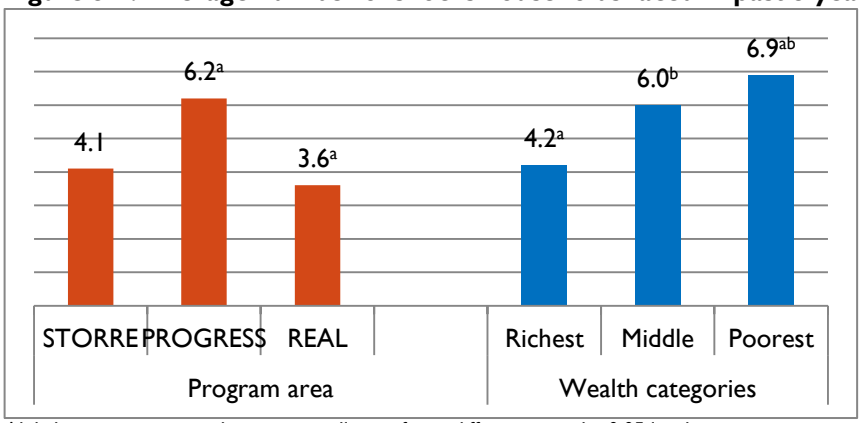


Since this figure shows shocks sorted by project, the statistical significance superscripts are not added.
See corresponding tables in Appendix 3.

Figure 5-2 shows that on average households across the program faced nearly one shock per year over the past five years. PROGRESS households faced 6.2 shocks on average, which was higher exposure to shocks in past years than REAL households (3.6 shocks). Analysis of shock exposure by wealth category

shows that the poorest households report exposure to significantly more shocks (6.9) than the middle and richest households.

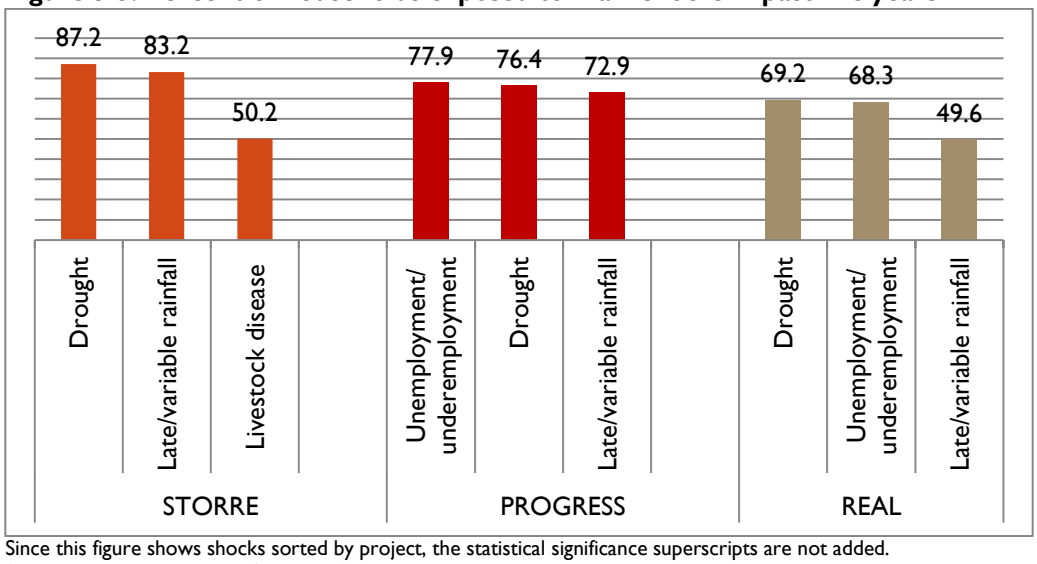
Figure 5-2: Average number of shocks households faced in past 5 years



Alphabetic superscripts show statistically significant differences at the 0.05 level across program area and wealth category.
See corresponding table in Appendix 3.

Figure 5-3 helps with understanding shock exposure over a five-year period, showing the top three shocks prevalent in each project area. Drought and late/variable rainfall are persistent stressors in all project areas. Underemployment is also identified as a persistent stressor, most likely a downstream effect of reduced livelihood productivity from the major climate stressors.

Figure 5-3: Percent of households exposed to main shocks in past five years

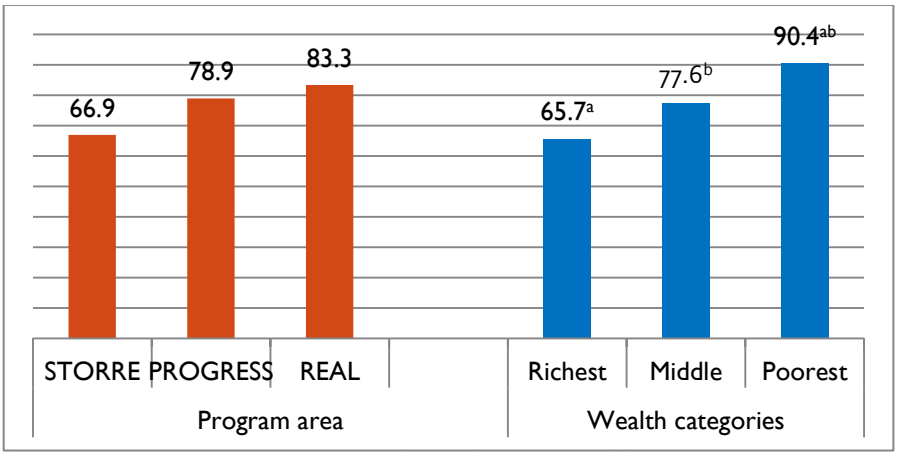


Since this figure shows shocks sorted by project, the statistical significance superscripts are not added.
See corresponding tables in Appendix 3.

Households of different wealth levels may also be more susceptible to being exposed to certain types of shocks. The poorest households were more likely than the other wealth categories to report the following shocks over the last five years: floods/heavy rain; military conflict; trade disruptions; displacement of the household; and death of the main income earner; these match those shocks most often cited by poor households over the past one year as well, with the difference that food price fluctuation is added to the list. It is interesting to note, then, that the richest households are less likely to report exposure to a variety of shocks as compared to the other wealth categories—from drought to cholera outbreaks and unemployment (see Table 12-32 and Table 12-33 in Appendix 3).

Shock impacts. As shown in Figure 5-4, the poorest households are significantly more likely to experience a severe decline in their food consumption in the months following a shock (90.4 percent), as compared to the middle (77.6 percent) or richest (65.7 percent) households. This ranges from 66.9 percent for STORRE households to 83.3 percent for REAL households, with no significant difference across the projects in the prevalence of food consumption decline, and discussed further in Chapter 10.

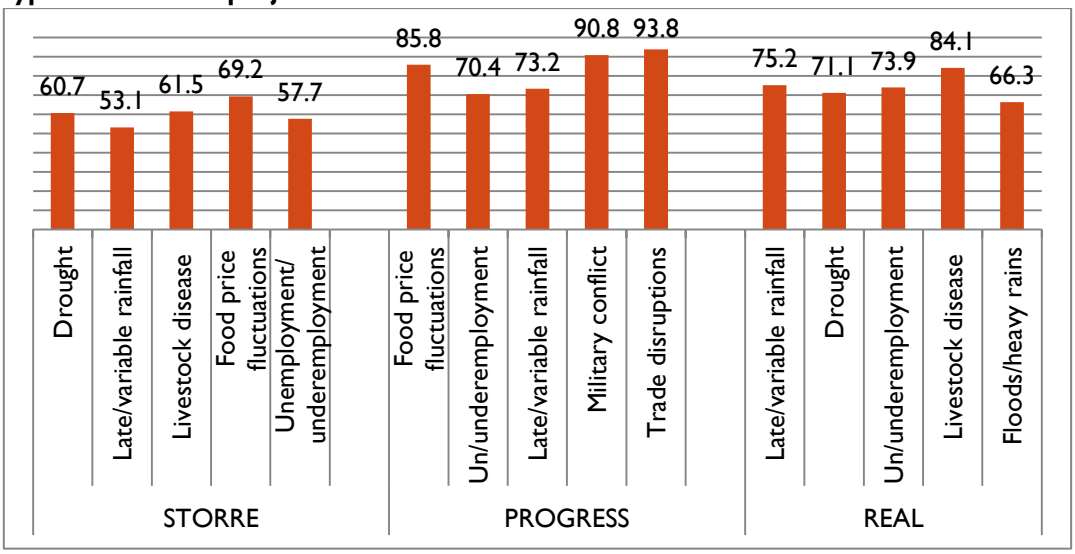
Figure 5-4: Percent of households experiencing severe decline in food consumption after shock



Alphabetic superscripts show statistically significant differences at the 0.05 level across program area and wealth category.
See corresponding tables in Appendix 3.

There is also variation in the impact on food consumption depending on the type of shock (Figure 5-5). While STORRE households appeared to be more susceptible to shocks over the previous years, households of the other project areas reported severe declines in food consumption due to the primary shocks they faced. PROGRESS households reported particularly poor food security as a result of their main shock experience in the past year. Military conflict and resulting trade disruptions when combined with a climate shock and its downstream effects have a catastrophic effect on PROGRESS households' food security.

Figure 5-5: Percent of households experiencing severe decline in food consumption, by type of shock and project area



Since this figure shows shocks sorted by project, the statistical significance superscripts are not added.
See corresponding tables in Appendix 3.

Analysis by wealth category shows that the poorest households are significantly more likely to experience severe deterioration of their food consumption for all of the main shocks associated with food decline: from fire, trade disruptions, and military conflict, to deforestation, cholera outbreaks and drought (see Table 12-34 in Appendix 3).

Qualitative Findings on Shock Exposure and Impacts

STORRE shock exposure and impacts. The quantitative findings above (Chapter 5) on household perceptions of shock exposure and impacts are confirmed and further explained through the community focus group and key informant discussions. Just as it is the most commonly cited shock for STORRE households, drought is also the primary shock listed by all STORRE focus groups, experienced as a continuous and severe shock over the past two to four years. The main drought effects include loss of productivity from livestock and farming activities, with the lack of water contributing to increased livestock and crop diseases, which in turn results in the drop in product value and ultimately loss of income for the households. This drop in product value is described by the focus groups as a type of food price fluctuation and may explain the prevalence of this shock reported in the household data. For STORRE communities, the drought also causes deaths of animals like cows and livestock from which the households get milk, causing food and nutrition insecurity. Another commonly stated impact of drought on communities is migration. In some communities, most of the productive members of the households have moved with the surviving animals in order to find water or they have migrated to bigger cities and abroad to find jobs. The migration of community members affects the growth and productivity of the community. This is pertinent especially for youth, looking for opportunity abroad due to the lack of job and educational opportunities in the village, and they are risking their lives to take that journey. Other common shocks, some also related to drought or variable rainfall, include diarrheal disease or other outbreaks like malaria, reduced soil productivity, and flooding. Some focus groups noted the shock of having death or injury of a main income earner, women in particular, which is discussed more in the box on gendered impact that follows this qualitative section.

> ***"This village suffers very much because of the drought and its effects. The absence of rainfall caused water shortages, which resulted in dry farms and death of our livestock. When these two were affected, our financial income decreased dramatically from the sharp drop in livestock and crop prices. This leads to major issues, like the inability to afford the basic necessities of life."***
>
> ***Focus group with women's savings group, STORRE***

PROGRESS shock exposure and impacts. The qualitative description of shocks by PROGRESS communities also aligns with the household survey, indeed, explaining how floods and the military presence have restricted their trade and transportation, how drought conditions have caused unemployment and that their lack of access to healthcare is devastating when they are hit by disease outbreaks. Floods or heavy rains during the rainy season is the most common shock reported by PROGRESS focus groups. The flooding causes a multitude of issues, from the immediate destruction of property, and blocking road or transport access, to causing evacuations of communities and even loss of life of both humans and animals. The floods are also connected to subsequent livestock disease, crop disease and pests, and human disease outbreaks, as well as linked to reduced soil productivity from the fertile soil being washed away in the flood waters. Water shortage is another common shock experience across interviewed communities, mostly caused by late rainfall and drought conditions that mean rivers and wells have gone dry, but for some communities it is also associated with the lack of public, free-to-use wells in the village. One community described how the river had dried up at the time of the survey, the worst condition of the river that they have seen in 40 years—or only the second time in their history as a village. The late rainfall and drought conditions that inhibit farmers from conducting their

livelihood activities are also linked to the shocks of unemployment and the need for household members to migrate to urban areas in search of work, particularly pertaining to men but with impacts on women as they earn income for the household (discussed in gendered-impact box on next page). The ongoing stress of insecurity in the area was reported by FGDs in most communities, mostly related to Somali troops and checkpoints in the area looking for al-Shabaab, but with reports that youth are interrogated, community people robbed or violated, and movements restricted. Other ongoing stressors include lack of health facilities and schools. Lack of health facilities necessitates critical costs for transport and care, and life or death issues for women in childbirth and children related to disease outbreaks. One men's group says the burden of outbreaks has particularly taken a toll on children and that just the day before the interview another child in the village died of measles. Lack of education for children was also named as an ongoing stressor.

"Floods affect this community badly. We need the water, but we could use strategies for reducing the damage or protecting ourselves because these floods are causing damage whenever it rains. The floods damage the houses, cause injury to our wives and girls, and even cause deaths."

Focus group of youth males, PROGRESS

REAL shock exposure and impacts. REAL project areas describe being hit hard in the past five years with the alternating extremes of severe seasons of drought and floods/heavy rains. Multiple communities expressed concern about current drought conditions. Nearly all communities also commented on the impacts of floods/heavy rains during their rainy seasons when crops are washed away. The communities describe how both severe dry and wet climates result in low productivity due to crop disease and pests and livestock disease and deaths. The impacts at the household level are outbreaks of disease, including malaria or cholera after heavy rains that cause deaths of children, as well as hunger and malnutrition particularly among pregnant women and children. Crop pests were repeatedly described, as from this FGD of female youth, "You will plant crops, and as soon as the crops come up to the surface of the earth the pests eat them; we need support to prevent that." In addition to the destruction of assets and potential for injury and death of animals and humans, the floods are also linked to reducing soil productivity, destroying homes that are not permanent/ durable, and causing rapid increases in food prices as roads to market are blocked. One community described how inter-community conflict started because during the rainy season their community started cutting the neighboring trees to fence in/protect their houses, but the neighboring community's natural resources committee works to stop people from cutting the trees, which affected the trust and sense of peace between the communities. One community mentioned the shock of fleeing their homes during conflict in recent years between the military and al-Shabaab, only to find upon their return that their property was stolen. The most prominent stressors described by the REAL communities were lack of clean drinking water sources, unemployment, as well as underemployment if their main livelihoods cannot produce, and education for the children.

"Last year in March, 200 goats died from this community due to the severe drought and it's the same thing we are experiencing now."

Focus group with village elders, REAL

GENDERED IMPACT OF SHOCKS: EVIDENCE FROM QUALITATIVE DATA

Climatic shocks deteriorate the health of women and children. As described above in Chapter 5, communities across the project areas explain that shocks like drought and floods cause the aftershocks of malnutrition and disease outbreaks, which have detrimental effects on the health of women and children. There are other indirect shocks experienced by women as well. STORRE communities, for instance, explain that lack of access to water (from inadequate rain or any other source) particularly affects children and pregnant women. FGDs describe how the women have to walk long distances to get water and carry heavy water containers, causing illness and, if pregnant, could cause miscarriage.

Un/underemployment and migration degrades the family, places burden of income generation and savings on women. PROGRESS and REAL communities describe the increasing potential for divorce as a result of the stress on household livelihoods from shocks. Tensions arise when the male household head, who is typically the main income earner, cannot provide for his family or he has to migrate in search of work. Women are increasingly taking up other income generating activities (IGAs) to fill this void of underproduction and to care for the family while the main income earners are working elsewhere. PROGRESS communities describe how the livelihood deficits resulting in the migration of men for work have impacts on women since they have increasingly become the bread-winners of the household. STORRE interviews with female leaders of savings groups further explain how these migrations, sometimes of many households in a village, also make it difficult for their savings groups to function.

"Unemployment has affected us badly, it affected the men, of course, while also affecting the women because women are struggling to do a lot to work and earn income compared to the men. The mothers of the house are the breadwinners of this village, some of them sell wood, some of them are engaged in the farm activities, and even some of are engaged in animal rearing."

Focus group with women, PROGRESS

"Migration of the main income earner of the family collapses the family. Divorce will come after the main income earner of the family migrates, and the reason is he forgets the needs of the family and starts to simply enjoy his new life."

Focus group of male youth, PROGRESS

Lack of access to health care is a shock for women, in particular, with ripple effects at the community level. The additional income of women working in various activities is increasingly important for many households, so maintaining their well-being is crucial. Thus, if women are malnourished, ill or injured, it affects the income of the household as well as the financial resources of the community with the growth of female savings groups. This shock is also described across projects in direct relation to women suffering or even dying during childbirth due to the lack of maternal health care and access to health facilities.

"Women in this community are some of the main income earners as they work in different activities, so if any injury happens to them, if affects the household and community financial status. Women get pregnant and some of them suffer injuries and bleeding or even die during delivery since we don't have any health facilities."

Focus group with women's savings group, STORRE

CHAPTER 5 SUMMARY OF KEY FINDINGS

- **The vast majority of households across project areas experienced at least one shock in the past year, with poorest households reporting the highest exposure to shocks.**
  - **Shock exposure.** Across the project areas, households averaged one shock in the past year. STORRE area appears to have been the most susceptible to shocks in the past year, primarily drought, but also late/variable rainfall, livestock disease, food price fluctuations, and un/underemployment. REAL households reported similar shock types, but at roughly half the prevalence rates of STORRE. PROGRESS households also reported similar shock types, but in addition were affected by military conflict and trade disruptions. On average, the PROGRESS area faced a larger number of different types of shocks in the past five years (6.2 shock types).
  - **Shock impact.** Across project areas, the poorest households are significantly more likely to experience a severe decline in food consumption in the months following a shock. Project areas vary in the impact of food consumption depending on the type of shock, with PROGRESS households reporting particularly poor food security impacts.
- **Qualitative findings support survey results on shock exposure and impacts.** Across projects, the qualitative findings confirm and further explain the above findings on household perceptions of shock exposure and impacts, and how many shocks are inter-related. All project areas name drought/late rainfall as a prominent shock, among others. The data also shed light on how women's health is particularly impacted by climatic shocks, and highlight the importance of women's income to household and community ability to respond to shocks.
  - **STORRE.** Drought is the primary shock listed by all STORRE focus groups. Drought results in overall loss of productivity from livestock and farming activities and a subsequent decline in product value, leading to a loss of household income. Migration or geographic movement also increases with drought, negatively impacting the growth and productivity of the community; this impacts youth in particular who go in search of work.
  - **PROGRESS.** The most common shock reported by PROGRESS focus groups is floods or heavy rains, which causes issues ranging from the immediate destruction of property to subsequent disease outbreaks among people, livestock, and crops. Insecurity and the stress of the military presence are also widely reported. Both the shocks of floods and military conflict lead to restricted trade and transportation. Late rainfall and drought conditions, even reports of the river drying up, have led to water shortages, unemployment, and increased migration. Additional ongoing stressors include the lack of health facilities and schools.
  - **REAL.** The communities describe alternating extremes of severe seasons of drought and floods/heavy rains. These shocks result in low productivity due to crop and livestock disease, pests, and deaths. Household impacts include disease, hunger and malnutrition. Floods are also linked to destroying homes, starting inter-community conflict over resources, and causing increased food prices due to blocked market roads. Their primary ongoing stressors include lack of clean water sources, jobs, and education.
  - **Gendered impact of shocks.** Health impacts of climatic shocks are particularly detrimental to women and children. Un/underemployment and migration lead to greater prevalence of divorce, and they also lead women to increasingly seek additional IGA in order to provide for the household. Migrations also hamper the functionality of women's savings groups. The increased responsibility of women to provide for the household means that women's lack of access to health care negatively impacts both the household and the financial resources of the community, as women's malnutrition, illness, injury, or maternal health complications can compromise their ability to generate income.

Chapter 6 Household Assistance, Responses to Shocks (coping strategies) and Community Responses

Assistance Received

The households were asked about assistance they received following each reported shock. Table 6-1 shows the percentage of households that received assistance of any kind, after any shock in the past year: 17.7 percent of STORRE households report receiving assistance, 10.6 percent of PROGRESS households, and 15.9 percent of REAL households. The most common type of assistance following any shock across the project areas is food aid. Other types of assistance reported by STORRE households affected by shocks in the past year include non-food necessities, food or cash gifts from friends or relatives. PROGRESS households reported food/cash for work assistance, livestock inputs/services, food from friends or relatives, and cash loans. Other assistance reported by REAL households included livestock inputs/services, as well as food or cash gifts from friends or relatives. For information about assistance over the past five years (see Table 12-36 in Appendix 3).

Table 6-1: Percent of households reporting assistance following shocks in past year, and types of assistance

Assistance in past year for any shock	Program area		
	STORRE	PROGRESS	REAL
Households reporting receiving assistance (following any shock in the past year)[1] (%)	17.7	10.6	15.9
n	*474*	*499*	*370*
Types of assistance (following any shock)[2, 3] (%)			
Food aid (from organization/institution)	71.7	26.2	62.2
Non-food necessities	35.5	3.6	5.4
Food (from friend, relative, etc.)	8.7	11.9	10.8
FFW/CFW	4.3	16.7	9.5
Livestock inputs, veterinary services/medicine	0.0	11.9	17.6
Cash gift(e.g., *Qaraan* of Somali, friends, relatives)	5.1	4.8	10.8
Cash loan	1.4	11.9	2.7
Unconditional cash transfer (e.g., NGOs, charitable org)	0.7	7.1	8.1
Transport to health services	0.7	3.6	2.7
Shelter	0.7	0.0	4.1
Crop inputs, Seed	0.0	1.2	2.7
Agricultural labor	0.0	3.6	0.0
Childcare	0.7	2.4	0.0
Clothing	1.4	0.0	0.0
Labor to rebuild/ repair structures	0.0	1.2	1.4
Medicine (human)	0.0	2.4	0.0
Transporting HH items to safety	0.0	1.2	0.0
Destocking of animals	0.7	0.0	0.0
Restocking of animals (external, from NGO)	0.7	0.0	0.0
Loan for purchasing a phone for communication	0.7	0.0	0.0
Land parcel	0.0	0.0	0.0
Restocking of animals (within the village)	0.0	0.0	0.0
VSLA, social funds	0.0	0.0	0.0
n	*84*	*53*	*59*

[1]Includes only households reporting shocks in the past year
[2]Totals sum to more than 100 percent because households may report more than one type of assistance.
[3] Includes only households that received assistance.

Qualitative findings on assistance received. The experiences with humanitarian assistance vary across the communities of each project area. Communities that have benefited from more extensive NGO programming in recent years clearly list the range of interventions and how the activities have improved their lives. Some STORRE communities expound on the benefits they have experienced from the building of dams and schools to the provision of vocational training and savings group supports. In the REAL project area, some communities were isolated from all assistance during the severe drought of 2011 due to insecurity in the region, and thus are pleased and speak positively of some NGO assistance arriving in more recent years. One community of the PROGRESS area spoke highly of the positive effect of assistance in the community in the last few years, where widespread aid from INGO, LNGO and UN agencies has provided food and nutrition supports, CFW, and agricultural inputs, among other activities.

Yet, there is a common theme across project areas that inconsistent or one-off assistance may not have a positive impact. STORRE communities that feel they have received very limited support from CARE and local partners, including singular supports such as a water catchment system or a consultation visit in the last year, consistently send a message that too little aid has no effect on their ability to cope or recover from shocks. In the PROGRESS area, nearly all FGDs report little to no NGO assistance in recent years, and they reiterate the message on limited support even stating that it could have harmful consequences such as creating conflict. Some REAL communities also reported tensions between community leaders and the community when aid was short. Some REAL communities received emergency supports around the 2011 drought, which they describe positively, but explain that after the emergency funding ended the external supports dried up—or continued in nearby villages but not theirs.

"The only NGO (CARE) that assisted us once did not have any impact on the community as it was not such a big help."

Focus group with male savings group, STORRE

"We are requesting from the NGOS to stop their limited support as it will only damage our trust as a community. If they can bring us enough to satisfy our needs we will welcome it, otherwise, we don't need their small support which creates conflict between us (between the clans in the village)."

Focus group with male youth, PROGRESS

"Always the NGOs assist the other villages, but not us."
Focus group with women, REAL

FGDs that feel the NGO supports to their communities are limited or insufficient to meet their needs expressed some frustration on those limits. It should be noted that this frustration extended to meetings or data collection activities (including this survey) associated with NGOs but that are not perceived to materialize into support.

"We need immediate help and support from whoever can give us a hand in this very critical time of drought. We don't need people with papers just filling pages with our problems but not bringing back any help"
Focus group with women, STORRE

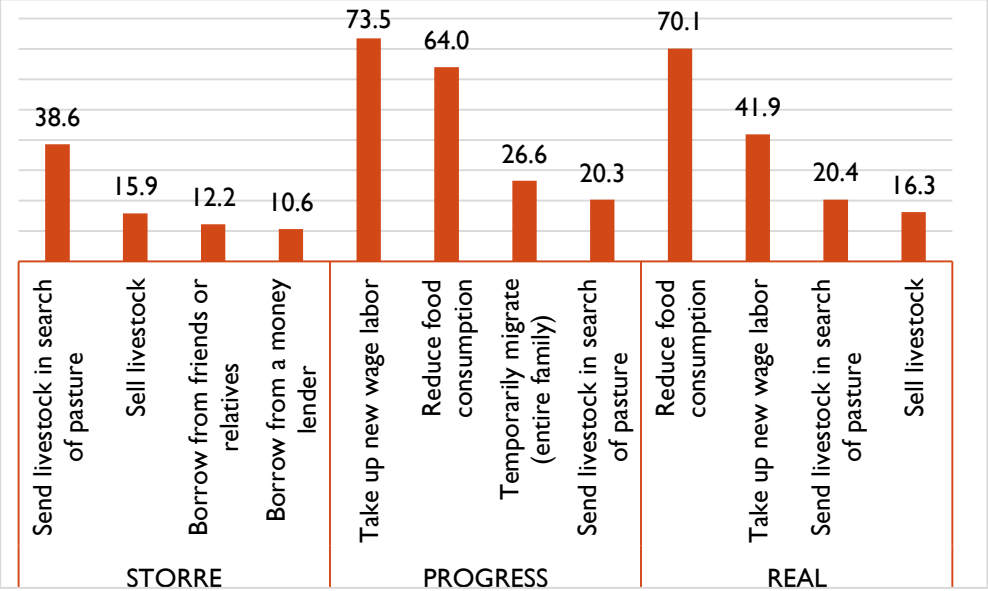
"We haven't ever received aid assistance but we have met a lot of NGOs coming to record or take notes on us, even taking pictures of us, but we didn't get any support from them."
Focus group with women, PROGRESS

Household Coping Strategies

With drought and/or late or variable rainfall being one of the most prominent shocks facing all project areas, this section describes the various coping strategies employed by households to deal with drought and/or late or variable rainfall. The coping strategies can be positive or negative (or not accessible/relevant) depending on the context and at what point of exposure they are utilized. For instance, selling livestock when faced with drought can be a positive way for households to cope if part of a livestock offtake plan, but can also have negative effects when herds are dramatically reduced from distress sales.

Figure 6-1 shows the top four coping strategies utilized by households exposed to drought and/or late or variable rainfall. (The complete list of coping strategies is presented in Table 12-37). Sending livestock in search of pasture was utilized by households in all three areas. Besides sending livestock in search of pasture, STORRE households also report selling livestock and borrowing from money lenders, relatives or friends. PROGRESS households reported taking up new wage labor, reducing food consumption, and temporary migration, in addition to sending livestock in search of pasture. REAL households reported reducing food consumption, taking up new wage labor, and selling livestock, in addition to sending livestock in search of pasture. PROGRESS and REAL households are able to access new wage labor for income during times of drought, which could be a factor of their closer proximity to urban, peri-urban or market centers.

Figure 6-1: Percent of households exposed to drought and/or late/variable rainfall by coping strategies



Since this figure shows coping strategies sorted by project, the statistical significance superscripts are not added. See corresponding tables in Appendix 3.

Table 6-2 shows the coping strategies employed by households experiencing drought and/or late or variable rainfall by wealth category. Overall, the most frequently reported coping strategy is to engage in wage labor, with over two-thirds of respondents exposed to drought/variable rainfall citing this strategy (68 percent). There is no statistically significant difference in adoption of this strategy across the wealth categories (figures by wealth category are not reported if the differences across the three categories are not significant). Reduction in food consumption, temporary migration, taking children out of school, sending boys to stay in other households and receipt of money or food from relatives are coping

strategies more commonly adopted by poor households than wealthier households – although this last strategy is only reported by about two percent of households overall. On the other hand, sale and slaughter of livestock, temporary migration of some family members and sale of household items are more common strategies for wealthier households. Generally, wealthier households are more likely to use their wealth to cope, and conversely are able to avoid strategies with more negative short-term or even long term consequences.

Table 6-2: HHs experiencing drought: coping strategies by wealth category

Coping strategy	All	Wealth categories		
		Poorest	Middle	Richest
Take up new wage labor	67.5			
Reduce food consumption	62.8	80.2 [ab]	60.6 [a]	35.2 [b]
Temporary migrate (entire family)	24.3	30.1 [a]	27.7	9.6 [a]
Send livestock in search of pasture	20.9			
Take children out of school	12.4	22.6 [ab]	6.3 [a]	3.0 [b]
Sell livestock	11.1	3.9 [a]	8.6 [b]	27.1 [ab]
Temporary Migration (only some family members)	7.6	3.9 [a]	8.1	13.3 [a]
Take out a loan from friends or relatives	7.5			
Firewood sales	7.4			
Slaughter livestock	6.1	1.0 [a]	4.9 [a]	16.3 [a]
Send boys to stay with relatives or other HH	5.9	12.8 [ab]	0.9 [a]	0.4 [b]
Lease out land	4.0	0.2 [ab]	5.1 [a]	9.1 [b]
Permanent migration of some family member(s)	3.9			
Use money from savings	3.1	3.1 [a]	4.9 [b]	0.8 [ab]
Sell household items	2.8	1.0 [a]	4.4 [a]	3.9
Receive money or food from relatives within community	2.3	3.1 [a]	2.3	0.7 [a]
Take out a loan from a money lender	1.7	0.3 [ab]	1.2 [a]	4.9 [b]
Send girls to stay with relatives or other HH	0.8			
Sell productive assets	0.5	0.1 [a]	0.4	1.6 [a]
Receive food aid or assistance from an NGO	0.4			
Receive food aid or assistance from the government	0.1			
Receive money from a relative from outside of village (remittance)	0.1			
Receive help from local organizations/companies	0.0			
n	*1473*	*519*	*513*	*438*

Alphabetic superscripts show statistically significant differences at the 0.05 level across wealth category.

Qualitative findings on shock responses. Nearly all STORRE focus groups listed actions taken by their communities to respond to a shock. Moving with their livestock in search of water and better pasture is a common measure—as reported above by over one-third of surveyed STORRE households (Figure 6-1). Moving preserves their animals' survival and is an attempt to still make some income for the household by then selling the milk. Other actions reported by STORRE communities include asking NGOs, government or relatives in bigger cities for assistance, and taking loans from savings groups, which are also congruent with those reported above by households related to social capital and loans. Some communities report collecting money to rent a water tanker truck when they faced water shortage. One community explained how they collect *beeyada* (a local plant) from the mountains and sell it as a perfume to people in urban areas. This could provide detail on household's reporting in surveys that they collect of bush products.

The coping strategy of taking up new wage labor presented above (Figure 6-1) is explained through FGDs in the PROGRESS area as the larger farmers offering daily labor jobs to households affected by a

disaster. REAL FGDs report that when faced with a shock, households sell livestock and farm products for income to buy food. In the quote below, one group of male elders described their typical reactions for the varied shocks they face, and the risk that none may be fully effective in preventing harm.

> ***"For drought, we pray to GOD to help us and protect us from the effects of drought. For floods, we use sandbags, and for the livestock diseases, we sell some goats and buy medicine to treat the rest. But we may sell some goats and buy medicine to treat the rest of the affected goats and they still may not recover from the shocks, and then we have sold the good ones and those left have died."***
>
> ***Focus group with male elders, REAL***

Communities across the project areas report making collective contributions organized by community leaders to help the most affected or vulnerable households, which is described in more depth in the next chapter's section on social capital. The committees and elders typically decide together when and how to deal with shocks. As a community they respond immediately when they face a crisis, although some focus groups across projects report that they don't have enough capacity or resources to respond or fully recover, particularly as shocks such as drought become recurrent. A few communities did not feel they could act at all due to lack of resources.

> ***"We do not take any actions because we can only react and respond to a shock if we at least have some resources to help such as water or grass. Most of the physically active men such as the youth have left us, and it's mostly women and old aged men that live here and we cannot take any actions."***
>
> ***Focus group with women, STORRE***

CHAPTER 6 SUMMARY OF KEY FINDINGS

- **Food aid is the most common assistance received, and too little aid considered harmful.** Overall, very low levels of assistance are reported from shocks faced over the past five years. When assistance is provided, food aid is the most common type across project areas. Communities report benefits from NGO assistance, although across project areas, inconsistent or one-off assistance may not have a positive impact. Too little aid may have no effect on the ability to cope or recover from shocks, or may even create conflict, as reported in the PROGRESS area.
- **Coping strategies employed by wealthier households to recover from drought can be positive; and community leaders mobilize support for vulnerable households.** The most frequently reported coping strategy is to engage in wage labor, with no statistically significant difference in adoption of this strategy across the wealth categories. Poorer households tend to reduce their food consumption, temporarily migrate, take children out of school, send boys to stay in other households and receive money or food from relatives as coping strategies, while the sale and slaughter of livestock, temporary migration of some family members and sale of household items are more common strategies for wealthier households. Generally, wealthier households are more likely to use their wealth to cope, and conversely are able to avoid strategies with more negative short-term or even long term consequences.

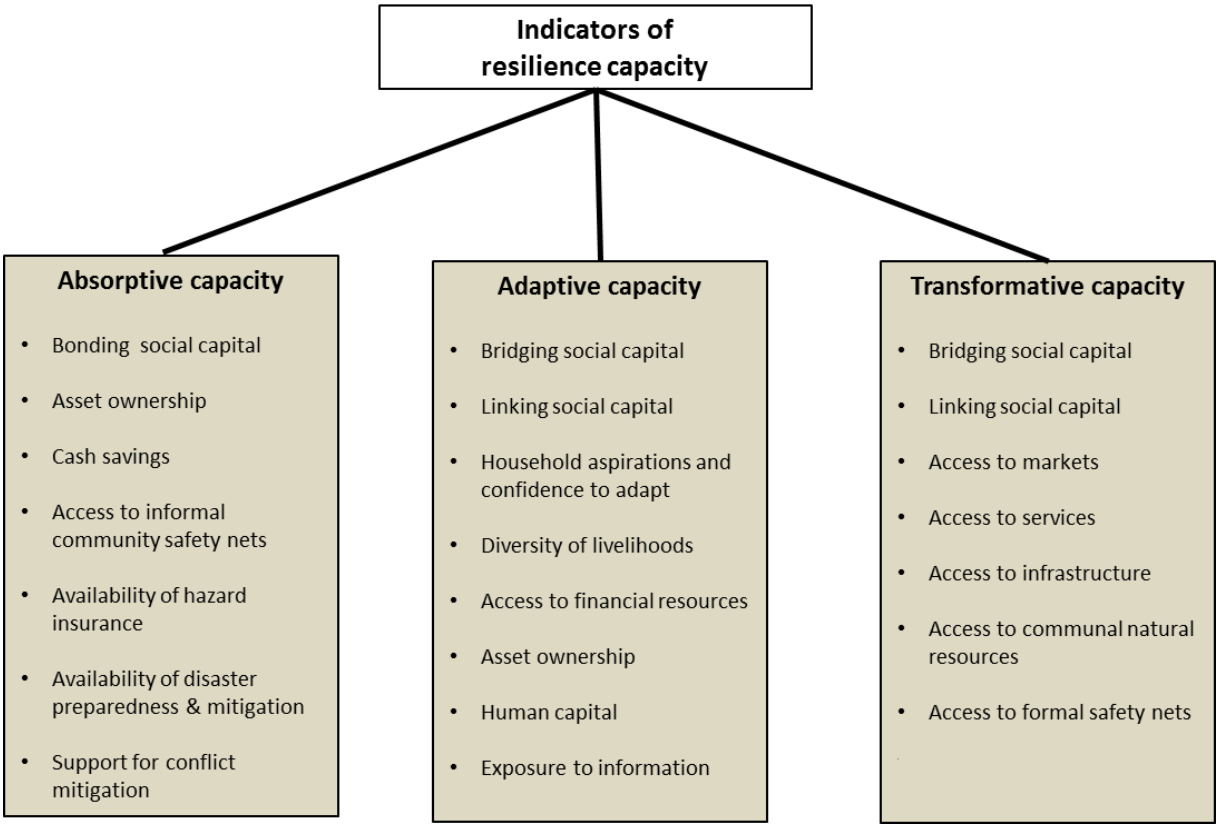
  Communities across the program report making collective contributions organized by community leaders to assist the most vulnerable. Communities decide together when and how to deal with shocks, although some feel that their ability to act is constrained or prevented from lack of resources.

Chapter 7 Resilience Capacities

The resilience capacities include a set of conditions, attributes, or skills that enable households and communities to manage or recover from shocks. As noted in Chapter 1, the three categories of resilience capacity are absorptive, adaptive and transformative capacity. See Figure 7-1 for a listing of indicators employed to measure the resilience capacities. Indicators of each capacity, measures of the indicators, and methods for computing capacities are the same as in other similar studies[55]The intent was to be able to compare results across similar regions and to further test the methods.

The indicators are combined into indexes of the three capacities using factor analysis (principal factors), except for dichotomous indicators. In those cases, polychoric factor analysis was used. For this study, absorptive and adaptive capacities are discussed primarily using measures at the household level, i.e., household survey (Chapter 7 Household Resilience Capacities), and the elements of transformative capacity are primarily derived from information at the community level, i.e., community leader survey (Chapter 7 Community Resilience Capacities), and then the indexes are combined into an overall index of resilience capacity, which is presented at the end of Chapter 7. Both the indicators and indexes of resilience capacity are used to understand the conditions, attributes, and skills that enable households in the program areas to achieve resilience in the face of shocks.

Figure 7-1: Indicators to measure resilience capacities



Source: TANGO International, 2012.

[55] Bower, T. et al. 2016, Smith, L. et al. 2015, Smith, L. et al. 2016, Woodson, L. et al. 2016

Absorptive and Adaptive Resilience Capacities

This section describes the baseline results for various indicators that relate to absorptive and adaptive resilience capacities at the household level. As shown in Figure 7-1 above, some indicators are used to measure more than one capacity, so this sub-section focuses on the following broad categories for discussion:

- Social capital;
- Aspirations and confidence to adapt;
- Economic sources of resilience capacity; and
- Human capital and access to information.

Social Capital

Social capital refers to the quantity and quality of social resources available to support people in their pursuit of livelihoods and well-being such as networks of relatives, membership in groups, and access to other societal institutions.[56] Some of these institutions may be political, but social capital also involves informal social interactions at individual, household and community levels. Social capital binds people together through strong perceptions of local connectedness and self-regulating moral codes, and the norms, reciprocity and trust that exist between individuals and groups at the community level.[57] In the Somali context, in particular, social capital plays an important role as social networks are based on the norms of exchange and obligation from belonging to a clan group. The extent and strength of these social relations are critical when households and communities are facing shocks and stressors.[58]

There are three types of social capital that enhance resilience: bonding, bridging and linking. Households and communities with higher levels of all types of social capital are more resilient than those with only one type or none. The social capitals are generally defined as follows:[59]

- **Bonding social capital** refers to the bonds between family members and community members within the same village. It involves norms such as trust, reciprocity and cooperation, and is often the first layer drawn upon in times of distress, when a family or community pulls together to help each other cope and recover. Measures of bonding social capital include giving and receiving from within the community.
- **Bridging social capital** connects members of one community or group to other communities/ groups, sometimes crossing ethnic/clan lines, as well as geographic boundaries and even language groups. It can include exchange (giving and/or receiving) of assets and other external social or financial linkages. The key aspect of bridging social capital's contribution to household and community ability to manage or adapt to shocks is that it involves social connections outside their immediate community, and thus outside the area of risk or exposure to the same shock, which can be called upon when local resources are insufficient or unavailable.
- **Linking social capital** is depicted by the vertical link whereby established social networks (of individuals or groups) interact with explicit, institutionalized, and formal boundaries in society. Linking social capital is important for economic development and resilience capacity because it provides resources and information that are otherwise unavailable.

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[56] Frankenberger, T. et al. 2013; Frankenberger, T. and J. Garrett. 1998.
[57] Chaskin, R.J.. 2008.
[58] Maxwell, D. et al. 2015.
[59] Aldrich, D. 2012; Wetterberg, A. 2004; Elliott, J.R. et al. 2010; Woolcock, M. and P. Narayan. 2000.

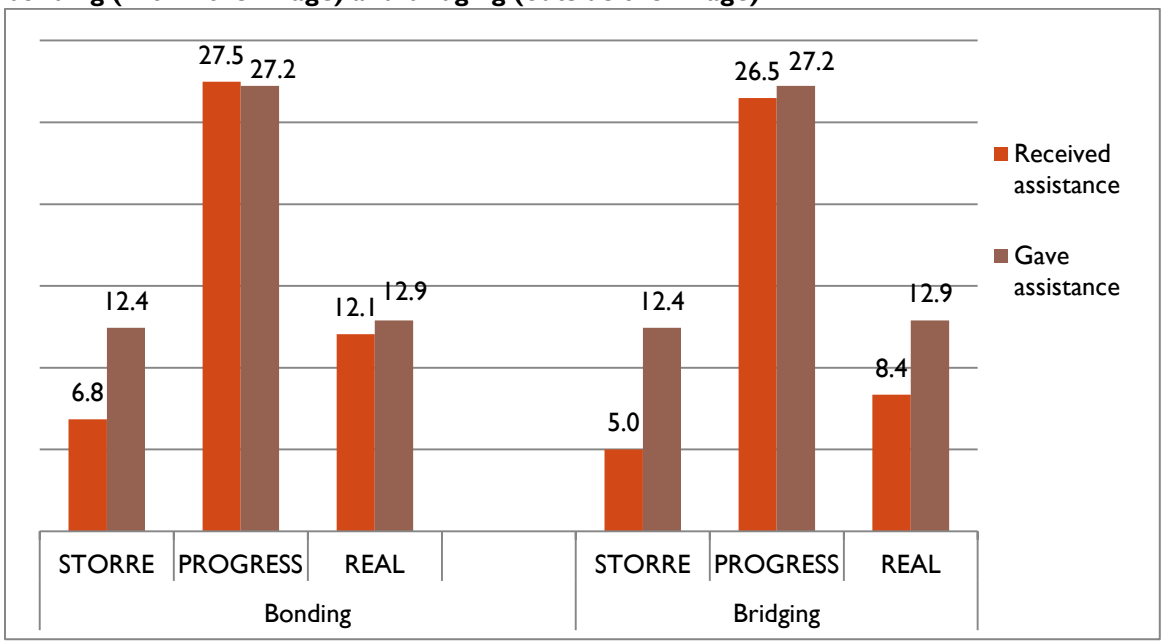
Background: Somali social networks. The Feinstein International Center study on Somali experiences of social connectedness during the drought of 2011 found that the social linkages that functioned during the disaster may be represented by three overlapping circles. The "first circle" exists around the family and is based on kin relations, but the circle is "fixed" in that if resources are exhausted in this circle, then cries for help extended to the second circle. The "second circle" includes sub-clan and community ties, all with people who regularly interact with each other, but whose assistance is invoked when worsening conditions mean the community mobilizes resources to share with members of this broader circle. Thus, in the Somali context, the social capital of absorptive capacity includes both the first and second circles of support,[60] but as they pertain to assistance from within the community.[61] The social capital of household adaptive capacity is seen through the "third circle," which represents distant contacts of a household or community who may not share the same clan identity and are invoked only in times of greatest need, like when the other two circles had collapsed during the last drought.[62] This study also includes any external-to-the-community assistance as bridging social capital, hence not only distant contacts but also relatives sending support, as it provides a source of support from entities not facing the same risk or exposure to the shock. The ability to reach across clan lines has been linked to Somali households' ability to maintain food security during crisis and to their timely recovery.[63] In addition, research on the famine of 2011-12 shows that clans with stronger links to urban business communities and the diaspora were less severely harmed by the effects of the famine.[64] Finally, linking social capital in the Somali context relates to household or community linkages to formal assistance, such as the function of community leaders interacting with NGOs or local authorities to garner assistance.

This section presents data from the baseline quantitative and qualitative studies on the sources and types of informal social support households received and/or gave in the previous year. Next, it presents slightly different measures of bonding, bridging and linking social capital, which are based on questions about potential access to, instead of actual use of these types of social capital to either provide or receive food or money in times of need. It should be noted that these questions about social capital are in reference to exposure to shocks, not about day-to-day sharing. The responses to these questions about perceived access to support from other individuals are used to create indexes of the three types of social capital, and these indexes are then incorporated into the resilience capacity indexes. Computation of capacities is discussed at the end of Chapter 7.

Bonding and bridging social capital. PROGRESS households were more likely to have received and given assistance both within (bonding) and outside their villages (bridging) within the last 12 months, as shown in Figure 7-2.

[60] Maxwell, D. et al. 2015.
[61] Note: the Maxwell, D. et al. (2015) study also includes in the first circle family members living outside the community who send regular remittances, but for the purposes of this measure as it relates to risk management, any contacts (family or not) providing assistance from outside the community falls into the social capital of adaptive capacity.
[62] Maxwell, D. et al. 2015.
[63] Mercy Corps with TANGO International. 2013.
[64] Maxwell, D. and N. Majid. 2015.

Figure 7-2: Percent of households that received and gave assistance in the last 12 months, by bonding (within the village) and bridging (outside the village)



Alphabetic superscripts show statistically significant differences between projects at the 0.05 level for each column label (within village/outside village) for: received assistance and gave assistance.
See corresponding tables in Appendix 3.

In terms of the source or recipient of informal assistance within the village, the data show that STORRE households are less likely to have received or given support in the last 12 months to family within the village than the other project areas, and more likely to have received/given supports to other community members both inside or outside the clan. Regarding sources or recipients of support outside the village, PROGRESS households are more likely to receive outside assistance from family in other rural areas of Somalia and less likely to receive support from family in urban areas of Somalia compared to the other project areas (see Table 12-39 in Appendix 3).

Qualitative findings on social capital. BONDING: There are common themes on social capital across the program. Within communities, people share resources like food and money with one another to recover from shocks and stresses, a consistent finding across FGDs. Other common resources shared, where available, are milk or crops, water, information, labor and livestock. The communities agreed that sharing is prioritized for vulnerable people in the community, defined as the widowed, elderly, sick, disabled or orphans, as well as poor households who are most in need or most affected by a disaster. Some sharing is done informally with neighbors or family, and other communities report a more structured approach guided by a community committee, savings group and/or the community leaders. Community leaders and elders of one village explain that shocks indeed prompt people to share information and to be aware of everyone's situation, like if someone is sick and needs help. The levels of trust and support around sharing are high, overall.

One of the main ways communities help one another to recover is by lending, sometimes labor or livestock, but most commonly by taking loans from relatives, small shops or the savings group where existent. Many of the communities provided a consistent message about how sharing affects their relationships amidst recurrent shocks: they have an even stronger bond as they are dependent on each other and seek to support one another. Lending for the short-term (a few weeks) is common practice, but larger/longer-term loans are more limited to connections with clan businessmen—all in line with traditional norms around guarantees and duration of the debt. While trust is high, they agree that debt is also high and increasingly so with prolonged periods of drought. Some communities explain that

people borrow money and food from the small food stores and it takes them a while to pay off the loan. Waiting with composure to be repaid is another common theme.

> ***"As a community member I can get loans if I want to and that is one of the best things we have here, as neighbors we lend to each other."***
> ***Focus group with women, PROGRESS***

> ***"We know our conditions and what we are going through within the community, so if the person can't pay off the debt, we help them with it by collecting money from the community."***
> ***Focus group with women, STORRE***

> ***"The closer the relative the more they help each other."***
> ***Focus group with religious leaders, REAL***

Yet, a few community members from STORRE and REAL suggest that sometimes the level of trust decreases when the drought becomes severe and people keep borrowing money or food but are not able to repay it, or if that person migrates from the community without paying the debt. This then affects the ability of those who lend in the community to offer any more loans to others, and in some cases puts them under--if they have to close their shop. Thus, while trust and support appear high in some communities, others say the shocks are affecting their relationships and levels of trust, and sometimes it just comes down to trust of the tribe. For the IDP community, with families representing many different original villages, the relations of trust may be more strained. IDP men say that the level of trust in the community is very low, that people in the IDP camp are poor and they don't trust each other for lending anything; but, for them, to share information is a positive thing because as people interact they learn about different experiences and they can get different ideas from what they know themselves.

> ***"It's a normal thing to lend someone a lot of money or food, but if they keep coming back to me and never pay off any of it, I start having doubts and my own assets decrease, so our level of trust slightly drops and I stop giving them anything anymore."***
> ***Focus group with women, STORRE***

> ***"No one is trusted fully in this community because of poverty."***
> ***Focus group with women, REAL***

A few PROGRESS and REAL FGDs report that sharing is not common or possible when their communities are in hard times and when each household is only looking after their own. Some PROGRESS FGDs described how different shocks can affect the ability of households to share or borrow; for instance, with a rapid-onset shock like a flood, the community relationships are affected because they all evacuate or disperse to urban areas trying to then return in the growing season, but certain widespread shocks like disease outbreaks means less sharing because if it affects the whole community, and thus, the usual contribution made by local people to those affected goes to each their own household. Many FGDs across the program also explain that the small amount of sharing and lending conducted within their communities is too small to have an impact on a household's ability to be productive again, for which larger loans are needed.

BRIDGING: While there are some communities who report receiving no external help, many STORRE communities have some households receiving remittances or support from relatives even if

this support is irregular or a small amount, and mostly from relatives that live in bigger cities in Somalia or abroad. Some of these STORRE communities that receive remittances note a decrease in this external help in recent years because the needs of the community increased and their contacts became unable to meet their needs. A few FGDs report that remittances have actually increased in order to meet their increased demand for help, and one community notes the tremendous contributions from the diaspora for helping their health and education facilities to function.

> ***"When our needs and demands increased and we kept calling them for help because of the constant drought, I think they got tired of us and don't even pick up the phone sometimes. Or when they do, they send some remittance after a long time."***
> ***Focus group with women, STORRE***

Few FGDs of the PROGRESS and REAL project areas report external connections providing support, such as remittances from relatives working in cities or the diaspora, and many relatives are reportedly facing the same shocks so "hand support" is all that can be exchanged. The most common forms of external support received, if existent, are the clan businessmen and family/relatives that live in urban areas. There was not a consistent message of any change in the external assistance received by these communities in recent years.

LINKING: Most of the STORRE communities, through their community leaders, have asked for support from the Somaliland government, business owners and organizations, but mostly with no response or feedback. The exceptions are the connections with CARE and some other humanitarian organizations. A few FGDs noted food distributed by the Somaliland Drought Commission.

As described earlier (Chapter 6 Assistance Received), some PROGRESS and REAL communities report being quite isolated from any external assistance or functioning government, which for some has changed just in the past year or two as the security has improved with military. Multiple communities of REAL report connections to the Luuq local authority; also, community leaders arrange meetings with NGOs on behalf of the community's needs. As most communities are not receiving NGO or humanitarian assistance, most report little external support or connections to people with influence who they can contact for help. One PROGRESS community explains that they feel cut off from all support, from the government or NGOs, because the area is not safe and no one dares to come there to give them any help. Indeed, multiple FGDs expressed the idea of being cut-off from external help, many for years, not being able to receive aid during the severe drought of 2011, or even before, attributed to insecurity and corruption by both ruling armed groups or the administration.

Bonding, bridging and linking social capital indexes used to compute resilience capacities. The indexes of bonding, bridging and linking social capital provide overall measures of the strength of social capital across the project areas and also provide a glimpse into one important factor for measuring resilience. See Appendix 1.4 for more detail on how the baseline data are used to construct the indexes of bonding, bridging and linking social capital.

As a brief summary from the descriptions provided earlier in this section, the index of bonding social capital used for the absorptive capacity index measures whether a household *could* rely on other members of their community *if* a crisis hits, and feels that if another community member needed them they could help out. The indicator values range from 0-6. The index of bridging social capital measures the same idea but in reference to their contacts residing outside of their community, which adds another layer of risk management available to households when in need, with a range of 0-12. The index of linking social capital is based on indicators of the vertical linkages that exist between the households and formalized sources of power and authority outside of their community. It is a count of the number

of influential people who would, if asked, help the household or community, such as business owners, government officials, NGO staff, religious leaders, and clan leaders, with a score range of 0-3.

Table 7-1 provides the index scores for bonding, bridging and linking social capital. The scores for social capital are low, overall, with linking social capital practically non-existent. While STORRE households scored higher (1.9 out of 6) for bonding social capital as compared to REAL (1.6) and PROGRESS (1.2) households, the actual scores are still low across project areas.

Table 7-1: Indexes of bonding, bridging, linking social capital

Social capital indexes (range of values)	Program area			Wealth categories		
	STORRE	PROGRESS	REAL	Poorest	Middle	Richest
Bonding social capital index (0-6)	1.9 [a]	1.2 [a]	1.6 [a]	1.3 [a]	1.3 [b]	1.6 [ab]
n	*671*	*664*	*672*	*668*	*668*	*667*
Bridging social capital score (0-12)	1.4	1.3	1.6	1.2	1.3	1.6
n	*672*	*664*	*673*	*669*	*668*	*668*
Linking social capital score (0-3)	0.0 [a]	0.0 [ab]	0.1 [b]	0.0	0.0	0.0 [a]
n	*672*	*664*	*673*	*669*	*668*	*668*

Alphabetic superscripts show statistically significant differences at the 0.05 level.

It should be noted that these low values for social capital from the household survey seem to diverge from the qualitative finding that social capital is indeed prevalent within communities across the project areas. This may be explained by the low scores for the bonding and bridging social capital indexes mostly attributed to low levels of assistance that could be given or received across clan or village lines. Thus, this finding partially agrees with the qualitative information that sharing with friends, family and neighbors within the community is common, but that connections to outside sources of support or influential people who can help during crisis are not. Yet, when the study team explored the household survey variable on borrowing practices as a proxy for social capital in this context, the relationship to resilience outcomes were still not significant.[65] These inconsistent findings between the qualitative and quantitative data on social capital may also show the need for expanding the social capital measure in the household survey for future research in Somalia. Points for future research are further discussed in Chapter 11 Conclusion.

Aspirations and Confidence to Adapt

Empirically testing the role of aspirations in resilience is relatively new.[66] Psychosocial capabilities, such as self-esteem and personal agency, are thought to be important for fostering resilience capacity in the face of shocks. A recent study in East Africa (Ethiopia) has linked low self-esteem, low aspirations and a fatalistic view among the poor with their lack of actions to improve their material well-being.[67] The inability to take action can be particularly harmful in the face of shocks, when quick responses and adaptations are necessary to successfully cope with the effects of the shock.

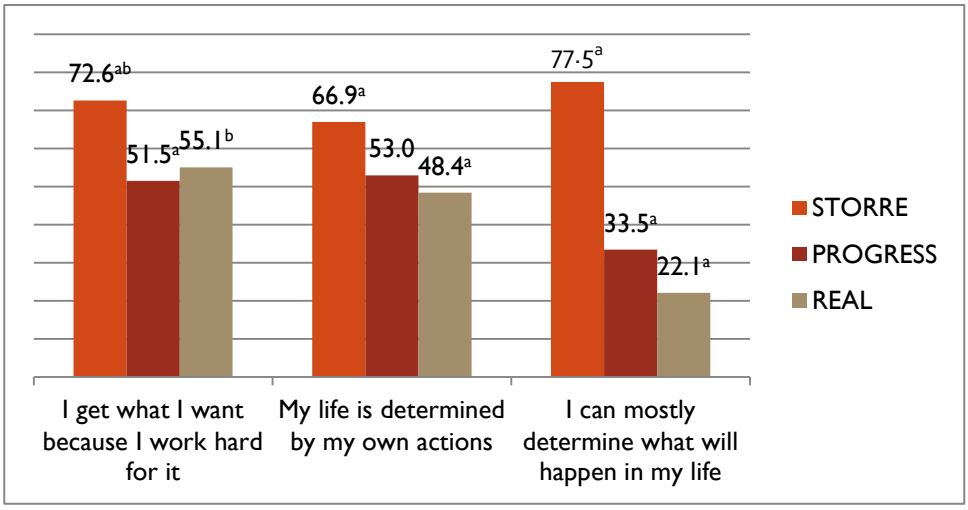
The aspirations module in this survey contains questions to provide measures of fatalism and individual power, two components of aspirations, which in turn are hypothesized to affect resilience capacity. Individual power is similar to 'self-efficacy', which psychologist Bandura described as a person's belief

[65] The regressions presented in Chapter 10 were re-run using measures of borrowing as an attempt to mirror the social connectedness on the ground, but none were significant in multivariate equations.
[66] Bene, C. et al. 2016.
[67] Bernard, T. et al. 2012.

that they can successfully achieve a desired outcome.[68] Higher levels of self-efficacy are linked to more perseverance in difficult situations.'Fatalism' is the sense that the one's life and future are predetermined.[69] The absence of fatalism is hypothesized to improve resilience outcomes.

Household head respondents were asked about their agreement with a total of 12 statements, framed both in the positive and negative. Figure 7-3 shows the three primary positive or "high" aspirations statements; to see the results for all statements go to Table 12-40 in Appendix 3. STORRE household heads are most likely to agree with these high aspirational statements.

Figure 7-3: Percent of household heads in agreement with high aspiration statements[1]



Alphabetic superscripts show statistically significant differences at the 0.05 level across program area for each statement. See corresponding table in Appendix 3.
[1]Percentages combine respondents reporting that they 'slightly agree', 'agree' or 'strongly agree'

Qualitative findings on confidence to adapt. The STORRE community FGDs carried a common message about resilience capacity: the households that have resources stored or saved combined with good financial income are the most confident to adapt and deal with shocks. Some FGDs stressed financial stability combined with the ingredients of faith and unity, that is, trust in Allah and in one another to provide support.

> ***"The important factor that influences household confidence is financial, if the household has enough income they are able to respond to shocks and deal with stresses with confidence."***
> ***Focus group with women, STORRE***

> ***"All we have to do is have faith, to trust in Allah and be united in responding and dealing with the shock."***
> ***Focus group with elder women, STORRE***

The PROGRESS area FGDs provided various ideas about what gives households the confidence to adapt to shocks, and some of the responses are similar to that of STORRE above. Household financial capacity

[68] Bandura, A. 1977.
[69] Pipes, D. 2015.

including income, savings and loans is a common theme, again, along with diversified IGA, learning from shocks, knowing there is a collective contribution for those in need, and strong relationships in the community or with the clan. A few FGDs mention religion, or faith that the situation will improve, as the impetus for aspiration.

The REAL area FGDs reinforce two of the main factors cited across project areas as contributing to household level confidence to adapt to shocks: close relationships and savings. Trust that one's neighbors, relatives and clan members will support in the time of need is an important factor for building confidence across the communities interviewed (social capital). The existence of men's and women's savings groups is another important factor that is commonly mentioned by the focus groups.

> ***"If someone is related to you or you are friends that person will help you during shocks, even if they have nothing else to help you with, they will help you with labor."***
> ***Focus group with elder women, REAL***

In all, the qualitative data on the topic of what gives households the confidence to adapt emphasizes the tangible resources and supports required to do so, but with low levels of these resources and supports across project areas, it would make sense that confidence is low overall. In addition to those tangible needs to build confidence, there is also a common theme among some focus groups of each project area that God's will directs their future. This shows the tension of believing both in controlling one's future outcomes and at the same time trusting only in God to provide, which may be reflected in the low (or neutral) index scores as shown below (Table 7-2).

Aspirations and confidence to adapt index. This section presents means of an index that included six statements of low aspiration and three statements of high aspiration for which the households were asked about their level of agreement.[70] These statements relate to the themes of absence of fatalism and belief in individual power, which were chosen because they are believed to be positively associated with having aspirations and confidence to adapt to change.[71] The description of the index can be found in Appendix 1.3.

Table 7-2 shows mid-range scores across the project areas, from 0.3 to 0.9 in the index range of -5 to 5. The scores hovering around zero represent nearly neutral agreement with the high or low aspirations statements. For instance, it means that a respondent reported the belief that "My life is chiefly controlled by other powerful people," and at the same time that "I can mostly determine what will happen in my life."

These mixed-results observed from the household survey may point toward the sentiment that 'it depends' when it comes to the extent the respondents believe they have control of their lives, and this is because of their awareness of the external barriers that exist in the way of their pursuits. That awareness of such life-shaping externalities makes sense in the Somali context where households have experienced years of political and climatic instability. This possible explanation may be a reflection of what the qualitative information emphasized, that households' confidence to adapt is related to other factors of having the enabling conditions, resources and capacity to adapt: financial capacity (income and savings), community cohesion or social capital, as well as knowledge of how to better prepare or respond to shocks. Psychological research from decades ago, in fact, explains the phenomena that populations with low socio-economic/political status may report measured or self-regulated levels of

[70] Seven-point response scale: 0=neutral (neither agree nor disagree); 1=strongly disagree; 2=disagree; 3=slightly disagree; 4=slightly agree; 5=agree; 6=strongly agree; Source: Sapp and Harrod (1993).
[71] An alternative terminology used in personality psychology for this aspect of resilience is "locus of control", defined as "The extent to which people believe they have power over events in their lives." Fournier, G. (2009).

perceived control if external conditions are not present that allow them to take actions for themselves, which serves as a protective measure to avoid the emotional distress that accompanies the recognition of powerlessness.[72] More empirical research is needed to further explore how these concepts of perceived power and internal-external control apply to the context of resilience to shocks.

Table 7-2: Aspirations and confidence to adapt index

Aspirations index (range of values)	Program area			Wealth categories		
	STORRE	PROGRESS	REAL	Poorest	Middle	Richest
Aspirations index (-5 to 5)	0.7 [a]	0.3 [ab]	0.9 [b]	0.3	0.5	0.4 [ab]
n	*672*	*664*	*673*	*669*	*668*	*668*

Alphabetic superscripts show statistically significant differences at the 0.05 level.

Economic Sources of Resilience Capacity

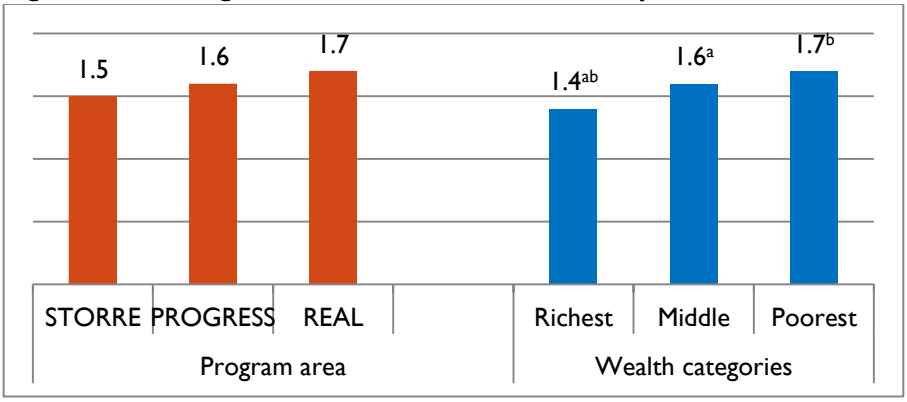
As previously discussed in Chapter 4 Household, Productive and Livestock Assets, asset ownership is an important indicator of wealth status in Somalia, but it is also a critical source of resilience capacity, as these productive and household assets can provide income for households in times of distress. This section describes additional economic sources of household resilience capacity, including diversity of livelihoods and access to financial resources such as credit and savings.

Livelihood diversity. Diversity of livelihoods is important for resilience capacity because if some livelihood activities are harshly affected by a shock, there is still household income and food potential through other sources, thereby reducing households' vulnerability in the face of shocks. Recent research in Somalia and the East Africa region emphasizes the need for livelihoods that are diverse in their risk profiles, highly nuanced to the context, as well as connected to other livelihood zones and resource bases.[73, 74]In this study diversity is measured as the number of livelihood and income sources, and the more nuanced information on livelihood diversity draws from the qualitative data. Livelihood diversification is included in the adaptive capacity index, and the details for this score can be found in Appendix 1.7.

Across the program area, the households report just one to two livelihood activities on average, with no significant differences across project areas (Figure 7-4). This finding is coherent with the common shock of un/underemployment facing households. Yet, the richest households conduct fewer livelihood activities on average than the other wealth categories. Female participation in livelihoods also contributes to the number of livelihood activities a household undertakes. For instance, more women than men of the total adult working population (sampled) are working in a self-employed manner or own a small business. (see Table 12-9 in Appendix 3).

[72] Gurin, P., G. Gurin, R. Lao & M. Beattie, et al., 1969.
[73] Little, P. Ed. 2016. USAID/East Africa Resilience Learning Project.
[74] Nelson, S. et al. 2016. Technical Report Series No. 2.

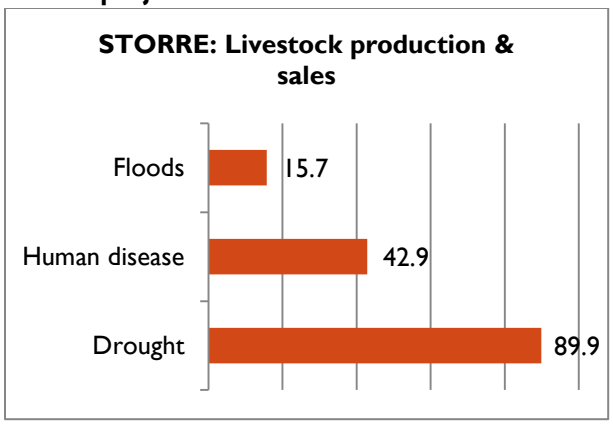
Figure 7-4: Average number of livelihood activities per household

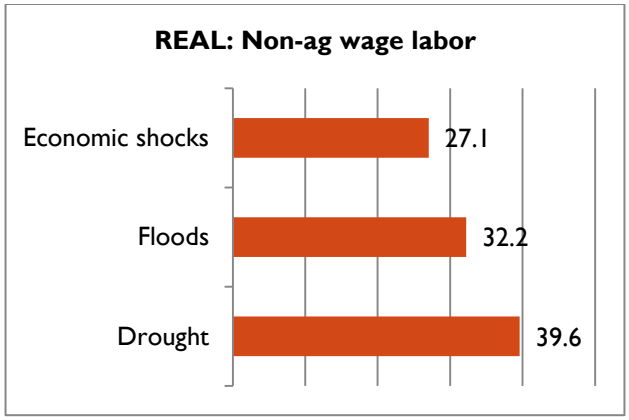


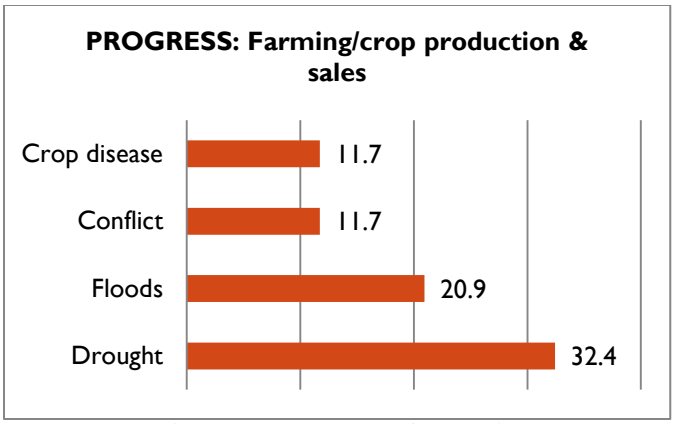
Alphabetic superscripts show statistically significant differences at the 0.05 level across program area and wealth category.
See corresponding table in Appendix 3.
Livelihood activities taken from the survey household roster of occupation of adult household members.

The households were asked about how severely various shocks impacted their livelihood activities. Figure 7-5 shows the top three shocks that severely impact the main livelihood of each project area. Overall, drought is the primary shock severely impacting every main livelihood, with floods also showing up as a main shock across livelihoods; but there are some differences across project areas. STORRE is a pastoral livelihood zone, and the main shocks that severely impact their livestock production and sales are drought (89.9 percent), human disease (42.9 percent) and floods (15.7 percent). PROGRESS is an agro-pastoral zone, and the shocks that severely impact their farming activities are varied: drought (32.4 percent), as well as floods, conflict and crop/livestock disease. REAL is a peri-urban livelihood zone with more households involved in non-agricultural wage labor, which is also affected by drought and floods, as well as economic shocks (27.1 percent) like price fluctuations or unemployment. The figures show that households engaged in livelihoods not directly exposed to climate risk (non-agricultural wage labor) as well as those engaged in livelihoods directly exposed (livestock and crop production and sales) all report that they were severely impacted by drought. Note that sample sizes for salaried non-agricultural workers were not large enough to present by program area but overall, 8.2 percent reported that they had been severely impacted by drought and 7.2 percent reported that they had been severely impacted by flooding.

Figure 7-5: Percent of households reporting shock severely impacted livelihood, by main livelihood in each project area







See corresponding table in Appendix 3.

Qualitative findings on diversity of livelihoods. As a notable finding related to diversified livelihoods, the STORRE communities consistently described a change in their livelihoods as a result of the recurrent shocks of recent years. Most communities were primarily livestock owners and their livelihoods were based on pastoralism or agro-pastoralism, but this has shifted in the past five years as livestock production dramatically decreased due to severe drought. In response, many households then created small businesses to diversify and survive. Yet, they report that even the small shops now, like tea shops or cloth shops, are closing after prolonged periods of drought due to lack of business because nearly everyone is faced with low income. Thus, there are no customers. This is a notable challenge in light of NGO programming that promotes vocational trainings. While some communities report participating in trainings such as for tailoring, and FGDs affirm that these trainings can help improve their lives, these skills are still dependent on a community that has income to spend on such services.

An interesting finding in the PROGRESS area is that FGDs reporting an improved situation in their livelihoods over the past five years, or at least not deterioration, also carry a common theme around their intention to expand activities and sources of income. This has meant that, as farmers, some households are also opening small businesses. Particularly for women, they report varied activities they now undertake for day-to-day income and feel their livelihood security is now better than in previous years, which is discussed further below in the box on gendered livelihood opportunities. A youth male FGD also reports that livelihood activities have changed in a positive way in the past five years because their working experiences are increasing and they are learning new ways of living and getting jobs such as selling the stored sorghum, selling milk, or offering other services. Yet, the communities currently hit by drought or a dry river report a sense of doing well before the drought hit, but that now their situation is tenuous, which echoes the situation of STORRE households also benefiting from diversified livelihoods but only to a certain point with recurrent shocks. The common attempt made by PROGRESS communities to retain assets or provide income despite climate shocks is to migrate for work. For those who found work in urban areas, some of these men have returned to their communities with new skills, such as in construction, which is notable since the project area otherwise reports very few organized vocational training opportunities.

"We are farmers. We don't have other skills to be productive."
Focus group with women, PROGRESS

While the REAL area focus groups report few changes in the livelihood activities they undertake, many communities have experienced decreased productivity of their main livelihood activities. This decrease is mostly attributed to the multiple shocks they have faced in the last five years, most commonly drought, with some communities feeling like the drought of 2011 never really ended. A few of the communities report managing the decline in their main livelihoods with other activities, like the activities of washing

clothes or selling tomatoes and firewood for females, and of hunting and fishing for males. There is also a theme that agricultural day-labor on larger farms is more common now, thus buying food with income from agricultural labor if they cannot produce themselves. Nearly all REAL FGDs report no access to vocational skills trainings.

"The whole community is not comprised of farmers; some keep livestock only. So those who keep livestock look for jobs from farmers to load the sandbags to fence the farms during floods."
Focus group with male elders, REAL

GENDERED LIVELIHOOD OPPORTUNITIES: EVIDENCE FROM QUALITATIVE DATA

Related to equal access to livelihood opportunities between men and women, most STORRE communities report that men have more opportunities because they can perform more physically difficult, manual labor. Though, some communities across the project areas believe women do, in fact, have equal access to livelihood activities albeit to different opportunities because they may be working in the market or in a small shop, which confirms the finding presented above from the household survey that more women than men take part in self-employment/small business activities. There are also some FGDs, particularly in the south, that explain women have more access to livelihood opportunities and livelihood information than men because of their increased presence at the market or public centers, for instance, while men are working the farm.

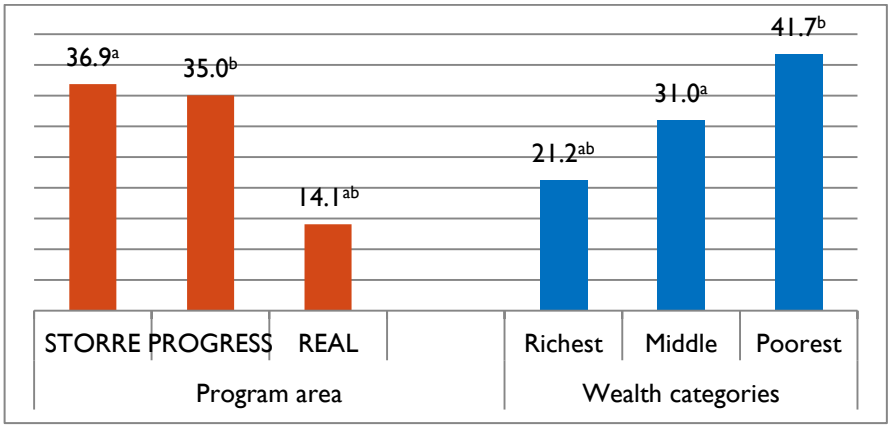
FGDs across the project areas describe the varied activities women now undertake, including selling wood, working in restaurants or shops, washing clothes, selling sweets or tea, among others, but all activities provide just a small subsistence, or daily income. A women's focus group in the PROGRESS area says there has been a massive change in recent years in what the local people are doing, especially the women, as they have a female savings group and are starting to run small businesses so they can help their families during hard times.

"Women have better livelihood opportunities in our village because they can work the different activities of farms, like digging, harvesting and cutting grasses, among others, but men can't work when there is no farming or no water."

Focus group with women, PROGRESS

Access to financial resources. Financial resources such as credit and savings can also be used by households to increase income and protect themselves in the face of shocks. As shown in Figure 7-6, REAL households are significantly less likely to have borrowed cash (14.1 percent) in the last 12 months as compared to the other project areas. The richest households across the program are also less likely to have borrowed cash (21.2 percent) than the other wealth categories, whereas 41.7 percent of the poorest households have borrowed cash. This may show the general dynamic of the richest households as the lenders and the poorer households as the borrowers. Indeed the sources for the loans are most commonly a friend, neighbor or relative; though STORRE households were less likely to source their loans from friends/relatives and instead tended to borrow from money lenders or savings groups (see Table 12-41 in Appendix 3).

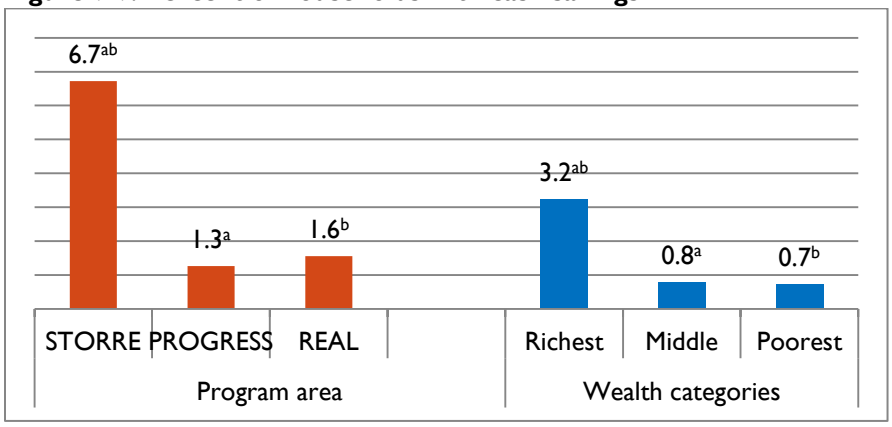
Figure 7-6: Percent of households with member borrowing money in last 12 months



Alphabetic superscripts show statistically significant differences at the 0.05 level across program area and wealth category.
See corresponding table in Appendix 3.

Overall, the prevalence of cash savings across project households is low. Figure 7-7 shows that significantly more STORRE households have cash savings (6.7 percent) than PROGRESS households (1.3 percent) or REAL households (1.6 percent). The richest households are more likely to hold cash savings than the poorer wealth categories.

Figure 7-7: Percent of households with cash savings



Alphabetic superscripts show statistically significant differences at the 0.05 level across program area and wealth category.
See corresponding table in Appendix 3.

Human Capital and Access to Information

Human capital is captured in this study through adult literacy, education level, trainings received, and access to information. Human capital means the working-age members of the household have the ability to use information and other resources to cope with and adapt to shocks and stressors. Access to information and trainings allows them to put such human capital to use. Overall, adult literacy, primary and continued education levels are low. Table 7-3 shows that PROGRESS area adults are significantly less likely to be literate or to have completed at least some primary school as compared to the adults of the other project areas. The adults who have received any training of any kind only ranges from 1.8 percent in PROGRESS to 2.6 percent in STORRE. There are no differences across wealth categories for these indicators of human capital see Table 12-45 in Appendix 3).

Table 7-3: Percent of adults per HH, by literacy, education level, and trainings

Human capital and access to information	Program area					
	STORRE		PROGRESS		REAL	
Human capital (% per HH)		*n*		*n*		*n*
Adults (18+) read or write	40.7 [a]	*672*	19.9 [ab]	*663*	38.8 [b]	*672*
Adults (18+) with at least some primary education	34.9 [a]	*672*	16.7 [ab]	*663*	27.9 [b]	*672*
Adults (18+) who received training	2.6	*671*	1.8	*664*	2.0	*673*

Alphabetic superscripts show statistically significant differences at the 0.05 level.
See corresponding table in Appendix 3.

Qualitative findings on human capital. Communities across the project areas named lack of education as one of the main shocks, or ongoing stressors they face. Lack of education is considered a stressor linked in a longer-term view to resilience. That is, if the next generation is educated these communities will have members with more skills and income earning opportunities, which means they can, in turn, support their relatives. But in the short-term, education also means they can write to and communicate with potential donors or organizations for assistance. The "ignorance" of the community's youth due to lack of education and schools is expressed as highly distressing because the adults see the youth unoccupied and have higher hopes for their future.

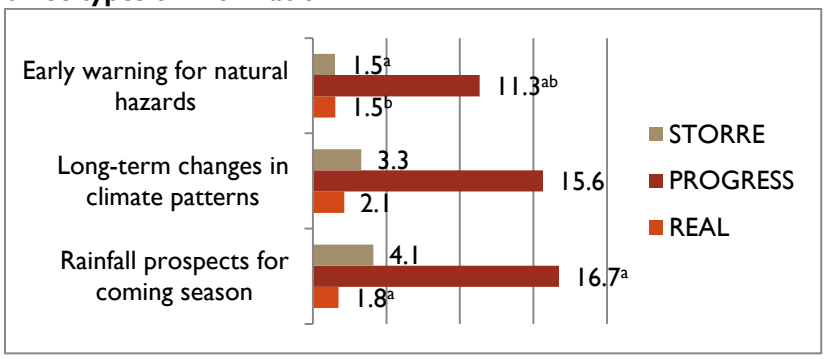
"We cannot even write our names."
Focus group with female youth, PROGRESS

"Ignorance itself is a big shock."
Focus group with men, PROGRESS

"As a community, we believe better life comes after the community has education because the educated family can defend themselves from the shocks, like by communicating with the NGOS, and by improving their income from better jobs."
Focus group with men, PROGRESS

Access to information is also very low across project areas. Figure 7-8 shows the top three types of information that households report they can access. More PROGRESS households (16.7 percent) access information on rainfall prospects compared to REAL households (4.1 percent). PROGRESS households also report more access to early warning information for natural hazards (11.3 percent), as compared to 1.5 percent of households, each, in the other project areas.

Figure 7-8: Percent of households accessing information, by top three types of information



Alphabetic superscripts show statistically significant differences at the 0.05 level across project areas by type of information.
See corresponding tables in Appendix 3.

Qualitative findings on access to early warning information. The data from Figure 7-8 showing very low levels of access to early warning or climatic information in the STORRE area are not surprising when triangulated with the qualitative data. According to the qualitative interviews, many STORRE communities have poor communications or they are remotely situated away from main roads or neighboring villages, and thus, are limited in the early warning information they receive. Other communities commonly cite sources of information passed from other neighboring villages by the big trucks that pass their road or from cell phone contacts, and some receive information on shocks through the radio or television. STORRE communities generally trust the cell phones the most because they talk directly to their contacts in other communities, and they then can apply the information such as boiling water and burying waste in the case of a diarrheal outbreak. The elderly, children, and vulnerable households that cannot access cell phones tend to have less direct access to this information.

Trust and reliance upon shared experiences within and between villages is also a common them among PROGRESS and REAL FGDs. Trusting the experience from what they have seen or heard themselves carries a lot of weight, as does the internal communication within the village to learn and adapt after a shock. A few PROGRESS and REAL communities explain that NGOs have started to give them useful early warning information by carrying out a preparedness campaign before a shock, which they may also hear on the radio. Yet, personal (and communal) shared experiences are the most trusted sources of information across FGDs. Male community leaders of one village report that they sometimes see agencies doing mobilization to prepare for shocks but they disregard it because only God knows what will happen (see quote below). This is a common theme of trusting personal experience and God's will above early warning information from NGOs.

"We only believe what we have seen."
Focus group with women, PROGRESS

"The last two months they (agencies) were talking about floods and heavy rains coming and that the community should get ready, but we have faced only severe drought so we don't consider it."
Focus group with male community leaders, REAL

Human capital index and access to information score. Table 7-4 corroborates the qualitative information above with the finding that human capital and access to information are very low across the project areas. The human capital index combines information on: maximum level of education of any

adult household member, literacy—if any household member can read or write, and the sum of trainings received by any household members such as skills or trade training, business development training, business start-up grants training, or conflict resolution training, among others. The range of the index is -1 to 1, with PROGRESS households showing less human capital than the other areas. The access to information score tallies information received by the household in the previous 12 months on 12 topics, with a range of 0-12. The extremely low access to information scores across projects shows that at the household level practically no one is accessing information on early warning, health, climate forecasts or other topics. Further explanation of this score may be found in the description of adaptive capacity in Appendix 1.9.

Table 7-4: Human capital index and access to information score

Human capital and access to information scores (range of values)	Program area			Wealth categories		
	STORRE	PROGRESS	REAL	Poorest	Middle	Richest
Human capital index (-1 to 1)[1]	0.2 [a]	-0.3 [ab]	0.3 [b]	-0.3	0.0	-0.2
Access to information score(0-12)	0.3	0.5	0.1	0.6 [a]	0.5	0.1 [a]
n	*672*	*664*	*673*	*669*	*668*	*668*

[1]Imputed values have been assigned to missing cases and may be negative.
Alphabetic superscripts show statistically significant differences at the 0.05 level.

Transformative Resilience Capacities

This section describes the measures that comprise the transformative resilience capacity, with data drawn from the community level quantitative survey, and the sub-indexes are used across the resilience capacity indexes. This sub-section includes discussion of:

- Access to markets, infrastructure, services, and communal natural resources;
- Safety nets and DRR; and
- Community mobilization and governance, which underlies the ability of households and communities to act collectively to respond and adapt to shocks.

Access to Markets, Infrastructure, Services, and Communal Natural Resources

Table 7-5 shows the indexes that represent access to various community structures and systems, which are included in the transformative capacity index. These indexes are broken out by index variable in Table 12-38 of Appendix 3.

- The access to markets score (out of 6) represents the proximity of communities to markets for livestock, agricultural products, and agricultural inputs. The STORRE communities are further from markets than the other project areas, which makes sense as a more geographically remote or rural area.
- The access to services score (out of 3) is a count of communities with access to three main types of services: primary education, health care, and veterinary. The access to services score is marginally higher in the REAL area; a score of 2.0 means that on average the REAL communities have access to two of the three main services—in this case primary school and health center. Veterinary services were practically non-existent across communities; zero communities of PROGRESS listed a primary school for boys and girls within five kilometers of their village.
- The access to infrastructure score (out of 4) is a count of four main structures: piped water as main water source in the community, cell phone network access, internet access and paved main road. All communities across project areas reported access to cell phone services; most

REAL communities listed access to piped water, though none report a paved road to market; these infrastructures were not common across project areas.

- Finally, the communal natural resources index includes shared resources (out of 4): grazing land, water for livestock, irrigation system and land for firewood. For this index there is no significant difference across project areas, showing access to nearly three of the four communal natural resources, which were the same three across project areas, namely: communal grazing land, irrigation systems, and communal land for firewood, with communal water for livestock as the least common shared natural resource across communities. Note that this indicator is included in program areas with urban and peri-urban populations.

Table 7-5: Community indexes on access to markets, infrastructure, services and natural resources

Access to markets, infrastructure, services and communal resources scores (range of values)	Program area		
	STORRE	PROGRESS	REAL
Access to markets score (0-6)	3.0 [ab]	4.8 [a]	5.6 [b]
Access to services score: primary school, health center, veterinary services (0-3)	1.2 [a]	0.6 [b]	2.0 [ab]
Access to infrastructure score (0-4)	1.4	1.2 [a]	1.7 [a]
Communal natural resources (0-4)	2.5	2.5	2.8
n	*672*	*664*	*673*

Alphabetic superscripts show statistically significant differences at the 0.05 level.

Safety Nets and Disaster Risk Reduction

Table 7-6 shows the indexes for formal and informal safety nets and community disaster risk management. The formal safety net score is part of the transformative capacity index, while the informal safety net score and disaster planning/mitigations score are included in the absorptive capacity index.

The formal safety net score is a count of institutions in the community that provide food and/or housing and other types of assistance, which is near zero out of 2 across the projects. The informal safety net score is a count across eight different types of community organizations providing safety nets including: credit or micro-finance groups, savings groups, trade or business associations, religious groups or women's groups, among others. The score is highest in the STORRE area (3.2), meaning there are three of the eight groups on average in STORRE communities, and the score is lowest in the PROGRESS area (0.7). The disaster planning and mitigation index includes information from household and community surveys, including household perceptions of how well prepared their community is to respond to any future climate shock, as well as community level reports of community-based disaster planning and government/NGO/UN programs[75] for disaster planning or response. These values are very low overall, with PROGRESS communities nominally higher (0.4) in score than the other project areas.

Table 7-6: Indexes of formal and informal safety nets, and disaster planning

Safety nets and DRR scores (range of values)	Program area		
	STORRE	PROGRESS	REAL
Formal safety net score (0-2)	0.3	0.0	0.2
Informal safety net score (0-8)	3.2 [a]	0.7 [a]	2.3 [a]
Disaster planning and mitigation score (-.3 to 4)[1]	-0.2 [a]	0.4 [a]	0.1 [a]
n	*671*	*664*	*672*

[75] Note that none of the villages report government, NGO or UN programs for disaster planning or disaster response.

[1]Imputed values have been assigned to missing cases and may be negative.
Alphabetic superscripts show statistically significant differences at the 0.05 level.

Qualitative findings on safety nets and DRR. STORRE communities reported a more uniform strategy for dealing with shocks, drought in particular, as compared to the reports in other areas. The most commonly mentioned preparedness actions include storing grass, sorghum or wheat in the rainy season and feeding it to the livestock in the times of drought. They also attempt to save water (for livestock or farming) in their dams or in holes in the ground covered in plastic, but this relies on an adequate rainy season. Many communities consider those actions of saving fodder and water to be their most effective in dealing with shocks.

However, some STORRE communities explain that while storing grass, for instance, has been common practice to prepare for drought times, it is becoming increasingly difficult to be prepared. Most FGDs report that preparations have decreased in the last one to two years because the stored or saved resources have been diminished due to continuous drought, and the communities are no longer able to replenish those stores during the rainy season; this has compelled them to move to other areas in search of pasture and water. Though, one community reported that they feel more prepared now because they have become more accustomed to the effects of the drought over recent years.

Nearly all STORRE communities list savings groups as the collective action taken to help vulnerable households recover from and to adapt to shocks. The savings groups act as a social safety net to support the neediest people, like when their livelihood assets have been lost or when a family member must be taken to the district hospital. They give money to those who have funerals, weddings or need other financial support. They also provide loans to the members of the group to make improvements in their lives, such as small business investments. Some of these groups work with the village committees to build or maintain community assets (discussed further in the next section, Chapter 7 Community Mobilization and Governance). They also do actions together to prevent or mitigate the risk of some shocks, for instance, they report trying to prevent the spread of disease by improving their hygiene or removing garbage from the environment.

One STORRE community had the experience that a savings group was established by CARE, but it only functioned for three months and failed after that because the people did not have the money to save after their income was hit hard by the drought and when most of the people left the village to search for water/pasture. They reported disappointment that CARE never returned to change the small amount of money they saved in those three months into U.S. dollars or other Somaliland Shillings, or to provide other support, so they ended up using the saved money. Similar to the reports of decreasing the amount of stored grass due to prolonged drought, the community savings group structure has deteriorated due to the drought effects of migrations of households away from the community, and loans that cannot be repaid for longer periods of time—this combined with the savings group acting as emergency support for other shocks/stresses layered upon the already difficult drought conditions.

These two strategies combined, i.e., storage and helping each other, are reported as the typical ways communities of the STORRE area act to reduce risk and to mitigate impacts of shocks.

> ***"It (storage and assisting the vulnerable) is a traditional act, and the community elders taught them how to do it."***
> ***Focus group with women's savings group, STORRE***

With the variation in type of shocks experienced by PROGRESS area communities, there is also much variation in how or if the communities act to reduce the impact of the shocks. Some communities say there is no way to know in advance, that only Allah knows, so no actions can be taken in advance. Yet, unlike drought where most communities feel they cannot know in advance, for the shocks of floods or

pest and disease outbreaks, some communities felt they could indeed know in advance just based on their own experiences of facing the shocks before. The most common actions taken to reduce the impact of floods is creating and placing sandbags to protect homes. Some communities have savings groups that respond; for the ongoing stressors (like a health emergency), most communities have members who find ways to contribute some crops or money to help the affected families.

Some PROGRESS communities report taking no actions to prepare or respond to shocks due to their overall lack of financial capacity.

A women's FGD explains (see quote below) their savings and actions as a community remain small and limited in what they can accomplish if the money is always going towards coping with the basic emergencies of life in their village like water, food, education and healthcare. This is a common theme across project areas on the limits of the effectiveness of the community safety nets when there is a total lack of infrastructure like roads, schools, health center and markets (refer back to 7.2.1, access to infrastructure).

> ***"A women's savings group is active here, but is very limited. We need support. We are missing the basic things to start the big things."***
> ***Focus group with women, PROGRESS***

As with the PROGRESS area, reported in the paragraphs above, most REAL communities report they do not know in advance if shocks will occur, lending that knowledge only to Allah. If there is any advance awareness of a shock, it is most likely for floods or outbreaks, awareness that is linked to shared experiences within and between villages and due to some early warning campaigns by organizations (as described in 7.1.4, access to information). For instance, experience with floods has allowed some farmers to know to plant maize first instead of beans, which is not as easily washed away. Overall, the REAL community members report very few actions taken to prepare for or reduce the impacts of shocks. Most commonly, sandbags are used for preventing damage of floods.

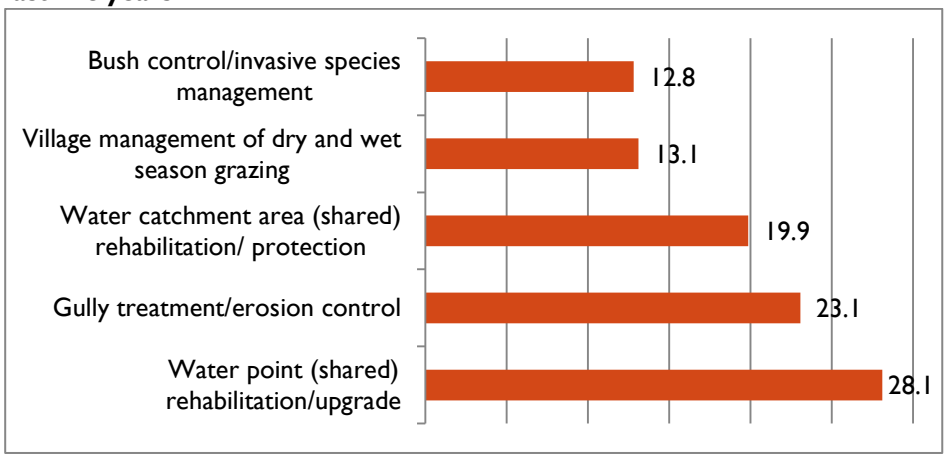
Overall, there is a strong message in the REAL area around sharing information as a form of DRR. REAL FGDs show that the shocks have prompted community members to have to interact more and share information to recover and be productive in the face of shocks, which is generally positive for them.

Community Mobilization and Governance

Collective action for community assets. The households report low levels of collective action taking place in their communities to protect or maintain community assets, with STORRE households generally reporting more participation in their community actions (see Table 12-46 in Appendix 3). The most common collective action reported by STORRE households (25.7 percent) is soil conservation, which includes terracing, gully improvement, or bunds. For both PROGRESS and REAL households the most commonly reported collective action is improving access to health services (7.0 percent and 5.8 percent, respectively). PROGRESS households also report taking actions to protect their crop land from flooding (5.5 percent) and some REAL households have worked to improve road quality (3.9 percent).

Figure 7-9 shows results on a similar topic of collective action drawn from the community leader survey. The top activities reported by community leaders across the program are: rehabilitation or upgrades of a shared drinking water source (28.1 percent) or water catchment area for animals or irrigation (19.9 percent), gully treatment or erosion control (23.1 percent), grazing management by season (13.1 percent), and bush control/invasive species management (12.8 percent).

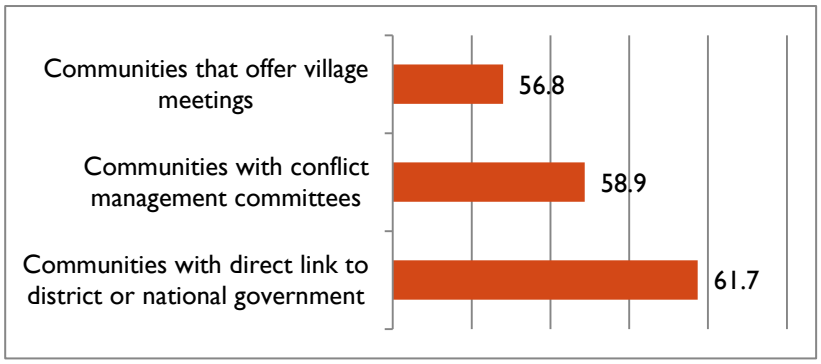
Figure 7-9: Percent of communities with members participating in activity in last five years



Note: Community leader survey, n=60, top five activities shown in figure. Survey sample size too small to present findings by project area.
See corresponding table in Appendix 3.

Community governance mechanisms. Over half of the community leaders surveyed, across project areas, report that they have a direct link to district or national government contacts (Figure 7-10). In terms of local governance, one aspect is holding meetings open to the community, which reportedly occurs in 56.8 of program communities. The leaders and elders ensuring a functioning conflict management committee is another key mechanism of local governance, which is reported by 58.9 percent of communities.

Figure 7-10: Percent of communities with community governance mechanisms



Note: Community leader survey, n=60, top five activities shown in figure. Survey sample size too small to present findings by project area.
See corresponding table in Appendix 3.

Qualitative findings on community governance. STORRE communities were asked about their community leadership's role in mobilizing support and ways that members of their communities are working together to recover from and adapt to shocks or stresses. Nearly all FGDs reported that their community leaders are effective at mobilizing support to deal with shocks. Their roles include the following: they contact and organize support for shocks with the government, diaspora, business or big organizations; they mobilize and maintain peace within the community; they arrange meetings and discuss the requirements of the community and make priorities. One female savings group sums it up well, that the community leaders are effective because they mobilize the community and motivate them to overcome the hard times. Yet, in one community the FGDs reported that their group of leaders is

not effective because the chief has been very sick and the others members of the committee have not taken on the responsibility.

Community assets are coordinated by community leaders but often supported by the savings groups, including: to buy farming equipment or motors that can be shared, to collectively rent water trucks when they need water, to rent garbage trucks and do projects that remove the garbage from their environment, or to buy buckets and covers that help them to maintain the well installed by CARE. More rarely do these groups have the funds for larger, infrastructure projects.

In the STORRE area, there are no major conflicts spurred by shocks/stress within the community or with other villages. Nearly all the communities say their sense of safety has remained the same in recent years, as secure, or it has even increased due to increased awareness of peace building. Just one community FGD noted that their sense of security has decreased with the drought, and a worry that small conflicts could become greater. FGDs of a few communities noted that minor conflicts sometimes arise within the community when the drought is very severe, as they have quarrels about the water scarcity and who gets access to the water dams. One community cited a conflict over sharing a tractor between two clans within the same village, a tractor provided by an NGO. In any instances of conflict, all communities agree that the elders along with village committees will resolve the issue. Traditionally, women and youth have no role in dealing with conflicts, and it is only elder men that have a say and maintain the peace. The finding from Figure 7-10, above, is even more extraordinary then, if women are participating in over three-quarters of the conflict resolution committees where they exist.

"Take an action, and I will help you with it." (Somali saying)
Member of female savings group, STORRE

As in STORRE, nearly all PROGRESS FGDs report that their community leaders are effective at mobilizing support to deal with shocks or with emergency and security situations, at least within the community. A few FGDs report some dissatisfaction with the leaders not garnering external supports or seemingly helping their relatives more than other residents of the village. As mentioned earlier, most PROGRESS area villages have very limited or no active supports mobilized from NGOs. Thus, community actions to deal with shocks come almost solely from the capacities and resources of the community itself. The most common collective action is collecting contributions for needy families and organizing meetings to discuss community priorities and to pray. A few communities have organized savings groups, and one community has worked together to build a mosque. A few communities even struggle to have meetings together, either due to security issues or because of being busy responding household by household to the current drought.

For the PROGRESS area, there are no major conflicts reported within or between villages that are spurred by shocks/stresses. If a dispute does arise over grazing land or debts, the leaders of the community are consistently the body to settle the minor conflict in a timely and effective manner. Some communities report the existence of conflict resolution committees for such matters, which aligns with the community leader survey results presented above (Figure 7-10). The general sense of external security is mixed, with some reports of improving or stable security at the time of the interviews and other FGDs facing real safety issues. Some communities feel safety is improving with Ethiopian and Somali troops in the area, while troops are also reported as the cause of some of the security situations.

"We face the insecurity situation that all Somali's face generally."
Focus group with women, PROGRESS

Nearly all FGDs in the REAL project area believe their community leaders are effective at organizing support for the community to recover from and adapt to shocks. Some community members

interviewed note that the leaders perform well in the following: they coordinate open meetings within the community to be aware of the needs, they redistribute resources such as goats to vulnerable families, and they meet directly with NGOs on behalf of the needs of the community such as for health services, as noted by one community group. This may help to explain the finding presented early in this section that REAL households report collective action taken within their community to improve access to health services (see Table 12-46 in Appendix 3).

In some REAL communities the internal tensions over insufficient resources at the household level extends to the community leaders, with community members reporting lack of trust in the leaders to mobilize resources both internally and externally to support them in recovery from shocks, as well as to ensure fair distribution and sharing of the resources. One of the main roles of community leaders cited across project area is to gather contributions within the community from those that can give resources and redistribute to vulnerable households; thus, not fulfilling this role is considered poor leadership, particularly ensuring fairness when agencies are distributing assistance. The male youth interviewed in one community even accused their community leaders of corruption saying that the community leaders meet with NGOs and ask for help, but that they take most of the assistance received for themselves.

As collective action to deal with shocks, the REAL community members most often cite the community contributions to vulnerable families, which act like community safety nets, and that are organized by the community leaders and elders. They describe how everyone that has the physical and material ability participates in some way. Community contributions to build a mosque for worship is another priority collective effort even when no other infrastructure or buildings exist in the community, serving as a place for religious worship but also to pray about the shocks. Other collective action contributed towards fencing-in grazing land for future use, and in maintaining community assets previously constructed through NGO assistance such as the main gate of a school, farming canals, and markets for women to conduct small business. For cash/food for work activities of NGOs, like constructing assets or bush clearing, it is explained that mostly men participate in the labor, but women also took part by cooking food and tea for the working men; and they accurately cite per NGO child protection policy that children under 18 years were not allowed to take part.

> ***"We have contributed livestock and as a community we sold them to build schools for our children. We have constructed the schools but are waiting for NGOs to help us by providing teachers."***
> ***Focus group with female youth, REAL***

More than the other project areas, the REAL project area FGDs across multiple communities noted various ways that shocks or stressors have fueled new or renewed conflicts within the village setting. The main issue relates to divorce caused by tensions from unemployment and lack of income brought in by the household head. For the IDP community, they report conflict arising during floods when people quickly move from lowland areas and settle in highland areas and end up fighting each other for plots. Fortunately, most FGDs do not report conflicts with other villages. Yet, a few do cite tensions with other neighboring villages in relation to disputes over natural resources such as pasture or water. Similar to the other project areas, elders are always cited as the main body to resolve conflicts involving the community, and the REAL project area community members explain that the elders work with the community or religious leaders to do so, as well as the local authority, as they are in proximity to Luuq District. Nearly all REAL project area community focus groups report that their sense of safety has remained stable or increased in the last five years, mostly related to the presence of military in Gedo region. Unlike reports in PROGRESS area of military presence bringing with it some experiences of lack of safety or harassment of community members, no such reports were made by REAL FGDs.

Indexes of Resilience Capacity

Quantitative findings on resilience capacity. This section provides descriptive information presenting the absorptive, adaptive and transformative resilience capacity indexes, as well as the underlying components of the indexes by program area and wealth categories. Appendix 1, particularly appendices 1.8 – 1.11 provide a comprehensive description of the methodology used to construct the resilience capacity indexes. It should be noted that the factor loadings, or scores, that provide an indication of the underlying components with our hypothesized latent resilience capacity index variables were extremely low. These loadings can also be found in the Appendix 1. In recent comparable studies, TANGO has found high correlations between the observed variables (indicators) and underlying factors (resilience capacities). The results from this study do not provide as much support for these hypotheses. TANGO views this as a result in and of itself and an opportunity to consider alternative approaches to measure the components of absorptive, adaptive, and transformative resilience capacities. Further discussion of the implications for future research is provided in the conclusion, Chapter 11.

The absorptive capacity index is scored 0 to 100, with the PROGRESS area scoring significantly lower (18.3) than the other project areas (Table 7-7). The richest households have more absorptive capacity as compared to the other wealth categories. With the generally low levels of household bonding social capital, livestock assets and household savings, the most important variables for this index are notably community level capacities; the highest factor loading for the index is the presence of a conflict mitigation committee, followed by disaster planning and mitigation, and then informal safety nets (see Appendix 1.8).

Table 7-7: Absorptive capacity index

Absorptive capacity and components (range of values)	Program area			Wealth categories		
	STORRE	PROGRESS	REAL	Poorest	Middle	Richest
Absorptive capacity index (0-100)	31.9 [a]	18.3 [ab]	32.6 [b]	12.1 [a]	25.5 [a]	36.8 [a]
Bonding social capital index (0-6)	1.9 [a]	1.2 [a]	1.6 [a]	1.3 [a]	1.3 [b]	1.6 [ab]
Livestock asset index (TLU; 0-77)	6.5 [a]	1.2 [a]	2.2 [a]	0.9 [a]	2.4 [a]	3.1 [a]
HH has savings (0-1)	0.07 [ab]	0.01 [a]	0.02 [b]	0.01 [a]	0.01 [b]	0.03 [ab]
Informal safety network score (0-8)	3.2 [a]	0.7 [a]	2.3 [a]	0.8 [ab]	1.6 [a]	1.7 [b]
Disaster planning and mitigation score (-.3-4)[1]	-0.2 [a]	0.4 [a]	0.1 [a]	-0.2 [a]	0.3 [a]	0.9 [a]
Conflict mitigation committee (0-1)	0.8 [a]	0.5 [a]	0.9 [a]	0.4 [a]	0.7 [a]	0.9 [a]
n	*671*	*664*	*672*	*668*	*668*	*667*

[1]Imputed values have been assigned to missing cases and may be negative.
Alphabetic superscripts show statistically significant differences at the 0.05 level.

As shown in Table 7-8, the adaptive capacity index value (out of 100) shows the REAL area with the highest adaptive capacity (19.2) as compared to PROGRESS area with the lowest (14.9). The richest households have more adaptive capacity as compared to the other wealth categories. The main driver of this index is asset ownership,[76] followed by livelihood diversification and human capital (see Appendix

[76] This asset ownership index combines household, productive, land, and livestock assets to report any ownership of the assets, which differs from the wealth index that accounts for the amount of the asset owned and type/value of the asset. The asset ownership and wealth indexes are highly correlated. See Appendix 1.5.

1.9 for the factor loadings for the index). Low levels of human capital in the PROGRESS area, in particular, appear to be associated with that area's adaptive capacity score.

Table 7-8: Adaptive capacity index

Adaptive capacity and components (range of values)	Program Area			Wealth categories		
	STORRE	PROGRESS	REAL	Poorest	Middle	Richest
Adaptive capacity index (0-100)	18.6	14.9 [a]	19.2 [a]	11.5 [a]	16.4 [a]	19.8 [a]
Bridging social capital score (0-12)	1.4	1.3	1.6	1.2	1.3	1.6
Linking social capital score(0-3)	0.0 [a]	0.0 [ab]	0.1 [b]	0.0	0.0	0.0
Aspirations index (-5 to 5)	0.7 [a]	0.3 [ab]	0.9 [b]	0.3	0.5	0.4
Livelihood diversity score (1-3)	1.1	1.1	1.2	1.0 [ab]	1.1 [a]	1.2 [b]
Asset index (0-100)	6.3	4.8	4.8	1.8 [a]	4.8 [a]	8.6 [a]
Human capital index (-1 to 1)[1]	0.2 [a]	-0.3 [ab]	0.3 [b]	-0.3	0.0	-0.2
Access to information score(0-8)	0.3	0.5	0.1	0.6 [a]	0.5	0.1 [a]
n	*672*	*664*	*673*	*669*	*668*	*668*

[1]Imputed values have been assigned to missing cases and may be negative.
Alphabetic superscripts show statistically significant differences at the 0.05 level.

The transformative capacity index (out of 100) also shows the REAL area scoring significantly higher (55.4) than the other project areas. The most important variables behind this index are access to services and access to infrastructure (see Appendix 1.10). Notably, the indexes of communal natural resources and governance were dropped from the index during the factor analysis, which is why they are not included here.

Table 7-9: Transformative capacity index

Transformative capacity and components (range of values)	Program area			Wealth categories		
	STORRE	PROGRESS	REAL	Poorest	Middle	Richest
Transformative capacity index(0-100)	30.2 [a]	24.8 [b]	55.4 [ab]	21.4 [a]	31.7 [a]	35.8
Bridging social capital score (0-12)	1.4	1.3	1.6	1.2	1.3	1.6
Linking social capital score (0-3)	0.0 [a]	0.0 [ab]	0.1 [b]	0.0	0.0	0.0
Formal safety networks score (0-2)	0.3	0.0	0.2	0.0	0.1	0.1
Access to markets score (0-6)	3.0 [ab]	4.8 [a]	5.6 [b]	4.5 [ab]	5.0 [a]	5.2 [b]
Access to services score: primary school, health center, veterinary service (0-3)	1.2 [a]	0.6 [b]	2.0 [ab]	0.5 [a]	1.0 [a]	1.0
Access to infrastructure score: piped water, cell network, internet, paved road (0-4)	1.4	1.2 [a]	1.7 [a]	1.2	1.3	1.5
n	*672*	*664*	*673*	*669*	*668*	*668*

Alphabetic superscripts show statistically significant differences at the 0.05 level.

Table 7-10 shows correlations between capacities over the three program areas. The capacities are correlated because they have common elements. Livestock assets are used to compute absorptive capacity and asset ownership (of which livestock assets are a part) is used to compute adaptive capacity. Bridging and linking social capital are included in adaptive and transformative capacities. Because the capacities are correlated, multivariate equations examine each one separately. Doing so allows us to examine each individually, without concern that those with relatively strong correlations with the others and relatively high variation in the sample will statistically dominate the others.

Table 7-10: Correlations between resilience capacities

Resilience capacities: correlation matrix	Adaptive capacity		Transformative capacity	
STORRE				
Absorptive capacity	0.167	***	-0.192	***
Transformative capacity	0.117	***		
n	671			
PROGRESS				
Absorptive capacity	-0.016		-0.116	***
Transformative capacity	0.414	***		
n	664			
REAL				
Absorptive capacity	0.147	***	0.168	***
Transformative capacity	-0.057			
n	673			

*: p<.0.05; **:p<0.01;***:p<0.001

Relationship between transformative capacity and the household resilience capacities. Transformative capacity represents the enabling conditions in which households develop and maintain their absorptive and adaptive capacities. Thus, in addition to directly affecting the resilience of households, transformative capacities may also influence the extent to which households can enhance their own absorptive and adaptive capacities. In particular, it may be expected that households residing in communities with greater transformative capacities (e.g., better transport and communication infrastructures) can have greater adaptive capacities (e.g., by engaging in trading or other IGAs that are linked to wider markets). T is an abbreviated version of Table 12-49 in Appendix 3 that shows full results of a multivariate regression analysis relating transformative capacity to adaptive capacity and absorptive capacity. The results in this table show that higher levels of transformative capacity are positively related to household level capacities, particularly absorptive capacity. In particular, a 10 percent increase in transformative capacity (on a scale of 0-100) is associated with an increase of almost four percent in absorptive capacity.

Table 7-11: Regression results exploring relationships between transformative and household resilience capacities

D.V. : HH resilience capacities: absorptive and adaptive	Model specifications	
	(1: Absorptive capacity)	(2: Adaptive Capacity)
Transformative capacity	0.372**	0.0825**
Number of observations	*1901*	*1903*
R^2	*0.64*	*0.55*

Stars represent statistical significance at the 0.05(*), 0.01(**) and 0.001(***) percent levels.

Qualitative findings on resilience capacity. The community leaders were asked what differentiates a community that successfully responds to a shock/stress from one that does not. In the STORRE area, the common themes included savings, income/assets and social unity, which were also mentioned previously as the factors giving households the confidence to adapt, but they added another critical factor: knowledge. Notably, these are all factors of absorptive and adaptive capacities, which are low as shown in the results of the indexes above in this chapter. The communities stressed the need for both resources and capacity to respond, and that capacity comes from awareness or education on how to

prepare for shocks and how to use past experiences with shocks to better adapt for the future. The STORRE communities also listed and ranked the most important factors for strengthening their resilience capacity. These factors primarily involve basic development priorities that are in line with the variables of community/transformative capacity and support the finding above that transformative capacity is foundational for the household resilience capacities (Table 7-11). In the STORRE area access to health care and to safe, reliable water sources were the most oft-reported effective solutions, followed by access to latrines and education facilities for the children. Other solutions that were commonly cited by STORRE communities include: markets, veterinary services, income and employment opportunities—particularly for youth, and garbage removal as it relates to hygiene and sanitation. The communities' descriptions of these factors for resilience focused on how water and health, first, are the basics for human survival, and without these as the foundation, resilience capacity will not be possible. It is notable that for the factors on health care, water, sanitation and education, there was a strong link to gender issues; for access to MCH in particular, many communities report that women have a critical role in the household survival and production and too many women suffer complications of pregnancy and birth. See Table 7-12, below, for the summary of the resilience capacities ranking findings across projects.

"The community that has good savings and is well prepared for the shocks is better in responding than the other community just like us. We don't have any savings for this drought so that's why we are not responding well."
Leader of women's savings group, STORRE

For the PROGRESS area, the common theme is that a community where members support each other is one that more successfully recovers. Support, in turn, depends on effective leadership and sometimes connections to external supporters and NGOs—essentially describing bonding, bridging and linking social capital. The PROGRESS communities also listed and ranked the most important factors for strengthening their resilience. Again these factors primarily involve basic development priorities that describe the transformative capacity index variables of "access to services" and "access to infrastructure," namely: access to health care, access to adequate water sources and to schools as their top solutions for building resilience. Other solutions that were commonly cited include: resolution to the security situation, flood drainage systems, employment or the creation of IGA, and agricultural supports like pesticides, fertilizer, tools and equipment. Additional resilience factors listed by some FGDs that were specific to the PROGRESS area were: access to NGO support, permanent/flood resistant shelters, EWS, and natural resource management e.g., to prevent deforestation.

Some common themes on the resilience capacity link to development carry into the messaging from the REAL area, as well. A men's group from the IDP camp mentions poverty as a disempowering factor that inhibits their ability to achieve resilience, see the quote below. At the individual level even, impoverished conditions are described as leading to the psycho-social dimension of "despising" oneself.

"Poverty makes people despise themselves, and to lose confidence."
Focus group with men, REAL

Indeed, there was a common perception across REAL area focus groups that the main reason that some communities successfully respond to shocks while others do not relate to being "well-developed," being the inverse of poverty. FGDs commonly described the importance of being well-developed in the areas of jobs, improved livelihood production, food and water access, education and health status, which were cited as the most compelling factors for successfully responding to shocks. This theme is internally coherent with the listing and ranking also done by these REAL area FGDs to collect their ideas on building resilience. Like the other project areas, access to water sources and health services were also

top priorities for REAL, but access to agricultural inputs was also a top solution. REAL communities facing the impacts of drought at the time of the survey also cited the need for food aid to address hunger and malnutrition along supports for their livelihoods to become productive again (e.g., agricultural inputs and veterinary services). Also among these top solutions listed for building resilience are flood protection measures, by way of permanent shelters and sandbags. A group of older females explains how sandbags relate back to their overall recovery and resilience capacity, see quote below.

> ***"If the community uses sandbags to prevent floods from destroying their farms, then the community will be able to have good farm products, which will allow them to better respond to the shock. This community is able to recover from the shock of floods."***
>
> ***Focus group with women, REAL***

Table 7-12 provides a summary of the qualitative findings from the resilience capacities ranking exercise conducted with focus groups. Each focus group listed and then ranked their ideas, or top solutions, for building resilience to shocks in their communities.

Table 7-12: Summary of qualitative resilience capacities ranking findings

STORRE	PROGRESS	REAL
Access to safe drinking water sources for humans and animals *Access to health services (emphasis on MCH)* *Access to latrines (and hygiene education)* *Access to education/school facilities (with adequate teachers and supplies)* *Access to markets* **Others**: Tools for removing garbage (related to sanitation); Employment and job creation (emphasis on youth); Access to veterinary services	*Access to safe drinking water sources for humans and animals (emphasis on dry season)* *Access to health services (emphasis on MCH)* *Access to education/school facilities (including mention of secondary level)* *Employment and job creation (emphasis on vocational skills for IGA in dry season)* *Water catchment/drainage systems to prevent floods* **Others**: Agriculture inputs (e.g., tools, fertilizer, pesticides); Safety and security in the region; Increased support from NGOs; Permanent/ flood resistant shelters	*Agriculture inputs (e.g., tools, fertilizer, pesticides, investments for extension services/equipment)* *Access to safe drinking water sources for humans and animals (emphasis on dry season)* *Food aid for current hunger (until they can produce again)* *Access to health services (emphasis on MCH & outbreaks)* *Access to veterinary services and medicines* **Others**: Permanent/flood resistant shelters and sandbags; Access to education/school facilities (including literacy for adults); Employment and job creation (emphasis on business loans and youth)

CHAPTER 7 SUMMARY OF KEY FINDINGS

- **Household resilience capacity (absorptive and adaptive).** The absorptive capacity index results showed PROGRESS households with the lowest score (18.3) as compared to 31.9 for STORRE and 32.6 for REAL. With low levels of capacity and resources at the household level, the community level indicators such as committees and informal safety nets were the most important variables within the index. The REAL area has the highest adaptive capacity (19.2), then 18.6 for STORRE, with PROGRESS scoring lowest (14.9) attributed to low levels of human capital in that area. Across projects, the richest households have the most absorptive and adaptive capacity.
  - **While qualitative information indicators that social supports within the family or village units are strong, the social capital index levels computed from quantitative information are low, with linking social capital nearly non-existent.** Only about one-quarter of PROGRESS households reported that they had either given or received any kind of assistance both within (bonding) and outside their villages (bridging), and the percentages are even lower in the other project areas. These low levels of social capital indexes from the quantitative data may be explained by low reliance on non-family or non-clan members in times of urgent need within the Somali context. In contrast to these quantitative results, qualitative findings across project areas indicate that inter-family and inter-village sharing is strong. People report sharing resources such as food and money within the community to assist in recovery from shocks. Sharing is prioritized for vulnerable people and poor households in the community. Trust within communities is reportedly high, though with some reports of decreased levels of trust when prolonged times of drought requires repeated borrowing and longer time to pay back loans. And localized sharing and lending is often too small (in quantity) to have a significant impact on productivity. In terms of external supports (linking), most STORRE communities can directly name CARE and the other supports received from NGOs. PROGRESS and REAL communities report very little external help; if it exists, it is commonly from clan businessmen and family/relatives living in urban areas; they report a sense of isolation from external assistance or functioning government, with some recent increase in response as security has improved.
  - **Aspirations and confidence of households are related to other factors of having the enabling conditions, resources and capacity to adapt.** The index scores are low, showing neutral agreement with both positive and negative statements about control over the circumstances and future of the household head's life. This duality of belief may be explained by the qualitative interviews in which many community members across projects say that what will happen with future shocks is part of God's will, and at the same time, they report common themes of household financial security (income/savings), social capital in times of need, and knowledge as the factors most associated with their confidence to adapt and deal with shocks.
  - **Economic sources of resilience capacity, households challenged to diversify and save.** Across projects, households report just one to two livelihood activities on average. Female participation in IGA contributes to the number of livelihood activities a household undertakes. From qualitative findings, households across projects report severe impacts on their livelihoods in recent years from drought or floods: STORRE households have decreased livestock production due to drought, turning to small businesses to diversify; however, the poor local economy prevents community members from patronizing these shops. PROGRESS households also report a positive expansion of livelihoods, but drought has similarly constrained the benefits of diversifying. REAL households report decreased productivity due to drought, and few changes in their livelihood activities. Related to financial resources such as credit and savings, richer households are less likely to have borrowed cash than poorer households, and more likely to hold cash savings. The prevalence of household cash savings is low, overall,

although STORRE households are more likely to have cash savings than other households.

- **Human capital and access to information are low across the projects.** Adult literacy and education levels are low overall, with no differences across wealth categories. Lack of education is considered one of the main ongoing stressors and barriers to building resilience, both short-term and long-term, according to focus groups across project areas. Access to information such as about shocks or weather patterns is also low. Although NGOs have started to provide early warning information, FGDs report placing more trust in personal experience and God's will than in NGO information.

- **Transformative resilience capacity.** The transformative capacity index shows the REAL area scoring significantly higher than the other project areas. Access to services and access to infrastructure are the most important variables; levels of communal natural resources and governance are very low.
  - **Access to markets, infrastructure, services, and communal natural resources.** STORRE communities are more geographically remote and rural, and thus are located farther from markets than are the other project areas. A few more REAL communities have access to primary education and health care, likely due to their proximity to urban areas, yet veterinary services are nearly non-existent across the projects. Program communities showed access to less than two out of four measured community infrastructures; with slightly better results in the average access to communal natural resources, which is nearly three of four resources measured, including communal grazing land, land for firewood and irrigation systems.
  - **Safety nets and disaster risk reduction.** The formal safety net score, a count of institutions in the community that provide food and/or housing and other types of assistance, is near zero across projects. The informal safety net score, measuring different types of community organizations providing safety nets such as business associations or women's groups, is highest in the STORRE area and nearly zero for PROGRESS. From the qualitative data: STORRE households report that storage of fodder and water, along with helping one another through collective action such as savings groups, are the two most common strategies of reducing and mitigating shocks. PROGRESS households take some DRR actions such as using sandbags to protect their homes against floods, but report limited success with informal safety nets because basic infrastructure/services are lacking. REAL communities report very few actions taken to prepare for or reduce the impacts of shocks. In all, the disaster planning and mitigation index, measuring perceptions of community preparation for shocks and institutional disaster planning and response, is very low across all areas.
  - **Community mobilization and governance.** Households report low levels of collective action in their communities to protect or maintain community assets. While still at low levels, STORRE households report more participation in community actions than other project areas, most commonly engaging in soil conservation. PROGRESS and REAL households most commonly report collective action to improve access to health services. The community leader survey reports that just over half of program communities hold open community meetings. Nearly all FGDs across project areas believe their community leaders are effective doing their best to organize support for the community to recover from and adapt to shocks. Yet, some distrust of community leaders was reported due to perceived insufficient distribution of resources. Across project area focus groups, there were few reports of major conflicts within the community or with other villages spurred by shocks/stress.

- **Relationship between transformative capacity and household resilience capacities.** The results show that higher levels of transformative capacity are positively related to household level capacities, particularly absorptive capacity.

- **Qualitative data on resilience capacity priorities.** The focus groups provided the study with

additional community-based solutions for strengthening resilience capacities within each project area. All project areas considered access to health services and safe drinking water to be some of the most crucial, top priorities. Other solutions included access to agriculture inputs, veterinary services, and food aid (for REAL); flood prevention, employment and job creation, and access to education (for PROGRESS); and access to markets, education, and latrines (for STORRE).

Chapter 8 Gender and Resilience

Women's Decision Making in the Household

Participation in household decisions. The majority of women participated in decisions over the past 12 months on all surveyed decision topics.[77] Table 8-1 shows that the household decision topics with the most participation of women in the past year are decisions: to seek medical treatment for herself or her children; to provide food and nutrition for herself or her children; and on minor household expenditures. Women of STORRE households were less likely to have made decisions related to their own food or nutrition provision (75.0 percent) than the women of the other project areas, with an overall trend across most of the decision-making topics of less participation in household decisions among STORRE women. And women of the PROGRESS households took more decisions in the past year on minor household expenditures (92.5 percent) than the other project areas; additionally, the PROGRESS women made more decisions on who migrates during times of stress in the past 12 months (87.4 percent) compared to STORRE women (51.6 percent).

Table 8-1: Percent of female respondents participating in household decision making in past 12 months, summary of top 10 decision topics

Top 10 topics of decision-making (%)	Program area (*n*)					
	STORRE		PROGRESS		REAL	
Medical treatment for yourself	86.9	*133*	93.7	*299*	87.6	*382*
Food and nutrition for yourself	75.0 [ab]	*132*	93.0 [a]	*292*	88.4 [b]	*387*
Medical treatment for your children	83.8	*130*	92.6	*289*	86.2	*381*
Food and nutrition for your children	82.5	*129*	92.0	*297*	88.4	*383*
Minor household expenditures	80.1 [a]	*170*	92.5 [ab]	*343*	83.8 [b]	*387*
Sending /withdrawing girls to/from school	70.9	*115*	88.5	*272*	69.5	*368*
Sending /withdrawing boys to/from school	68.1	*124*	88.0	*288*	69.5	*367*
Food rationing during times of stress/shocks	80.4	*133*	86.2	*283*	72.3	*377*
Spending money that your spouse has earned	65.1	*134*	85.2	*312*	75.3	*386*
Who migrates during times of stress/shocks	51.6 [a]	*96*	87.4 [a]	*232*	63.9	*374*

Alphabetic superscripts show statistically significant differences at the 0.05 level.
See corresponding table in Appendix 3.

It is notable that analysis by wealth category shows that women of the poorest households are more likely to have participated in the household decision-making in the past 12 months for nearly all decision topics (20 total)(see Table 12-50 in Appendix 3). The exceptions to that pattern are for the decision topics of 'major household expenditures' and 'inputs for agricultural or livestock production' for which women of the richest households were more likely to take part in the decisions. In sum, the women who participated in these household decisions in the past 12 months were asked about their level of input in the decision making process and the following themes emerged:

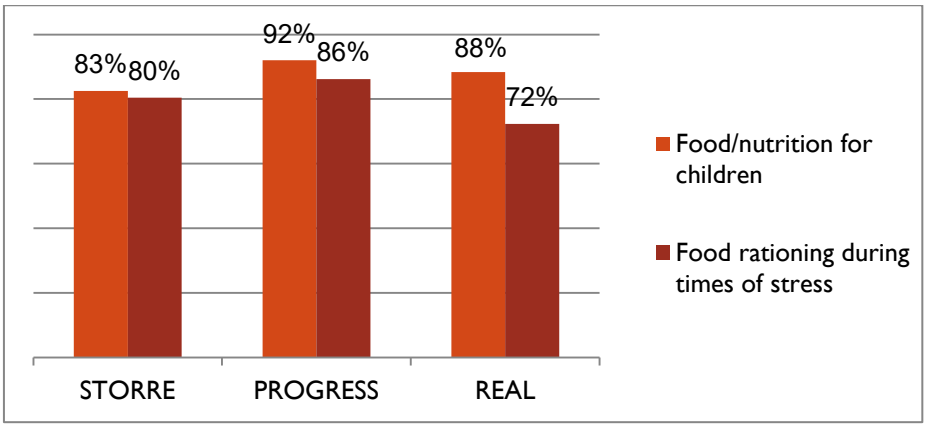
- Nearly all female (at least nine out of 10) respondents reported joint or sole responsibility for the decision on various topics;
- Any deviation from this high level of input into decision making was reported among women of the STORRE area, who generally reported lower levels of joint/sole input at the household level compared to the other project areas; and

[77] It should be noted that the female respondents for this module are the spouses of the head of household or another primary female decision-maker of the household; this sample of women excludes female-headed households due to the assumption that they already have sole decision-making power.

- The women of the poorest households are significantly more likely to make decisions jointly or alone on nearly all decision topics as compared to the women of the richest households.

Women's decision making in the household during times of stress is another indicator of women's empowerment. Figure 8-1 shows that women's decision making on food and nutrition for the household slightly declines during stress times.

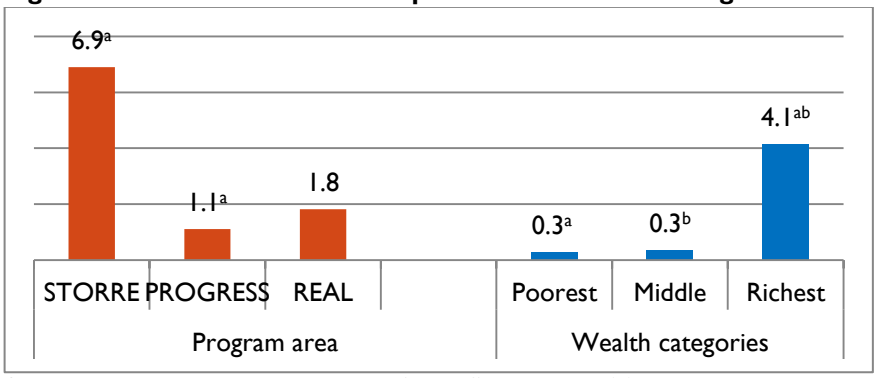
Figure 8-1: Women's decision making on household nutrition in times of stress



Alphabetic superscripts show statistically significant differences at the 0.05 level across program area.
See corresponding table in Appendix 3.

Women's borrowing and saving. Figure 8-2 shows that of the female respondents, there are very low reported levels of cash savings. While still low, women of the STORRE area (6.9 percent) are significantly more likely to have savings, as compared to 1.1 percent of PROGRESS area women, and the savings that do exist among these sampled women are nearly all held by women of the richest households (4.1 percent).

Figure 8-2: Percent of female respondents with cash savings



Alphabetic superscripts show statistically significant differences at the 0.05 level across program area and wealth category.
See corresponding table in Appendix 3.

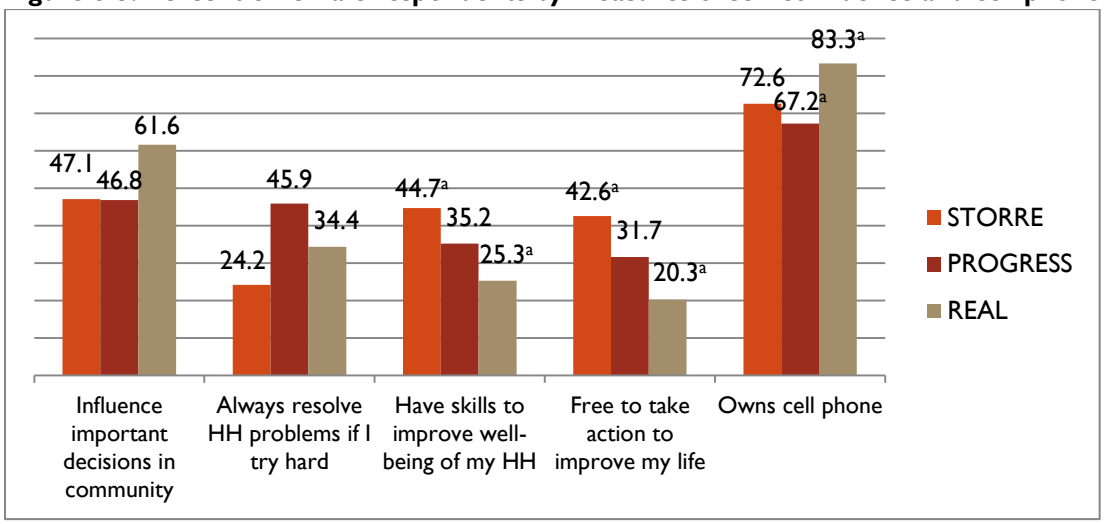
In contrast, over half of the female respondents (54.1 percent) of STORRE have borrowed cash in the last 12 months, which is higher than PROGRESS women (47.9 percent) and REAL women (33.6 percent) (see Table 12-54 in Appendix 3). Women of the richest households were less likely to have borrowed (36.9 percent), which is coherent with the findings of overall household borrowing in Chapter 7 Economic Sources of Resilience Capacity.

Women's confidence and communications. The female respondents were also asked about their agreement with statements on self-confidence to resolve problems and make changes in their own lives and households, as well as in their communities (community level discussed more in the next section of

this chapter). Some of these statements are shown in Figure 8-3. More women of STORRE report capacity to make changes at the household and individual levels: 44.7 percent of STORRE women agree that they have the skills and knowledge needed to improve the well-being of their households, compared to 25.3 percent of REAL women; and 42.6 percent of STORRE women believe they are free to take actions to improve their lives, compared to 20.3 percent of REAL women. Analysis by wealth for those two statements shows that women of the richest households are more likely to perceive that they can improve their households' well-beings and their own lives, as compared to the poorest households (see Table 12-55 in Appendix 3).

Figure 8-3 also shows women's ownership of cell phones. REAL women are more likely to own a cell phone (83.3 percent) than PROGRESS women (67.2). The poorest women have less access to this critical form of communications in Somalia, as compared to the other wealth categories (see Table 12-55 in Appendix 3).

Figure 8-3: Percent of female respondents by measures of self-confidence and cell phone



Alphabetic superscripts show statistically significant differences between projects at the 0.05 level for each category.
See corresponding table in Appendix 3.

Qualitative findings on women's household decision making. Overall, men are the predominant household decision-makers, according to focus groups across the program, but women may have more opportunity in some communities for decision-making on issues of borrowing and health/nutrition for women and children—as these realms are considered to be the matters covered by women, in particular the needs of the household.

The STORRE communities are generally more positive about the women's role in household decision making, as compared to the interviews in the other project areas. Women and men make decisions jointly, or women at least contribute, to all other realms of household decisions. Nearly all community FGDs comment that a household where women have a strong or joint influence on decision making is better than those households where she has little or no influence on the decisions, as it relates to a women having education and confidence, and thus, more respect and trust from her husband. Those households, in turn, can improve more through the women's volition. The increased empowerment of women in decision making may be related to their earning of income for the household, according to some women's groups, see quote below. It should be noted that this finding is inconsistent with the household survey results presented earlier in this section (Table 8-1) showing the trend that STORRE women reported lower joint/sole participation in household decision-making compared to women of

other project areas across a variety of topics. This discrepancy could be further explored by project monitoring conducted by the IP.

> ***"The woman that has good financial income can have a huge say in decisions. Besides, if she has the full trust of her husband and he believes she's smart enough to make a decision, she's able to have an influence in the household."***
> ***Focus group with women, STORRE***

In the REAL area, it was interesting to note that any additional claims to women's decision-making (above the traditional domains) are made by female focus groups as opposed to those of males, and particularly related to decisions on spending income.

Some PROGRESS FGDs explain that even if the men are unemployed and the household income comes from the women, the men will still take the decision. This harder stance toward male-dominant decisions is often linked back to interpretation of religious mandates for the male to lead the household. For the REAL and PROGRESS areas, while the communities are split on whether households are better off when women have influence in decisions, many FGDs recognize the benefits of women's decision making power because of their closeness to the needs of the household, and their increased income generation.

> ***"The man is responsible for making the decisions of the house related to production even if he is not working or if he is jobless."***
> ***Focus group with male youth, PROGRESS***

> ***"We are Muslims, and we are practicing what the religion says: whatever and how ever the women decide, the men still have the power in the family."***
> ***Focus group with female elders, REAL***

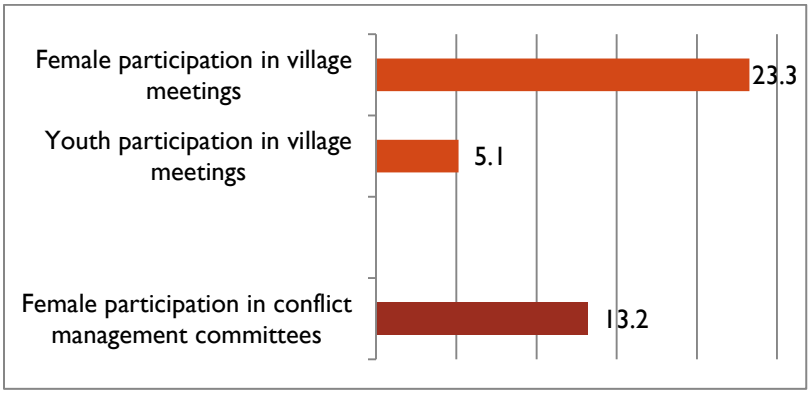
> ***"The households where women make decisions are better because women play an important role in our community."***
> ***Focus group with female elders, REAL***

Participation of Women and Vulnerable Groups in Community Decision Making

As shown in Figure 8-3 above, about half of the surveyed women agree that they can influence decisions in their communities, with no significant differences across project areas. This finding can be triangulated with results of the community leader and household surveys, as follows.

The community leaders surveyed were asked about women/youth participation in some of the key community governance groups, participation which is promoted by this program. Table 10 shows that of communities with village meetings, about half (49.3 percent) of the STORRE community leaders report female participation in the village meetings, which is 44.2 percent in REAL and 18.2 percent in PROGRESS. Youth participation in the village meetings is much lower than women, at just 5.1 percent overall, but highest in the REAL area (30.6 percent). Of communities with conflict management committees, participation of women in the committee is even lower than their participation in village meetings, at 13.2 percent overall.

Figure 8-4: Percent of communities reporting female/youth participation in local governance



Note: Community leader survey, n=60, top five activities shown in figure. Survey sample size too small to present findings by project area.
See corresponding table in Appendix 3.

The female household survey respondents named few groups active in their communities, overall (see

in Appendix 3). The most commonly reported groups active in the STORRE area, according to the women, are savings/credit groups and women's groups; whereas the women of PROGRESS and REAL report that religious groups are active.

Qualitative findings on participation in community decision making. The qualitative data elucidate how women's contributions to their communities through savings groups enable them to participate more in community decisions and collective action. In the STORRE area, for instance, some FGDs explain how building roads is an activity that would typically just involve able-bodied men for the labor and a private business owner (male) as the funding source, but now women have been involved in the planning because they are contributing funds for the road through an initiative of their savings group.

The qualitative interviews also explained that all community members are invited to participate in a savings group. Yet, the vulnerable people of the community cannot participate as members of a savings group if they are not able to afford to put some money into the money-saving box, though the savings group may still offer them help as a charity initiative. In all, savings groups are described as contributing tangible benefits and emergency assistance to communities.

Savings groups have also built confidence among the participating women to have other roles in the community, from conflict resolution to health promotion, protecting the environment, and promoting education for children. The female community leaders interviewed had a positive tone, overall, reporting about small changes that have resulted from the NGO programming of recent years, and about how they feel effective. Another indirect and positive impact of savings groups is that unity is strengthened among women in the community, and that they learn to work together as a team. The female leaders of savings groups describe how they have gained skills in mediation and facilitation, as well.

> ***"We successfully resolved the conflict between two clans, which went on for a long time of five years, and we finally resolved it. That is something we are proud of as a women's association."***
> ***Interview with female leader, STORRE***

> ***"The big example of community action that we can share with you is we have a group saving policy. Every women and men savings group consists of 25 individuals, and the amount we save per week is 10,000 Shilling (Somali)***

while 2,000 of that is used to cover the minor problems that we face as a community".

Focus group with women, PROGRESS

"Everybody participates in community meetings, men and women, and always it's the chief who prepares and shares the agenda with the community as per the situation/shock we are in, and the community discusses in detail and makes a concrete decision on what to do. It is agreed upon and the community starts implementing the final verdicts of the meeting, like if it is burying of sorghum before the droughts and famine set in."

Focus group with male youth, REAL

REAL FGDs explained that unlike the elders, who are always male in Somali tradition, the group of community leaders is often selected by the community itself and includes both men and women, which is a positive finding. There are also community committees that work with the community leaders, such as water management or natural resource committees, and they are also selected by the community, and include men, women and youth.

But there do appear to be cases where women and other vulnerable groups are left out of the community committee and leadership structure. A few FGDs stated that women are not, in fact, part of the community leadership; or, in cases where religious leaders of the community fill that role, women would not be allowed because women are never religious leaders. One group of male elders explained that when community leaders organize meetings with the aid agencies, only the male leaders attend the meeting and they may not inform their counterpart female leaders. In addition, FGDs of a few communities report that some women and other vulnerable members of the communities are not part of the committees (or the meetings) that work on projects with the leaders because they are the people receiving support, thus excluding: widowed or divorced women, children, the elderly and people with disabilities. One group of men from the IDP camp stated that people with disabilities are "discriminated" against as they are excluded from participating in these efforts. PROGRESS and REAL FGDs explain that women who are divorced or widowed tend to be left out of community governance mechanisms because they are considered a vulnerable population who are too busy caring for their families to take part in community committees or community leadership.

Women's Empowerment and Resilience Capacity

Household level empowerment and resilience capacity. Female spouses of male household heads were asked a range of questions related to their participation in household decision making, confidence, awareness and participation in community groups, borrowing and savings, and mobile phone ownership. For presentation of the following results, female respondents were grouped into one of two categories: households above and below the median level of the resilience capacity index.

Table 8-2 demonstrates that women's mobile phone ownership, in general, is high. Roughly 70 percent of women surveyed own their own mobile phone, and an additional 4 to 10 percent of women have access to a mobile phone. Mobile phone access for women is related to higher resilience capacity, although differences in access between women in high-resilience capacity households and low-resilience capacity households is not meaningfully large – 80.4 percent versus 73.8 percent, respectively.

Table 8-2: Women's mobile phone ownership and resilience capacity level

Phone ownership	Resilience capacity	
	Low	High
% HH with women that own their own mobile phone	67.3	72.2
% HH with women that own their own mobile phone or have access to a mobile phone	73.8 [a]	80.4 [a]
n	*187*	*738*

Note: There was no variation in the mobile phone services q (q2206)
Alphabetic superscripts show statistically significant differences at the 0.05 level between resilience capacity levels.

Across the total sample of women surveyed, borrowing rates were fairly high, nearly half of women borrowed in some capacity (Table 8-3). In most cases, those women that borrowed did so from a friend/neighbor or local trader. While overall there is no difference in borrowing rates between high and low-resilience capacity households; for those women that borrowed, borrowing from a friend or neighbor was associated with lower resilience capacity.

Table 8-3: Women's borrowing and resilience capacity level

Borrowing	Resilience capacity	
	Low	High
% HH with woman that borrowed	49.4	42.1
% HH with woman that wanted to borrow, but could not	5.1	20.8
% HH with woman that did not borrow because she has enough money	2.9 [a]	13.6 [a]
n	*183*	*736*
Sources		
Friend/neighbor	71.7 [a]	52.5 [a]
Local trader	36.6	31.2
Money lender	5.7	32.3
Input supplier	0.7	0.0
Religious institution	0.2	0.0
Family member	0.1 [a]	8.7 [a]
SACCO	0.0 [a]	0.4 [a]
Others (specify)	0.0 [a]	0.8 [a]
Bank	0.0	0.0
NGO	0.0	0.0
Cultural/village leadership	0.0	0.0
Savings group	0.0	0.3
Community based organization (CBO)	0.0	0.0
Burial society	0.0	0.0
n	*74*	*288*

Note: women's savings levels too low to conduct this analysis.
Alphabetic superscripts show statistically significant differences at the 0.05 level between resilience capacity levels.

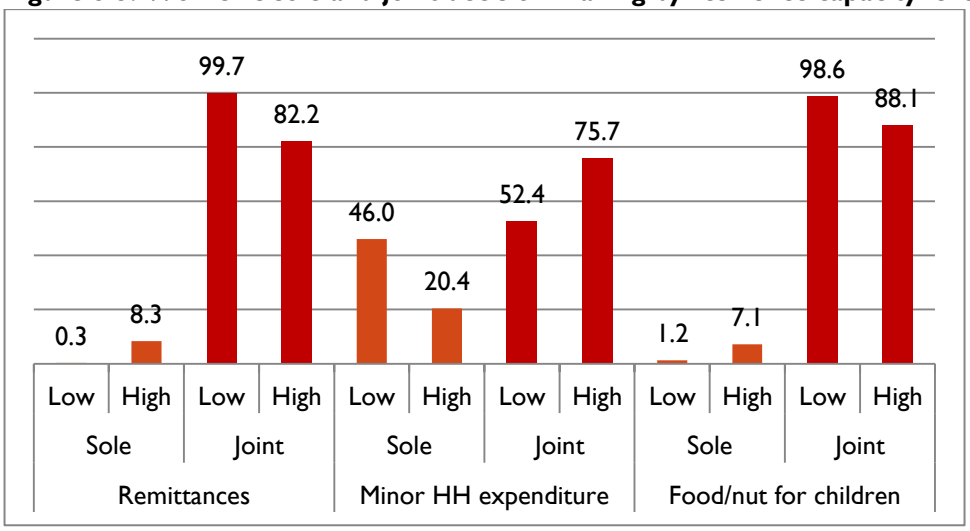
Figure 8-5 includes results in which women were asked about their level of participation across a range of household decision-making domains. Results in the figure include only those results that are statistically significantly different between high- and low –resilience capacity households. For full results, please see Table 12-58 and Table 12-59 in Appendix 3.

While nearly all household decisions, for women sampled, were made jointly with their husbands (Table 12-58 in Appendix 3), in a few instances there were differences in sole and joint decision-making between women in low- and high-resilience capacity households. Women in high-resilience capacity

households (75.7 percent) were more likely to make decisions about minor household expenditures jointly with their husbands, compared to 52.4 percent of women in low-resilience capacity households; and women who tended to solely make this decision were more likely to be in lower-resilience capacity households. This may indicate that females who can count on the support of their male counterparts to help with routine daily household duties are freed to participate in more productive activities that ultimately bolster household resilience capacity.

Alternatively, the two decision-making areas in which women in high-resilience capacity households more frequently made decisions solely, without their husbands input, are with respect to the use of remittances received (8.3 percent vs. 0.3 percent) and regarding food and nutrition for their children (7.1 percent vs. 1.2 percent). While the overall proportion of women making sole decisions in these domains is low, this result does support the inference that ceding decision-making power to women for household income, in this case remittances, and enabling them to maintain their children's nutrition and food security promotes better resilience outcomes for the household as a whole.

Figure 8-5: Women's sole and joint decision making by resilience capacity level



Note: Superscripts are not added to this figure because all low-to-high categories are statistically significant at the 0.05 level. See corresponding tables in Appendix 3.

Women's confidence and resilience capacity. Table 8-4 shows that women's self-image and confidence is not related to the resilience capacity of the household.

Table 8-4: Women's confidence by resilience capacity level

Confidence and self-image	Resilience capacity			
	Low	*n*	High	*n*
I can always resolve household problems if I try hard enough	74.8	*370*	58.4	*1152*
I always find some way to deal with problems in the community that confront me	69.0	*364*	56.2	*1134*
I have the skills and knowledge I need to improve the well-being of my household	78.2	*349*	62.0	*1114*
I am free to take action to improve my life	83.4	*366*	67.5	*1142*
I can influence important decisions in my community	54.9	*356*	49.7	*1134*

Alphabetic superscripts show statistically significant differences at the 0.05 level between resilience capacity levels.

Community level empowerment and resilience capacity. Women's participation in groups is extremely low overall (see Table 12-60 in Appendix 3 for results by type of group); however, group participation is higher among those women in households with higher resilience capacity (2.5 percent) versus lower resilience capacity (0.2 percent).

CHAPTER 8 SUMMARY OF KEY FINDINGS

- **Women report taking part in most household decisions, particularly in the poorest households.** The majority of women report participating in decisions over the past 12 months on all surveyed decision topics. Overall, men are the predominant decision-makers, but decisions relating to medical treatment, food and nutrition matters, and minor household expenditures are more likely to be the sole decisions of women. Yet, during stress times women's decision making on food and nutrition for the household slightly decreases across project areas. For nearly all decision topics, women of the poorest households are more likely to participate in household decision-making; in contrast, decisions regarding major household expenditures or agricultural/livestock inputs most commonly included women of the richest households. Nearly all community FGDs note that women's input in decision-making is beneficial for the household and reflects a woman's education and confidence. Analysis of women's empowerment in the household and resilience capacity shows:
  - Mobile phone ownership by women (spouses of the household head) is high overall; mobile phone access for women is related to higher resilience capacity.
  - Nearly half the women borrowed overall, but women of lower resilience capacity households were more likely to borrow from friends/neighbors.
  - Women in higher-resilience capacity households tended to make decisions jointly with their spouses on minor household expenditures, but also were the sole decision-maker for using remittances and issues of nutrition for the children.
  - Women's responses to questions on self-confidence are not significantly related to household resilience capacity.
- **Participation of women and vulnerable groups in community decision making.** Across project areas, about half of women surveyed report that they can influence decisions in their communities. Youth participation in village meetings is lower than that of women, but both very low overall. According to the qualitative data, women's contributions to their communities through savings groups have enabled them to participate more in community decisions and collective action. Savings groups have built confidence and contributed tangible benefits to communities. Community leaders and committees may include women, but some FGDs report that women are left out for various reasons, including religious tradition or women's perceived status as a vulnerable group. Analysis of women's empowerment in the community and resilience capacity shows:
  - Participation in community groups is higher among women in households with higher resilience capacity versus lower resilience capacity.
- **Participation in household and community decision-making shows mixed results for the women of the STORRE area.** For the women of the STORRE area, the FGDs were generally positive about women's participation in household decision-making, yet, the household survey results showed lower participation of STORRE women as compared to the women of other project areas across most of the household decision-making topics; though at the community level, the STORRE community leaders reported higher levels of women's community meeting participation than the leaders of other areas. This is a finding that could be further explored through IP project monitoring.

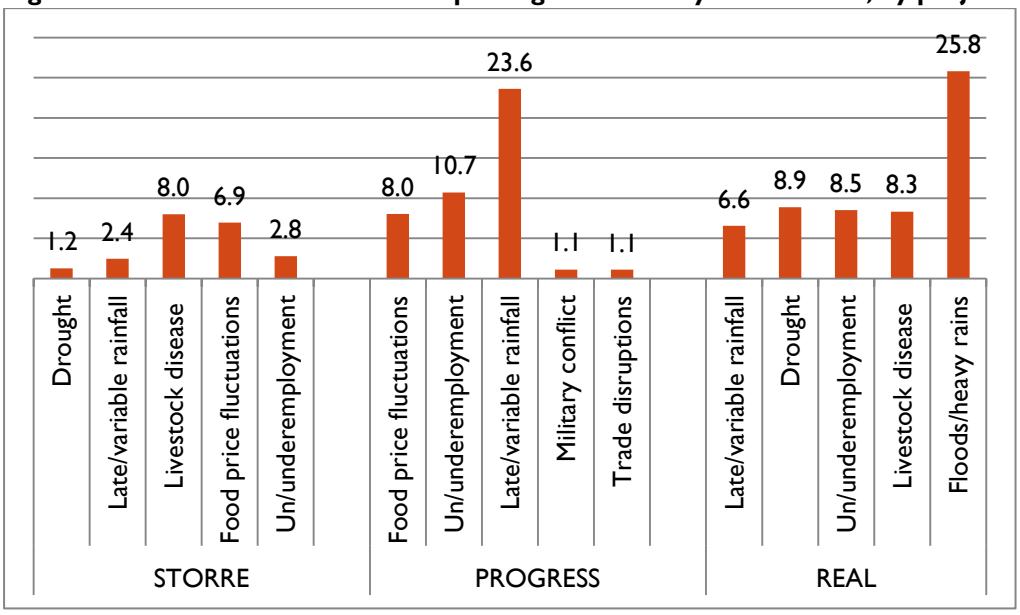
Chapter 9 Resilience Outcomes

Recovery from Shocks

Recovery from shocks is an important resilience outcome indicator because it provides a time dimension of household's well-being in response to exposure to shocks. Description of the recovery index may be found in Appendix 1.2.

Overall, the households report very low recovery from shocks across the program. Figure 9-1 shows the percent of households reporting full recovery from the shocks previously discussed (Chapter 5) as having severely impacted their food security. Significantly fewer STORRE households (1.2 percent) have fully recovered from drought as compared to the other project areas (refer to Table 12-61 in Appendix 3 for the full table with significance tests). Drought was at its peak in the Sanaag region (STORRE) during data collection. More PROGRESS households have fully recovered from late/ variable rainfall (23.6 percent) as compared to those shock recovery rates in the other project areas; yet, PROGRESS households have made little progress in recovery from the economic and socio-political shocks. REAL households generally appear to have made more progress in full recovery from the shocks that caused the most severe food insecurity, but still at low levels, with recovery from floods/heavy rain (25.8 percent) showing the most progress.

Figure 9-1: Percent of households reporting full recovery from shocks, by project area



Since this figure shows shocks sorted by project, the statistical significance superscripts are not added.
The figure only shows the top shocks for which HH reported exposure and severe food consumption decline.
See corresponding table in Appendix 3.

Of those households that have fully recovered from shocks, the average recovery time in months can be found in Appendix 3. For instance, it took PROGRESS households an average of 4.6 months to fully recover from late/variable rainfall, and 9.8 months to recover from food price fluctuations. REAL households recovered from floods/heavy rain for 8.9 months. Both PROGRESS and REAL households that have fully recovered from drought averaged one year for the recovery.[78]

[78] The n=<30 for STORRE households, thus, data are not presented.

Measurements of Food Security

Household Diet Diversity

Table 9-1 shows the household dietary diversity score (HDDS), which is the average number of food groups consumed (out of 12) on the day before the survey. The HDDS provides an indication of the household economic access to food and is not a measure of nutritional diet quality;[79] thus, higher HDDS may indicate better household economic status and/or access to markets. REAL households consume more food groups per day (8.0) than the other project areas. The daily diets typically include grains such as rice, coffee/tea and vegetables for all project areas, with food groups such as fruits, eggs or fish eaten less often. There is some variation of food groups across project areas, which may be connected to the differing livelihoods and availability of foods in the regions. For instance, REAL households eat more foods like beans, potatoes and fruit than households in the other project areas. Surprisingly, STORRE households as pastoralists are consuming less animal products, like meat and milk, than the other areas.

Table 9-1: HDDS and percent of households consuming food groups

Dietary diversity	Program area								
	STORRE			PROGRESS			REAL		
Dietary diversity score	5.7	a	*662*	6.4	b	*629*	8.0	ab	*670*
Food groups consumed "yesterday" (%)									
Grains	96.0		*671*	92.8		*662*	93.2		*673*
Condiments, coffee or tea	89.6		*670*	83.0	a	*655*	95.5	a	*672*
Vegetables	84.2		*672*	70.5		*661*	79.8		*673*
Meats	49.8	a	*671*	69.2	a	*661*	63.6		*673*
Milk products	33.6	ab	*671*	64.1	a	*661*	69.6	b	*672*
Legumes or nuts	24.7	a	*670*	54.7	a	*651*	77.8	a	*673*
Starch/tubers	42.8	a	*670*	50.9	b	*661*	73.0	ab	*673*
Oil/fats	56.9		*672*	49.6		*661*	70.9		*673*
Sugars	67.2	a	*672*	37.1	ab	*660*	69.9	b	*673*
Fruits	8.2	a	*671*	30.2	b	*658*	60.8	ab	*673*
Eggs	5.6	ab	*671*	32.0	a	*659*	35.8	b	*673*
Fish	8.8		*672*	8.3		*658*	12.3		*672*

Shading shows the most prevalently consumed food groups in each program area.
Alphabetic superscripts show statistically significant differences at the 0.05 level.
See corresponding table in Appendix 3.

There are also differences in diet diversity across wealth categories (see Table 12-63 in Appendix 3). The poorest households consume fewer food groups on average (6.2) as compared to the middle (6.6) and richest (7.2) households. The poorest households consume less of most food groups, except for the three food groups most prevalent across project areas (grains, coffee/tea vegetables). Notably, meat consumption does not differ by wealth status of household.

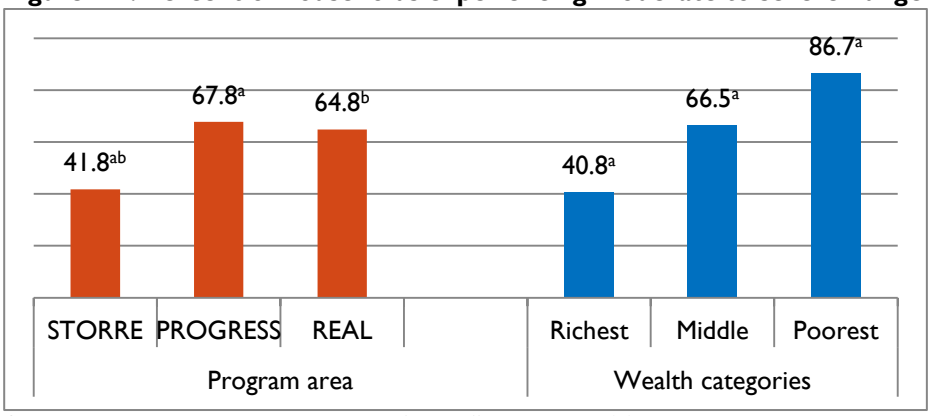
Household Hunger

Overall, a high prevalence of households experienced moderate to severe hunger in the 30 days prior to the survey. As seen in Figure 18, the prevalence of hunger is lower in STORRE households (41.8 percent) than the other project areas. Hunger and wealth analysis shows a logical trend that the richer

[79] Kennedy, G., T. Ballard and M. Dop. 2011.

the household, the lower the prevalence of hunger; moderate to severe hunger reaches an alarming level for the poorest households, at 86.7 percent.

Figure 9-2: Percent of households experiencing moderate to severe hunger



Alphabetic superscripts show statistically significant differences at the 0.05 level across program area and wealth category.
See corresponding table in Appendix 3.

These findings that PROGRESS and REAL were experiencing more hunger than STORRE at the time of the survey are confirmed by higher rates of food insecurity coping strategies in those two areas (see Table 12-65 in Appendix 3). For instance, 86.9 percent of REAL households and 75.1 percent of PROGRESS households were reducing the number of meals eaten in a day, compared to 53.0 percent of STORRE households. Limiting portion sizes at mealtimes and reducing adult household members' food consumption so that children can eat more were other common coping strategies employed in the PROGRESS and REAL areas.

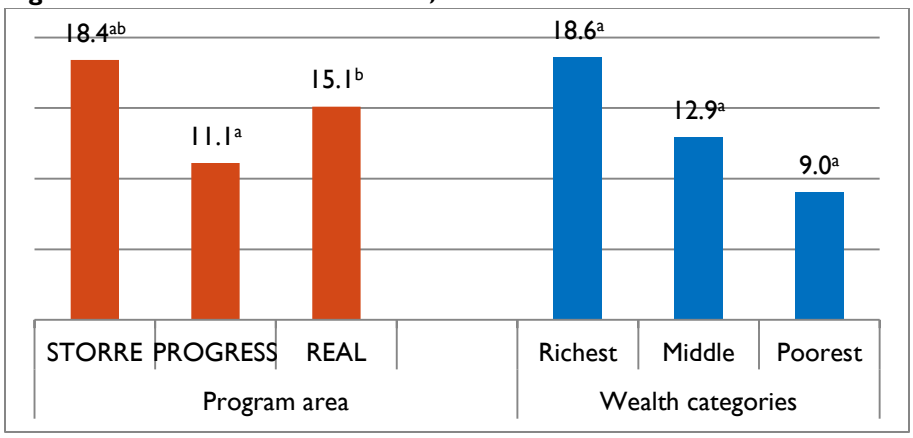
Household Food Insecurity Access Scale (transformed)

This study transformed the household food insecurity access scale (HFIAS) by reverse coding it, so that which means the higher the score the better the household food access. The HFIAS index is constructed from the responses to nine questions regarding people's experiences of food insecurity in the previous four weeks.[80] Responses range from worry about not having enough food to actual experiences of food deprivation associated with hunger. Survey respondents indicate whether or not they or another household member experienced the event or feeling in question and, if yes, how often in the last 30 days (rarely, sometimes or often). A score is then calculated based on these frequency responses. The HFIAS can also be used to identify which households can be categorized as food secure, defined as experiencing none of the nine conditions(see Footnote 80), or just experiencing worry, but rarely. The recoded scale is used in regression analyses shown in Chapter 10. Figure 9-3 shows the mean values of HFIAS reverse-coded, Consistent with the findings of the household hunger measure

[80] The nine experiences about which respondents are asked are:
1. Worry that the HH would not have enough food.
2. Any HH member was not able to eat the kinds of foods preferred because of a lack of resources.
3. Any HH member had to eat a limited variety of foods due to a lack of resources.
4. Any HH member had to eat some foods that they really did not want to eat because of a lack of resources to obtain other types of food.
5. Any HH member had to eat a smaller meal than he/she felt they needed because there was not enough food.
6. Any HH member had to eat fewer meals in a day because there was not enough food.
7. There was no food to eat of any kind in the HH because of lack of resources to get food.
8. Any HH member went to sleep at night hungry because there was not enough food.
9. Any HH member went a whole day and night without eating anything because there was not enough food.

presented in the section just above, STORRE households have better access to food on average compared to the other project areas. Analysis by wealth shows that the richest households also have better access to food than the other wealth categories.

Figure 9-3: Mean of reverse-coded, transformed HFIAS



Alphabetic superscripts show statistically significant differences at the 0.05 level across program area and wealth category.
See corresponding table in Appendix 3.

CHAPTER 9 SUMMARY OF KEY FINDINGS

- **Resilience Outcome: Recovery from shocks.** This outcome indicator provides a time dimension of households' well-being in response to shock exposure. Across projects, households report very low recovery from shocks. STORRE households show the least recovery from drought, as the drought was at its peak in the Sanaag region during data collection; PROGRESS households have the highest recovery from late/variable rainfall, but have made little progress in recovery from economic and socio-political shocks. REAL households have generally made more progress in recovery from shocks causing the most food insecurity, although this recovery is still at low levels. PROGRESS and REAL households averaged one year for full recovery from drought.

- **Resilience Outcome: Food security.**
  - **Dietary diversity.** The household dietary diversity score (HDDS) is an indicator of household economic access to food rather than nutritional diet quality; thus, higher HDDS may indicate better household economic status and/or access to markets. REAL households consume more food groups per day than the other project areas. Diet diversity differs across wealth categories: the poorest households consume fewer food groups on average, although meat consumption does not differ by wealth status of household.
  - **Household hunger.** Overall, a high rate of program households report experiencing moderate to severe hunger in the 30 days prior to the survey, although the prevalence of hunger is lower in STORRE households than in other project areas. More PROGRESS and REAL households have employed negative coping strategies in response to hunger than STORRE households. Hunger prevalence varies by wealth category: richer households experience less hunger.
  - **Household food access.** The transformed version of the household food insecurity access scale (HFIAS) shows that STORRE households have significantly better access to food than the other project areas; richer households also have better food access.

Chapter 10 The Links Between Resilience Capacity, Ability to Recover from Shocks, and Household Food Security

Regression analysis has been applied to examine the relationships between the resilience capacities described above (Chapter 7), shock intensity, and resilience outcomes measures (household food security and household's reported recovery from shocks). Yet, because some of the resilience capacities are weak compared to other studies (i.e., lower eigenvalues), tables in this section also include the elements of each capacity to test their relationship to household food security and to reported recovery. The regression models measure the extent to which resilience capacities affect household's ability to recover from shocks, and their food security outcome, for given levels of exposure to shocks and other household characteristics. Based on findings from other studies,[81] households with greater levels of resilience capacities are expected to be more likely to recover from shocks and achieve higher levels of food security than households with lower capacities. The regression results measure the magnitudes of the impacts of resilience capacities on recovery and food security status.

Theory and empirical studies indicate that many other factors in addition to resilience capacities affect the food security status of households, particularly household demographic characteristics. Other external factors, such as agro-climatic conditions, degree of isolation, social and political insecurity, which vary across geographic areas, may also affect household food security status and recovery from shocks. Multivariate analysis allows estimation of the relationship between resilience capacities and elements while controlling for the effects of these other factors.

In the presentations of regression results in this section, tables include only information about key variables of interest. The full regression models include other factors that are expected to influence both current household security status and recovery from shocks. These include: household demographic characteristics, livelihood categories (livelihoods are grouped into: farming, livestock production/sales, wage labor, salaried employment, self-employment, and other), household exposure to shocks in the past five years, and the village and project area that each household resides in. The village and project area variables are included in order to control for additional differences across geographic areas that might influence either food security or recovery from shocks.

Results for the full models are presented in the Chapter 10 Tables of Appendix 3. It should be noted that in this section where regression results are presented there is a change from alphabetic superscripts indicating statistical significance in the tables to stars, which represent statistical significance at the 0.05(*), 0.01(**) and 0.001(***) levels; the exception is one table in 10.2 that uses the alphabetic superscripts as applied elsewhere the report. These models are also run by project area and results are provided in Annex 1 (separate document).

Food Security and Resilience Capacity

The first set of regression results examines the relationships between resilience capacities and household food security. The overall measure of food security used in the regressions is a transformed variable from the HFIAS.[82], household food security or HFS. This index has a maximum possible value (27). About 12 percent of households scored 27 on the index. Among households with a score of 27, some may actually be more food secure than others, but this difference will not be captured in the index. Tobit regression (Tobit) models are appropriate to use with censored data. Table 10-1 provides the regression results for models that examine the relationships between the resilience capacities and household food security, controlling for exposure to shocks, as well as household demographic

[81] Bower, T. et al. 2016, Smith, L. et al. 2015, Smith, L. et al. 2016, Woodson, L. et al. 2016
[82] Coates, J., A. Swindale and P. Bilinsky, 2007.

characteristics, and project area (coefficients on demographic and project area variables are not presented in the table).[83] The first regression model specification presented in the table, in column (1) shows that the overall resilience index, a composite index created from the absorptive, adaptive, and transformative capacities, has a positive relationship with food security. That is, for a given level of exposure to shocks (and other household characteristics held constant) households with greater resilience capacity have higher levels of food security. The results for the model specifications with individual resilience capacities show that adaptive capacity (Model 3) and transformative capacity (Model 4) are also associated with higher levels of food security.

Table 10-1: Regression results exploring relationships between food security, shocks and resilience capacities (abridged)

Tobit regression, dependent variable: HFS				
Selected explanatory variables	**Model specifications**			
	(1)	**(2)**	**(3)**	**(4)**
Overall index	0.078**			
Absorptive capacity		0.011		
Adaptive capacity			0.193***	
Transformative capacity				0.039*
No. of shocks (in the past 5 yrs.)	-0.810***	-0.862***	-0.873***	-0.834***
Number of observations	*1875*	*1875*	*1877*	*1877*

Stars represent statistical significance at the 0.05(*), 0.01(**) and 0.001(***) percent levels. Underlying t-statistics are robust to heteroskedasticity. See corresponding table in Appendix 3.

Because of the high level of correlation across the three types of resilience capacity, including all three types in a single regression model can lead to problems of multicollinearity among the explanatory variables, in which case the regression analysis cannot separate out the independent effects of the different types of capacity. To avoid this problem, separate regressions are run with each type of capacity included separately. In all models, a variable measuring the household exposure to shocks over the last five years is included. This variable is included to account for the expectation that all else equal, households that are exposed to more shocks will have lower levels of food security, all else equal. The results from all the four models presented in this table show that increased exposure to shocks does is associated with lower food security, assuming household resilience capacities, demographic characteristics are the same, and that they are located in the same project area.

Table 10-2 examines the relationships of individual components of absorptive capacity on household food security. Even though the overall absorptive capacity index does not show a statistical relationship with food security, some of the individual components show statistically significant relationships. The results in this table show that the livestock index (measured using the Tropical Livestock Unit Index, to generate a single index of all types of livestock on a comparable basis) has a strong, positive relationship with the food security variable. The negative relationship between bonding social capital and food security may indicate that bonding social capital is a proxy for need. Households with lower levels of food security rely more on assistance from within the community.

[83] Additional equations, interacting shock exposure and resilience capacities, did not yield significant coefficients for either capacities or the interactions.

Table 10-2: Regression results exploring relationships between food security and components of adsorptive capacity (abridged)

Tobit regression, dependent variable: HFS						
Selected explanatory variables	Model specifications					
	(1)	(2)	(3)	(4)	(5)	(6)
Bonding social capital index (0-6)	-0.574*					
Livestock asset index (TLU; 0-76)		0.271***				
HH has savings (0-1)			4.706**			
Informal safety network score (0-8)				-0.343		
Disaster planning and mitigation score (-0.3-4)					-0.030	
Conflict mitigation committee (0-1)						2.068
Number of observations	*1975*	*1969*	*1975*	*1975*	*1975*	*1975*

Stars represent statistical significance at the 0.05(*), 0.01(**) and 0.001(***) percent levels. Underlying t-statistics are robust to heteroskedasticity. See corresponding table in Appendix 3.

Estimates of the contributions of the individual components of absorptive capacity to food security are reported in Table 10-3. Factors that are associated with enhanced food security are linking social capital, human capital, and access to information.

Table 10-3: Regression results exploring relationships between food security and components of adaptive capacity (abridged)

Tobit regression, dependent variable: HFS							
Selected explanatory variables	Model specifications						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Bridging social capital score (0-12)	-0.505						
Linking social capital score (0-3)		2.748*					
Aspirations index (-5 to 5)			-0.177				
Livelihood diversity score (1-3)				0.345			
Asset index (0-100)					0.370		
Human capital index (-1 to 1)						0.501***	
Access to information score (0-8)							0.312**
Number of observations	*1975*	*1975*	*1786*	*1975*	*1975*	*1975*	*1975*

Stars represent statistical significance at the 0.05(*), 0.01(**) and 0.001(***) percent levels. Underlying t-statistics are robust to heteroskedasticity. See corresponding table in Appendix 3.

Table 10-4 provides information about the relationships of components of transformative capacity with food security. Linking social capital, access to markets, services, and infrastructures are all positively associated with higher food levels of household food security. Access to formal safety nets is negatively related with food security. This result may reflect targeting of safety net interventions – formal safety nets may be expected to be placed in communities that have more vulnerable or food insecure households.

Table 10-4: Regression results exploring relationships between food security and components of transformative capacity (abridged)

Tobit regression, dependent variable: HFS						
Selected explanatory variables	Model specifications					
	(1)	(2)	(3)	(4)	(5)	(6)
Bridging social capital score (0-12)	-0.038					
Linking social capital score (0-3)		3.443***				
Formal safety networks score (0-2)			-1.404*			
Access to markets score (0-6)				0.692*		
Access to services score (0-3)					0.682*	
Access to infrastructure score (0-3)						4.076***
Number of observations	*1877*	*1877*	*1877*	*1877*	*1877*	*1877*

Stars represent statistical significance at the 0.05(*), 0.01(**) and 0.001(***) percent levels. Underlying t-statistics are robust to heteroskedasticity. See corresponding table in Appendix 3.

Ability to Recover from Shocks and Resilience Capacity

Resilience capacities are expected to strengthen households' abilities to recover from shocks[84]. In order to examine these relationships empirically, regression models include households that were exposed to either drought or late/variable rainfall (low rainfall). The dependent variable is a binary (yes, no) variable --whether or not the household reported recovering from the low rainfall shock[85]. Exposure to low rainfall was the most frequent type of shock reported by households in the sample, with over 73 percent of sample households (1,473) reporting exposure to either drought of late/variable rainfall. Because the dependent variable is binary, equations are estimated using probit regression models.

The first observation to emphasize about recovery from low rainfall is that a low proportion of households across project areas, ranging from 1.1 percent of households in STORRE area to 11.8 percent in PROGRESS area, reported that they had recovered from this shock by the time of the survey (Table 10-5). Not surprisingly, wealthier households were more likely to have recovered from this type of shock than poorer households, while a greater proportion of poor households reported severe impacts of low rainfall on food consumption than did wealthier households.

Table 10-5: Percent of households fully recovered from drought, late/variable rainfall and reporting severe impact on food consumption

Drought and/or late/variable rainfall	Program area						Wealth categories					
	STORRE		PROGRESS		REAL		Poorest		Middle		Richest	
HH fully recovered (%)	1.1 [ab]	547	11.8 [a]	443	5.4 [b]	483	2.1 [ab]	519	13.2 [a]	513	22.4 [b]	438
HH reporting severe impact on food consumption[1]	68.4	545	81.8	443	77.7	483	91.7 [ab]	517	78.6 [a]	513	65.0 [b]	438

[1] Households reporting severe decline in food consumption for either or both shocks.
Alphabetic superscripts show statistically significant differences at the 0.05 level.

[84] Bower, T. et al. 2016, Smith, L. et al. 2015, Smith, L. et al. 2016, Woodson, L. et al. 2016
[85] Additional equations, interacting shock exposure and resilience capacities did not yield significant coefficients for either capacities or the interactions.

Table 10-6 reports the results of regression analysis of the resilience capacity indexes on recovery from low rainfall.[86] As in the section above in Chapter 10, these tables report only selected variables, and full results are presented in the Chapter 10 Tables of Appendix 3. The overall resilience capacity index, and the household capacity indexes (absorptive and adaptive) do not exhibit any relationship with recovery from low rainfall, but transformative capacity is positively related to recovery. These results could be explained by the generally very low levels of all the factors that contribute to the household-level resilience capacities across all the sampled households, so that households had to rely on the community level (transformative) capacities—where they exist—to recover.

Table 10-6: Regression results exploring relationships between recovery from drought/late rainfall and resilience capacities (abridged)

Probit regression, dependent variable: HH recovered from low rainfall				
Selected explanatory variables	Model specifications			
	(1)	(2)	(3)	(4)
Overall index	0.135			
Absorptive capacity		-1.661		
Adaptive capacity			0.586	
Transformative capacity				3.370*
No. of shocks (in the past 5 yrs.)	-1.978	-2.707	-1.886	-1.177
Number of observations	*1471*	*1471*	*1473*	*1473*

Stars represent statistical significance at the 0.05(*), 0.01(**) and 0.001(***) percent levels. Underlying t-statistics are robust to heteroskedasticity. See corresponding table in Appendix 3.

Table 10-7 reports on the relationships between components of absorptive capacity and recovery from low rainfall. Only savings and community disaster planning and mitigation are significant, and they have a negative relationship. The negative sign of the disaster planning and mitigation score may reflect the fact that supports to these activities may be directed toward more shock-prone communities. Cash savings may have a negative coefficient because households used their savings to recover.

Table 10-7: Regression results exploring relationships between recovery from drought/late rainfall and components of absorptive capacity (abridged)

Probit regression, dependent variable: HH recovered from low rainfall						
Selected explanatory variables	Model specifications					
	(1)	(2)	(3)	(4)	(5)	(6)
Bonding social capital index (0-6)	0.626					
Livestock asset index (TLU; 0-76)		0.151				
HH has savings (0-1)			-1.062**			
Informal safety network score (0-8)				-0.725		
Disaster planning and mitigation score (-.3-4)					-1.787*	
Conflict mitigation committee (0-1)						-0.636
Number of observations	*1473*	*1473*	*1473*	*1473*	*1473*	*1473*

Stars represent statistical significance at the 0.05(*), 0.01(**) and 0.001(***) percent levels. Underlying t-statistics are robust to heteroskedasticity. See corresponding table in Appendix 3.

[86] Recovery from shocks comes from survey questions asking "to what extent has your household recovered from [shock]?" Response codes are 1 "Did not recover" 2 "Recovered but worse off" 3 "Recovered, same as before the [shock]" or 4 "Recovered and better than before". The dependent variable for the analysis combines response codes 3 and 4 =1 into "recovered" and 1 and 2 =0 "did not recover". Households reporting exposure to drought alone or late/variable rainfall alone were coded "recovered" if they reported 3 or 4. Households reporting exposure to both drought and late/variable rainfall were coded as "recovered" if they reported 3 or 4 on both.

The components of adaptive capacity in relation to recovery from low rainfall are presented in Table 10-8. Livelihood diversity is negatively related to recovery. In Somalia, livelihood diversification may be a negative coping strategy that households are pushed into from necessity rather than a positive strategy for enhancing resilience capacity. This hypothesis is supported by the finding that livelihood diversity is higher for poor households than for wealthy households (see Table 12-43 in Appendix 3). The aspirations index contributes positively to recovery from low rainfall, as does wealth (asset index). Access to information is negatively correlated. This may be explained by targeting of program interventions – government and NGO programs that provide information – may be directed toward more vulnerable communities, where recovery from low rainfall is less likely.

Table 10-8: Regression results exploring relationships between recovery from drought/late rainfall and components of adaptive capacity (abridged)

Probit regression, dependent variable: HH recovered from low rainfall							
Selected explanatory variables	Model specifications						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Bridging social capital score (0-12)	0.053						
Linking social capital score (0-3)		0.321					
Livelihood diversity score (1-3)			-2.104**				
Aspirations index (-5 to 5)				1.194**			
Human capital index (-1 to 1)1					0.474		
Access to information score (0-8)						-1.822**	
Asset index (0-100)							1.665*
Number of observations	*1473*	*1473*	*1325*	*1473*	*1473*	*1473*	*1470*

Stars represent statistical significance at the 0.05(*), 0.01(**) and 0.001(***) percent levels. Underlying t-statistics are robust to heteroskedasticity. See corresponding table in Appendix 3.

Within transformative capacity, the components that are positively related to recovery are access to markets and access to infrastructures, as seen in Table 10-9. It is important to note that these two components, along with access to services, are also significant in the food security regressions.

Table 10-9: Regression results exploring relationships between recovery from drought/late rainfall and components of transformative capacity (abridged)

Probit regression, dependent variable: HH recovered from low rainfall						
Selected explanatory variables	Model specifications					
	(1)	(2)	(3)	(4)	(5)	(6)
Bridging social capital score (0-12)	0.053					
Linking social capital score (0-3)		0.321				
Formal safety networks score (0-2)			-0.410			
Access to markets score (0-6)				4.495*		
Access to services score (0-3)					0.858	
Access to infrastructure score (0-3)						3.669***
Number of observations	*1473*	*1473*	*1473*	*1473*	*1473*	*1473*

Stars represent statistical significance at the 0.05(*), 0.01(**) and 0.001(***) percent levels. Underlying t-statistics are robust to heteroscedasticity. See corresponding table in Appendix 3.

Regressions were also estimated using the severe impact on food consumption indicator as the dependent variable and resilience capacities as explanatory variables. The results from these regressions showed no clear patterns of significant relationships of the resilience capacities on the food consumption impact variable.

CHAPTER 10 SUMMARY OF KEY FINDINGS

- **Positive relationship shown between food security and resilience capacities.** The overall resilience index, a composite index created from the absorptive, adaptive, and transformative capacities, has a positive relationship with food security. Results by individual capacity index shows that adaptive capacity and transformative capacity are also related to higher levels of household food security.
- **Only transformative capacity related to households' abilities to recover from low rainfall shock**. The multiple regression models were estimated on households that were exposed to either drought or late/variable rainfall (low rainfall), with the dependent variable being a binary of whether or not the household reported recovering from the low rainfall shock. The overall resilience capacity index, and the household capacity indexes (absorptive and adaptive) do not exhibit any relationship with recovery from low rainfall, but transformative capacity is positively related to recovery. These results could be explained by the generally very low levels of all the factors that contribute to the household-level resilience capacities across all the sampled households, so that households had to rely on the community level (transformative) capacities—where they exist—to recover.

  Further examination of the components within each capacity index shows the following:
  - **Absorptive capacity**—While the full absorptive capacity index does not show a statistical relationship with food security, some of the individual components of the index do show relationships, namely livestock ownership and household savings. The negative relationship between bonding social capital and food security may be because bonding social capital is a proxy for need; that is, households with lower levels of food security rely more on assistance from within the community. There were no absorptive capacity components with significant and positive relationships to recovery from the low rainfall shock.
  - **Adaptive capacity**—Factors of this index that correlate significantly with enhanced food security are linking social capital, human capital and access to information. The components of adaptive capacity in relation to recovery from low rainfall are aspirations index and wealth (asset index). Livelihood diversity is negatively related to recovery. In Somalia, livelihood diversification may be a negative coping strategy that households are pushed into from necessity rather than a positive strategy for enhancing resilience capacity. This hypothesis is supported by the finding that livelihood diversity is higher for poor households than for wealthy households. In contrast to the finding that access to information supports food security, it is negatively correlated with recovery from low rainfall. This may be explained by targeting of program interventions directed toward more vulnerable communities, where recovery is more difficult overall.
  - **Transformative capacity**—For this index, again, linking social capital is positively associated with higher levels of household food security, along with access to markets, services, and infrastructures. Access to formal safety nets is negatively related with food security. This may reflect targeting of safety net interventions – as they may be expected to be placed in communities that have more vulnerable or food insecure households. The components that are positively related to recovery are access to markets and access to infrastructure, which were also significantly correlated in the food security regressions.

Chapter 11 Conclusion: Key Findings on Resilience for the Somalia Context

This chapter on key findings and conclusions is organized around the five study objectives described in the Scope of Work. The chapter concludes with discussion of the implications for programming.

OBJECTIVE 1: UNDERSTAND THE IMPLEMENTATION CONTEXT OF THE PROJECTS, PARTICULARLY THE LOCALIZED STRATEGIES AND FACTORS THAT AFFECT HOUSEHOLD AND COMMUNITY RESILIENCE

The context of each of the project areas is characterized by different urbanization and livelihood profiles. The **STORRE** project area is characterized as pastoralist and rural. STORRE households own more livestock, more valuable livestock and larger average herds, as compared to the other project areas, and they have better housing conditions. The **PROGRESS** area is agro-pastoral with more peri-urban areas, and the households own more productive assets, particularly for crop production and sales. The **REAL** area is primarily urban with a greater number of livelihoods related to wage labor or small business, but the area also includes some agro-pastoral communities that are increasingly producing and selling eggs from poultry assets.

The basic socio-economic characteristics of households in the program areas are extremely poor. Households show low human capital and difficult living conditions. Education and literacy of household members are limited; just two percent of household heads have completed primary education. Shelters are not made of durable materials and are susceptible to severe heat or floods. Most of the population lacks access to improved drinking water and sanitation facilities, and lack of access to health care is an ongoing stressor on household resources and the productivity of income-earning members, particularly affecting women and children.

The baseline context for building resilience within the program area is bleak overall. Hunger is widespread, as is exposure to shocks. Reported recovery from shocks is low. Formal safety nets are practically non-existent and social capital to support households in the midst of crisis is also very low. Added to this, target communities have been hit with numerous shocks in the year prior to the survey. The analysis has identified factors that are associated with improved food security and recovery from low rainfall shocks. Even though scores on these measures are low across the three regions, nearly all the factors are addressed in STORRE, PROGRESS, and REAL programming. Resilience among program beneficiaries should improve as the programs are fully implemented.

All project areas have experienced drought conditions and water shortages in the past year, and some communities are currently being hit by shocks. STORRE households have primarily faced drought and its downstream effects in the past year. PROGRESS households face a wider range of types of shocks, ranging from military conflict and trade disruptions to measles outbreaks alongside the climatic shocks of drought or floods. REAL households are mostly facing the alternating extremes of drought/late rainfall then floods. In all, livelihood productivity is challenged across project areas, resulting in increased un/underemployment, increased migration to find work, and the need for more loans for day-to-day survival, particularly for the poorest households. Women have expanded their role as cash providers, as they take on various income generating activities and take part in community-based savings groups. Yet, the well-being of women is affected by the ongoing stressors of lack of access to healthcare and water, which in turn affects their ability to contribute financially to the household and community.

Analysis by **wealth categories** has provided notable findings on how the better-off households are remaining productive in the midst of shocks while the poorest households are struggling to recover:

- Wealthier households have sold more goats in the past year, and they are more likely to produce livestock commodities, overall. While camels are typically a symbol of wealth, it

appears that medium-sized livestock are possibly more important in producing commodities and food/income sources during recurrent drought, such as sheep/goat milk and milk products.

- The wealthier households are involved in crop production. In PROGRESS and REAL areas, the barriers to crop production (for those not farming currently) are access to land and lack of money for inputs, but in STORRE, it is mostly from lack of interest.
- Migration of household members is a strategy of the poorest households. It may cause more harm than good for the household members left behind (particularly women) if remittances are not steady and if family cohesion is degraded.
- Livelihood diversification in the current Somalia context appears to be a negative coping strategy that households are pushed into out of necessity, rather than a positive strategy that contributes to household resilience capacity.

The specific factors that contribute positively to the ability of households and communities to recover from drought and late/variable rainfall shocks are:

At the household level

- **Household assets, particularly livestock.** Access to wealth can be a powerful tool for households to avoid other negative or harmful coping strategies. Livestock ownership, in particular as a long tradition in Somalia, shows up as an important component of absorptive capacity and associated with greater food security. Household recovery is also associated with selling household and productive assets, and leasing out land.
- **Availability of savings.** In this aspect, savings groups have been effectively used to prepare for shocks and help vulnerable households in times of need. Though, with recurrent shocks, savings have often run out; and savings at the household level are very low—though marginally better in the STORRE area. Programming in all three areas has developed savings groups. As these expand, they should help more households to improve food security and recover from shocks.
- **Linking social capital.** Household's ability to connect with and receive assistance from influential people or institutions gives them access resources that are less likely to be affected by shocks. However, very households report access to linking social capital.
- **Human capital.** Human capital in the form of education and training is positively associated with household food security status, and education is highly valued by communities for building resilience according to the qualitative focus groups. Training provided by all three programs should increase literacy and human capital among beneficiary households.
- **Access to information.** Access to information is positively associated with improvements in food security and household ability to recover from drought/variable rainfall shocks. However, the overall level of access to information is very low for most surveyed households. Programming could improve resilience by expanding access to information.
- **Women as decision makers—**the women surveyed (spouses of the household head) report high levels of joint or sole decision making in the household, and the focus groups confirmed the perceived benefits of women's participation as they are seen increasingly as primary decision makers. Though the rates of female decision-making and participation at the community level have lagged behind those reported at the household level.

At the community level

- **Access to markets.** Markets provide people with the ability to sell surplus produce and livestock, to destock livestock in the event of a shock, access to a wider variety of foods and

goods, as well as inputs for livestock and agriculture. They also provide opportunities for livelihood diversification, in some cases, financial services in the form of loans from shop keepers.

- **Access to infrastructure.** Transportation infrastructure (roads) provides access to goods and services that are not available locally, including health care, veterinary services, and schools. Most of the infrastructure access across the three project areas was cell phone access. This provides access to information (including market prices, shocks, and weather) as well as to mobile banking services.

These findings about the specific factors that are associated with households' food security outcomes and ability to recover from shocks point to important areas of focus for programming to enhance resilience: investments to enhance households' opportunities to save and increase assets, investment in education and training, improving access to information, and promoting empowerment of women in household and community decision-making. Further discussion of programming implications is provided under Objective 4, below.

OBJECTIVE 2: DEVELOP HOUSEHOLD AND COMMUNITY-LEVEL RESILIENCE INDEXES, IDENTIFYING THE MOST IMPORTANT CAPACITIES FOR RESILIENCE TO RECURRENT SHOCKS FACED BY THE PROJECT AREAS, AND EXPLORING THE RELATIONSHIP BETWEEN HOUSEHOLD AND COMMUNITY RESILIENCE

In terms of resilience capacities, the household-level capacities (absorptive and adaptive) and community level capacities (transformative) are generally low across the sample. Overall, the PROGRESS area has the lowest scores for the absorptive and adaptive resilience capacity indexes, as compared to the other areas, which is a difference that should be explored further as the program implementation progresses.

Analysis of resilience capacities highlights the link between household and community-level resilience, as well as the importance of household wealth/assets in the face of shocks. In particular, household level capacities are only weakly associated with food security and recovery from low rainfall, as compared with transformative capacity. The household level capacities that were positively correlated with food security or recovery are livestock ownership, household savings, wealth (assets), linking social capital, human capital and access to information. Many of the components of both absorptive and adaptive capacities are either insignificant or have negative signs, such as bonding social capital and livelihoods diversity. By contrast, several key elements of transformative capacity, namely access to markets and infrastructure (in food security and recovery from low rainfall) and access to services (in food security) are significantly correlated with improved resilience outcomes.

In sum, household level (absorptive and adaptive) capacities are very low, indicating that households' own capacities have been depleted due to the ongoing stressors of living in a context without transformative capacity. Household-level capacities have been severely eroded, so when analysis is conducted to look at the relationship between shock exposure, resilience capacities and household food security, the strongest impact on food security is related to community infrastructure and services. That is, those components that promote human capital, thriving livelihoods and improved health. Even while transformative capacity is incredibly low, the regression analysis results show that any communities that have slightly higher levels of transformative capacity are more resilient in terms of household food security and ability to recover from shocks. **In conclusion, transformative capacity serves as the foundation for building household resilience capacities.**

Yet, considering that this program focuses on strengthening absorptive and adaptive capacities through mostly community-level interventions, and considering these results, the study points toward the following question: What are the specific aspects of transformative and community-level capacity that serve as leverage points to enhance household-level capacities and well-being? This conclusion has implications for both follow-up research and programming strategies. Discussion of follow-up research is

provided below under Objective 5, and further discussion on programming and how these findings relate to the program theories of change is provided next, under Objective 4.

More generally, the measurement of resilience capacities using factor analysis did not perform as well in Somalia as other studies in the region. One explanation for this is the very low levels and low variability across the components of the resilience capacity indicators in Somalia. This will be an area for future research, discussed later in this chapter under Objective 5.

OBJECTIVE 3: ESTABLISH A BASELINE AGAINST WHICH RESULTS OF A 2018 ENDLINE CAN BE COMPARED TO ASSESS CHANGES IN HOUSEHOLD AND COMMUNITY RESILIENCE

At baseline, low levels of correlation were found between the resilience capacities and resilience outcome indicators. The resilience capacities will be measured in the endline and compared with the baseline values. It is expected that as the components of resilience capacities improve, the measurement of the capacity indexes at endline will also improve because more variation strengthens the factor analysis results. It will then be possible to better determine the specific factors that contribute to resilience. The endline analysis will also include alternative measures of resilience, specific to the Somali context and will test these against the original measures as well as estimate resilience outcomes using both original and revised capacities.

OBJECTIVE 4: TEST AND REFINE THE THEORIES OF CHANGE OF THE PROJECTS

This study provides insight for refining the theories of change (ToC) of the projects. This conclusion section focuses on some of the key elements of the ToC across the projects, discussing if the assumptions for building resilience have been affirmed by this study or if there is a need for further refinement of project interventions. Since each project has organized the purposes, sub-purposes and activities of their ToC differently, the log frame numbering for that project is provided in parenthesis in the discussion below. The discussion that follows is organized around the findings and programming implications related to five main ToC components, with gender issues cross-cutting across these elements:

- Livelihood diversification and increased assets/income
- DRM and safety nets
- Community governance
- Health and nutrition promotion
- Natural resource management

LIVELIHOOD DIVERSIFICATION. (STORRE Purpose 1.1 and 1.2; PROGRESS Purpose 2.1 and 2.3; REAL Purpose 2.2)

A critical objective of livelihood diversification is that the various livelihood activities a household undertakes are varied in their risk profiles. This is supported by findings from studies of the 2011 famine showing that social connectedness that links households and communities across occupational and livelihood-related resource bases (including links across urban/rural, clan networks, value chains/market systems or transnational locations) may be significantly protected from certain shocks.[87] The study affirms the projects' promotion of alternative livelihood activities and IGA. Though, the project ToC should be refined to capture the need for nuanced diversification because livelihood diversification in and of itself does not build resilience. The household survey found that livelihood diversification does not improve resilience; rather, it is employed as a coping strategy in the face of shocks, and there are currently limited opportunities for diversification out of pastoral or agro-pastoral livelihoods. This

[87] Majid, N. et al. 2016.

concept was aptly explained by focus groups of the qualitative study. They described how they opened small businesses or shops to diversify beyond their main pastoral or agro-pastoral livelihoods (in STORRE and PROGRESS areas, in particular), but how even those small businesses could not survive during prolonged or recurrent shocks if all of the 'customers' of the community were similarly struggling with the shock.

The study also shows that households are struggling to maintain productivity in their main livelihoods due to recurrent drought and late/variable rainfall, in particular. The study shows very low levels of production and sales of livestock and crop products, which has implications for programming that targets both the female and the male income earners of the household. First, for females, this has resulted in the rising prominence of women's contributions to household income by taking on various IGAs. The study affirms the need for project activities that support gender-sensitive livelihood activities that both promote women's business/employment and ensure that those additional IGA are not damaging enterprises. This ToC component is particularly relevant as the study shows that women are picking up multiple IGAs to support the family, but all continue to provide just daily subsistence. Thus, the ToC can be refined to ensure that women's IGAs promoted by the program go beyond subsistence activities while also ensuring they do not add to the burdens on women who are expected to fulfil many household roles particularly in times of stress. This is linked to the next point on supporting the productivity of the primary male income earner, as well. For some households, the low productivity due to shocks has meant that the livelihood activities of the primary male(s) are stagnant or stalled, or that he decides to migrate for work; some households then face the related tensions of family breakdown and divorce. The study affirms the project activities that focus on improved livelihood production techniques and on strengthening producer groups and cooperation through field schools. These activities planned by the projects should help households know how to better adapt their livelihood production techniques in the face of shocks, which is critical for adaptive capacity.

In all, these findings highlight the need for livelihood diversification activities that are linked to communities and markets of other livelihood profiles and outside the shock area (i.e., to find 'customers' not facing the risk and shock in the same way). In the short-term, there are limited livelihood opportunities outside of pastoralism and agro-pastoralism, so special attention should be paid to how the program supports IGAs and increased production among both the female and male income earners of the household. Based on the livelihood diversification findings, the resilience programming recommendations are the following:

- **Programming should continue to support the productivity of the main pastoral and agro-pastoral livelihoods**, e.g., the field schools model, livelihood inputs, animal and crop health services.
- **While productivity is low due to shocks, there is need for more cash-based programming**. It will be important to identify the key levers available to enhance household-level resilience capacities. It appears that more programming like cash for work projects that build water sources, for instance, would serve to inject cash into the household economy and provide jobs amidst high unemployment while addressing a critical need for community infrastructure.[88]
- **Programming that promotes IGAs should be carefully analyzed to determine the market opportunities of the activity that could bring positive benefits to households**. Livelihood diversification activities must be highly nuanced to the risk context and to the market demand for a given enterprise. Livelihood supports are needed for both male and female income

[88] Cash-based transfers were considered one of the most innovative and effective interventions of the 2011 famine response, according to the Planning from the Future case study by Maxwell, D. et all (2015).

earners of a household, but empowering in different ways, as discussed above. Cash-based programming concurrent with activities to improve livelihoods is also highly relevant to address immediate household needs and avoid distress sales of assets while not creating a dependence on daily wage labor—this connects with the previous point on bolstering work for assets.

DRM AND SAFETY NETS (INCLUDING SAVINGS GROUPS). (STORRE Purpose 1.2, 2.1 and 2.6; PROGRESS Purpose 1.1 and 2.1.1; REAL Purpose 1.1 and 1.2)

The study affirms the promotion of savings groups and community safety nets across the projects. From the qualitative study, the reality for many communities is savings groups are acting as safety nets already, but they don't have the support/structures to survive if providing repeated emergency assistance when funds cannot be replenished. Further, if the savings groups are repeatedly acting as emergency safety nets, they do not have the funds to invest in larger or longer-term household and community investments. Thus, the ToC should be refined to distinguish how and when savings groups contribute to informal safety nets. It appears that parallel structures are being developed through community action or preparedness plans that should also be acting as the community safety net system. In all, the study shows exposure to shocks is high and resilience capacities are very low, thus, savings groups serve as a critical safety net for households and communities. The need to respond to repeated shocks compromises their ability to provide this service.

Another study finding on DRM relates to access to information. Overall, the study shows access to all types of information, including early warning and weather information, is low across surveyed households, and some early warning campaigns have not been trusted. Qualitative findings show low levels of trust in relation to external sources of information.

The study recommends the following for resilience programming related to DRM and safety nets:

- **Programming should continue to support savings groups as providers of safety nets. Savings groups need additional resources to be able to provide support in the face of repeated shocks.** The savings groups should be distinguished from or defined as informal safety nets and linked to the larger community vision for replenishing emergency funds and supporting collective action. The savings groups may also need additional capacity and training on how to function in times of high stress and with migrations of group members; ideally, the void in formal safety nets is filled by NGO programming to provide these supports.
- **IPs should closely monitor household access to and utilization of information**. As information dissemination continues throughout the program, an increase in access to information at endline is expected. The IPs should monitor how the information is used by communities.

COMMUNITY GOVERNANCE. (STORRE Purpose 2.2-2.5; PROGRESS Purpose 1.1, 2.4; REAL Purpose 1.1 and 1.2)

The study affirms the ToC emphasis on community governance and inclusive institutions, as well as efforts to link community leaders to government structures (i.e., the resilience capacity of linking social capital). The qualitative information showed that strong community leadership in the face of shocks is key to community mobilization to prepare and to respond. Another important lever connecting community and household resilience capacity identified from the study is female savings groups. These groups have launched women into leadership roles, and have served as means to promote informal collective initiatives and community safety nets, and to promote social capital. Though, the qualitative findings reveal that sometimes women's roles in community governance structures are symbolic, e.g., if women in leadership roles were still not invited to attend important meetings. Also, vulnerable women such as widows or female-headed households are not considered for community committee

membership or leadership positions. As stated in the following recommendation, the program should follow up on these findings to ensure meaningful participation of all women in community leadership:

- **Programming should continue to support female savings groups linked to meaningful leadership of women in governance structures**. This includes monitoring how women are participating in decision making processes at the community level, and promoting the inclusion of the most vulnerable women.

HEALTH AND NUTRITION PROMOTION. (STORRE Purpose 1.3; PROGRESS Purpose 2.2; REAL Purpose 2.1)

The study affirms the importance of health and nutrition promotion as part of a resilience building strategy in Somalia. The household survey shows that household access to healthcare (particularly maternal and child health) and access to improved water sources and sanitation facilities are very limited. Focus groups across projects list lack of access to water, sanitation facilities and healthcare as ongoing stressors. The qualitative information also explains the impacts of the lack of healthcare on households and communities, and its direct link to recovery and well-being outcomes. While the ToC addresses the need for improved health and nutrition behaviors, the ToC also assume that a certain level of health-enabling conditions exist to support behavior change (e.g., clean water, sanitation, health services and medicines/vaccinations). Yet, health and nutrition messaging without access to health services and water may not improve health outcomes. Based on this study and the major assumption underlying this ToC component, the implication for health and nutrition promotions is the following:

- **Health and nutrition messaging should focus on those behavior changes that may be possible given the major gaps in the enabling environment**.

NATURAL RESOURCE MANAGEMENT. (STORRE Purpose 2.2; PROGRESS Purpose 2.3; REAL Purpose 2.2)

The study affirms NRM as an important area for collective action, and to support and improve sustainable livestock production. The household survey findings show the importance of crop and livestock production as positive livelihood activities. Though, the coping strategy of harvesting/selling bush products is also shown to be positively associated with household recovery, while over time it can also degrade the environment and have a negative effect on community peace-building. The projects should continue to monitor the prevalence and impacts of various bush products (charcoal in particular) as they relate to community-based natural resource management, gender issues and peace-building. Generally related to NRM programming for resilience, the study recommends:

- **Projects should continue to provide support for community management of water sources and pastures as means to strengthen resilient livelihoods.** These activities also help to strengthen social capital, local governance, and peace-building

A final point on programming relates to community members concerns voiced during the study showing the need for improved messaging to target area households that communicates the benefits of community-level interventions at the household level: The household survey shows low reported levels of formal assistance received by households to cope with shocks in the past year. The qualitative interviews with community members across project areas stress the need for sustained and tangible assistance, with some community members vocalizing frustration about being the target communities for data collection activities that do not seem to materialize into sufficient humanitarian or development supports in the eyes of the respondent. This may be an issue of humanitarian accountability, showing the need for clear and consistent messaging with target communities on when or what activities will take place and what benefits at the household-level could be expected, particularly for a program such as this that mostly consists of community-level interventions.

OBJECTIVE 5: CONTRIBUTE TO THE BODY OF KNOWLEDGE ON RESILIENCE

The following topics describe some of the main learnings from this study that may contribute to future resilience research and resilience measurement strategies.

Women and resilience: Current low levels of transformative capacity disproportionately affect women's resilience capacities. Lack of access to maternal and child health services, education for children, and low availability of water are examples of existing barriers. Other research findings point to the strong multiplier effects of investments that enhance women's status within their households and communities. Identifying which particular investments have the greatest impact in terms of eliminating these barriers to women is an important issue for further study.

Social capital: The levels of social capital are very low in the sampled households based on information from the quantitative survey. Yet, the qualitative findings do give strong indications of reliance on social capital and other forms of informal networks within villages that were not captured in the quantitative surveys. This suggests the need to consider ways to better capture social capital and other informal forms of collective action in quantitative surveys. In particular, to expand measures of social capital to reflect (1) giving and receiving food, cash, assistance, animals and other non-cash goods on a day-to-day basis and not just during times of shock, and (2) participation or willingness to participate in collective action, such as activities promoted by this program. Improved measures of social capital may increase correlations between it and other indicators and increase its correlations with underlying resilience capacities.

Exploring new measures for aspirations and governance: The findings from this study indicate the need to better measure the resilience capacities of aspirations and governance. The aspirations questions should be more explicitly placed in the context of decisions that affect household resilience capacities or outcomes, particularly in contexts like Somalia where decades of instability combined with traditional beliefs have influenced the population's sense of individual power. Related to community governance, it was a challenge in this study to capture information on community leadership from households due to the sensitive nature of the topic, and the community governance indicator that was collected ended up falling out of the transformative capacity index. Yet, the qualitative study shows the importance of community leadership in mobilizing around shocks. Future studies in Somalia in particular will continue to face this challenge, and should explore ways to appropriately gather information from households on the effectiveness of community leadership.

Measurement and construction of resilience capacities. Resilience measurement must be carefully tailored to take into consideration the particular characteristics of the study regions. This point was clearly brought out in the Somalia context, which is quite extreme in a number of aspects: exposure to extreme and long-term climatic variations and stresses, very disruptive and long-term civil unrest and resulting limits on formal government structures and services, unpredictable and destructive terrorist activities of al-Shabaab, and the Somali cultural characteristics and dimensions of inter-personal relationships and trust, organized strongly along clan lines. Further research is needed to better incorporate these aspects into resilience measurement in Somalia, and the particular types of information needed to measure resilience capacities must be expanded to appropriately capture variations in context across a wide spectrum. On the other hand, the technique for measuring resilience capacity indexes must also be robust enough to perform in situations where the variations in the underlying variables may be quite low in the measured population.

The study team acknowledges that the resilience measures and composite indexes used at baseline are limited and that household and community resilience strengths may not have been sufficiently captured through the quantitative surveys. In recent comparable studies, TANGO has found high correlations between the observed variables (indicators) and underlying factors (resilience capacities). Yet, the results from this study do not provide as much support for these constructs. TANGO views this as an

important finding and as an opportunity to better understand how to measure absorptive, adaptive, and transformative resilience capacities and their indicators—particularly in a challenging context as Somalia.

CONCLUSIONS

The findings from this study have a number of implications for future sequencing and layering of resilience programming strategies in Somalia. First, the very precarious conditions of households, including low levels of all components of resilience capacities and those capacities' limited impact on resilience outcomes, point to the critical immediate need for humanitarian assistance. The findings suggest that household-level resilience capacities (absorptive and adaptive) are currently at such low levels that they do not effectively contribute to improved recovery and only very weakly to household food security status in the face of shocks. Individuals and households are currently in a vulnerable position as their abilities to address future shocks are very low. They need direct humanitarian assistance, including food or cash assistance, clean water sources, and access to medical services to support them now, and to allow them to begin to build up their resilience capacities in the future. This is not to say, however, that resilience does not exist among these households and communities. This study recognizes the Somali strengths in resilience enacted for many years such as the inter-family and community sharing and lending of resources, traditional savings and storage practices, remaining flexible to migrate to find pasture or work, and managing household and productive assets in such a way that promotes recovery from shocks.

Second, the study indicates that higher levels of transformative capacity may improve absorptive and adaptive capacities. There is a positive relationship between household-level capacities and community-level transformative capacities. In other words, households in communities with low levels of transformative capacity (i.e., a constrained enabling environment) are limited in their abilities to enhance their absorptive and adaptive capacities. Lack of infrastructure and services limit households' opportunities to engage in livelihoods with higher and more stable returns, which in turn inhibit their ability to build up assets and savings; lack of access to education inhibits development of human capital. If possible, investments to enhance transformative capacities will improve resilience both directly, and by permitting households to improve their absorptive and adaptive capacities. Ideally, the best strategy would be to make investments to enhance transformative capacities.

However, with the current problems of insecurity and lack of strong public institutions in Somalia, this strategy may not be feasible for some time. In the face of these structural problems, programming strategies to strengthen household-level capacities that are not so dependent on access to government-led infrastructure and services may be the only feasible options to enhance household resilience. Strategies to enhance social capital and community-level collective action, such as provision of informal safety nets, may be the only feasible ways to enhance household resilience capacities in the short to medium term. This may also mean supporting the services such as education and water systems already being provided in some communities through their linkages to the private sector or diaspora donations, and ensuring these are as inclusive as possible. In all, the study team concludes that the current profile of community level interventions is appropriate in terms of sequencing. In themselves, these will not greatly enhance household resilience directly, so continued humanitarian assistance will be needed to avoid the adoption of more negative coping strategies in the face of recurrent shocks. As the security situation improves, the strong community-level organizations and social capital will leverage investments in system-level capacities.

Chapter 12 Appendices

Appendix 1: Calculation of Resilience Measures

This section explains the calculation of measures used to compute absorptive, adaptive, transformative, and resilience capacities and in the multivariate analyses. Question numbers from the household and community questionnaires used for each index are listed after the explanations. Question numbers from the household questionnaire are preceded by "hh" and those from the community questionnaire preceded by "cm".

Ax.1.1: Shock Exposure

Shock exposure is computed as (1) a count of shocks per household over the past five years and (2) over the past year. Survey questions ask about exposure to 23 shocks over the past five years. A follow-up question asks how many years (<1 thru 5) since the most recent time the household was exposed to the shock.

Questions about the following shocks are included in the survey:

CLIMATIC/ENVIRONMENTAL SHOCKS/STRESSES

- Floods/heavy rains
- Late/variable rainfall
- Drought
- Deforestation (from bush fires, charcoal or tree cutting)
- Livestock disease
- Crop disease & pests
- Reduced soil productivity (from soil and water degradation)
- Fire

CONFLICT SHOCKS/STRESSES

- Military conflict
- Inter-village conflict from natural resource disputes
- Inter-village conflict/ other non-resource disputes
- Intra-village or clan conflict/ theft

ECONOMIC SHOCKS/STRESSES

- Food price fluctuations
- Trade disruptions (e.g., road blocks or export bans)
- Sharp increase in inputs/livestock or crop prices
- Sharp drop in inputs/livestock or crop prices

HOUSEHOLD SHOCKS/STRESSES

- Measles outbreak
- Cholera or diarrheal outbreaks
- Chronic illness (e.g., malaria, TB)
- Migration of main income earner
- Displacement of household
- Unemployment/ underemployment
- Death or injury of main income earner

Survey questions: hh402 and hh402a

Ax.1.2: Recovery Index

The **recovery index** is based on households' responses to questions about their ability to recover from each shock they experienced over the past five years. The index uses exposure to and recovery from the two most common shocks: drought and late /variable rainfall. Households reporting exposure to either shock, or both are included in the index. Recovery is based on responses:

Fully recovered and better than before the shocks

Fully recovered, same as before the shocks

Partially recovered

Have not recovered at all

For the index, recovery is either of the first two responses. 'Recovered' households are those exposed to drought and recovered, late/variable rain and recovered, or both and recovered from both. Of 1,473 households exposed to either drought or late/variable rainfall shock, or both, 10% (156 households recovered) and 90% (1317 did not recover).

Survey questions: hh409

Ax.1.3: Aspirations Index

The **aspirations index** using information from the household survey (nine of the 12 statements). Respondents are asked whether they agree or disagree on a six point Likert scale (0=strongly disagree to 6=strongly disagree) with the following nine statements:

- I feel like what happens in my life is mostly determined by powerful people
- To a great extent, my life is controlled by accidental happenings
- My experience in my life has been that what is going to happen will happen
- My life is chiefly controlled by other powerful people
- When I get what I want its usually because I am lucky
- It is not always wise for me to plan too far ahead because many things turn out to be a matter of good or bad future

- I can mostly determine what happens in my life
- When I get what I want, it is usually because I worked hard for it
- My life is determined by my own actions

The index is based on the degree to which respondents are more likely to agree with high aspirations statements than with low aspirations statements. The first six statements are low aspirations statements. The last three statements are high aspirations statements. The index equals the mean of statements 1-6, subtracted from the mean of statements 7-9. It has a mean of 0.7.

Survey questions: hh501, hh504, hh506, hh507, hh508, hh509, hh510, hh511, hh512

Ax.1.4: Bonding, Bridging and Linking Social Capital Indexes

The **bonding social capital** index is based on a series of questions from the household survey about support from *within* the community. The index is the total of 'yes' responses to the following questions and ranges from 0-6, with a mean of 1.4.

- Whether the household would be able to receive help from relatives in their community;
- Whether the household would be able to receive help from non-relatives (within clan) in their community;
- Whether the household would be able to receive help from non-relatives (outside of clan) in their community;

- Whether the household would be able to give help to relatives in their community;
- Whether the household would be able to give help to non-relatives (within clan) in their community and;
- Whether the household would be able to give help to non-relatives (outside of clan) in their community.

Survey questions: hh1204 and hh1206

The **bridging social capital** index is based on a similar set of questions and scoring as described above but with regard to relatives or non-relatives living *outside* of their community.

Respondents are asked if they could receive support from the following sources:

- Family member or relatives in Somalia (rural)
- Family member or relatives in Somalia (urban)
- Family member or relatives outside Somalia
- Others (within my clan) in Somalia (rural)
- Others (within my clan) in Somalia (urban)
- Others (within my clan) outside Somalia
- Others (outside my clan) in Somalia (rural)
- Others (outside my clan) in Somalia (urban)
- Others (outside my clan) outside Somalia

And, in another series of questions, respondents are asked if they could give support to the same sources. The bridging social capital index has a possible range of 0-18 (the survey asks about more sources of support outside the community than inside), and an actual range of 0-12 and a mean of 1.4,

Survey questions: hh1205 and hh1207

The **linking social capital** index is a count of the number of influential people who would, if asked, help the household or community. Influential people are business owners, employees of large businesses, elected officials, NGO staff members, religious leaders, and clan leaders. The index has a possible range of 0-6, an actual range of 0-3 and a mean of 0.02.

Survey questions: hh1216 and hh1217

Ax.1.5: Wealth Index and Asset Ownership Index

The **wealth index** is constructed similarly to the asset ownership index, presented below. The salient distinction between the two indexes is that the wealth index uses quantities owned of each asset while the asset ownership index only considers whether a household is, or is not, an owner of each category of assets. The wealth index is used in this evaluation to describe households' living conditions. The asset index is a measure of assets that households could sell in the event of a shock.

Computing the wealth index follows DHS guidelines (http://dhsprogram.com/topics/wealth-index/). It is comprised of quantities owned of 17 household assets, 15 productive assets, 11 types of livestock (does not include "other" livestock), the number of rooms in the primary dwelling, and binary variables indicating whether a household has an improved dwelling, roofing, flooring, water source, and/or latrine. Ultimately, the wealth index is computed by combining all of these variables in a principal components factor analysis. Resulting factor scores are scaled 0-100. The overall wealth index has a mean of 0.49.

Survey questions: hh301-303, hh305, hh308, hh601h, hh601p, hh701

Eigenvalue: 10.2

Variable	Factor Loadings
Walking motorized tiller/tractor	0.9543
Tuktuk	0.9453
Refrigerator	0.9346
Passenger car or truck	0.8707
Motorbike	0.8622
Mechanical water pump	0.7812
Bicycle	0.7446
Motorized grain mill (diesel/petrol)	0.7294
Small riding tractor	0.7116
Motorized water pump p(diesel)	0.7042
Generator	0.6942
Solar panel	0.6565
Stone grain mill(manual)	0.5885
Table	0.5774
Individual Granary	0.5492
Knapsack chemical sprayer	0.5306
Animal cart	0.5155
Television	0.4661
Solar lamp	0.3887
Kerosene stove	0.3498
Radio	0.3004
Wheelbarrow	0.2839
Chair	0.2831
Bee hive	0.2622
Hoe	0.1586
Pruning/Cutting shears	0.1541
Kerosene lamp	0.105
Improved charcoal stove (Burjiko/Girgire)	0.0871
Cell phone	0.0828
Number of rooms	0.0751
Has electricity	0.0695

Jewelry (pieces)	0.0581
Agricultural land (Hectares)	0.0574
Ox plough	0.0557
Donkey	0.0523
Other cattle Local	0.051
Oxen	0.0484
Poultry	0.0359
Improved latrine	0.0235
Improved dwelling	-0.0133
Improved floor	-0.0091
Improved water source	-0.0095
Other cattle Exotic	0.0122
Goat	0.0101
Improved roofing	-0.0031
Other cattle Crossbred	-0.0029
Sheep	0.0039
Horse	-0.0052
Camel	-0.0041

The **asset index** is also constructed from information collected in the household survey. It combines household, productive, land, and livestock assets. Survey questions ask about ownership of 24 household assets (such as chairs, stoves, and radios) and 20 productive assets (such as hoes, ploughs, and tractors). The asset index does not include housing characteristics. The household asset score is a count of the number of assets owned by each household (1=household owns asset, 0=household does not own). Similarly, the productive asset score is a count of productive assets. Land assets are the total acres owned by the household. Livestock assets are computed as the total number of each type of livestock multiplied by the Tropical Livestock Unit (TLU) (Food and Agriculture Organization, 2003). TLUs allow for comparisons among different animals The asset ownership index is computed by combining household, productive, land, and livestock assets in a factor analysis. Resulting factor scores are scaled 0-100. The resulting index has a mean of 4.9.

Survey questions: hh1216 and hh1217

Ax.1.6: Human Capital Index

Human capital is computed from household survey data on education level, literacy, and training. Education is the sum of the highest level of education of any adult (18+) in the household. Literacy is a binary variable equal to one, if any household member can read or write. Training is the sum of trainings anyone in the household has received. Trainings include: skills or trade training, business development training, business start-up grants training, adults education (literacy and/or numeracy), training on using a mobile phone to get market information (e.g., prices), and conflict resolution training. Data were combined in an index using polychoric factor analysis (Eigenvalue=0.99). Polychoric factor analysis is appropriate to use with binary or Likert scale variables (Holgado–Tello, F.P., et al. 2010). Factor loadings:

Maximum education	0.5388
Literacy level	0.6923

Training	0.4670

Survey questions: hh206, hh207, and hh1218

Ax.1.7: Livelihood Diversification Index

Livelihood diversification is calculated as the number of distinct livelihood activities engaged in during the last year. The question asked respondents to identify which livelihoods were the sources of your household's food/income over the last 12 months. The possible options are:

- Farming/crop production and sales
- Livestock production and sales
- Milk/milk products sales
- Poles and grass sales
- Agricultural wage labor (crops/livestock)
- Non-agricultural wage labor
- Salaried work (agricultural)
- Salaried work (non-agricultural)
- Sale of wild/bush products (including charcoal, construction materials)
- Artisanal mining/quarrying
- Handicrafts (baskets, mats, pottery, beads, ropes, clothing,)
- Small shop/kiosk
- Sale of other non-livestock assets/rental of land
- Remittances
- Other self-employment (non-agricultural)
- Gifts/food aid (NGO, Food-for-work/Cash-for-Work, etc.)
- Micro-retail/petty trade/micro-franchise (hawkers, airtime)
- Sand harvesting
- Domestic services (e.g., clothes washing)
- Begging

Survey questions: hh1101

Ax.1.8: Absorptive Capacity Index

The **absorptive capacity index** is constructed from seven components.

- Bonding social capital (see Ax. 1.4 of this appendix)
- Livestock assets (see Ax. 1.5 of this appendix)
- Savings
- Access to informal safety nets (ISN)
- Availability of disaster preparedness and mitigation support;
- Support for conflict mitigation

The index is computed by combining all components in a polychoric factor analysis (Eigenvalue=1.1). Generally, factors are retained only when their associated eigenvalue is greater than one. An eigenvalue lower than one indicates that the factor explains less of the total common variation than one variable explains in isolation. Factor loadings:

Bonding social capital	0.03
Livestock assets	0.24
Savings	0.20
ISN	0.52
Disaster prep and mitigation	0.59
Conflict mitigation	0.65

The components (not described in previous sections) and explanations of their calculation are as follows.

Access to savings is a binary (dummy) variable based on whether a household currently holds savings.

Survey questions: hh1405

Informal Safety Nets (ISN) is a count of community organizations providing safety nets. ISN ranges from 0-8. It is a count of organizations:

- Credit or micro-finance group
- Savings group
- Mutual help group (including burial societies)
- Trade or business association
- Civic group (improving community)
- Charitable group (helping others)
- Religious group and
- Women's group.

Survey questions: cm401 series

Disaster preparedness and mitigation includes information from household and community surveys. The index is computed using polychoric factor analysis. The component includes data from three questions in the household survey:

- How well prepared is your village to respond to any future environmental or climate shocks? (Likert scale 1-3)
- Is your village involved in protecting land from flooding?
- Did your household receive information about long-term changes in weather patterns?

The component also includes data from ten questions in the community survey:

- Are there government programs in the village for disaster planning?
- Are there government programs in the village for disaster response?
- Are there NGO programs in the village for disaster planning?
- Are there NGO programs in the village for disaster response?
- Are there UN programs in the village for disaster planning?
- Are there UN programs in the village for disaster response?
- Does a disaster planning or resilience group exist in your community?
- Does an early warning monitoring group exist in your community?
- Does your village have a strategy to respond to future shocks?

- Is there an emergency plan for livestock offtake if a drought hits?

Note that none of the villages have government, NGO or UN programs for disaster planning or disaster response.

Survey questions: hh413, hh1220, and hh1601cm501-cm506, cm401, cm603, and cm343

Conflict mitigation is the total of responses (yes=1, no=0) to three questions in the community survey:

- Does a conflict management or peace group exist in your village?
- Has the conflict management or peace group been active in the last year?
- Does your village have a conflict resolution or peace committee?

Survey questions: cm401, cm402, cm805

Ax.1.9: Adaptive Capacity Index

The adaptive capacity index is constructed from seven components:

- Bridging social capital (see Ax. 1.4 of this appendix)
- Linking social capital (see Ax. 1.4 of this appendix)
- Aspirations (see Ax. 1.3 of this appendix)
- Livelihood diversification (see Ax. 1.7 of this index)
- Asset ownership (see Ax. 1.5 of this appendix)
- Human capital (see Ax. 1.6 of this appendix)
- Exposure to information

The index using factor analysis (principal factors) (Eigenvalue = 0.35). Generally, factors are retained only when their associated eigenvalue is greater than one. An eigenvalue lower than one indicates that the factor explains less of the total common variation than one variable explains in isolation. Factor loadings:

Bridging social capital	0.16
Linking social capital	0.11
Aspirations	0.19
Livelihood diversification	0.30
Asset ownership	0.33
Human capital	0.29
Exposure to information	0.03

Access to financial resources. The variable is a count of financial institutions in the community.

Survey questions: cm350 and cm351

Exposure to information is a count of whether respondents received information on any of 12 topics.

Topics are:

- Long-term changes in climate patterns
- Rainfall prospects for coming season
- Early warning for natural hazards
- Weather-related agricultural recommendations
- Animal health/husbandry practices
- Current market prices farm-gate, wholesale or retail
- Business and investment opportunities
- Opportunities for borrowing money
- Child nutrition and health information
- Gender equality/gender-based violence
- Conflict or other security restrictions on access to grazing
- Information about government services/responsibilities/processes

Survey questions: hh1601

Ax.1.10: Transformative Capacity Index

The index of transformative capacity is constructed from seven components:

- Bridging social capital (see Ax. 1.4 of this appendix)
- Linking social capital (see Ax. 1.4 of this appendix)
- Formal safety nets (FSN)
- Access to markets
- Access to services
- Access to infrastructure
- Access to common resources
- Governance

The index is computed using factor analysis (Eigenvalue=0.92). Generally, factors are retained only when their associated eigenvalue is greater than one. An eigenvalue lower than one indicates that the factor explains less of the total common variation than one variable explains in isolation. Factor loadings:

Bridging social capital	0.2019
Linking social capital	0.2945
FSN	0.2125
Access to markets	0.4276
Access to services	0.5442
Access to infrastructure	0.5267

Formal Safety Nets (FSN) is a count of institutions in the community that provide food and/or housing and other types of assistance.

Survey questions: cm356, cm358

Access to markets is computed from information in the community survey. It is the proximity of markets for livestock, agricultural products, and agricultural inputs.

Survey questions: cm340, cm344, cm347

Access to infrastructure is a count of four variables:

- Piped water is the main water source
- The community has cell phone network access
- The community has internet access
- The main road to the community is paved

Survey questions: cm301, cm303, cm305, cm307,

Access to basic services is a count of public services.

- Primary school within 5 km
- Health center within 5 km
- Veterinary services available

Survey questions cm311, cm312, cm322, cm323 cm327, cm 335

Ax.1.11: Index of Household Resilience Capacity

The overall index of resilience capacity is calculated using factor analysis, with the absorptive, adaptive, and transformative capacity indexes as inputs (Eigenvalue= 0.15109). Generally, factors are retained only when their associated eigenvalue is greater than one. An eigenvalue lower than one indicates that the factor explains less of the total common variation than one variable explains in isolation. Factor loadings:

Absorptive capacity	0.2421
Adaptive capacity	0.2755
Transformative capacity	0.1287

Appendix 2: Table of Program Indicators

Table 12-1 shows project-specific indicators at the household level. The cell shading shows which project is tracking the indicator; though, it should be noted that the data were collected across the program area so values are reported for all projects even if not relevant to the results framework of that project as the results may still be helpful or insightful for their future programming.

Table 12-1: Project-specific indicators, baseline values

Project-specific indicators	All	*n*	Program area					
			STORRE		PROGRESS		REAL	
Percent of men and women who earned cash during the past 12 months[89]	39.3	*5231*	37.4	*1634*	39.5	*1662*	39	*1935*
Average number of adult HH members involved in productive activities (per HH)	1.04	*2007*	0.76 [a]	*672*	1.13 [ab]	*663*	0.79 [b]	*672*
Percent of HHs using an improved sanitation facility	35.7	*2007*	25.1	*672*	33.3	*663*	53.4	*672*
Percent of population in target areas practicing open defecation (% of HHs with no facility)	40.0	*2008*	68.7 [a]	*672*	42.0 [b]	*664*	21.3 [ab]	*672*
Percent of HHs using an improved drinking water source	49.7	*2007*	41.9	*672*	47.5	*663*	65.3	*672*
Percent of HHs in target areas practicing correct use of recommended household water treatment technologies[90]	5.0	*2008*	6.3	*672*	4.8	*663*	5.5	*673*
Percent of HH employing resilient behaviors[91]	*Refer to tables in footnote*		-		-		-	
Average HH asset/wealth score (out of 100)	29.8	*2005*	26.1 [a]	*672*	29.7 [ab]	*663*	31.5 [b]	*670*
Percent of HHs that sold livestock asset due to stress	10.9	*1739*	15.8	*603*	10.3	*558*	13.5	*578*
Percent of farming/agricultural HHs that produced leguminous crops	13.1	*794*	1.9 [ab]	*138*	11.6 [a]	*509*	21.6 [b]	*147*
Percent of farmers (farming HHs) that are familiar with at	8.8	*794*	24.7 [a]	*138*	6.8 [a]	*509*	15.6	*147*

[89] See Table 12-9 for information on livelihood activities by sex.
[90] Correct water treatment responses include: use filter; boil water; use chlorine tablet; or use halogen tablet.
[91] List of resilient behaviors: 1) Early recovery from the shocks, see

Table 12-62: Average recovery time for households fully recovered

; 2) HH and community level shocks preparedness, see Table 7-6; 3) Aspiration index, see Table 12-40; 4) Less stress sale of livestock, see Table 12-37; 5) Engaged in diversified livelihood activities, see Table 12-43; 6) Access to and use of formal and informal social support and social capital, see Table 12-39; 7) HH awareness and active participation in community group decision making, see Table 12-48; 8) Less migration both for internal and external, see Table 4-5; 9) Less coping strategies for HH hunger, see Table 12-65; 10) Women's empowerment at both HH and community level, see Table 12-50.

Table 12-1: Project-specific indicators, baseline values

Project-specific indicators	All	n	Program area					
			STORRE		PROGRESS		REAL	
least three NRM practices								
Percent of farmers (farming HHs) who used 1 or more sustainable agriculture (crop/livestock and/or NRM) practices and/or technologies in the past 12 months	67.4	*794*	73.4	*138*	68.5	*509*	61.5	*147*
Percent of farmers (farming HHs) who used 3 or more sustainable agriculture (crop/livestock and/or NRM) practices and/or technologies in the past 12 months	33.0	*794*	44.4	*138*	31.8	*509*	37.2	*147*
Average number of livelihood types/number of productive activities per HH	1.6	*1809*	1.5	*574*	1.6	*639*	1.7	*596*
Percent of HHs participating in a livelihood option promoted by the project	*Refer to Table 12-43 for livelihood types*		-		-		-	
Mean number of income sources (farm and off-farm) for men and women in project areas/ diversity index:								
Female headed households	1.2	*43*	^	*12*	^	*28*	^	*3*
Male headed households	1.4	*1818*	1.5	*564*	1.6	*612*	1.7	*599*
Percent of HHs with (1,2,3,4) sources of income:			1: 59.0 2: 32.6 3: 7.3 4: 0.7	*574*	1: 72.3 2: 20.2 3: 6.1 4: 1.1	*639*	1: 44.5 2: 39.5 3: 11.8 4: 2.2	*596*
Percent of HHs pursuing livelihoods that are at different categories of risk to common shocks and stresses	*Refer to Table 12-44*		-		-		-	
Percent of farmers (farming HHs) who used financial services (agricultural credit, and/or agricultural insurance) in the past 12 months	0.5	*674*	0.7	*114*	0.4	*481*	2.0	*79*
Daily per capita expenditures (as a proxy for income) in SG-assisted areas (USD)	1.99	2009	3.56 [a]	*672*	1.85 [a]	*664*	2.50 [a]	*673*
Percent of community members (HHs) who received at least one early warning message prior to a disaster	2.7	*1937*	6.9	*660*	2.3	*605*	2.9	*672*
Percent of HHs using community-generated early warning information to influence livelihood decisions (of the HHs who received early warning message)	35.9	*94*	35.8	*45*	^	*25*	^	*24*

Table 12-1: Project-specific indicators, baseline values

Project-specific indicators	All	n	Program area					
			STORRE		PROGRESS		REAL	
Percent of women/men who have knowledge of MCHN (ENA) practices[92]			-		[93]		-	
Women	26.6	*1516*	18.6	[a] *365*	23.2	[b] *582*	48.7	[ab] *569*
Men	17.0	*644*	12.8	[a] *275*	11.5	*205*	37.7	[a] *164*
Men/women who have knowledge of key times for proper handwashing practices[94](Average number of points 0-5, disaggregated female/male)	4.5/4.5	*1578/ 703*	3.9/3.7	[ab/ a] *397/ 321*	4.5/4.6	[a] *599/ 212*	4.9/4.9	[b/ a] *582/ 170*
Number of respondents who know three of the five critical times to wash hands (women/men)	89620/ 87237	*1578/ 703*	13926/ 11594	[ab/ ab] *397/ 321*	37173/ 37949	[a/ a] *599/ 212*	38019/ 37402	[b/ b] *582/ 170*
Percent of HHs with soap and water at a handwashing station commonly used by family members	15.6	*1562*	21.4	*392*	14.3	*591*	22.5	*579*
Average Household Dietary Diversity Score (HDDS)	6.6	*1961*	5.7	[a] *662*	6.4	[b] *629*	8.0	[ab] *670*
Percent of HHs with Coping Strategy Index (CSI) score above threshold levels	16.3	*1996*	11.7	*669*	16.0	*656*	18.3	*671*
Prevalence of HHs with moderate or severe hunger (HH Hunger Scale)	66.6	*1990*	41.8	[ab] *666*	67.8	[a] *652*	64.8	[b] *672*
Percent of men/women in union who make MCHN decisions jointly with spouse/partner[95]	82.2	*831*	59.7	[ab] *143*	82.7	[a] *305*	81.8	[b] *383*
Percent of women who make decisions jointly with spouse/partner	*Refer to Table 12-52 for each decision*		-		-		-	
Percent of women who make decisions alone	*Refer to Table*		-		-		-	

[92] Men/women who answered correctly to at least 4 of the following 6 questions: 1) How many times should a woman go for antenatal check-ups during pregnancy? (at least four times); 2) In your opinion, do you think pregnant women, overall, need to eat more, less or the same amount of food as they did before they got pregnant (eat more); 3) How long after birth should a mother first put her baby to the breast? (just after birth or within one hour); 4) At what age should a breastfed child be given foods and drink other than breastmilk? (after 5.9 months); 5) If a child less than five years gets diarrhea, what should you do for home remedy/ (feeding packet oral saline, homemade saline, or zinc syrup/tablet); 6) Should a child with diarrhea be given the same amount of liquids to drink as before the diarrhea, or more or less? (more).

[93] Note: this CRS indicator is "Percent of women and men of reproductive age group of 18-49 who have knowledge on at least 3 essential ENA components." This was merged with the indicator on MCHN because all ENA components included are related to MCHN.

[94] Five times for handwashing include: after using the toilet, after cleaning baby stools, before preparing food, before feeding children, before eating.

[95] Two MCHN decisions/joint decision for both: 1) Seeking medical treatment for your children; 2) Seeking medical treatment for yourself/women.

Table 12-1: Project-specific indicators, baseline values

Project-specific indicators	All	*n*	Program area					
			STORRE		PROGRESS		REAL	
	12-53 for each decision							
Percent of household with change in adaptations to shocks (adaptive, absorptive and transformative)	*Refer to Chapter 7 index results*		-		-		-	
Community Asset Index (communal natural resources, max 4)	2.5	*2040*	2.5	*680*	2.5	*680*	2.8	*680*

Shading in program area cells show if the indicator is tracked by a specific project.

Alphabetic superscripts show statistically significant differences at the 0.05 level.

^ Value not reported if n=<30.

Appendix 3: Additional tables

The following are the full tables from which the tables and figures in the main report text are drawn.

Chapter 3 Tables

Table 12-2: Percent of households in wealth categories

Households in wealth categories (%)	Program area		
	STORRE	PROGRESS	REAL
Wealth/Asset index category			
Poorest	43.5 [ab]	38.4 [a]	37.8 [b]
Middle	33.2	31.5	32.3
Richest	23.3 [ab]	30.1 [a]	29.9 [b]
n	672	663	670

Estimates of statistical significance are based on Wald tests.

Alphabetic superscripts show statistically significant differences at the 0.05 level.

Table 12-3: Listing of sample villages

District	Project	Village	Distance to nearest district center	Urbanization category	# HHs	Population	Comment
Baidoa	PROGRESS - CRS	Bonkay	5.0	Peri-Urban	250	1500	
Afgooye	PROGRESS - CRS	Balow	7.0	Rural	850	2200	HH are scattered over a large area and there are few facilities compared to other peri-urban areas in the region.
Afgooye	PROGRESS - CRS	Bulalow	7.0	Peri-Urban	3850	23960	
Baidoa	PROGRESS - CRS	Makuudo	7.0	Rural	220	1320	
Baidoa	PROGRESS - CRS	Shalbii	7.0	Rural	70	420	
Belet Xaw	PROGRESS - CRS	Carabo/Arabo	7.0	Peri-Urban	300	1917	
Afgooye	PROGRESS - CRS	Donka	10.3	Urban	2380	10000	
Afgooye	PROGRESS - CRS	Buxow	14.0	Rural	270	2000	
Afgooye	PROGRESS - CRS	Bure/Burow/Buri	15.0	Rural	115	890	
Baidoa	PROGRESS - CRS	Misgaale	15.0	Rural	390	2340	

Table 12-3: Listing of sample villages

District	Project	Village	Distance to nearest district center	Urbanization category	# HHs	Population	Comment
Belet Xaw	PROGRESS - CRS	Beled Amiin	15.0	Peri-Urban	1450	13500	
Belet Xaw	PROGRESS - CRS	Odaa	17.0	Peri-Urban	350	2459	This cluster is far from the administration district and Odaa is very small city in terms of population, but it has infrastructure and have some basic schools and markets with shops.
Afgooye	PROGRESS - CRS	Bagdaad	18.0	Rural	380	2680	
Baidoa	PROGRESS - CRS	Midow	25.0	Rural	400	2400	
Luuq Town	REAL - WV	Jaziira	1.0	Urban	400	2400	
Luuq Town	REAL - WV	Sheik mahaad	1.0	Urban	1816	12712	
Luuq Town	REAL - WV	Bulamusley	1.5	Urban	870	6320	
Luuq Town	REAL - WV	Aakaaro	2.3	Urban	1458	10756	
Luuq Town	REAL - WV	Wadajir	2.5	Urban	1050	9000	
Luuq	REAL - WV	Jazeera IDP Camp	3.0	Urban	253	2277	
Luuq Town	REAL - WV	Hawlwadag	3.0	Urban	843	5058	
Luuq Town	REAL - WV	Horseed	3.5	Urban	1330	13300	
Luuq Town	REAL - WV	Bederwanay	6.0	Urban	170	1020	
Luuq	REAL - WV	Haanoy	7.0	Peri-Urban	300	1800	The houses are clustered together and the village has small infrastructure.
Luuq	REAL - WV	Garsow	9.0	Rural	120	731	
Luuq	REAL - WV	Qasaale	14.0	Rural	120	960	
Luuq	REAL - WV	Garbolow	18.0	Rural	155	930	
Luuq	REAL - WV	Shaatilow	18.0	Rural	274	1653	
Erigavo	STORRE - CARE	Karin	18.0	Rural	125	420	
Badhan	STORRE - CARE	Sibaayo	30.0	Rural	37	105	

Table 12-3: Listing of sample villages

District	Project	Village	Distance to nearest district center	Urbanization category	# HHs	Population	Comment
Erigavo	STORRE - CARE	Carmale (Dhoob)	30.0	Rural	40	115	
Erigavo	STORRE - CARE	Dhoob	35.0	Rural	150	400	
Erigavo	STORRE - CARE	Doonyaha	35.0	Rural	50	250	
Erigavo	STORRE - CARE	Xamaas	35.0	Rural	78	500	
Erigavo	STORRE - CARE	Dib Qarax	40.0	Rural	500	1600	The houses are scattered widely and the community are pastoralists.
Erigavo	STORRE - CARE	Godmo Afaafo	40.0	Rural	40	120	
Erigavo	STORRE - CARE	Jiidali	40.0	Peri-Urban	500	2500	
Erigavo	STORRE - CARE	Ragcadeeye/Rag-caddeeye	40.0	Rural	106	424	
Erigavo	STORRE - CARE	Ardaa	62.7	Urban	700	3700	There is a strong market presence and school infrastructure.
Erigavo	STORRE - CARE	Daarasalaam	70.0	Rural	50	230	
Erigavo	STORRE - CARE	Daryare/Daryale	70.0	Rural	80	350	
Badhan	STORRE - CARE	Habarshiro	80.0	Peri-Urban	70	200	Although this cluster is far from the administrative city they have the facilities of a small city, secondary school, small market and growing households.
Badhan	STORRE - CARE	Xingalool	93.7	Urban	1500	18000	Xingalool is big city with booming market that and is one of the big cities in Sanaag, Hingalool is now candidate to become full district

Chapter 4 Tables

Table 12-4: Household demographics

Demography	Program area			Wealth categories		
	STORRE	PROGRESS	REAL	Poorest	Middle	Richest
Mean household size	6.3 [a]	6.7	7.3 [a]	6.3	6.7	7.3
Female headed households (%)	3.2	4.6	1.3	4.4	2.4 [a]	5.7 [a]
n	*672*	*664*	*673*	669	668	668
Marital status of household head (%)						
Married	84.7	83.7	83.7	76.1 [ab]	89.1 [a]	87.9 [b]
Never married	0.3	0.4	0.1	0.0 [ab]	0.4 [a]	0.8 [b]
Divorced/separated	7.1 [a]	3.2 [ab]	5.8 [b]	6.1 [ab]	2.3 [a]	2.0 [b]
Widowed	7.9 [a]	12.7 [a]	10.4	17.8 [a]	8.2 [a]	9.3
n	*672*	*663*	*672*	668	668	667
Education level of household head (%)						
Never attended	61.5 [a]	79.9 [a]	42.8 [a]	82.8 [a]	71.5 [b]	66.7 [ab]
Primary incomplete	19.1 [a]	13.7 [b]	30.7 [ab]	13.6	18.8	16.5
Primary complete	6.2 [a]	0.7 [ab]	9.6 [b]	0.7 [ab]	2.1 [a]	3.5 [b]
Secondary incomplete	3.9 [a]	0.3 [ab]	2.3 [b]	0.6	0.5	1.0
Secondary complete	4.6 [ab]	0.8 [a]	2.0 [b]	0.4	0.9	1.9
Incomplete higher education	1.3	0.2	0.8	0.0 [ab]	0.6 [a]	0.4 [b]
Completed higher education	1.0 [a]	0.1 [a]	0.5	0.1	0.4	0.1
Adult literacy program	0.5	0.2	1.0	0.3	0.3	0.4
Other literacy program	0.4	0.9	0.4	0.3	0.5	1.8
Church/mosque education	1.5 [a]	3.3	10.1 [a]	1.3 [ab]	4.3 [a]	7.6 [b]
n	*668*	*664*	*669*	*666*	*666*	*665*

Alphabetic superscripts show statistically significant differences at the 0.05 level.

Table 12-5: Housing characteristics

Housing	Program area			Wealth categories		
	STORRE	PROGRESS	REAL	Poorest	Middle	Richest
Mean number of rooms	1.5	1.9	1.5	1.3	1.9	2.3
Improved drinking water source (%)	41.9	47.5	65.3	53.3	37.5	57.9
Improved sanitation facility (%)	25.1	33.3	53.4	24.4 [a]	44.9 [a]	40.7
Roofing materials (%)						
Thatch (grass, reed, bamboo, etc.)	31.6 [a]	54.8 [ab]	35.8 [b]	60.3	48.9	43.2
Corrugated iron	45.5	42.6	57.7	32.7 [a]	47.1 [a]	57.8 [a]
Plastic sheeting	6.8 [a]	35.5 [a]	19.9	52.2 [a]	32.7 [a]	7.1 [a]
Wood and mud	15.0 [ab]	3.2 [a]	0.7 [b]	1.3	2.9	6.1
Cement	6.5 [a]	1.7	0.2 [a]	0.2 [a]	1.6	3.6 [a]
n	672	664	672	669	668	668
Flooring materials (%)						
Earth	56.2 [a]	63.5	87.0 [a]	86.4 [a]	67.0 [a]	40.1 [a]
Cow dung	0.1 [a]	36.1 [a]	2.0 [a]	11.1 [a]	31.1 [a]	54.8 [a]
Concrete/stone/cement	31.0 [a]	1.0 [a]	10.4 [a]	2.5	2.4	4.8
Tile/bricks	0.7	0.1	0.4	0.1	0.0 [a]	0.4 [a]
Mats, rugs, animal skins	13.7 [ab]	0.1 [a]	0.5 [b]	0.5	0.5	0.9
n	*672*	*664*	*673*	669	668	668
Houses with electricity (%)	15.7	17.0	13.4	3.8 [ab]	16.5 [a]	32.8 [b]
n	*672*	*663*	*672*	669	668	668

Alphabetic superscripts show statistically significant differences at the 0.05 level.

Table 12-6: Percent of poorest households by drinking water source

Water sources for the poorest households	Program area		
	STORRE	PROGRESS	REAL
Improved sources			
Piped into public tap	0.0	41.2	5.4
Protected public well	21.2	6.1	1.0
Borehole	7.6	4.8	0.0
Piped into yard	0.0	0.2	27.2
Water piped into dwelling	0.0	0.0	27.8
Protected well in yard/plot	1.3	0.3	0.6
Protected well in dwelling	6.1	0.0	0.0
Protected spring	3.0	0.0	0.0
Unimproved sources			
Other[1]	16.5	31.6	14.2
River, stream, dam	4.7	15.4	23.2
Unprotected well (dwelling/plot/yard	13.7	0.2	0.7
Water trucked to settlement	19.4	0.0	0.0
Pond	5.5	0.3	0.0
Pan (in riverbed)	1.0	0.0	0.0
n	*227*	*117*	*275*

[1] "Other" was translated into English, all except 2 responses were unimproved sources

Table 12-7: Percent of households by ownership of household assets

Household assets (% of HH owning)	Program area			Wealth categories		
	STORRE	PROGRESS	REAL	Poorest	Middle	Richest
Asset type						
Cell phone	90.4 [a]	82.9 [a]	86.4	77.6 [ab]	89.2 [a]	85.5 [b]
Improved charcoal stove	32.7	33.2	41.3	22.1 [ab]	37.1 [a]	47.0 [b]
Radio	21.6	19.9	24.1	3.4 [ab]	29.4 [a]	33.2 [b]
Solar lamp	37.3 [ab]	18.8 [a]	18.6 [b]	7.5 [a]	18.5 [a]	35.6 [a]
Kerosene lamp	30.9 [a]	13.2 [ab]	29.6 [b]	11.3 [a]	19.0 [a]	18.5
Chair	1.7 [a]	14.2	21.2 [a]	0.3 [a]	13.8 [a]	34.4 [a]
Solar panel	23.6 [a]	6.5 [a]	0.8 [a]	0.0	4.3 [a]	16.5 [a]
Table	1.2 [a]	4.0	13.6 [a]	0.0	2.0 [a]	15.4 [a]
Jewelry (pieces)	6.0 [ab]	2.8 [a]	3.0 [b]	0.3 [a]	1.7 [a]	7.6 [a]
Television	4.4	1.2 [a]	10.7 [a]	0.0	1.4 [a]	7.1 [a]
Bicycle	0.1 [a]	1.4 [a]	0.3	0.0	0.0	4.1
Generator	1.1	1.0	0.7	0.0	0.2 [a]	3.1 [a]
Passenger car or truck	2.0	0.3 [a]	3.0 [a]	0.0	0.0	2.5
Motorbike	0.0	0.4	1.0	0.0	0.0	1.5
Refrigerator	0.5	0.2	0.9	0.0	0.0	0.9
Kerosene stove	0.6	0.2	0.2	0.0 [a]	0.0 [b]	0.7 [ab]
Tuktuk	0.0	0.0	1.3	0.0	0.0	0.6
n	*671*	*664*	*673*	*669*	*668*	*667*

Alphabetic superscripts show statistically significant differences at the 0.05 level.

Table 12-8: Percent of households by ownership of productive assets

Productive assets (% of HH owning)	Program area			Wealth categories		
	STORRE	PROGRESS	REAL	Poorest	Middle	Richest
Productive assets						
Hoe	13.1 [a]	55.4 [a]	27.4	19.5 [a]	48.7 [a]	88.4 [a]
Agricultural land	20.7	46.1	24.5	12.2 [a]	38.4 [a]	81.1 [a]
Animal cart	7.4 [ab]	33.1 [a]	24.7 [b]	0.0	41.7	55.1
Stone grain mill(manual)	1.8 [a]	20.0 [ab]	2.7 [b]	0.0	9.5 [a]	41.0 [a]
Individual Granary	3.7	18.1 [a]	1.1 [a]	0.0	8.0 [a]	36.7 [a]
Wheelbarrow	23.3 [ab]	6.0 [a]	12.5 [b]	0.1 [a]	3.4 [a]	13.5 [a]
Ox plough	1.8 [a]	7.8 [a]	2.5	0.9 [a]	3.9 [a]	10.6 [a]
Motorized water pump (diesel)	2.4 [a]	4.3	10.7 [a]	0.0	0.0	9.4
Pruning/Cutting shears	4.1	5.5 [a]	2.2 [a]	0.0	1.8 [a]	7.3 [a]
Knapsack chemical sprayer	4.9	3.4	6.0	0.0	0.0	5.1
Bee hive	1.8 [a]	4.1 [ab]	1.9 [b]	0.0	0.0	5.0
Motorized grain mill (diesel/petrol)	1.3	3.4 [a]	0.9 [a]	0.0	0.0	2.3
Mechanical water pump	1.9	2.9	2.3	0.0	0.0	1.5
Small riding tractor	1.2	2.8 [a]	1.0 [a]	0.0	0.0	0.8
Walking motorized tiller/tractor	1.2	2.6	0.9	0.0	0.0	0.2
n	*680*	*680*	*680*	*669*	*668*	*668*

Alphabetic superscripts show statistically significant differences at the 0.05 level.

Table 12-9: Percent of sample population, working men, women and children, by occupations

Livelihood activities/occupations by sex/age of household members (%)	% of working sample population: 18-65 years		% of Children
	Adult men	Adult women	
Household/domestic/housewife (unpaid)	2.2	29.2	8.8
Child/student	2.4	1.3	28.6
Farm/crop production and sales	15.1	7.2	3.7
Other (specify)	9.0	4.8	2.3
Unavailability of work opportunities	5.6	2.3	1.0
Livestock production and sales	4.7	2.6	1.4
Other self-employment/own business (non-agricultural)	1.9	3.0	0.0
Retired/elderly	1.9	2.6	0.0
Agricultural daily wage labor (crop/livestock)	2.0	0.9	0.5
Salaried work (non-agricultural)	2.5	0.5	0.2
Handicrafts	1.9	0.8	0.3
Non-agricultural daily wage labor	1.7	0.3	0.2
Salaried work (agricultural)	1.6	0.1	0.2
Unable to work due to illness	0.6	0.5	0.0
Sale of wild/bush products (e.g., honey, charcoal)	0.5	0.1	0.1
Unable to work due to handicap/disability	0.4	0.3	0.1
Childcare/domestic work (paid)	0.0	0.1	0.1
Begging	0.0	0.1	0.0
Remittances	0.1	0.0	0.0
Fishing	0.0	0.0	0.0

n= 4837

Table 12-10: Percent of households owning any livestock and ownership by type of livestock

Livestock ownership	Program area			Wealth categories		
	STORRE	PROGRESS	REAL	Poorest	Middle	Richest
HH owns any livestock (%)	77.8 [ab]	62.5 [a]	56.9 [b]	50.1 [ab]	68.2 [a]	76.3 [b]
n	*680*	*680*	*668*	*669*	*668*	*668*
Ownership by type of livestock (%)						
Poultry	4.0 [ab]	60.9 [a]	50.0 [b]	28.6	48.4	66.3
Goat	95.6 [a]	52.2 [a]	74.6 [a]	28.2	60.5	53.0
Sheep	70.8 [a]	37.4 [a]	53.8	26.7 [a]	37.7	32.6 [a]
Donkey	43.2	38.3	39.3	4.1 [a]	39.4 [a]	63.4 [a]
Other cattle Local	15.0	27.5	24.3	9.0 [ab]	22.8	37.8 [a]
Oxen	6.3	13.5	12.4	1.6 [ab]	10.7 [a]	23.8 [b]
Camel	32.0 [a]	2.4 [a]	11.1	1.7	5.2	4.7
Other cattle Exotic	0.0	1.4	0.2	0.0	0.4	2.9
Other cattle Crossbred	0.2	0.0	0.4	0.0	0.2	0.0
Horse	0.5	0.0	0.0	0.0	0.0	0.0
n	*540*	*432*	*377*	*371*	*461*	*515*

Alphabetic superscripts show statistically significant differences at the 0.05 level.

Table 12-11: Median number of livestock owned

Median number of livestock owned[1,2]	Program areas						Wealth categories					
	STORRE		PROGRESS		REAL		Poorest		Middle		Richest	
Oxen	^	*27*	2	*83*	2	*47*	^	*16*	1	*39*	2	*102*
Other cattle Local	3	*67*	3	*125*	3	*94*	2	*42*	3	*79*	3	*165*
Other cattle Crossbred	^	*1*	^	*0*	^	*1*	^	*0*	^	*2*	^	*0*
Other cattle Exotic	^	*0*	4	*16*	^	*1*	^		^	*3*	^	*14*
Sheep	20 [a]	*364*	3 [a]	*128*	7 [a]	*206*	15	*198*	10	*253*	10	*246*
Goat	16 [a]	*517*	5 [a]	*186*	10 [a]	*279*	10	*291*	10	*345*	11	*345*
Donkey	1	*200*	1	*213*	1	*155*	1	*76*	1	*180*	1	*311*
Horse	3	*1*		*0*	^	*0*	^	*1*	^	*0*	^	*0*
Mule		*0*		*0*		*0*	^	*0*	^	*0*	^	*0*
Poultry	^	*28*	5	*326*	5	*191*	4	*103*	4	*181*	5	*260*
Camel	5	*159*	^	*11*	5	*43*	5	*72*	5	*62*	5	*78*

[1] Median values are reported for households owning each type of livestock.
[2] Estimated differences between median values are based on Somers' D statistical tests.
^ Values are not reported for fewer than 30 households.
Alphabetic superscripts show statistically significant differences at the 0.05 level.

Table 12-12: Median number of livestock sold in the past 12 months

Median number of livestock sold[1, 2]	Program areas						Wealth categories					
	STORRE		PROGRESS		REAL		Poorest		Middle		Richest	
Oxen	^	*5*	^	*13*	^	*8*	2	*1*	1	*9*	1	*16*
Other cattle Local	^	*8*	^	*25*	^	*11*	1	*5*	1	*11*	2	*28*
Other cattle Crossbred		*0*		*0*		*0*		*0*		*0*		*0*
Other cattle Exotic		*0*	^	*1*		*0*		*0*		*0*	2	*1*
Sheep	5 [a]	*152*	3 [ab]	*34*	5 [b]	*66*	5	*64*	4	*90*	5	*98*
Goat	4	*145*	4	*75*	5	*116*	3 [a]	*76*	4	*135*	5 [a]	*124*
Donkey		*0*	1	*5*	2	*13*		*0*	1	*5*	1	*13*
Horse		*0*		*0*		*0*		*0*		*0*		*0*
Mule		*0*		*0*		*0*		*0*		*0*		*0*
Poultry	^	*1*	3	*79*	^	*18*	2	*12*	3	*33*	3	*53*
Camel	^	*23*		*0*	^	*17*	2	*12*	2	*13*	1	*15*

[1] Median values are reported for households owning each type of livestock.

[2] Estimated differences between median values are based on Somers' D statistical tests.
^ Values are not reported for fewer than 30 households.
Alphabetic superscripts show statistically significant differences at the 0.05 level.

Table 12-13: Percent of households with camel/cattle/goat/sheep, sources of livestock food in rainy and dry seasons

Livestock ownership	Program area			Wealth categories		
	STORRE	PROGRESS	REAL	Poorest	Middle	Richest
HH owns any camel/cattle/goat/sheep (%)	75.9 [ab]	43.0 [a]	47.4 [b]	35.0 [ab]	52.7 [a]	54.0 [b]
n	*672*	*664*	*673*	*669*	*668*	*668*
Household with sources of livestock food in **rainy** season (%)						
Communal pasture browse	75.4	86.4	75.9	77.7	86.8	80.2
Private pasture browse	23.9 [ab]	4.3 [a]	0.6 [b]	3.9	3.3 [a]	7.9 [a]
Green fodder	1.0	4.0	3.1	0.5 [a]	3.1 [b]	6.5 [ab]
Crop residue	0.2 [a]	5.9 [ab]	0.3 [b]	1.1 [a]	2.4	6.5 [a]
Purchased feed	1.8 [a]	4.4 [b]	19.4 [ab]	10.8	6.6	10.0
Food residue	1.6	1.1	2.4	0.4 [a]	0.8	3.3 [a]
Hay	0.6 [ab]	4.0 [a]	4.6 [b]	7.1	1.5	3.7
n	*525*	*259*	*313*	*320*	*378*	*398*
Household with sources of livestock food in **dry** season (%)						
Purchased feed	15.1 [ab]	61.1 [a]	76.7 [b]	70.8 [a]	70.7 [b]	44.0 [ab]
Communal pasture browse	55.5	30.5	28.8	22.6 [a]	24.2 [b]	49.4 [ab]
Private pasture browse	27.9 [a]	12.8	8.1 [a]	5.7 [a]	10.6	21.1 [a]
Crop residue	2.3 [ab]	16.0 [a]	7.5 [b]	2.7 [a]	7.9 [a]	24.1 [a]
Food residue	16.4 [a]	3.4 [ab]	12.6 [b]	9.5	7.0	6.7
Hay	2.5 [a]	3.6	10.4 [a]	1.7 [a]	6.1 [ab]	8.5 [b]
Green fodder	0.0	1.2	2.7	0.0 [a]	0.9	3.5 [a]
n	*525*	*259*	*313*	*320*	*378*	*398*

Alphabetic superscripts show statistically significant differences at the 0.05 level.
Note that this table refers to livestock as only large/productive animals, including camel/cattle/goat/sheep.

Table 12-14: Percent of households with fodder/pasture availability in rainy season compared to last year

Livestock ownership	Program area			Wealth categories		
	STORRE	PROGRESS	REAL	Poorest	Middle	Richest
Livestock food source availability compared to last year (%)						
Less available than last year	90.0 [a]	50.7 [ab]	80.5 [b]	63.7	60.9	67.8
Better than last year	3.8 [a]	26.7 [a]	8.6	18.3	28.1 [a]	8.6 [a]
About the same as last year	3.5 [a]	19.9 [a]	9.6	15.1	10.7	19.5
Not in same location in last year	0.0	1.4	0.0	0.8	0.0	1.7
n	*525*	*259*	*313*	*320*	*378*	*398*
Primary reason it was less available than last year (%)						
Prolonged drought	98.7 [a]	86.4 [a]	95.9	97.1 [a]	93.7 [b]	86.0 [ab]
Overgrazed	4.4	7.6 [a]	0.9 [a]	2.1 [a]	4.2	6.6 [a]
Pests	0.6 [a]	8.4 [ab]	0.3 [b]	1.6 [a]	1.2 [b]	8.9 [ab]
Unpalatable pasture	2.4	3.8	4.1	1.9 [a]	2.9	6.0 [a]
n	*451*	*133*	*252*	*252*	*298*	*285*
Primary reason it was better available than last year (%)						
Better rainfall	87.1 [a]	100.0 [a]	^	87.9	81.1	79.4
Better grazing practices	0.0	1.1	^	0.0	0.6 [a]	7.1 [a]
Planting of improved fodder species	9.1	1.1	^	0.5	0.7	2.2
No conflict	0.0	0.5	^	0.0	0.0 [a]	2.2 [a]
Not pests/disease	3.8 [a]	0.0 [a]	^	0.0	0.0	0.4
n	*35*	*48*	*29*	*44*	*48*	*51*
Fodder/pasture quality this year compared to the same time last year (%)						
Low quality	86.4 [a]	52.7 [ab]	78.0 [b]	61.9	68.0	61.7
High quality	7.0 [a]	25.8 [a]	15.6	22.1	24.8	15.1
Quality is the same	3.8 [a]	19.7 [ab]	5.0 [b]	13.9	7.0 [a]	20.1 [a]
n	*525*	*259*	*313*	*320*	*378*	*398*

^ Values are not reported for fewer than 30 households.
Alphabetic superscripts show statistically significant differences at the 0.05 level.
Note that this table refers to livestock as only large/productive animals, including camel/cattle/goat/sheep.

Table 12-15: Percent of households with fodder/pasture availability in dry season compared to last year

Livestock ownership	Program area			Wealth categories		
	STORRE	PROGRESS	REAL	Poorest	Middle	Richest
Livestock food source availability compared to last year (%)						
Less available than last year	95.1 ab	38.6 a	37.4 b	57.3 a	49.0 b	27.1 ab
Better than last year	1.2 ab	35.8 a	50.6 b	24.8	39.6	44.4
About the same as last year	2.9 ab	22.9 a	10.6 b	15.3	11.1 a	24.9 a
Not in same location in last year	0.3	0.6	0.0	0.0 a	0.0 b	1.1 ab
n	*525*	*259*	*313*	*320*	*378*	*398*
Primary reason it was less available than last year (%)						
Prolonged drought	97.2 ab	84.5 a	80.1 b	94.5 a	88.7 b	65.9 ab
Unpalatable pasture	2.1 a	7.0	24.2 a	6.0 a	8.3 b	23.4 ab
Overgrazed	5.5	6.4	16.8	5.4	8.7	16.2
Pests	0.5 ab	11.0 a	9.5 b	4.3 a	4.4 b	23.2 ab
Failed access agreements with neighboring communities	0.2	0.0	0.0	0.0	0.0	0.2
n	*478*	*79*	*125*	*255*	*244*	*183*
Primary reason it was better available than last year (%)						
Better rainfall	^	100.0	100.0	99.9	99.9	99.9
Planting of improved fodder species	^	0.9	1.9	0.0	0.7	2.7
Better grazing practices	^	0.8	0.0	0.0	0.6	0.5
No conflict	^	0.4	0.0	0.0	0.6	0.0
Not pests/disease	^	0.0	0.0	0.1	0.0	0.0
n	*15*	*84*	*151*	*38*	*86*	*125*
Fodder/pasture quality this year compared to the same time last year (%)						
Low quality	92.6 ab	47.9 a	36.8 b	69.4 a	48.5 a	32.1 a
High quality	2.7 ab	32.1 a	51.4 b	18.0 ab	41.4 a	43.1 b
Quality is the same	3.8 a	18.3 a	10.4	11.0 a	9.3 b	22.6 ab
n	*525*	*259*	*313*	*320*	*378*	*398*

^ Values are not reported for fewer than 30 households.
Alphabetic superscripts show statistically significant differences at the 0.05 level.
Note that this table refers to livestock as only large/productive animals, including camel/cattle/goat/sheep.

Table 12-16: Percent of households with primary water sources for livestock in rainy/dry seasons

Livestock ownership	Program area			Wealth categories		
	STORRE	PROGRESS	REAL	Poorest	Middle	Richest
Household with sources of livestock water in **rainy** season (%)						
River, stream, spring	18.3 ab	42.2 a	66.7 b	41.0 a	44.2	56.9 a
Others	11.0 a	34.2 a	19.4	37.5 a	30.1 b	15.3 ab
Pond, dam	30.5 a	9.3 a	13.8	12.9	10.8	15.1
Berkad	20.4 a	7.9	0.0 a	5.8	9.6 a	4.1 a
Hand dug well (shallow well)	26.2 ab	3.0 a	1.0 b	5.9	3.5	4.8
Borehole	3.6 a	3.8 b	0.3 ab	0.4 a	1.2 b	6.2 ab
Delivered by tanker	2.5 a	1.4	0.0 a	0.2 a	2.4 ab	0.4 b
n	*525*	*259*	*313*	*320*	*378*	*398*
Household with sources of livestock water in **dry** season (%)						
River, stream, spring	13.4 a	22.0 b	69.0 ab	30.8	35.8	40.9
Others	1.9 ab	24.3 a	27.4 b	28.5	26.0	15.6
Berkad	25.7 a	20.1 b	0.0 ab	19.6 a	19.5 b	4.0 ab
Hand dug well (shallow well)	32.0 a	13.1 b	2.3 ab	8.1 a	8.0 b	18.2 ab
Borehole	18.1 a	15.0	0.0 a	4.5 a	6.8	19.7 a
Delivered by tanker	27.7 ab	2.0 a	0.0 b	5.1	5.1	1.6
Pond, dam	0.9 a	5.0 a	2.2	7.5 a	1.1 a	3.5
n	*525*	*259*	*313*	*320*	*378*	*398*

Alphabetic superscripts show statistically significant differences at the 0.05 level.
Note that this table refers to livestock as only large/productive animals, including camel/cattle/goat/sheep.

Table 12-17: Percent of households with livestock water availability in rainy season compared to last year

Livestock ownership	Program area			Wealth categories		
	STORRE	PROGRESS	REAL	Poorest	Middle	Richest
Livestock primary water source availability compared to last year (%)						
Less available than last year	90.8 [ab]	48.5 [a]	65.4 [b]	66.6	53.2	56.2
About the same as last year	3.3 [ab]	24.9 [a]	23.0 [b]	18.1 [a]	15.2 [b]	33.1 [ab]
Better than last year	4.2 [a]	24.3 [a]	10.0	13.7	30.6	7.2
n	*525*	*259*	*313*	*320*	*378*	*398*
Primary reason it was less available than last year (%)						
Less rainfall	98.7	95.1	97.1	98.7	95.2	95.3
Less surface water	3.1 [a]	10.4 [ab]	2.4 [b]	1.1 [ab]	6.4 [a]	11.6 [b]
No money to buy	0.6	0.7	1.5	1.0	1.8	0.0
Broken pump/dam	0.1	0.6	0.5	0.0	0.5	1.0
Others	0.2	0.5	0.0	0.0	0.8	0.0
n	*452*	*130*	*215*	*252*	*284*	*260*
Primary reason it was better available than last year (%)						
Good rainfall	52.9 [ab]	84.3 [a]	79.1 [b]	87.9	81.1	79.4
More money to buy	0.0	0.9	5.1	0.0 [a]	0.6 [b]	7.1 [ab]
Fewer animals	5.5 [a]	0.9	0.0 [a]	0.5	0.7	2.2
Migration	0.0	0.4	0.0	0.0	0.0	2.2
No conflict	2.3 [ab]	0.0 [a]	0.0 [b]	0.0	0.0	0.4
n	*47*	*59*	*37*	*44*	*48*	*51*

Alphabetic superscripts show statistically significant differences at the 0.05 level.
Note that this table refers to livestock as only large/productive animals, including camel/cattle/goat/sheep.

Table 12-18: Percent of households with water availability in dry season compared to last year

Livestock ownership	Program area			Wealth categories		
	STORRE	PROGRESS	REAL	Poorest	Middle	Richest
Livestock primary water source availability compared to last year (%)						
Less available than last year	93.4 [ab]	40.0 [a]	40.0 [b]	65.9 [ab]	42.3 [a]	31.6 [b]
Better than last year	1.7 [ab]	32.8 [a]	35.9 [b]	14.4 [ab]	39.9 [a]	34.1 [b]
About the same as last year	4.3 [ab]	25.4 [a]	22.2 [b]	17.9 [a]	16.5 [b]	32.2 [ab]
n	*525*	*259*	*313*	*320*	*378*	*398*
Primary reason it was less available than last year (%)						
Less rainfall	97.7	94.8	93.6	97.7 [a]	96.0 [b]	88.9 [ab]
Less surface water	4.9	16.4	9.7	2.9 [a]	10.8 [a]	30.2 [a]
No money to buy	0.7 [a]	2.0	5.6 [a]	1.4	4.2	3.0
Broken pump/dam	0.0	0.7	0.0	0.0	0.0	1.5
n	*462*	*88*	*134*	*258*	*237*	*189*
Primary reason it was better available than last year (%)						
Good rainfall	^	97.2	99.4	^	99.7 [a]	94.8 [a]
No conflict	^	2.3	0.9	^	0.0	3.7
More money to buy	^	0.5	0.0	^	0.0	0.8
Fewer animals	^	0.4	0.0	^	0.0	0.7
Others	^	0.0	0.6	^	0.1	0.6
Had own water source (improved infrastructure)	^	0.0	0.0	^	0.0	0.1
Migration	^	0.0	0.0	^	0.1	0.0
n	*17*	*70*	*117*	*26*	*70*	*107*

^ Values are not reported for fewer than 30 households.
Alphabetic superscripts show statistically significant differences at the 0.05 level.
Note that this table refers to livestock as only large/productive animals, including camel/cattle/goat/sheep.

Table 12-19: Percent of households that produced livestock commodities in last three years

Livestock commodities	Program area			Wealth categories		
	STORRE	PROGRESS	REAL	Poorest	Middle	Richest
Cattle						
Milk/milk product	26.2 [a]	10.5	8.5 [a]	3.7 [ab]	12.5 [a]	18.3 [b]
Meat	0.4 [a]	2.4 [ab]	0.2 [b]	2.0	0.4 [a]	2.5 [a]
Hides	0.8 [a]	0.7	0.1 [a]	0.0 [a]	0.2	1.5 [a]
Sheep/goat						
Milk/milk product	20.2	9.3	16.4	3.2 [ab]	13.9 [a]	21.8 [b]
Meat	19.7	8.9	13.2	2.8 [ab]	13.7 [a]	18.0 [b]
Skin	14.4	6.9	10.5	2.4 [ab]	10.1 [a]	14.5 [b]
Camel						
Milk/milk product	10.5 [a]	0.6 [ab]	5.3 [b]	1.4	3.3	3.6
Meat	1.6 [a]	0.0 [ab]	0.9 [b]	0.3 [ab]	0.3 [a]	0.5 [b]
Hides	0.6	0.1	0.2	0.1	0.0	0.4
Others						
Eggs	2.3 [ab]	13.1 [a]	7.0 [b]	4.5 [a]	4.5 [a]	18.1 [a]
Honey	2.9	1.0	0.7	0.1 [a]	0.1	2.4 [a]
n	*672*	*664*	*673*	*669*	*668*	*668*

Alphabetic superscripts show statistically significant differences at the 0.05 level.

Table 12-20: Percent of households that produced livestock commodities sold in last 12 months

Livestock commodities	Program area			Wealth categories		
	STORRE	PROGRESS	REAL	Poorest	Middle	Richest
Cattle						
Milk/milk product	43.0 [a]	80.6 [ab]	39.4 [b]	59.9	68.7	63.4
n	*162*	*101*	*59*	*63*	*108*	*151*
Meat	^	^	^	^	^	^
n	*5*	*22*	*1*	*2*	*7*	*19*
Hides	^	^	^	^	^	^
n	*7*	*10*	*1*	*1*	*5*	*12*
Sheep/goat						
Milk/milk product	27.0	52.6	32.3	44.3	51.7	33.9
n	*132*	*73*	*113*	*55*	*109*	*153*
Meat	30.0	40.8	18.1	32.5	49.0 [a]	15.5 [a]
n	*127*	*54*	*96*	*46*	*98*	*132*
Skin	31.9	38.7	33.1	22.9 [a]	51.0 [a]	27.4
n	*87*	*43*	*74*	*38*	*72*	*93*
Camel						
Milk/milk product	50.6	^	60.3	56.7	70.8 [a]	36.2 [a]
n	*60*	*5*	*36*	*32*	*32*	*36*
Meat	^	^	^	^	^	^
n	*11*	*0*	*6*	*6*	*5*	*6*
Hides	^	^	^	^	^	^
n	*3*	*1*	*1*	*2*	*0*	*3*
Others						
Eggs	^	81.2	62.9	^	78.5	76.8
n	*17*	*136*	*48*	*27*	*59*	*201*
Honey	^	^	^	^	^	62.6
n	*22*	*8*	*5*	*2*	*11*	*35*

^ Values are not reported for fewer than 30 households.

Alphabetic superscripts show statistically significant differences at the 0.05 level.

Table 12-21: Percent of households that produced livestock commodities reporting sales increased in last three years

Livestock commodities	Program area			Wealth categories		
	STORRE	PROGRESS	REAL	Poorest	Middle	Richest
Cattle						
Milk/milk product	49.8 [a]	40.6 [a]	^	30.3	38.1	42.1
n	*62*	*88*	*24*	*32*	*60*	*82*
Meat	^	^	^	^	^	^
n	*4*	*10*	*1*	*0*	*5*	*10*
Hides	^	^	^	^	^	^
n	*1*	*6*	*0*	*0*	*1*	*15*
Sheep/goat						
Milk/milk product	61.3 [a]	32.2 [a]	63.5 [a]	^	42.6	51.0
n	*40*	*44*	*36*	*20*	*51*	*49*
Meat	57.0	^	^	^	89.9	^
n	*45*	*17*	*17*	*21*	*34*	*24*
Skin	^	^	^	^	54.8	28.2
n	*27*	*19*	*25*	*11*	*30*	*30*
Camel						
Milk/milk product	^	^	^	^	^	^
n	*28*	*1*	*21*	*17*	*21*	*12*
Meat	^	^	^	^	^	^
n	*6*	*0*	*2*	*4*	*2*	*2*
Hides	^	^	^	^	^	^
n	*1*	*0*	*1*	*1*	*0*	*1*
Others						
Eggs	^	48.3	51.4	^	67.2	46.7
n	*11*	*109*	*149*	*22*	*43*	*84*
Honey	^	^	^	^	^	^
n	*14*	*5*	*23*	*1*	*5*	*17*

^ Values are not reported for fewer than 30 households.

Alphabetic superscripts show statistically significant differences at the 0.05 level.

Table 12-22: Percent of households by places for selling livestock commodities

Livestock commodities	Program area			Wealth categories		
	STORRE	PROGRESS	REAL	Poorest	Middle	Richest
Cattle milk/milk product						
Local market	63.5	35.7	^	34.1	23.3	43.4
Regional market	31.5	26.5	^	12.3	13.4	35.7
District market	0.0	45.6	^	55.9	63.5	30.5
Neighbor	0.0	4.3	^	0.0	0.0	7.6
Collection point	0.0	0.8	^	0.0	1.6	0.0
Others	0.3	0.8	^	0.0	0.1	1.3
Don't know	7.8 [a]	0.0 [a]	^	0.5	1.7	0.0
Refused	0.6 [a]	0.0 [a]	^	0.5	0.0	0.0
n	*62*	*88*	*24*	*32*	*60*	*82*
Cattle meat						
Local market	^	^	^	^	^	^
Regional market	^	^	^	^	^	^
Don't know	^	^	^	^	^	^
n	*4*	*10*	*1*	*0*	*5*	*10*
Cattle hides						
Local market	^	^	^	^	^	^
Regional market	^	^	^	^	^	^
Don't know	^	^	^	^	^	^
n	*1*	*6*	*0*	*0*	*1*	*6*
Sheep/goat milk/milk product						
Local market	73.1 [a]	27.7 [a]	1.8 [a]	^	12.8 [a]	33.1 [a]
Regional market	15.9 [a]	22.8	0.0 [a]	^	6.0 [a]	27.3 [a]
District market	0.0 [a]	54.2 [b]	98.2 [ab]	^	80.0 [a]	46.2 [a]
Neighbor	0.8	1.2	0.0	^	0.0	1.9
Others	1.2 [ab]	0.0 [a]	0.0 [b]	^	0.2	0.0
Don't know	9.8 [ab]	0.0 [a]	0.0 [b]	^	1.0	0.0
n	*40*	*44*	*36*	*20*	*51*	*49*
Sheep/goat meat						
Local market	98.2	^	^	^	19.2	^
Regional market	13.4	^	^	^	2.5	^
District market	0.0	^	^	^	8.9	^
Neighbor	0.0	^	^	^	71.9	^
Don't know	1.8	^	^	^	0.0	^
n	*45*	*17*	*17*	*21*	*34*	*24*
Sheep/goat skin						
Local market	^	^	^	^	8.8 [a]	34.0 [a]

Regional market	^	^	^	^	9.2	40.5
District market	^	^	^	^	82.8	48.5
Don't know	^	^	^	^	1.4	0.0
n	*27*	*19*	*25*	*11*	*30*	*30*
Camel milk/milk product						
Local market	^	^	^	^	^	^
Regional market	^	^	^	^	^	^
District market	^	^	^	^	^	^
n	*28*	*1*	*21*	*17*	*21*	*12*
Camel meat						
Local market	^	^	^	^	^	^
Regional market	^	^	^	^	^	^
District market	^	^	^	^	^	^
Neighbor	^	^	^	^	^	^
n	*6*	*0*	*2*	*4*	*2*	*2*
Camel hides						
Regional market	^	^	^	^	^	^
District market	^	^	^	^	^	^
n	*1*	*0*	*1*	*1*	*0*	*1*
Others - Eggs						
Local market	^	60.2	^	^	36.4	53.1
Regional market	^	15.7	^	^	1.9 [a]	23.8 [a]
District market	^	24.2	^	^	29.0	22.8
Neighbor	^	15.4	^	^	27.7	10.8
Itinerant merchant	^	3.2	^	^	6.2	1.2
Collection point	^	0.0	^	^	0.0	1.1
Others	^	3.0	^	^	1.6	4.2
n	*11*	*109*	*29*	*22*	*43*	*84*
Others - Honey						
Local market	^	^	^	^	^	^
Regional market	^	^	^	^	^	^
District market	^	^	^	^	^	^
Neighbor	^	^	^	^	^	^
n	*14*	*5*	*4*	*1*	*5*	*17*

^ Values are not reported for fewer than 30 households.

Alphabetic superscripts show statistically significant differences at the 0.05 level.

Table 12-23: Percentage of households sold livestock commodities through producers group

Livestock commodities	Program area			Wealth categories		
	STORRE	PROGRESS	REAL	Poorest	Middle	Richest
Cattle						
Milk/milk product	7.5	15.9	^	5.1 [a]	5.4 [b]	22.1 [ab]
n	*62*	*88*	*24*	*32*	*60*	*82*
Meat	^	^	^	^	^	^
n	*4*	*10*	*1*	*0*	*5*	*10*
Hides	^	^	^	^	^	^
n	*1*	*6*	*0*	*0*	*1*	*6*
Sheep/goat						
Milk/milk product	26.3 [a]	7.4	4.8 [a]	^	^	9.9
n	*40*	*44*	*36*	*20*	*21*	*49*
Meat	11.5	^	^	^	3.5	^
n	*45*	*17*	*17*	*21*	*34*	*24*
Skin	^	^	^	^	0.0	4.2
n	*27*	*19*	*25*	*11*	*30*	*30*
Camel						
Milk/milk product	^	^	^	^	^	1.0
n	*28*	*1*	*21*	*17*	*21*	*50*
Meat	^	^	^	^	^	^
n	*6*	*0*	*2*	*0*	*0*	*0*
Hides	^	^	^	^	^	^
n	*1*	*0*	*1*	*0*	*0*	*0*
Others						
Eggs	^	12.1	^	^	7.7	18.3
n	*11*	*109*	*29*	*22*	*43*	*84*
Honey	^	^	^	^	^	^
n	*14*	*5*	*4*	*0*	*0*	*0*

^ Values are not reported for fewer than 30 households.

Alphabetic superscripts show statistically significant differences at the 0.05 level.

Table 12-24: Percent of households engaging in crop production

Indicator	Program area			Wealth categories		
	STORRE	PROGRESS	REAL	Poorest	Middle	Richest
Households engaged in crop production (%)	14.9 [a]	49.6 [a]	21.0	14.2 [a]	36.2 [a]	72.4 [a]
n	*672*	*664*	*673*	*669*	*668*	*668*
Reason for not engaging in crop production activities (%)						
No access to land (i.e., lack of title)	20.8 [ab]	52.1 [a]	58.9 [b]	52.7	53.1	48.1
Lack of money	5.7 [ab]	54.8 [a]	43.0 [b]	54.3 [a]	42.0 [a]	22.3 [a]
Not interested	31.8 [a]	4.3 [ab]	14.2 [b]	6.5 [a]	13.0 [b]	20.3 [ab]
Others	30.2 [ab]	6.2 [a]	2.6 [b]	5.6	7.4	10.1
Not enough household labor	3.5	1.8	8.6	2.5 [a]	5.0 [b]	12.8 [ab]
No inputs (i.e., seed, fertilizer, farm tools)	17.3 [a]	0.3 [a]	4.8 [a]	2.4 [a]	3.1 [b]	9.5 [ab]
Pests and invasive weeds	0.1 [a]	1.0 [a]	0.3	0.0 [ab]	1.1 [a]	1.9 [b]
No arable land	1.2 [a]	0.0 [a]	0.5	0.0 [ab]	0.7 [a]	0.4 [b]
n	*534*	*155*	*526*	*536*	*434*	*242*

Alphabetic superscripts show statistically significant differences at the 0.05 level.

Table 12-25: Percent of households cultivating land and average/median land cultivated

Indicators	Program area			Wealth categories		
	STORRE	PROGRESS	REAL	Poorest	Middle	Richest
Average land cultivated last growing season (ha)	21.9 [a]	4.0 [a]	4.9 [a]	2.9 [a]	3.8 [a]	5.4 [a]
Median land cultivated last growing season (ha)	5.0	3.0	3.0	2.0	2.0	3.0
Cultivable land change compared to previous year (%)						
Stayed the same	49.7	76.9	65.0	80.5	78.1	70.5
Increased	16.3	8.1	14.7	3.9 [a]	6.1 [b]	12.6 [ab]
Decreased	32.5 [a]	6.3 [ab]	14.6 [b]	11.2	8.2	7.6
Don't know	1.6 [a]	8.7 [a]	5.7	4.4	7.5	9.3
n	*138*	*509*	*147*	*133*	*234*	*426*
Reason for decrease in cultivable land (%)						
Droughts	78.2 [a]	32.0 [a]	^	50.1	29.1	49.3
Others	15.0	30.7	^	47.7	33.9	23.4
Rainfall	5.5 [a]	40.9 [a]	^	26.1	19.5	28.6
Erosion	8.4	15.7	^	14.6	4.4	22.4
Lack of surface water	17.9	9.9	^	4.3 [a]	21.2 [a]	15.0
n	*57*	*37*	*22*	*37*	*33*	*46*
Reason for increase in cultivable land (%)						
More favorable start of rainfall	27.2	72.6	^	^	^	68.0
Rehabilitation	13.0	22.1	^	^	^	21.0
Increased surface water	7.9	12.6	^	^	^	12.3
Others	2.8	9.0	^	^	^	11.3
Improved land agreement	0.0	7.6	^	^	^	5.7
Increased household labor	8.3	5.6	^	^	^	7.9
Expanded irrigation	38.1 [a]	1.5 [a]	^	^	^	6.6
Improved resources for inputs (including land)	2.6	4.5	^	^	^	6.9
Household relocated	0.0	1.5	^	^	^	1.4
n	*31*	*51*	*23*	*13*	*22*	*70*
Security of access to cultivated land (%)						
Secure*	92.8	94.8	96.3	88.6 [a]	93.6 [b]	97.5 [ab]
Partially secure	5.1	3.5	0.6	4.8	4.0	2.1
Not secure	1.0 [a]	0.6	0.0 [a]	2.5 [ab]	0.6 [a]	0.0 [b]
n	*138*	*509*	*147*	*133*	*234*	*426*

*Secure refers to a household that owns or has rights (title) to the land, it is demarcated, with no land disputes.
^ Values are not reported for fewer than 30 households.
Alphabetic superscripts show statistically significant differences at the 0.05 level.

Table 12-26: Availability of irrigation system in the village

Irrigation	Program area			Wealth categories		
	STORRE	PROGRESS	REAL	Poorest	Middle	Richest
Availability of irrigation system in village (%)	42.7	29.3	53.5	39.8	35.1	31.5
n	*138*	*509*	*147*	*133*	*234*	*426*
Households using available irrigation system in village (%)	100.0	85.4	96.9	78.3	88.3	92.8
n	*94*	*123*	*78*	*60*	*82*	*153*
Average arable land for household if irrigated (ha)	13.3 [a]	4.9 [a]	5.8 [a]	2.8 [a]	3.6 [b]	7.5 [ab]
Median arable land for household if irrigated (ha)	3.0	2.0	4.0	3.0	3.0	4.0
n	*58*	*97*	*69*	*52*	*71*	*128*

Alphabetic superscripts show statistically significant differences at the 0.05 level.

Table 12-27: Percent of households that produced or sold crops last season, by top five crops

Crop variety	Program area			Wealth categories		
	STORRE	PROGRESS	REAL	Poorest	Middle	Richest
Produced (%)						
Millet	11.9 [a]	72.5 [ab]	14.9 [b]	50.1	63.7	62.6
Peppers	4.2 [ab]	63.3 [a]	46.4 [b]	55.1	59.3	60.0
Maize	17.8 [ab]	50.3 [a]	63.5 [b]	57.1	51.7	50.6
Sorghum	33.8	39.3	38.2	34.0	41.6	38.8
Sweet potato	52.8	27.0 [a]	53.8 [a]	24.1	34.3	33.1
Sold (%)						
Sweet potato	51.8 [a]	69.2	76.1 [a]	71.9	71.0	70.0
Peppers	28.0 [ab]	67.7 [a]	65.5 [b]	78.2	73.3	61.5
Millet	15.8 [a]	64.8	96.0 [a]	52.6	70.4	66.2
Maize	9.9 [ab]	58.1 [a]	59.8 [b]	39.3 [a]	74.5 [ab]	54.0 [b]
Sorghum	11.2 [a]	58.6	50.2 [a]	47.1	61.6	55.0
n	*138*	*509*	*147*	*133*	*234*	*426*

Alphabetic superscripts show statistically significant differences at the 0.05 level.

Table 12-28: Percent of households with any family member participating in a producer organization, by top five crops

Crop variety	Program area			Wealth categories		
	STORRE	PROGRESS	REAL	Poorest	Middle	Richest
Millet	2.9	5.7	2.1	7.5	2.9	5.7
Peppers	0.0	3.6	2.6	2.0	3.8	3.4
Sorghum	0.5 [a]	3.5 [a]	2.9	6.3	2.4	3.1
Maize	4.7	1.5	5.5	2.7	2.4	2.1
Sweet potato	8.6 [a]	0.6 [ab]	6.9 [b]	0.1 [ab]	1.2 [ab]	2.6 [b]
n	*138*	*509*	*147*	*133*	*234*	*426*

Alphabetic superscripts show statistically significant differences at the 0.05 level.

Table 12-29: Percent of farming households familiar with improved production practice

Production practices	Program area			Wealth categories		
	STORRE	PROGRESS	REAL	Poorest	Middle	Richest
Households familiar with the practices (%)						
Crop diversification	51.2	38.0	58.8	35.0	42.7	43.2
Cropping system	36.4	26.7	41.7	17.2 [a]	33.3 [a]	30.5
Minimum tillage	34.7 [a]	50.1	61.6 [a]	37.7	58.0	51.8
Soil and water conservation	44.3 [a]	18.4 [ab]	39.1 [b]	14.3	26.8	22.3
Integrated pest management	30.5	17.4	34.4	13.8	20.5	22.5
Soil fertility	46.7 [ab]	16.5 [a]	25.8 [b]	18.3	19.2	18.8
Drip or micro irrigation	13.0	12.2	18.6	12.9	13.5	13.3
Use of improved seeds	5.2	1.5 [a]	13.6 [a]	2.2	5.2	3.2
Agroforestry	7.8	7.8	13.1	4.1	7.7	10.2
Improved storage practices	7.2 [a]	20.9 [a]	11.6	12.1 [a]	16.6	22.1 [a]
Improved livestock husbandry practices	41.9 [a]	9.9 [ab]	32.5 [b]	6.0	12.0	18.1
Improved/drought-tolerant animal species	4.3 [a]	5.7	16.5 [a]	1.5 [ab]	6.4 [a]	9.7 [b]
Improved marketing practices	15.8 [a]	3.3 [ab]	11.5 [b]	0.9 [ab]	4.7 [a]	6.1 [b]
Reseeding	15.7	5.9	14.1	1.0 [ab]	7.8 [a]	9.1 [b]
Hay making	40.7 [ab]	19.6 [a]	13.0 [b]	3.0 [a]	14.0 [a]	25.8 [a]
Fodder production	35.6 [ab]	12.3 [a]	9.4 [b]	5.3 [a]	9.5 [b]	15.7 [ab]
n	*138*	*509*	*147*	*133*	*234*	*426*

Alphabetic superscripts show statistically significant differences at the 0.05 level.

Table 12-30: Percent of farming households trained on improved production practice

Production practices	Program area			Wealth categories		
	STORRE	PROGRESS	REAL	Poorest	Middle	Richest
Households having received training/orientation on practices						
Crop diversification	16.6	13.6	17.3	13.1	16.9	13.2
Cropping system	16.6	17.1	16.5	7.2	13.8	11.4
Minimum tillage	19.2	10.6	13.5	15.8	19.3	16.1
Soil and water conservation	17.9	11.0	13.1	7.2	17.1	9.2
Integrated pest management	14.7	10.3	13.3	6.7	12.8	11.0
Soil fertility	16.2 [a]	6.5 [a]	9.1	5.0	9.3	6.6
Drip or micro irrigation	8.7 [a]	1.2 [a]	4.2	1.4	2.3	1.8
Use of improved seeds	2.1 [a]	0.1 [ab]	8.1 [b]	2.1	2.0	1.2
Agroforestry	3.0	3.4	9.4	2.2 [a]	5.9 [a]	4.1
Improved storage practices	2.1	2.2	6.4	2.7	3.4	2.8
Improved livestock husbandry practices	9.3	2.7	3.5	0.8 [a]	1.6	4.3 [a]
Improved/drought-tolerant animal species	1.8	4.0	4.2	0.5 [ab]	2.6 [a]	5.7 [b]
Improved marketing practices	4.4 [a]	0.6 [ab]	4.2 [b]	0.4	1.6	1.4
Reseeding	4.5	1.0	3.9	0.1 [ab]	1.8 [a]	1.9 [b]
Hay making	2.1	5.9	5.2	0.5 [ab]	4.2 [a]	7.8 [b]
Fodder production	1.3 [a]	5.3	6.3 [a]	0.3 [ab]	4.9 [a]	6.9 [b]
n	*138*	*509*	*147*	*133*	*234*	*426*

Alphabetic superscripts show statistically significant differences at the 0.05 level.

Table 12-31: Percent of farming households using improved production practice

Production practices	Program area			Wealth categories		
	STORRE	PROGRESS	REAL	Poorest	Middle	Richest
Households having used the practices in the last 12 months						
Crop diversification	42.0	31.9	42.0	22.3	34.1	36.7
Cropping system	28.1	20.3	28.5	10.9 [ab]	22.9 [a]	24.2 [b]
Minimum tillage	23.7 [ab]	41.4 [a]	50.6 [b]	27.3 [a]	50.6 [a]	42.0
Soil and water conservation	36.1 [a]	15.7 [a]	24.4	8.9 [a]	21.2	17.9 [a]
Integrated pest management	21.3	14.0	26.1	9.0 [a]	17.9 [a]	17.2
Soil fertility	37.5 [a]	12.7 [a]	20.2	15.0	15.5	14.0
Drip or micro-irrigation	11.8	9.2	12.6	8.6	10.2	10.0
Use of improved seeds	2.6	0.7 [a]	10.0 [a]	1.2	2.8	2.3
Agroforestry	2.5	6.3	7.0	2.5	5.7	7.6
Improved storage practices	4.3 [a]	17.5 [a]	7.5	10.0	14.5	17.5
Improved livestock husbandry practices	28.3 [a]	9.3 [a]	24.9	5.1	10.4	15.3
Improved/drought-tolerant animal species	2.2	4.2	5.6	0.3 [ab]	2.6 [a]	6.4 [b]
Improved marketing practices	7.5 [a]	1.4 [ab]	7.3 [b]	0.9	2.4	3.1
Reseeding	8.5	1.9 [a]	8.6 [a]	0.5 [ab]	3.5 [a]	3.8 [b]
Hay making	27.8 [a]	14.6	7.8 [a]	2.2 [a]	9.9 [a]	18.8 [a]
Fodder production	18.1	9.5	7.1	2.7 [a]	7.7	11.9 [a]
n	*138*	*509*	*147*	*133*	*234*	*426*

Alphabetic superscripts show statistically significant differences at the 0.05 level.

Chapter 5 Tables

Table 12-32: Households experiencing shocks in past five years

Shocks	Program area (n)									Wealth categories (n)								
	STORRE			PROGRESS			REAL			Poorest			Middle			Richest		
Households experiencing at least one shock in past five years (%)	98.1	a	*672*	95.7		*663*	89.0	a	*673*	96.1		*668*	95.5		*668*	92.6		*668*
Mean # of shocks	4.1		*672*	6.2	a	*663*	3.6	a	*673*	6.9	ab	*668*	6.0	a	*668*	4.2	b	*668*
Floods/heavy rains	8.9	ab	*669*	43.4	a	*661*	26.8	b	*672*	52.0	a	*666*	37.1	ab	*666*	28.1	b	*666*
Late/variable rainfall	83.2	a	*672*	72.9		*659*	49.6	a	*671*	83.2		*665*	71.0		*667*	52.4		*666*
Drought	87.2	a	*672*	76.4		*656*	69.2	a	*672*	88.8	a	*666*	78.2	b	*666*	56.5	ab	*664*
Deforestation	20.9		*670*	4.4		*661*	11.0		*672*	2.7		*666*	5.0		*666*	10.5		*667*
Livestock disease	50.2	ab	*668*	29.6	a	*662*	25.8	b	*673*	21.9	a	*664*	36.7	a	*668*	32.3		*667*
Crop disease & pests	9.8	a	*665*	33.2	ab	*660*	13.4	b	*672*	14.8	ab	*667*	31.8	a	*664*	47.5	b	*662*
Reduced soil productivity	7.2		*649*	9.6		*644*	7.0		*669*	11.5	a	*659*	7.4	a	*650*	8.1		*649*
Fire	1.2	a	*671*	6.7	a	*661*	2.5		*673*	3.0	a	*667*	13.3	a	*667*	1.9		*667*
Military conflict	0.4	a	*670*	44.1	a	*654*	3.9	a	*673*	67.6	a	*665*	33.6	a	*664*	2.7	a	*664*
Inter-village conflict/NRM	1.1		*671*	1.8	a	*658*	0.6	a	*673*	0.3		*667*	3.8		*665*	1.0		*666*
Inter-village conflict	0.5		*671*	1.4	a	*658*	0.1	a	*673*	0.0	a	*666*	3.1	a	*667*	0.7		*665*
Intra-village or clan conflict	0.5	a	*671*	2.7	ab	*656*	0.2	b	*673*	0.2	a	*666*	6.8	ab	*667*	0.3	b	*663*
Food price fluctuations	41.9	a	*667*	49.4		*645*	22.4	a	*673*	58.5	a	*663*	45.2		*657*	29.0	a	*661*
Trade disruptions	3.6	a	*668*	33.8	ab	*652*	2.1	b	*672*	47.7	a	*662*	27.5	a	*662*	5.5	a	*664*
Sharp increase in prices	6.7	a	*660*	2.3		*657*	2.1	a	*670*	0.4	ab	*660*	2.3	a	*662*	5.1	b	*661*
Sharp drop in prices	7.8	ab	*657*	1.3	a	*654*	2.0	a	*671*	0.8		*659*	1.4		*657*	2.9		*662*
Measles outbreak	8.2	a	*669*	36.9	ab	*662*	8.9	b	*672*	31.1		*665*	32.1		*666*	34.3		*668*
Cholera diarrheal outbreaks	10.2		*672*	21.1	a	*662*	4.9	a	*673*	25.6	a	*667*	21.3	b	*668*	6.7	ab	*668*
Chronic illness	0.7	ab	*672*	15.9	a	*662*	4.9	b	*673*	5.0	ab	*667*	15.6	a	*668*	23.7	b	*668*
Migration of main income earner	2.8		*672*	5.7		*661*	3.3		*673*	3.7	a	*667*	10.0	ab	*667*	2.1	b	*668*
Displacement of household	3.7	ab	*672*	43.7	a	*662*	18.8	b	*673*	68.0	a	*667*	35.6	a	*668*	6.1	a	*668*
Unemployment/ underemployment	46.8	ab	*671*	77.9	a	*662*	68.3	b	*673*	87.2	a	*667*	77.3	b	*668*	59.6	ab	*667*
Death main income earner	5.4		*672*	11.6		*661*	8.1		*673*	15.3	ab	*666*	11.2	a	*668*	5.2	b	*668*

Alphabetic superscripts show statistically significant differences at the 0.05 level.

Table 12-33: Households experiencing shocks in past one year

Shocks	Program area (n)						Wealth categories (n)					
	STORRE		PROGRESS		REAL		Poorest		Middle		Richest	
Households experiencing at least one shock in past year (%)	84.7	*672*	94.3 [a]	*663*	71.7 [a]	*673*	91.6	*668*	92.0	*668*	89.1	*668*
Mean # of shocks	2.8	*672*	3.8 [a]	*663*	1.9 [a]	*673*	3.8	*668*	3.6	*668*	3.0	*668*
Floods/heavy rains	2.3 [ab]	*669*	30.1 [a]	*660*	15.7 [b]	*671*	39.7 [ab]	*666*	24.7 [a]	*666*	14.4 [b]	*664*
Late/variable rainfall	55.3 [a]	*672*	41.0	*658*	33.7 [a]	*669*	46.0	*665*	37.1	*667*	36.9	*663*
Drought	60.8 [ab]	*672*	10.8 [a]	*670*	31.2 [b]	*670*	8.1	*665*	16.5	*665*	22.3	*663*
Deforestation	18.0	*670*	4.1	*661*	8.7	*672*	1.8 [a]	*666*	4.4 [a]	*666*	10.1 [a]	*667*
Livestock disease	40.9 [a]	*667*	23.7	*661*	21.1 [a]	*673*	14.3 [ab]	*664*	33.5 [a]	*668*	25.9 [b]	*665*
Crop disease & pests	7.3	*665*	24.3	*660*	9.1	*672*	7.1 [ab]	*667*	22.7 [a]	*664*	39.9 [b]	*662*
Reduced soil productivity	5.0	*649*	2.4	*644*	4.8	*669*	0.2 [a]	*659*	2.8 [a]	*650*	6.2 [a]	*649*
Fire	0.7	*671*	3.0	*661*	1.6	*673*	2.9	*667*	3.7	*667*	1.5	*667*
Military conflict	0.4 [a]	*670*	38.8 [ab]	*654*	0.2 [b]	*673*	61.1 [a]	*665*	26.6 [a]	*664*	2.2 [a]	*664*
Inter-village conflict/NRM	0.8	*671*	1.3	*658*	0.4	*673*	0.3	*667*	3.2 [a]	*665*	0.3 [a]	*666*
Inter-village conflict	0.5	*671*	0.1	*657*	0.0	*673*	0.0	*666*	0.0	*667*	0.4	*664*
Intra-village or clan conflict	0.5 [a]	*671*	2.7 [ab]	*656*	0.2 [b]	*673*	0.2 [a]	*666*	6.8 [ab]	*667*	0.3 [b]	*663*
Food price fluctuations	31.2 [a]	*666*	46.0 [b]	*645*	15.5 [ab]	*670*	56.8 [a]	*663*	42.4 [a]	*655*	20.8 [a]	*659*
Trade disruptions	2.1 [a]	*668*	33.3 [ab]	*652*	1.5 [b]	*671*	47.1 [a]	*662*	27.2 [a]	*662*	4.5 [a]	*663*
Sharp increase in prices	4.0 [a]	*660*	1.6	*656*	0.9 [a]	*670*	0.1 [a]	*660*	1.2 [a]	*661*	4.0 [a]	*661*
Sharp drop in prices	5.0 [ab]	*657*	1.0 [a]	*654*	1.7 [b]	*671*	0.5	*659*	0.9	*657*	2.4	*662*
Measles outbreak	4.3 [a]	*669*	25.6 [ab]	*662*	4.6 [b]	*672*	21.1	*665*	17.7 [a]	*666*	28.4 [a]	*668*
Cholera diarrheal outbreaks	8.4	*672*	17.8 [a]	*662*	3.8 [a]	*673*	22.9 [a]	*667*	18.3 [b]	*668*	3.7 [ab]	*668*
Chronic illness	0.3 [a]	*672*	13.2 [a]	*662*	1.9 [a]	*673*	4.2 [ab]	*667*	11.0 [a]	*668*	20.5 [b]	*668*
Migration of main income earner	1.6 [a]	*672*	4.0 [ab]	*661*	1.6 [b]	*673*	3.2	*667*	5.4	*667*	2.0	*668*
Displacement of household	2.8	*672*	5.3	*661*	3.9	*673*	8.8 [ab]	*667*	4.3 [a]	*668*	1.0 [b]	*667*
Unemployment/ underemployment	27.9	*670*	43.6 [a]	*662*	22.8 [a]	*673*	29.2 [ab]	*666*	43.2 [a]	*668*	51.7 [b]	*667*
Death main income earner	2.9	*672*	5.2	*660*	3.2	*673*	6.4 [a]	*666*	5.5 [b]	*668*	2.1 [ab]	*667*

Alphabetic superscripts show statistically significant differences at the 0.05 level.

Table 12-34: Households experiencing severe decline in food consumption following shock, by type of shock

Shock	Program area (n)						Wealth categories (n)					
	STORRE		PROGRESS		REAL		Poorest		Middle		Richest	
Households experiencing severe decline in food consumption (%)	66.9	*659*	78.9	*606*	83.3	*603*	90.4 [ab]	*626*	77.6 [a]	*629*	65.7 [b]	*610*
Fire	^	*11*	^	*12*	^	*17*	^	*14*	^	*16*	^	*10*
Trade disruptions	59.4	*31*	93.8	*72*	^	*13*	98.9 [a]	*40*	95.6 [a]	*48*	^	*28*
Displacement of household	41.1 [a]	*31*	92.0 [a]	*85*	75.9 [a]	*133*	94.6 [ab]	*116*	85.6 [a]	*79*	68.8 [b]	*53*
Military conflict	^	*2*	90.8	*67*	75.5	*31*	95.9 [a]	*52*	81.8 [a]	*37*	^	*11*
Deforestation	44.5 [a]	*125*	^	*25*	84.3 [a]	*77*	69.1 [ab]	*61*	88.8 [a]	*72*	91.7 [b]	*93*
Cholera diarrheal outbreaks	38.0 [ab]	*62*	87.3 [a]	*69*	88.3 [b]	*40*	97.9 [a]	*62*	87.8 [a]	*61*	23.5 [a]	*47*
Food price fluctuations	69.2	*272*	85.8	*221*	80.3	*136*	97.0 [a]	*187*	81.8 [a]	*225*	58.5 [a]	*215*
Death main income earner	54.1	*42*	84.2	*38*	77.7	*60*	93.0 [a]	*65*	83.1 [b]	*45*	44.1 [ab]	*30*
Drought	60.7	*578*	81.8	*408*	71.1	*471*	90.4 [ab]	*522*	76.3 [a]	*508*	63.5 [b]	*424*
Livestock disease	61.5 [a]	*315*	72.8	*178*	84.1 [a]	*173*	82.2	*196*	80.3	*223*	58.0	*246*
Migration of main income earner	^	*18*	^	*22*	^	*22*	^	*20*	^	*26*	^	*15*
Late/variable rainfall	53.1 [a]	*563*	73.2	*379*	75.2 [a]	*361*	84.2 [a]	*448*	75.4 [a]	*455*	45.2 [a]	*398*
Unemployment/ underemployment	57.7	*329*	70.4	*450*	73.9	*466*	82.5 [ab]	*445*	67.2 [a]	*431*	52.8 [b]	*368*
Sharp increase in prices	42.7	*54*	^	*24*	^	*14*	^	*25*	^	*28*	78.0	*39*
Floods/heavy rains	48.3	*100*	67.0	*179*	66.3	*194*	82.0 [ab]	*172*	59.2 [a]	*143*	41.3 [b]	*156*
Reduced soil productivity	40.9 [a]	*65*	58.9 [b]	*42*	87.6 [ab]	*51*	53.5	*34*	78.8	*44*	59.0	*80*
Sharp drop in prices	52.7	*56*	^	*17*	^	*13*	45.5	*34*	^	*20*	64.8	*32*
Measles outbreak	27.7 [a]	*62*	44.6	*269*	58.8 [a]	*61*	74.5 [a]	*92*	44.6 [a]	*146*	11.1 [a]	*154*
Crop disease & pests	29.0 [a]	*116*	41.8 [b]	*334*	77.6 [ab]	*94*	60.2 [a]	*88*	39.6 [a]	*177*	40.1	*279*
Chronic illness	^	*7*	10.4 [b]	*159*	76.9 [ab]	*37*	20.9	*46*	9.8	*69*	14.1	*87*

Alphabetic superscripts show statistically significant differences at the 0.05 level.
^ Value not reported if n=<30.

Table 12-35: Average time (years) since HH experienced most recent shock

Years since most recent shock (mean)	Program area (n)					
	STORRE		PROGRESS		REAL	
Shock						
Trade disruptions	1.2	*32*	0.1	*72*	^	*12*
Food price fluctuations	0.8	*272*	0.3	*222*	1.0	*133*
Cholera or diarrheal outbreaks	0.6	*64*	0.5	*71*	0.8	*40*
Military conflict	^	*2*	0.5	*67*	3.3	*31*
Livestock disease	0.6	*317*	0.7	*182*	0.7	*173*
Deforestation (bush fires, charcoal or tree cutting)	0.6	*125*	^	*25*	0.9	*77*
Chronic illness	^	*7*	0.8	*160*	2.1	*38*
Crop disease & pests	1.0	*116*	1.0	*336*	1.0	*94*
Sharp drop in inputs/livestock or crop prices	1.1	*57*	^	*17*	^	*13*
Floods/heavy rains	2.3	*100*	1.0	*179*	1.4	*193*
Sharp increase in inputs/livestock or crop prices	1.0	*54*	^	*25*	^	*14*
Measles outbreak	1.5	*64*	1.2	*272*	1.7	*62*
Late/variable rainfall	0.9	*568*	1.4	*379*	1.1	*359*
Migration of main income earner	^	*19*	^	*23*	^	*22*
Unemployment/ underemployment	1.3	*330*	1.6	*450*	2.2	*466*
Reduced soil productivity	1.0	*65*	2.1	*42*	0.9	*51*
Death or injury of main income earner	2.0	*44*	2.3	*38*	2.2	*60*
Drought	0.9	*579*	2.6	*408*	1.6	*469*
Fire	^	*11*	^	*12*	^	*17*
Displacement of household	0.9	*31*	3.3	*84*	2.9	*133*
Inter-village conflict from natural resource disputes	^	*8*	^	*8*	^	*4*
Inter-village conflict/ other disputes	^	*4*	^	*3*	^	*1*
Intra-village or clan conflict/ theft	^	*3*	^	*7*	^	*1*

Alphabetic superscripts show statistically significant differences at the 0.05 level.

^ Value not reported if n=<30.

Chapter 6 Tables

Table 12-36: Percent of households reporting that they received assistance following shocks

Of HH that reported the type of shock (in last five years):	Program area (n)						Wealth categories (n)					
	STORRE		PROGRESS		REAL		Poorest		Middle		Richest	
Livestock disease	2.9 [a]	*318*	6.3 [b]	*183*	10.6 [ab]	*173*	2.5	*197*	3.2 [a]	*228*	14.2 [a]	*248*
Crop disease & pests	0.0 [ab]	*116*	4.3 [a]	*336*	2.0 [b]	*94*	6.3	*88*	4.1 [a]	*177*	3.3 [a]	*281*
Deforestation (bush fires, charcoal or tree cutting)	21.0 [a]	*125*	^	*25*	3.3 [a]	*77*	8.2	*61*	4.1	*72*	1.0	*93*
Floods/heavy rains	1.9 [a]	*100*	3.0 [b]	*180*	4.6 [ab]	*194*	1.7 [a]	*172*	2.5 [b]	*143*	7.2 [ab]	*157*
Late/variable rainfall	13.0 [a]	*568*	2.2 [a]	*380*	4.3 [a]	*361*	1.2 [a]	*450*	2.4 [b]	*457*	6.5 [ab]	*400*
Drought	15.2 [a]	*579*	1.7 [a]	*409*	6.0 [a]	*471*	1.7 [a]	*522*	2.3 [b]	*508*	5.5 [ab]	*426*
Chronic illness	^	*7*	2.7 [a]	*160*	0.0 [a]	*38*	0.0	*46*	1.8 [a]	*69*	3.8 [a]	*89*
Sharp drop in inputs/livestock or crop prices	4.8	*57*	^	*17*	^	*13*	6.4	*35*	^	*20*	0.0	*32*
Unemployment/ underemployment	3.5 [a]	*331*	1.6 [a]	*450*	1.7 [a]	*466*	0.4 [a]	*446*	1.3 [b]	*432*	4.5 [ab]	*368*
Displacement of household	0.0 [ab]	*31*	0.3 [a]	*85*	15.5 [b]	*133*	0.7 [a]	*116*	1.4 [b]	*79*	9.2 [ab]	*53*
Trade disruptions	0.0	*32*	1.0	*72*	^	*13*	0.0	*41*	0.0	*48*	^	*28*
Sharp increase in inputs/livestock or crop prices	3.8	*54*	^	*26*	^	*14*	^	*25*	^	*29*	1.0	*40*
Fire	^	*11*	^	*12*	^	*17*	^	*14*	^	*16*	^	*10*
Food price fluctuations	2.8 [ab]	*273*	0.6 [a]	*222*	0.7 [b]	*136*	0.1	*187*	0.6	*226*	2.2	*216*
Military conflict	^	*2*	0.5	*67*	5.9	*31*	0.6	*52*	0.6	*37*	^	*11*
Cholera or diarrheal outbreaks	0.0	*64*	0.3	*71*	4.9	*40*	0.1	*63*	0.4	*61*	2.5	*50*
Reduced soil productivity	0.0 [a]	*65*	0.0 [b]	*42*	3.4 [ab]	*51*	0.0	*34*	0.0	*44*	1.3	*80*
Migration of main income earner	^	*19*	^	*23*	^	*22*	^	*20*	^	*26*	^	*17*
Measles outbreak	0.0	*64*	0.0	*272*	0.0	*62*	0.0	*94*	0.0	*148*	0.0	*156*
Death or injury of main income earner	0.0	*44*	0.0	*39*	0.0	*60*	0.0	*65*	0.0	*46*	0.0	*32*
Inter-village conflict from natural resource disputes	^	*8*	^	*8*	^	*4*	^	*3*	^	*9*	^	*8*
Inter-village conflict/ other disputes	^	*4*	^	*4*	^	*1*	^	*1*	^	*4*	^	*4*
Intra-village or clan conflict/ theft	^	*3*	^	*7*	^	*1*	^	*1*	^	*7*	^	*3*

Alphabetic superscripts show statistically significant differences at the 0.05 level.

Table 12-37: Percent of households utilizing coping strategy (at least once in the past 5 years) following drought and/or late or variable rainfall

Coping strategy	Program area			Wealth categories		
	STORRE	PROGRESS	REAL	Poorest	Middle	Richest
Send livestock in search of pasture	38.6 [a]	20.3 [a]	20.4	12.2	29.8	24.3
Sell livestock	15.9	10.2	16.3	3.9 [a]	8.6 [b]	27.1 [ab]
Slaughter livestock	7.2	5.2	11.8	1.0 [a]	4.9 [a]	16.3 [a]
Lease out land	0.1 [a]	4.7 [a]	0.2	0.2 [ab]	5.1 [a]	9.1 [b]
Temporary Migration (only some family members)	8.6	7.3	9.3	3.9 [a]	8.1	13.3 [a]
Temporary migrate (entire family)	6.6 [a]	26.6 [a]	13.1	30.1 [a]	27.7	9.6 [a]
Permanent migration of some family member(s)	2.0	4.4 [a]	0.9 [a]	6.1	1.8	2.8
Send boys to stay with relatives or other HH	0.4	6.6	2.2	12.8 [ab]	0.9 [a]	0.4 [b]
Send girls to stay with relatives or other HH	0.9	0.6	1.9	0.7	1.2	0.2
Take children out of school	1.0 [ab]	13.3 [a]	9.4 [b]	22.6 [ab]	6.3 [a]	3.0 [b]
Move to less expensive housing	0.5 [ab]	9.0 [a]	4.3 [b]	4.9	10.1	11.4
Reduce food consumption	3.8 [ab]	64.0 [a]	70.1 [b]	80.2 [ab]	60.6 [a]	35.2 [b]
Take up new wage labor	4.4 [a]	73.5 [a]	41.9 [a]	71.4	63.9	65.6
Charcoal production	0.8	1.2	0.7	0.4 [a]	1.8 [a]	1.6
Firewood sales	0.7 [a]	8.6 [ab]	0.8 [b]	4.9	9.6	9.0
Sell household items (e.g., radio, bed)	0.5 [a]	3.2 [a]	0.5	1.0 [a]	4.4 [a]	3.9
Sell productive assets (e.g., plough, water pump)	0.1	0.6	0.2	0.1 [a]	0.4	1.6 [a]
Take out a loan from an NGO	1.5	0.0	0.0	0.1	0.1	0.0
Take out an loan from a bank	0.0	0.0	0.0	0.0	0.0	0.0
Take out a loan from a money lender	10.6 [a]	1.6 [a]	0.0	0.3 [ab]	1.2 [a]	4.9 [b]
Take out a loan from friends or relatives	12.2	6.8	11.4	5.5	7.3	11.3
Send children to work for money (e.g. domestic service)	0.3	0.2	1.0	0.3	0.3	0.3
Receive money or food from family members within community	1.8 [a]	2.5 [a]	0.5	3.1 [a]	2.3	0.7 [a]
Receive food aid or assistance from the government (including food/cash-for-work)	0.1	0.1	0.6	0	0.1	0.5
Receive food aid or assistance from an NGO (including food/cash-for-work)	0.4	0.1 [a]	2.3 [a]	0.2	0.3	0.8
Use money from savings	0.7 [a]	3.5 [a]	1.1	3.1 [a]	4.9 [b]	0.8 [ab]
Receive money from a relative from outside of village (remittance)	0.4	0.1	0.0	0.0	0.0	0.3
Receive help from local organizations/companies (e.g., Dahabshiil, Telesom, etc.)	0.3	0.0	0.0	0.0	0.0	0.0
n	547	443	483	519	513	438

Alphabetic superscripts show statistically significant differences at the 0.05 level.

Chapter 7 Tables

Table 12-38: Community indexes on access to markets, infrastructure, services and natural resources

Access to markets, infrastructure, services and communal resources scores	Program area[1]		
	STORRE	PROGRESS	REAL
Access to markets score (0-3)	0.45	2.8	2.9
Livestock markets within 20kn and open (%)	15.0	90.0	95.0
Ag products markets within 20km and open (%)	15.0	95.0	100.0
Ag inputs markets within 20km and open (%)	15.0	95.0	95.0
Access to services score: primary school, health center, veterinary services (0-3)	1.2	0.6	2.0
Primary school[2] (%)	10.0	0.0	25.0
Health center[3] (%)	20.0	15.0	35.0
Veterinary center (%)	0.0	10.0	0.0
Access to infrastructure score (0-4)	1.4	1.2	1.7
Piped water is one of main water sources (%)	0.0	10.0	70.0
Cell phone services (%)	100.0	100.0	100.0
Internet (%)	25.0	10.0	5.0
Paved road to major market town (%)	5.0	30.0	0.0
Communal natural resources (0-4)	2.5	2.5	2.8
Communal graze (%)	80.0	35.0	70.0
Firewood (%)	80.0	55.0	70.0
Water for livestock (%)	25.0	30.0	40.0
Irrigation (%)	80.0	50.0	75.0
n	*20*	*20*	*20*

Tests for statistical significance were not conducted because the community survey sample was not powered to show such differences.
Note: The community leader survey was also weighted to the community level, matching the weights of the household survey. This table shows weighted results with unweighted n's.
[1]These findings of the community leader survey (n=60) are provided by program area to show an idea of the distribution, but sample sizes by project (n=20) are too small to warrant statistically-representative discussion of the proportional findings.
[2] Criteria for primary schools: within 5km of community, attended by at least half of boys and girls, sufficient teachers, and in good or very good condition, with sufficient beds and staff
[3] Health center within 5km, in good or very good condition, with enough beds and staff, and in good or very good condition

Table 12-39: Percent of households reporting access to social capital

Social capital	Program area			Wealth categories		
	STORRE	PROGRESS	REAL	Poorest	Middle	Richest
Could receive assistance- within the village (%)	49.9	46.4	57.7	44.6	49.1	51.5
n	*659*	*662*	*672*	*662*	*663*	*664*
Family/friend	79.2 ab	98.2 a	95.3 b	98.3	97.0	96.2
Others w/in clan	36.1 a	16.8	9.0 a	9.6	16.3	23.3
Others non-clan	31.4 ab	11.4 a	8.2 b	6.3	13.7	15.2
n	*339*	*337*	*402*	*347*	*369*	*361*
Received assistance- within the village (past 12 months) (%)	6.8 a	27.5 a	12.1	40.7 ab	19.1 a	10.3 b
n	*668*	*657*	*673*	*665*	*665*	*664*
Family/friend	50.0 ab	87.5 a	91.8 b	86.7	95.1	76.3
Others w/in clan	36.9 ab	11.6 a	8.2 b	8.9	6.4	35.7
Others non-clan	24.2 a	7.0 a	13.2	7.6	5.4	12.1
n	*49*	*94*	*92*	*93*	*78*	*62*
Could receive assistance- outside the village (%)	45.5	44.3 a	60.2 a	41.9	49.7	49.1
n	*660*	*662*	*671*	*662*	*661*	*666*
Family/relatives SOM rural	62.8 ab	94.6 a	90.4 b	96.7	92.7	89.0
Family/relatives SOM urban	43.6 a	20.5	13.2 a	11.4	19.9	29.3
Family/relatives outside SOM	5.1	8.0	5.1	2.7 ab	7.8 a	12.1 b
Others clan SOM rural	1.6	0.9	1.7	0.8	0.3 a	2.0 a
Others clan SOM urban	1.7 a	0.6	0.2 a	0.5 a	0.0 ab	1.0 b
Others clan outside SOM	0.8	0.0	0.4	0.0	0.0 a	0.2 a
Others non-clan SOM rural	1.4	0.6	0.6	0.7 a	0.1 ab	1.1 b
Others non clan SOM urban	1.6	0.6	1.0	0.6	0.2	1.2
Others non clan outside SOM	0.8	0.0	0.2	0.0	0.0	0.2
n	*313*	*309*	*414*	*334*	*344*	*357*
Received assistance- outside the village (past 12 months) (%)	5.0 a	26.5 a	8.4	38.3 ab	18.8 a	9.2 b
n	*669*	*659*	*673*	*666*	*665*	*666*
Family/relatives SOM rural	56.3 a	96.5 ab	72.8 b	98.3 a	94.2	80.2 a
Family/relatives SOM urban	39.4 a	6.0 ab	21.3 b	3.1 a	5.8 ab	30.4 b
Family/relatives outside SOM	5.0	1.7	10.2	0.2 a	0.7 ab	15.9 b

Table 12-39: Percent of households reporting access to social capital

Social capital	Program area			Wealth categories		
	STORRE	PROGRESS	REAL	Poorest	Middle	Richest
Others clan SOM rural	1.8	0.0	4.1	0.3	0.0	0.0
Others clan SOM urban	0.0	0.4	1.4	0.1	1.4	0.0
Others clan outside SOM	4.1	0.0	0.0	0.0	0.0	0.0
Others non-clan SOM rural	0.0	0.0	1.6	0.1	0.0	0.0
Others non clan SOM urban	2.2	0.0	0.0	0.0	0.0	0.0
n	*35*	*86*	*64*	*64*	*67*	*53*
Could give assistance- within the village (%)	66.6	58.4	71.7	62.2	56.8	62.0
n	*661*	*662*	*673*	*661*	*665*	*666*
Family/friend	84.8 [a]	94.0	97.2 [a]	98.6 [ab]	90.8 [a]	92.0 [b]
Others w/in clan	41.0 [a]	23.1	20.0 [a]	11.5 [ab]	26.0 [a]	35.7 [b]
Others non-clan	49.0 [ab]	19.6 [a]	17.6 [b]	12.9 [ab]	20.8 [a]	29.2 [b]
n	*448*	*373*	*503*	*434*	*441*	*447*
Gave assistance- within the village (past 12 months) (%)	12.4 [a]	27.2 [ab]	12.9 [b]	28.6 [a]	29.1 [b]	15.7 [ab]
n	*669*	*662*	*673*	*669*	*664*	*667*
Family/friend	38.4 [a]	97.6 [a]	83.3 [a]	98.2 [a]	97.0	87.7 [a]
Others w/in clan	38.3 [a]	12.7 [a]	12.9 [a]	7.4 [a]	9.3 [b]	34.1 [ab]
Others non-clan	37.0 [a]	6.8 [a]	21.2	4.1 [a]	6.9 [b]	20.6 [ab]
n	*90*	*142*	*101*	*88*	*131*	*113*
Could give assistance- outside the village (%)	56.0	56.0 [a]	70.6 [a]	61.9 [a]	53.8 [a]	57.5
n	*656*	*662*	*673*	*663*	*658*	*666*
Family/relatives SOM rural	84.7 [ab]	96.3 [a]	96.2 [b]	98.4	95.8	92.7
Family/relatives SOM urban	23.2 [a]	19.6	23.1 [a]	9.3 [ab]	23.3 [a]	32.3 [b]
Family/relatives outside SOM	7.2	7.3	8.6	3.5 [a]	7.8	12.8 [a]
Others clan SOM rural	11.8	3.5	4.0	2.7	3.3	5.8
Others clan SOM urban	2.1 [a]	2.8	0.2 [a]	1.7	2.1	3.4
Others clan outside SOM	1.7 [a]	0.1 [a]	0.2	0.2	0.0 [a]	0.4 [a]
Others non-clan SOM rural	12.0	2.6	0.7	2.1	2.1	3.8
Others non clan SOM urban	3.4	2.5	0.6	1.7	2.0	3.2
Others non clan outside SOM	2.8 [a]	0.3 [a]	0.0	0.1	0.1 [a]	0.9 [a]

Table 12-39: Percent of households reporting access to social capital

Social capital	Program area			Wealth categories		
	STORRE	PROGRESS	REAL	Poorest	Middle	Richest
n	*393*	*347*	*496*	*419*	*405*	*411*
Gave assistance- outside the village (past 12 months) (%)	12.4 [a]	27.2 [ab]	12.9 [b]	28.6 [a]	29.1	15.7 [a]
n	*669*	*662*	*673*	*669*	*664*	*667*
Family/relatives SOM rural	53.1 [ab]	93.5 [a]	89.2 [b]	98.0 [a]	92.8	78.3 [a]
Family/relatives SOM urban	8.0	14.3	15.2	4.8 [a]	15.7 [a]	40.6 [a]
Family/relatives outside SOM	0.6	5.3	4.3	2.2 [a]	3.6 [ab]	17.4 [b]
Others clan SOM rural	18.8 [a]	0.3 [ab]	4.9 [b]	0.3	0.3	2.4
Others urban	0.0	0.3	0.0	0.0	0.7	0.0
Others clan outside SOM	2.3	0.8	0.0	0.0	0.0	4.4
Others non-clan SOM rural	28.9 [a]	0.3 [a]	0.0	0.2	0.9	0.2
n	*39*	*118*	*71*	*61*	*91*	*75*
HH know influential person who can help (%)	4.5 [a]	1.2 [ab]	7.4 [b]	1.2	2.1	3.5
n	*658*	*656*	*673*	*660*	*662*	*661*
Information from Govt or NGO (past 12 months) (%)	8.2 [a]	7.9	2.5 [a]	8.2	10.6	2.2
n	*672*	*664*	*673*	*669*	*668*	*668*

Alphabetic superscripts show statistically significant differences at the 0.05 level.

Table 12-40: Percent of respondents agreeing with statements related to aspirations and confidence to adapt

Aspirations	Program area						Wealth categories					
	STORRE		PROGRESS		REAL		Poorest		Middle		Richest	
Respondents agreeing with statements (%)[1]	%	*n*	%	*n*	%	*n*	%	*n*	%	*n*	%	*n*
Life determined by powerful people	31.3 [a]	*664*	12.0 [a]	*660*	4.2 [a]	*672*	12.2	*666*	13.6	*664*	9.7	*662*
Can protect personal interests	82.4 [ab]	*671*	25.6 [a]	*659*	35.6 [b]	*673*	28.6 [a]	*668*	36.5 [a]	*668*	35.1	*663*
Cannot protect personal interests from bad luck	40.8 [a]	*663*	32.3	*657*	16.4 [a]	*673*	41.5 [ab]	*665*	23.3 [a]	*662*	17.0 [b]	*662*
Life is controlled by accidental happenings	67.5 [ab]	*666*	34.9 [a]	*653*	25.1 [b]	*672*	42.4 [ab]	*664*	32.3 [a]	*661*	28.6 [b]	*662*
Cannot protect interests where pressure groups	45.4 [ab]	*658*	20.5 [a]	*651*	9.7 [b]	*672*	27.5 [ab]	*663*	15.9 [a]	*660*	13.7 [b]	*654*
What is going to happen will happen	83.2 [a]	*665*	54.6 [a]	*648*	36.0 [a]	*671*	50.9	*662*	60.0	*661*	48.5	*657*
Life in controlled by powerful people	33.7 [a]	*668*	35.5 [b]	*653*	13.3 [ab]	*672*	36.0 [a]	*665*	33.6 [b]	*665*	17.5 [ab]	*659*
I get what I want because I am lucky	69.3 [ab]	*669*	47.2 [a]	*657*	52.9 [b]	*673*	56.6 [a]	*666*	51.9	*666*	37.8 [a]	*663*
Not wise to plan, matter of good or bad fortune	51.3 [ab]	*647*	23.4 [a]	*648*	12.9 [b]	*671*	29.1 [a]	*656*	20.2	*654*	18.0 [a]	*652*
I can determine what will happen in my life	77.5 [a]	*666*	33.5 [a]	*653*	22.1 [a]	*671*	37.2	*665*	33.6	*661*	32.7	*660*
I get what I want because I work hard	72.6 [ab]	*664*	51.5 [a]	*652*	55.1 [b]	*672*	60.5 [a]	*664*	59.5 [b]	*660*	36.0 [ab]	*660*
My life is determined by my own actions	66.9 [a]	*645*	53.0	*654*	48.4 [a]	*672*	57.5 [a]	*655*	59.6 [b]	*655*	37.5 [ab]	*657*

[1] Percentages combine respondents reporting that they 'slightly agree', 'agree' or 'strongly agree'.
Alphabetic superscripts show statistically significant differences at the 0.05 level.

Table 12-41: Percent of households with member borrowing money in last 12 months , and source of loan

Borrowing	Program area			Wealth categories		
	STORRE	PROGRESS	REAL	Poorest	Middle	Richest
HH borrowed money	36.9 [a]	35.0 [b]	14.1 [ab]	41.7 [a]	31.0 [a]	21.2 [a]
n	*663*	*626*	*664*	*653*	*646*	*650*
Source for borrowing[1]						
Friend, neighbor or relative	12.0 [ab]	55.9 [a]	42.4 [b]	61.5 [a]	46.9 [a]	43.6
Local trader	46.8	42.3	54.7	37.4	45.4	55.0
Money lender	30.6 [a]	15.4	5.3 [a]	4.0 [ab]	25.4 [a]	28.7 [b]
SACCO, savings group, burial society	10.8 [a]	0.0	1.0 [a]	0.2	0.6	0.9
Bank, NGO	2.7	0.0	0.0	0.0	0.2	0.2
n	*215*	*191*	*96*	*137*	*208*	*156*

[1] Sources sum to more than 100% because households could choose more than one source.
Alphabetic superscripts show statistically significant differences at the 0.05 level.

Table 12-42: Percent of households reporting cash savings

HH with cash savings (%)	Program area			Wealth categories		
	STORRE	PROGRESS	REAL	Poorest	Middle	Richest
Savings (%)	6.7 [ab]	1.3 [a]	1.6 [b]	0.7 [a]	0.8 [a]	3.2 [ab]
n	*661*	*619*	*671*	*656*	*649*	*642*

Alphabetic superscripts show statistically significant differences at the 0.05 level.

Table 12-43: Average number of livelihood activities per household

Livelihoods[1]	Program area			Wealth categories		
	STORRE	PROGRESS	REAL	Poorest	Middle	Richest
Livelihoods (mean)	1.5	1.6	1.7	1.7 [a]	1.6 [b]	1.4 [ab]
Livelihood activities (%)						
Farm/crop production and sales	55.1 [a]	88.1 [ab]	54.4 [b]	55.1 [a]	60.6 [a]	81.8 [a]
Livestock production and sales	39.4 [a]	18.5 [ab]	32.0 [b]	30.5	30.1	28.2
Agricultural daily wage labor (crop/livestock)	5.9 [ab]	15.5 [ab]	13.9 [b]	10.9	12.8	12.0
Other self-employment/own business (non-agricultural)	13.2 [a]	1.7 [ab]	20.0 [a]	11.6	9.6	13.0
Non-agricultural daily wage labor	5.9	9.5	14.3	7.4 [a]	12.3 [a]	9.9
Salaried work (non-agricultural)	8.4	6.9	12.6	6.8	9.7	10.8
Salaried work (agricultural)	3.1 [a]	4.7	12.4 [a]	7.4	7.6	5.4
Handicrafts	3.7	5.9	10.2	10.0 [a]	5.7	4.8 [a]
Sale of wild/bush products (e.g., honey, charcoal)	2.8	1.4	4.9	4.3	3.2	1.7
Begging	0.0	0.0	0.0	0.0	0.0	0.0
Childcare/domestic work (paid)	0.5	0.2	2.0	1.1	0.8	0.8
Fishing	0.2	0.8	0.0	0.2	0.3	0.5
Remittances	0.2	0.5	0.0	0.2	0.2	0.3
n	*574*	*639*	*596*	*541*	*617*	*648*

[1]Livelihood activities taken from the survey household roster of occupation of adult household members.

Alphabetic superscripts show statistically significant differences at the 0.05 level.

Table 12-44: Percent of households reporting that shock severely impact livelihood

Type of shock by severely impacted livelihood[1] (%)	Program area			Wealth categories		
	STORRE	PROGRESS	REAL	Poorest	Middle	Richest
Farming/crop production and sales						
Drought	71.7 [a]	32.4 [ab]	73.9 [b]	52.5	34.6	30.9
Floods	20.4	20.9	39.3	26.4	18.4	22.8
Conflict	6.9 [a]	11.7	21.0 [a]	26.4	12.2	8.7
Livestock/crop disease	13.3	11.7	14.6	14.8	10.8	11.8
Human disease	49.0 [a]	7.2 [ab]	22.8 [b]	6.3	7.6	9.2
Economic shocks	21.2 [a]	6.6 [ab]	15.2 [b]	6.2	9.6	6.0
n	*114*	*483*	*110*	*109*	*199*	*399*
Livestock production and sales						
Drought	89.9	93.9	97.4	88.7 [a]	95.4 [a]	94.9
Livestock/crop disease	7.1	33.8	13.9	30.1	40.3 [a]	13.7 [a]
Floods	15.7 [a]	14.4 [b]	42.2 [ab]	20.2	9.7	28.7
Conflict	8.7 [a]	18.5	24.4 [a]	18.4	19.3	17.2
Human disease	42.9 [ab]	9.7 [a]	19.7 [b]	17.4	7.5	21.6
Economic shocks	7.3 [a]	6.2	14.6 [a]	5.4	4.3	12.2
n	*239*	*63*	*94*	*123*	*135*	*137*
Non-agricultural wage labor						
Drought	51.8	75.9	39.6	74.9 [a]	74.0 [b]	39.8 [ab]
Conflict	8.9 [a]	71.3 [ab]	20.5 [b]	55.1	68.4	36.8
Livestock/crop disease	6.2	36.0	24.5	16.4 [a]	39.8 [a]	32.7
Floods	10.9 [a]	21.9	32.2 [a]	19.4	25.9	24.2
Economic shocks	5.8 [a]	11.8 [b]	27.1 [ab]	14.3	9.5	32.5
Human disease	18.2	10.1	23.8	15.1	9.8	21.6
n	*41*	*50*	*116*	*76*	*75*	*56*
Small shop/kiosk						
Drought	64.5	^	42.0	85.0 [ab]	35.6 [a]	33.7 [b]
Livestock/crop disease	18.8	^	22.1	72.9 [a]	8.3 [a]	22.2
Conflict	8.8	^	12.5	67.7 [a]	3.9 [a]	11.9 [a]
Human disease	44.6	^	20.9	12.4	24.3	22.7
Floods	5.8	^	15.7	7.2	8.0	14.7
Economic shocks	0.0	^	6.7	5.9	2.1	0.9
n	*63*	*3*	*76*	*44*	*46*	*52*

[1] Includes households engaged in type of livelihood

Alphabetic superscripts show statistically significant differences at the 0.05 level.

Table 12-45: Households reporting various types of human capital and access to information

Human capital and access to information	Program area						Wealth categories					
	STORRE		PROGRESS		REAL		Poorest		Middle		Richest	
Human capital (% per HH)		*n*		*n*		*n*		*n*		*n*		*n*
Adults (18+) can read or write	40.7 [a]	672	19.9 [ab]	663	38.8 [b]	672	22.3	668	24.8	668	22.1	667
Adults (18+) with at least some primary education	34.9 [a]	672	16.7 [ab]	663	27.9 [b]	672	20.6	668	20.1	668	14.9	667
Adults (18+) who received training	2.6	671	1.8	664	2.0	673	1.4	668	2.5	668	1.8	668
Access to information (%)												
Rainfall prospects for coming season	4.1	663	16.7 [a]	619	1.8 [a]	672	0.2 [a]	659	0.2 [ab]	647	0.0 [b]	644
Long-term changes in climate patterns	3.3	669	15.6	641	2.1	673	0.2 [a]	663	0.2 [ab]	657	0.0 [b]	659
Early warning for natural hazards	1.5 [a]	666	11.3 [ab]	598	1.5 [b]	673	0.2	661	0.1 [ab]	637	0.0 [b]	635
Child nutrition and health information	2.9	667	1.7	637	1.2	672	0.0 [ab]	665	0.0 [a]	652	0.0 [b]	655
Weather-related agricultural recommendations	0.4	665	1.4	598	0.1	673	0.0	661	0.0	643	0.0	628
Current market prices farm-gate, wholesale or retail	3.0 [a]	667	1.0	618	0.5 [a]	672	0.0 [ab]	662	0.0 [a]	648	0.0 [b]	643
Animal health/husbandry practices	2.6 [a]	665	0.4 [a]	620	0.0	672	0.0	662	0.0 [ab]	650	0.0 [b]	641
Opportunities for borrowing money	3.1 [ab]	669	0.1 [a]	639	0.8 [b]	671	0.0	660	0.0	658	0.0	657
Conflict or other security restrictions on access to grazing	0.8	666	0.1	603	0.6	668	0.0	656	0.0	637	0.0	640
Business and investment opportunities	1.3 [ab]	669	0.1 [a]	626	0.1 [b]	670	0.0	659	0.0	654	0.0	648
Gender equality/gender-based violence	1.7	668	0.0	604	0.0	671	0.0	659	0.0	643	0.0	637
Information about government services/processes	0.7	665	0.0	622	0.0	671	0.0	662	0.0	647	0.0	645

Alphabetic superscripts show statistically significant differences at the 0.05 level.

Table 12-46: Percent of households whose community participates in collective action

% of households whose community participates in the specified activity	Program area (n)						Wealth categories (n)								
	STORRE			PROGRESS			REAL			Poorest			Middle			Richest		
Protecting crop land from flooding	14.0	a	651	5.5		628	2.8	a	646	2.0	a	647	4.7	b	645	10.6	ab	631
Protecting structures from flooding/landslides	14.3	ab	635	2.1	a	616	1.9	b	635	0.9		635	2.4		621	4.4		628
Soil conservation (terracing, gully improvement, bunds)	25.7	ab	644	0.3	a	639	1.8	b	645	0.9		645	1.6		636	1.3		645
Reforestation	3.8	a	648	0.2	ab	610	2.7	b	635	0.2		639	0.9		624	0.8		628
Improving access to drinking water	10.6	ab	650	3.6	a	636	2.1	b	638	1.0	ab	646	3.5	a	635	7.2	b	641
Improving access to electricity	1.0		647	0.8		636	1.6		626	0.2	a	639	1.7	a	628	0.9		640
Improving access to health services	5.7		653	7.0		632	5.8		631	2.6	a	636	8.5	a	639	10.5		639
Improving road quality	10.0	a	647	0.7	a	620	3.9	a	628	0.9		632	1.8		627	1.6		634
Forming cooperative	4.5	a	645	2.2		616	0.9	a	635	0.8		633	4.0		631	1.9		630
Improving/repairing market infrastructure	1.0		646	1.2		618	1.1		634	0.1	a	631	3.5	ab	632	0.2	b	632
Education or schools/education supplies	6.8	a	639	0.6	a	618	2.8		638	1.1		635	1.1		633	0.9		624
Providing support through zakat	1.9		648	0.0		576	1.4		628	0.2		631	0.4		613	0.1		605
Others	0.2		623	0.1		607	0.4		624	0.0	a	620	0.1	a	609	0.3		622

Alphabetic superscripts show statistically significant differences at the 0.05 level.

Table 12-47: Percent of communities with members participating in activity in the previous five years

Collective action for community assets	Program area[1] (n)					
	STORRE		PROGRESS		REAL	
Water point (shared) rehabilitation/upgrade	34.0	20	25.2	20	35.3	20
Gully treatment/erosion control	48.4	20	18.9	20	26.6	20
Water catchment area (shared) rehabilitation/ protection	29.8	19	15.3	20	31.3	20
Village management of dry and wet season grazing	16.7	19	7.4	20	31.0	20
Bush control/invasive species management	38.4	20	7.4	20	21.7	17
Reforestation	19.9	20	7.5	19	12.3	20
Communal fodder production	3.9	20	8.5	19	15.8	20
Others	0.0	17	0.0	20	25.2	19
Reseeding grass in degraded areas	2.4	20	0.0	19	15.4	20

Tests for statistical significance were not conducted because the community survey sample was not powered to show such differences.
Note: The community leader survey was also weighted to the community level, matching the weights of the household survey. This table shows weighted results with unweighted n's.
[1]These findings of the community leader survey (n=60) are provided by program area to show an idea of the distribution, but sample sizes by project (n=20) are too small to warrant statistically-representative discussion of the proportional findings.

Table 12-48: Percent of communities with community governance mechanisms

Community governance mechanisms	Program area[1] (n)					
	STORRE		PROGRESS		REAL	
% of communities with direct link to district or national government	52.2	20	66.4	20	50.1	20
% of communities that offer village meetings	40.4	20	66.0	20	32.7	20
% of communities with female participation in village meetings	49.3	7	18.2	7	44.2	7
% of communities with youth participation in village meetings	11.7	7	0.9	7	30.6	7
% of communities with conflict management committees	78.7	20	45.8	20	94.6	20
% of communities with female participation in conflict management committees	18.9	18	5.9	15	23.0	19

Tests for statistical significance were not conducted because the community survey sample was not powered to show such differences.
Note: The community leader survey was also weighted to the community level, matching the weights of the household survey. This table shows weighted results with unweighted n's.
[1]These findings of the community leader survey (n=60) are provided by program area to show an idea of the distribution, but sample sizes by project (n=20) are too small to warrant statistically-representative discussion of the proportional findings.

Table 12-49: Regression results exploring relationships between transformative and household resilience capacities

Independent variable	Dependent variable	
	Absorptive capacity	Adaptive Capacity
Transformative capacity	0.372**	0.0825**
# of shocks (in the past 5 yrs.)	-1.086**	0.0935
Household size	-1.408**	0.632**
Household size sq.	0.041	-0.0334*
Percent females 30 plus a/		
Females 0-16	-0.130***	0.003
Females 16-30	0.012	-0.0199*
Males 0-16	0.007	0.014
Males 16-30	-0.046	0.012
Males 30 plus	-0.046	0.237
Education: None a/		
Primary	2.108	6.756***
Secondary	-2.001	5.741***
Female-adult-only HH	0.327	-0.408
Livelihood: Farming a/		
Livestock production/sales	14.82***	1.223
Wage labor	0.896	-0.15
Salaried employment	-1.755	-0.978
Self-employment	2.609	-1.021
Other	-0.12	-1.24
Wealth category: poor		
Middle	5.843***	3.452***
Rich	10.17***	8.180***
Locality type: Urban a/		
Peri-urban	-4.341	3.074*
Rural	14.42**	1.885
Program area: STORRE a/		
PROGRESS	7.401	-3.275**
REAL	1.869	-0.75
Number of observations	*1901*	*1903*
R^2	0.64	0.55

Stars represent statistical significance at the 0.05(*), 0.01(**) and 0.001(***) percent levels.

Table 12-50: Percent of female respondents participating in household decision making in past 12 months

Topics of decision-making (%)	Program area (n)									Wealth categories (n)								
	STORRE			PROGRESS			REAL			Poorest			Middle			Richest		
Medical treatment for yourself	86.9		*133*	93.7		*299*	87.6		*382*	97.6	b	*226*	93.9	a	*302*	83.7	ab	*285*
Food and nutrition for yourself	75.0	ab	*132*	93.0	a	*292*	88.4	b	*387*	97.5	ab	*230*	92.2	a	*291*	84.0	b	*289*
Medical treatment for your children	83.8		*130*	92.6		*289*	86.2		*381*	98.1	ab	*226*	92.3	a	*291*	80.8	b	*282*
Food and nutrition for your children	82.5		*129*	92.0		*297*	88.4		*383*	98.4	ab	*229*	91.6	a	*294*	81.1	b	*285*
Minor household expenditures	80.1	a	*170*	92.5	ab	*343*	83.8	b	*387*	91.3		*252*	92.9		*332*	87.9		*315*
Sending /withdrawing girls to/from school	70.9		*115*	88.5		*272*	69.5		*368*	96.1	ab	*208*	84.6	a	*275*	71.0	b	*271*
Sending /withdrawing boys to/from school	68.1		*124*	88.0		*288*	69.5		*367*	95.3	ab	*215*	84.2	a	*287*	71.4	b	*276*
Food rationing during times of stress/shocks	80.4		*133*	86.2		*283*	72.3		*377*	95.3	ab	*221*	80.1	a	*293*	73.1	b	*278*
Spending money that your spouse has earned	65.1		*134*	85.2		*312*	75.3		*386*	92.1	ab	*233*	83.2	a	*307*	72.0	b	*291*
Who migrates during times of stress/shocks	51.6	a	*96*	87.4	a	*232*	63.9		*374*	93.6	ab	*201*	81.6	a	*266*	67.9	b	*234*
Decisions on savings	52.0	a	*117*	84.1	ab	*239*	58.5	b	*361*	85.7	ab	*196*	81.9		*262*	66.4	ab	*258*
Sales of HH assets during times of stress/shocks	39.8	a	*97*	84.3	ab	*227*	53.4	b	*375*	91.5	ab	*198*	73.8	a	*264*	65.1	b	*236*
Spending money that you have earned	56.0		*95*	84.0	ab	*259*	49.0	a	*377*	92.6	ab	*207*	78.7	a	*271*	55.6	b	*252*
Sale of HH assets (normal times)	42.9	a	*98*	83.4	ab	*245*	53.4	b	*375*	90.6		*203*	70.9		*265*	69.6		*249*
Sales of large livestock during times of stress/shocks	67.2		*128*	81.8		*234*	56.1		*373*	85.0	a	*207*	79.8		*273*	61.1	a	*254*
Sale of large livestock (during normal times)	64.2	a	*123*	80.5	ab	*269*	57.7	b	*367*	79.4		*212*	77.3		*279*	71.7		*267*
Major household expenditures	67.8		*148*	75.8		*321*	73.7		*374*	66.9	ab	*225*	76.2	a	*316*	85.5	b	*301*
Decisions on borrow money	74.7		*125*	77.9	a	*245*	55.7	a	*354*	78.9		*201*	74.0		*278*	67.0		*244*
Inputs for agricultural or livestock production	43.0	a	*128*	72.0	ab	*329*	50.1	b	*351*	57.5	ab	*215*	70.8	a	*299*	80.1	b	*293*
How to use remittances	35.7	a	*95*	66.8	ab	*214*	30.6	b	*355*	75.4	a	*184*	61.7		*245*	33.5	a	*234*

Alphabetic superscripts show statistically significant differences at the 0.05 level.

Table 12-51: Percent of female respondents reporting joint or sole responsibility for decisions, by decision topic

Of women reporting HH decision making (%)	Program area (n)						Wealth categories (n)					
	STORRE			PROGRESS			REAL			Poorest			Middle			Richest		
Food rationing during times of stress/shocks	90.7	a	*101*	98.5	a	*207*	98.2		*284*	99.8	a	*176*	98.8	a	*214*	94.8	ab	*201*
Medical treatment for yourself	97.4		*113*	98.2		*259*	98.5		*336*	99.8	ab	*200*	97.5	a	*268*	97.0	b	*239*
Spending money that you have earned	76.3	ab	*51*	98.3	a	*187*	97.3	b	*206*	99.7	a	*142*	99.5	b	*169*	90.5	ab	*133*
Medical treatment for your children	88.4	ab	*105*	98.1	a	*244*	97.7	b	*329*	99.7	ab	*197*	97.6	a	*255*	95.6	b	*225*
Food and nutrition for yourself	88.3	ab	*104*	98.0	a	*251*	97.8	b	*344*	99.8	ab	*200*	98.1	a	*255*	94.3	b	*243*
Food and nutrition for your children	87.4	ab	*104*	97.8	a	*247*	98.0	b	*340*	99.6	ab	*203*	98.1	a	*253*	94.0	b	*234*
Decisions on savings	83.5	ab	*59*	97.7	a	*165*	97.7	b	*220*	99.7	ab	*120*	96.7	a	*161*	95.3	b	*162*
Sending /withdrawing girls to/from school	86.5	ab	*75*	97.7	a	*206*	96.6	b	*264*	99.3	a	*164*	96.1	a	*202*	96.2		*178*
Spending money that your spouse has earned	80.3	ab	*88*	97.6	a	*223*	97.4	b	*292*	99.2	a	*165*	97.8		*227*	93.6	a	*210*
Minor household expenditures	93.6		*137*	97.4		*311*	97.6		*323*	99.8	ab	*209*	96.2	a	*289*	95.9	b	*272*
Sales of HH assets during times of stress/shocks	71.4	ab	*34*	97.4	a	*153*	97.1	b	*217*	99.7	ab	*122*	95.7	a	*149*	94.6	b	*133*
How to use remittances	^		*29*	97.5		*101*	96.0		*127*	99.8	ab	*84*	96.5	a	*98*	89.8	b	*75*
Sale of HH assets (normal times)	75.3	ab	*38*	97.4	a	*186*	96.6	b	*214*	99.6	ab	*123*	96.4	a	*165*	93.7	b	*150*
Sale of large livestock (during normal times)	85.0	ab	*72*	97.3	a	*200*	96.5	b	*222*	99.7	ab	*131*	96.3	a	*186*	94.1	b	*176*
Decisions on borrow money	90.1		*85*	97.1		*168*	96.3		*209*	99.5	ab	*125*	95.7	a	*178*	94.1	b	*158*
Sending /withdrawing boys to/from school	86.2	a	*80*	96.9		*216*	96.6	a	*264*	98.9		*164*	95.6		*213*	94.9		*182*
Inputs for agricultural or livestock production	84.0		*54*	94.7		*278*	96.6		*177*	98.2		*107*	95.8		*198*	90.1		*203*
Major household expenditures	89.3		*92*	94.3		*273*	96.2		*276*	98.9	ab	*156*	94.6	a	*242*	89.7	b	*242*
Sales of large livestock during times of stress/shocks	86.1	a	*79*	93.5		*147*	97.6	a	*222*	99.8	ab	*124*	89.1	a	*173*	91.4	b	*150*
Who migrates during times of stress/shocks	72.5	ab	*45*	92.4	a	*160*	97.6	b	*256*	93.1		*147*	95.2		*169*	87.4		*144*

Alphabetic superscripts show statistically significant differences at the 0.05 level.

Table 12-52: Percent of female respondents who make joint decisions

Women who make joint decisions with male (%)	Program area (n)								
	STORRE			PROGRESS			REAL		
Type of decision:									
Inputs for agricultural or livestock production	71.6	ab	*54*	93.5	a	*279*	94.3	b	*177*
Major household expenditures	77.2	ab	*92*	93.3	a	*273*	93.4	b	*276*
Minor household expenditures	75.7		*137*	60.6	a	*311*	87.3	a	*323*
Sale of large livestock (during normal times)	72.8	ab	*75*	96.6	a	*200*	92.5	b	*222*
Sale of HH assets (normal times)	50.0	ab	*38*	96.7	a	*187*	91.6	b	*214*
Spending money that you have earned	51.1	ab	*51*	93.9	a	*187*	90.4	b	*206*
Spending money that your spouse has earned	72.1	ab	*88*	97.4	a	*223*	94.9	b	*292*
Sending /withdrawing boys to/from school	71.8	ab	*80*	96.2	a	*217*	93.0	b	*265*
Sending /withdrawing girls to/from school	75.6	a	*75*	97.1	a	*206*	92.2		*264*
Medical treatment for your children	78.5	ab	*105*	97.0	a	*244*	95.0	b	*329*
Medical treatment for yourself	83.7		*113*	89.7		*259*	93.9		*336*
Food and nutrition for your children	68.6	ab	*104*	94.9	a	*247*	94.8	b	*340*
Food and nutrition for yourself	65.8	ab	*104*	94.1	a	*251*	93.4	b	*344*
Decisions on savings	66.2	ab	*59*	97.7	a	*165*	94.0	b	*220*
Decisions on borrow money	62.6	ab	*85*	95.3	a	*168*	91.7	b	*209*
How to use remittances	^		*29*	95.7		*101*	88.4		*127*
Sales of large livestock during times of stress/shocks	71.5	ab	*79*	93.5	a	*147*	93.3	a	*222*
Sales of HH assets during times of stress/shocks	52.8	ab	*34*	97.3	a	*153*	91.7	b	*217*
Food rationing during times of stress/shocks	40.7	a	*101*	61.6	a	*209*	85.0	a	*284*
Who migrates during times of stress/shocks	57.4	ab	*45*	91.8	a	*160*	94.0	b	*256*

Alphabetic superscripts show statistically significant differences at the 0.05 level.

Table 12-53: Percent of female respondents who make decision alone

Women with sole decision-making (%)	Program area (n)								
	STORRE			PROGRESS			REAL		
Type of decision:									
Food rationing during times of stress/shocks	50.0	a	*101*	36.5	b	*209*	13.2	ab	*284*
Minor household expenditures	17.9		*137*	36.8	a	*311*	10.4	a	*323*
Medical treatment for yourself	13.7		*113*	8.5		*259*	4.6		*336*
Spending money that you have earned	25.2	ab	*51*	4.3	a	*187*	6.9	b	*206*
Food and nutrition for yourself	22.4		*104*	3.9		*251*	4.4	a	*344*
Food and nutrition for your children	18.7	a	*104*	2.9		*247*	3.3	a	*340*
Decisions on borrow money	27.5	ab	*85*	1.8	a	*168*	4.5	b	*209*
How to use remittances	0.0		*29*	1.8	a	*101*	7.6	a	*127*
Medical treatment for your children	9.8	a	*105*	1.1	a	*244*	2.7		*329*
Major household expenditures	12.2	ab	*92*	0.9	a	*273*	2.8	b	*276*
Inputs for agricultural or livestock production	12.5	ab	*54*	1.0	a	*279*	2.3	b	*177*
Sending /withdrawing girls to/from school	11.0	ab	*75*	0.6	a	*206*	4.4	b	*264*
Sale of large livestock (during normal times)	10.7	a	*75*	0.7	a	*200*	4.0		*222*
Sale of HH assets (normal times)	25.3	a	*38*	0.5	a	*187*	5.1	a	*214*
Who migrates during times of stress/shocks	15.1	ab	*45*	0.6	a	*160*	3.6	b	*256*
Sending /withdrawing boys to/from school	14.4	a	*80*	0.5	a	*217*	3.2		*265*
Sales of HH assets during times of stress/shocks	18.7	a	*34*	0.2	a	*153*	5.3	a	*217*
Sales of large livestock during times of stress/shocks	14.6	a	*79*	0.0		*147*	4.3	a	*222*
Spending money that your spouse has earned	8.2	ab	*88*	0.3	a	*223*	2.5	b	*292*
Decisions on savings	17.3	a	*59*	0.0		*165*	3.7	a	*220*

Alphabetic superscripts show statistically significant differences at the 0.05 level.

Table 12-54: Percent of female respondents who saved or borrowed cash

Women's finances	Program area (n)						Wealth categories (n)								
	STORRE			PROGRESS			REAL			Poorest			Middle			Richest		
Woman has cash savings	6.9	a	183	1.1	a	341	1.8		390	0.3	a	259	0.3	b	338	4.1	ab	316
Woman has borrowed cash in past 12 months	54.1	ab	183	47.9	a	345	33.6	b	391	48.3		257	49.7	a	343	36.9	a	318
Of women who borrowed, source of loan:																		
Money lender	38.3	a	87	17.3		147	16.4	a	129	6.9	ab	97	20.6	a	147	30.3	b	119
Friend/neighbor	8.7	a	87	66.7	a	147	43.6	a	129	78.4	a	97	50.2	a	147	62.5		119
Family member	2.1	a	87	2.6	b	147	15.2	ab	129	3.0		97	3.0		147	7.3		119
SACCO	10.2		87	0.0		147	0.0		129	0.3		97	0.1		147	0.3		119
Religious institution	0.0		87	0.1		147	0.0		129	0.0		97	0.0		147	0.6		119
Savings group	6.4		87	0.0		147	0.0		129	0.0		97	0.2		147	0.1		119
Input supplier	0.0		87	0.4		147	0.0		129	0.0		97	0.9		147	0.0		119
Local trader	38.3		87	34.4		147	31.3		129	27.6	a	97	42.8	a	147	28.2		119

Alphabetic superscripts show statistically significant differences at the 0.05 level.

Table 12-55: Percent of female respondents by measures of self-confidence and ownership of cell phone

Women's confidence & communications	Program area (n)						Wealth categories (n)								
	STORRE			PROGRESS			REAL			Poorest			Middle			Richest		
Women's self-image and confidence																		
I can influence important decisions in my community	47.1		138	46.8		356	61.6		311	52.9	a	220	41.2	ab	281	54.5	b	303
I can always resolve household problems if I try hard enough	24.2		120	45.9		387	34.4		236	40.5		168	33.6		271	61.5		303
I always find some way to deal with problems in the community that confront me	41.8		126	36.5		348	49.2		271	37.0		183	28.6		265	51.6		295
I have the skills and knowledge I need to improve the well-being of my household	44.7	a	109	35.2		313	25.3	a	238	25.8	a	158	27.0		242	52.2	a	258
I am free to take action to improve my life	42.6	a	103	31.7		294	20.3	a	227	21.2	a	142	23.4		226	48.7	a	255
Access to communications																		
Woman owns a cell phone	72.6		183	67.2	a	353	83.3	a	390	62.1	ab	260	73.5	a	344	74.1	b	321

Alphabetic superscripts show statistically significant differences at the 0.05 level.

Table 12-56: Percent of female respondents reporting that groups are active in the village

Type of group (%)	Program area (n)						Wealth categories (n)					
	STORRE		PROGRESS		REAL		Poorest		Middle		Richest	
Religious group	14.0	*179*	13.0	*333*	12.4	*370*	6.1	*251*	14.6	*329*	20.0	*301*
Area land committee	6.8	*174*	7.2	*332*	3.7	*368*	6.6	*247*	8.2	*327*	4.5	*299*
Youth group	3.8	*178*	5.5	*332*	7.4	*365*	1.8	*249*	8.8	*328*	6.9	*297*
DRR/CCA committee	3.1	*177*	5.7	*328*	3.4	*370*	0.4 [ab]	*249*	8.4 [a]	*323*	7.8 [b]	*302*
Farmer's coops/groups/field schools	5.4	*175*	4.8	*328*	6.7	*369*	1.5	*248*	8.7	*325*	4.9	*298*
Trade or business associations	2.8	*179*	5.0	*332*	5.9	*372*	1.6	*251*	8.3	*333*	5.1	*298*
Women's group	22.8 [ab]	*181*	4.1 [a]	*326*	7.6 [b]	*356*	1.7	*244*	7.4	*321*	5.7	*297*
Village development/resilience committee	7.7	*175*	5.0	*336*	3.0	*367*	6.4	*250*	1.9 [a]	*326*	6.8 [a]	*301*
Savings / credit groups (i.e., VSLA, SILC)	40.5 [ab]	*178*	4.0 [a]	*330*	4.0 [b]	*368*	1.4 [a]	*249*	3.5 [b]	*329*	10.7 [ab]	*297*
Charitable group (helping others)	3.4	*179*	4.2	*333*	3.4	*368*	0.8	*247*	6.6	*332*	4.7	*300*
Water users · group	5.2	*177*	3.3	*336*	4.5	*370*	1.4 [a]	*249*	4.3 [a]	*332*	5.2	*301*
Political group	4.7	*177*	3.4	*331*	2.9	*368*	0.9	*247*	6.1	*328*	2.5	*300*
Livestock production groups/field schools	2.6	*180*	2.8	*325*	3.8	*369*	1.1 [a]	*247*	2.6 [b]	*328*	6.2 [ab]	*298*
Mutual Help group (burial society)	2.9	*177*	1.7	*336*	8.8	*365*	2.1	*249*	2.0	*327*	4.8	*301*
Community forest/rangeland users group	5.7	*178*	2.5	*335*	3.4	*367*	1.2 [a]	*248*	3.2 [a]	*329*	4.0	*302*
Civic group ("improving community")	3.7	*176*	1.8	*329*	2.7	*363*	0.5 [ab]	*242*	2.0 [a]	*325*	4.0 [b]	*300*
In-school, out-of-school clubs	1.8	*179*	0.2 [a]	*333*	2.4 [a]	*365*	0.5	*249*	0.8	*329*	0.1	*298*

Alphabetic superscripts show statistically significant differences at the 0.05 level.

Table 12-57: Percent of communities with participation of women/youth in community governance

Participation in community governance (%)	Program area[1] (n)					
	STORRE		PROGRESS		REAL	
% of communities with female participation in village meetings	49.3	7	18.2	7	44.2	7
% of communities with youth participation in village meetings	11.7	7	0.9	7	30.6	7
% of communities with female participation in conflict management committees	18.9	*18*	5.9	*15*	23.0	*19*

Tests for statistical significance were not conducted because the community survey sample was not powered to show such differences.
Note: The community leader survey was also weighted to the community level, matching the weights of the household survey. This table shows weighted results with unweighted n's.
[1]These findings of the community leader survey (n=60) are provided by program area to show an idea of the distribution, but sample sizes by project (n=20) are too small to warrant statistically-representative discussion of the proportional findings.

Table 12-58: Women's sole decision making by resilience capacity level

Women's decision making (sole)	Resilience capacity			
	Low	*n*	High	*n*
Minor household expenditures? (such food for daily consumption or other household needs)	46.0 [a]	*155*	20.4 [a]	*615*
Food rationing during times of stress/shocks?	41.0	*107*	24.9	*484*
Seeking medical treatment for yourself?	9.7	*132*	7.8	*575*
Spending money that you have earned?	5.3	*87*	4.3	*356*
Food and nutrition provided for yourself?	2.2	*122*	8.0	*576*
What inputs to buy for agricultural or livestock production?	2.1	*115*	1.1	*393*
Major household expenditures? (large appliances, etc.,)	1.5	*125*	2.6	*515*
Decisions on borrow money	1.4	*75*	4.2	*386*
Food and nutrition provided for your children?	1.2 [a]	*118*	7.1 [a]	*572*
Seeking medical treatment for your children?	1.1	*123*	4.2	*554*
Sale of large livestock (cattle, camel, shoats/goats) (during normal times)?	0.9	*79*	2.2	*414*
Sale of HH assets (during normal times)?	0.8	*77*	2.2	*360*
Sending /withdrawing girls to/from school?	0.6	*95*	2.6	*449*
Spending money that your spouse has earned?	0.4	*103*	1.4	*499*
How to use remittances?	0.3 [a]	*44*	8.3 [a]	*213*
Who migrates/relocates during times of stress/shocks?	0.3 [a]	*78*	2.6 [a]	*382*
Sending /withdrawing boys to/from school?	0.3 [a]	*101*	3.1 [a]	*458*
Sales of large (cattle, camel, shoats/goats) livestock during times of stress/shocks?	0.1 [a]	*67*	2.1 [a]	*380*
Decisions on savings?	0.0	*66*	2.2	*377*
Sales of HH assets during times of stress/shocks?	0.0	*69*	2.8	*334*

Alphabetic superscripts show statistically significant differences at the 0.05 level.

Table 12-59: Women's joint decision making by resilience capacity level

Women's decision making (joint)	Resilience capacity			
	Low	*n*	High	*n*
How to use remittances?	99.7 [a]	*44*	82.2 [a]	*213*
Spending money that your spouse has earned?	99.1	*103*	93.3	*499*
Decisions on savings?	99.1	*66*	93.2	*377*
Sales of HH assets during times of stress/shocks?	98.8	*69*	91.9	*334*
Food and nutrition provided for your children?	98.6 [a]	*118*	88.1 [a]	*572*
Sending /withdrawing girls to/from school?	98.5	*95*	92.5	*449*
Seeking medical treatment for your children?	98.2	*123*	92.0	*554*
Sending /withdrawing boys to/from school?	98.1	*101*	91.5	*458*
Sale of HH assets (during normal times)?	98.0	*77*	92.9	*360*
Sale of large livestock (cattle, camel, shoats/goats) (during normal times)?	97.8	*79*	92.9	*414*
Food and nutrition provided for yourself?	97.6	*122*	87.5	*576*
Decisions on borrow money	97.1	*75*	90.5	*386*
Major household expenditures? (large appliances, etc.,)	95.5	*125*	89.7	*515*
Spending money that you have earned?	94.4	*87*	90.7	*356*
What inputs to buy for agricultural or livestock production?	94.4	*115*	92.1	*393*
Sales of large (cattle, camel, shoats/goats) livestock during times of stress/shocks?	94.3	*67*	91.0	*380*
Who migrates/relocates during times of stress/shocks?	93.4	*78*	89.1	*382*
Seeking medical treatment for yourself?	89.8	*132*	88.9	*575*
Food rationing during times of stress/shocks?	58.5	*107*	71.9	*484*
Minor household expenditures? (such food for daily consumption or other household needs)	52.4 [a]	*155*	75.7 [a]	*615*

Alphabetic superscripts show statistically significant differences at the 0.05 level.

Table 12-60: Women's participation in community groups by resilience capacity level

Group participation	Resilience capacity			
	Low	*n*	High	*n*
% HH with woman that participates in at least one group	0.2 [a]	*185*	2.5 [a]	*727*
% of groups participation				
Village development/resilience committee	0.00	*184*	0.10	*710*
Farmer's coops/groups/field schools	0.00	*182*	0.15	*701*
Livestock production groups/field schools	0.00	*183*	0.00	*706*
Savings / credit groups (VSLA, SILC)	0.17	*181*	1.08	*713*
Community forest and rangeland users group	0.00	*182*	0.65	*714*
DRR/CCA committee	0.00	*182*	0.35	*714*
Water users · group	0.00	*182*	0.08	*711*
Trade or business associations	0.00	*182*	0.42	*714*
Area land committee	0.00	*183*	0.00	*715*
Charitable group (helping others)	0.00	*182*	0.38	*715*
Mutual Help group (burial society)	0.00	*184*	0.02	*716*
Civic group ("improving community")	0.00	*182*	0.02	*713*
Religious group	0.00	*181*	0.03	*722*
Political group	0.00	*182*	0.00	*717*
Women's group	0.05	*182*	0.19	*718*
Youth group	0.00	*184*	0.00	*711*
In-school, out-of-school clubs	0.00	*184*	0.00	*712*

Alphabetic superscripts show statistically significant differences at the 0.05 level.

Table 12-61: Percent of households reporting full recovery from shocks

Full recovery (%) by type of shocks[1]	Program area (n)						Wealth categories (n)					
	STORRE		PROGRESS		REAL		Poorest		Middle		Richest	
Chronic illness (e	^	*4*	48.4	*46*	^	*26*	^	*20*	^	*26*	39.3	*30*
Sharp increase in inputs/livestock or crop prices	2.9	*45*	^	*18*	^	*9*	^	*19*	^	*24*	^	*29*
Measles outbreak	^	*25*	32.0	*83*	41.1	*35*	36.3	*49*	17.9	*53*	50.8	*41*
Sharp drop in inputs/livestock or crop prices	0.0	*43*	^	*12*	^	*7*	^	*25*	^	*13*	^	*24*
Crop disease & pests	2.8 [a]	*86*	25.7 [ab]	*267*	5.5 [b]	*86*	8.3 [ab]	*79*	24.0 [a]	*140*	30.4 [b]	*220*
Cholera or diarrheal outbreaks	^	*28*	21.6	*39*	0.0	*28*	21.1	*44*	22.8	*34*	^	*17*
Late/variable rainfall	2.4 [a]	*478*	23.6 [ab]	*321*	6.6 [b]	*327*	11.7 [ab]	*401*	30.9 [a]	*394*	27.3 [b]	*329*
Drought	1.2 [ab]	*516*	18.5 [a]	*360*	8.9 [b]	*437*	3.0 [ab]	*481*	26.2 [a]	*456*	29.6 [b]	*373*
Floods/heavy rains	9.6	*70*	15.6	*142*	25.8	*133*	2.5 [ab]	*116*	25.7 [a]	*107*	38.9 [b]	*121*
Livestock disease	8.0	*286*	12.4	*130*	8.3	*163*	15.1	*184*	5.0 [a]	*200*	17.7 [a]	*194*
Un/underemployment	2.8	*305*	10.7	*406*	8.5	*437*	3.2 [ab]	*410*	10.7 [a]	*404*	22.5 [b]	*333*
Displacement of household	^	*22*	7.3 [a]	*70*	32.2 [a]	*123*	1.7 [ab]	*99*	16.3 [a]	*69*	62.9 [a]	*46*
Reduced soil productivity (soil/water degradation)	4.2	*48*	8.7	*37*	6.7	*48*	^	*27*	9.9 [a]	*36*	19.6 [a]	*70*
Food price fluctuations	6.9	*242*	8.0	*189*	12.0	*135*	1.7 [ab]	*172*	8.5 [a]	*207*	28.6 [a]	*185*
Migration of main income earner	^	*16*	^	*17*	^	*19*	^	*17*	^	*21*	^	*13*
Death or injury of main income earner	8.1	*37*	^	*29*	4.7	*51*	1.3 [ab]	*56*	2.0 [a]	*38*	^	*23*
Deforestation (from bush fires, charcoal, etc.)	3.5	*94*	^	*25*	1.4	*70*	10.8 [ab]	*49*	0.3 [a]	*60*	0.7 [b]	*79*
Military conflict	^	*2*	1.1	*45*	^	*21*	0.2	*38*	^	*23*	^	*7*
Trade disruptions	^	*28*	1.1	*69*	^	*12*	0.0 [ab]	*38*	2.2 [a]	*45*	^	*26*
Fire	^	*3*	^	*10*	^	*15*	^	*9*	^	*12*	^	*7*
Inter-village conflict from natural resource disputes	^	*4*	^	*6*	^	*3*	^	*3*	^	*7*	^	*3*
Inter-village conflict/ other non-resource disputes	^	*4*	^	*3*	^	*1*	^	*1*	^	*4*	^	*3*
Intra-village or clan conflict/ theft	^	*2*	^	*2*	^	*1*	^		^	*2*	^	*3*

[1] Includes households reporting that they experienced the shock.

Alphabetic superscripts show statistically significant differences at the 0.05 level.

Table 12-62: Average recovery time for households fully recovered

Mean recovery time (months) following shocks[1]	Program area (n)						Wealth categories (n)					
	STORRE		PROGRESS		REAL		Poorest		Middle		Richest	
Floods/heavy rains	^	*6*	9.8	*58*	8.9	*32*	^	*14*	9.8	*37*	9.6	*44*
Late/variable rainfall	^	*14*	4.6	*123*	^	*21*	1.5 [a]	*33*	4.1	*60*	8.5 [a]	*65*
Drought	^	*8*	11.9	*135*	12.3	*37*	^	*27*	8.8	*71*	15.0	*81*
Deforestation	^	*5*	^	*1*	^	*1*	^	*4*	^	*1*	^	*2*
Livestock disease	^	*23*	^	*24*	^	*12*	^	*13*	^	*15*	7.7	*31*
Crop disease & pests	^	*2*	9.2	*94*	^	*4*	^	*6*	8.2	*34*	9.7	*60*
Reduced soil productivity	^	*2*	^	*9*	^	*3*	^	*1*	^	*3*	^	*10*
Fire	^	*3*	^	*3*	^		^	*1*	^	*1*	^	*4*
Military conflict	^	*1*	^	*2*	^	*6*	^	*3*	^	*2*	^	*4*
Inter-village conflict from natural resource disputes	^	*1*	^		^		^	*1*	^		^	
Inter-village conflict/ other non-resource disputes	^	*2*	^	*1*	^	*1*	^	*1*	^	*1*	^	*2*
Intra-village or clan conflict/ theft	^	*1*	^		^		^		^	*1*	^	
Food price fluctuations	^	*14*	9.8	*53*	^	*14*	^	*12*	^	*26*	9.7	*43*
Trade disruptions	^	*3*	^	*2*	^	*4*	^	*2*	^	*3*	^	*4*
Sharp increase in inputs/livestock or crop prices	^	*1*	^	*8*	^	*2*	^	*2*	^	*4*	^	*5*
Sharp drop in inputs/livestock or crop prices	^	*5*	^	*1*	^		^	*1*	^	*3*	^	*2*
Measles outbreak	^	*14*	6.5	*38*	^	*15*	^	*24*	^	*21*	^	*22*
Cholera or diarrheal outbreaks	^	*7*	^	*8*	^	*8*	^	*10*	^	*9*	^	*4*
Chronic illness	^	*2*	^	*21*	^	*15*	^	*12*	^	*14*	^	*12*
Migration of main income earner	^	*2*	^	*3*	^	*2*	^	*2*	^	*3*	^	*2*
Displacement of household	^	*15*	9.8	*38*	^		^	*12*	^	*14*	^	*27*
Unemployment/ underemployment	^	*8*	7.9	*95*	10.6	*32*	^	*25*	6.9	*47*	9.2	*63*
Death or injury of main income earner	^	*3*	^	*6*	^	*3*	^	*4*	^	*2*	^	*6*

[1] Includes households reporting that they fully recovered.

Alphabetic superscripts show statistically significant differences at the 0.05 level.

Table 12-63: Household dietary diversity

HDDS	Program area (n)						Wealth categories (n)					
	STORRE		PROGRESS		REAL		Poorest		Middle		Richest	
Dietary diversity score	5.7 [a]	*662*	6.4 [b]	*629*	8.0 [ab]	*670*	6.2 [ab]	*657*	6.6 [a]	*646*	7.2 [b]	*655*
Food groups (%)												
Grains	96.0	*671*	92.8	*662*	93.2	*673*	92.4	*667*	94.3	*667*	92.2	*668*
Condiments, coffee or tea	89.6	*670*	83.0 [a]	*655*	95.5 [a]	*672*	91.2 [ab]	*667*	84.6 [a]	*661*	76.9 [b]	*665*
Vegetables	84.2	*672*	70.5	*661*	79.8	*673*	81.4 [a]	*667*	61.7 [a]	*667*	71.5	*668*
Meats	49.8 [a]	*671*	69.2 [a]	*661*	63.6	*673*	68.3	*667*	72.6	*666*	62.4	*668*
Milk products	33.6 [ab]	*671*	64.1 [a]	*661*	69.6 [b]	*672*	56.8 [ab]	*667*	67.8 [a]	*666*	68.9 [b]	*667*
Legumes or nuts	24.7 [a]	*670*	54.7 [a]	*651*	77.8 [a]	*673*	51.5 [a]	*666*	65.4 [a]	*661*	54.9	*663*
Starch/tubers	42.8 [a]	*670*	50.9 [b]	*661*	73.0 [ab]	*673*	42.7 [ab]	*668*	57.2 [a]	*664*	64.0 [b]	*668*
Oil/fats	56.9	*672*	49.6	*661*	70.9	*673*	44.5 [a]	*668*	46.7	*666*	69.4 [a]	*668*
Sugars	67.2 [a]	*672*	37.1 [ab]	*660*	69.9 [b]	*673*	36.7	*668*	40.8	*665*	51.2	*668*
Fruits	8.2 [a]	*671*	30.2 [b]	*658*	60.8 [ab]	*673*	26.0 [a]	*665*	30.2	*665*	47.2 [a]	*668*
Eggs	5.6 [ab]	*671*	32.0 [a]	*659*	35.8 [b]	*673*	21.3 [a]	*666*	30.3 [a]	*666*	46.7 [a]	*667*
Fish	8.8	*672*	8.3	*658*	12.3	*672*	6.1 [a]	*667*	7.6	*667*	13.9 [a]	*665*

Alphabetic superscripts show statistically significant differences at the 0.05 level.

Table 12-64: Percent of households experiencing moderate to severe hunger

Hunger last 30 days (%)	Program area (n)						Wealth categories (n)					
	STORRE		PROGRESS		REAL		Poorest		Middle		Richest	
Households with moderate to severe hunger	41.8 [ab]	*666*	67.8 [a]	*652*	64.8 [b]	*672*	86.7 [a]	*663*	66.5 [a]	*661*	40.8 [a]	*663*

Alphabetic superscripts show statistically significant differences at the 0.05 level.

Table 12-65: Percent of households using food insecurity coping strategies

Food insecurity coping strategies	Program area (n)						Wealth categories (n)					
	STORRE		PROGRESS		REAL		Poorest		Middle		Richest	
Reduce number of meals eaten in a day	53.0 [a]	*671*	75.1	*663*	86.9 [a]	*673*	88.7 [ab]	*669*	76.5 [a]	*668*	59.3 [b]	*666*
Rely on less preferred and less expensive foods	56.8	*672*	77.1	*663*	70.1	*673*	90.6 [a]	*669*	72.4 [a]	*667*	59.8 [a]	*668*
Limit portion size at mealtimes	53.3 [a]	*671*	73.4	*661*	75.4 [a]	*673*	83.9 [ab]	*668*	73.7 [a]	*667*	58.2 [a]	*666*
Reduce adult consumption so children can eat more	36.0 [ab]	*671*	72.3 [a]	*664*	58.2 [b]	*673*	84.4 [ab]	*669*	69.1 [a]	*667*	50.1 [b]	*668*
Borrow food, or rely on help from a friend/relative	74.5 [ab]	*672*	55.6 [a]	*664*	50.7 [b]	*673*	68.4 [ab]	*669*	46.5 [a]	*668*	48.4 [b]	*668*
Skip entire days without eating	28.1	*672*	58.7	*664*	37.1	*672*	76.5 [a]	*668*	54.5 [a]	*668*	27.3 [a]	*668*
Send household members to eat elsewhere	19.5 [a]	*671*	50.5 [a]	*664*	30.4	*673*	65.0 [ab]	*668*	44.7 [a]	*668*	25.8 [b]	*668*
Purchase food on credit	46.8	*672*	43.9	*664*	34.4	*673*	49.3	*669*	37.9	*668*	39.3	*668*
Rely on begging for food	3.1 [ab]	*671*	37.8 [a]	*664*	16.0 [b]	*673*	64.4 [ab]	*669*	19.0 [a]	*667*	10.3 [b]	*668*
Consume seed stock held for next season	9.8 [a]	*672*	20.1 [a]	*661*	15.3	*673*	19.1	*668*	16.0	*666*	22.6	*668*
Gather wild food, hunt, or harvest immature crops	4.6 [ab]	*672*	18.8 [a]	*664*	12.4 [b]	*672*	12.7 [a]	*669*	16.1	*667*	25.4 [a]	*668*
Feed working members of HH at the expense of non-working members	15.6	*671*	14.3	*664*	10.3	*673*	10.7 [a]	*669*	10.1 [b]	*667*	21.7 [ab]	*668*

Alphabetic superscripts show statistically significant differences at the 0.05 level.

Table 12-66: Average household food access score

Food security	Program area						Wealth categories					
	STORRE		PROGRESS		REAL		Poorest		Middle		Richest	
Mean HFIAS (reverse-coded)	18.4 [ab]	*658*	11.1 [a]	*645*	15.1 [b]	*672*	9.0 [a]	*658*	12.9 [a]	*658*	18.6 [a]	*656*

Alphabetic superscripts show statistically significant differences at the 0.05 level.

Chapter 10 Tables

Table 12-67: Regression results exploring relationships between food security, shocks and resilience capacities

D.V. food security; tobit estimator	Program-area controls				Village fixed effects			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Overall index	0.078**				0.095*			
Absorptive capacity		0.011				0.080**		
Adaptive capacity			0.193***				0.088*	
Transformative capacity				0.039*				N/A
# of shocks (in the past 5 yrs.)	-0.810***	-0.862***	-0.873***	-0.834***	-0.541***	-0.526***	-0.541***	
Household size	0.089	0.089	-0.044	0.086	-0.090	-0.048	-0.092	
Household size-squared	-0.002	-0.003	0.004	-0.002	0.002	0.000	0.002	
Percent females 0-16a/								
Females 16-30	-0.005	-0.012	-0.010	-0.010	-0.001	-0.001	-0.001	
Females 30 plus	0.008	0.002	0.002	0.004	0.016	0.016	0.016	
Males 0-16	0.000	-0.002	0.003	-0.001	0.000	-0.001	0.000	
Males 16-30	0.008	0.012	0.008	0.009	-0.009	-0.008	-0.009	
Males 30 plus	-0.018	-0.019	-0.022	-0.019	-0.032	-0.030	-0.032	
Education: None a/								
Primary	-1.132	-0.609	-1.915*	-0.603	-0.261	0.305	-0.289	
Secondary	3.637***	3.970***	2.821**	3.963***	4.295***	4.814***	4.254***	
Female-adult-only HH	-0.863	-0.875	-0.832	-0.864	-0.896	-0.889	-0.885	
Livelihood: Farming a/								
Livestock production/sales	-2.203	-1.435	-1.658	-1.722	1.105	1.131	1.171	
Wage labor	-2.843*	-2.841*	-2.800*	-2.847*	0.142	0.114	0.168	
Salaried employment	0.170	0.150	0.246	-0.011	3.027*	2.990*	3.027*	
Self-employment	-1.572	-1.576	-1.337	-1.590	1.056	0.937	1.085	
Other	-2.913*	-3.101**	-2.785*	-3.026**	0.178	0.087	0.202	
Wealth category: poor								
Middle	1.243	1.781*	1.151	1.605*	0.873	1.075	0.849	
Rich	4.240***	5.277***	3.719***	5.055***	2.894***	3.368***	2.858***	
Locality type: Urban a/								
Peri-urban	-4.070***	-3.983***	-4.620***	-3.954***				
Rural	-2.554***	-2.362***	-2.427***	-1.817**				
Program area: STORRE a/								
PROGRESS	-3.491***	-3.708***	-2.925**	-3.433***				
REAL	-6.383***	-5.817***	-5.892***	-6.510***				
Number of observations	*1859*	*1859*	*1861*	*1861*	*1875*	*1875*	*1877*	*1877*

*: p<.0.05; **:p<0.01;***:p<0.001

Table 12-68: Regression results exploring relationships between food security and components of absorptive capacity

D.V. food security; tobit estimator	Model specifications, w/village fixed-effects					
	(1)	(2)	(3)	(4)	(5)	(6)
Bonding social capital index (0-6)	-0.574*					
Livestock asset index (TLU; 0-76)		0.271***				
HH has savings (0-1)			4.706**			
Informal safety network score (0-8)				-0.343		
Disaster planning and mitigation score (-.3 to 4)1					-0.030	
Conflict mitigation committee (0-1)						2.068
# of shocks (in the past 5 yrs.)	-0.559***	-0.554**	-0.555**	-0.551**	-0.552**	-0.544**
Household size	0.112	0.098	0.140	0.134	0.133	0.136
Percent females 30 plus a/						
Females 0-16	0.001	0.006	0.003	0.003	0.003	0.003
Females 16-30	-0.001	0.000	0.000	0.000	0.000	-0.001
Males 0-16	-0.010	-0.001	-0.007	-0.004	-0.004	-0.004
Males 16-30	0.005	0.010	0.010	0.010	0.011	0.011
Males 30 plus	-0.009	-0.009	-0.008	-0.008	-0.007	-0.008
Female-adult-only HH	0.793	0.821	1.018	0.888	0.904	0.884
Program area: STORRE a/						
PROGRESS	1.811**	4.135***	0.596**	1.050*	0.707***	0.700***
REAL	-11.38***	-8.643***	-11.29***	-11.32***	-11.33***	-11.32***
Number of observations	*1473*	*1473*	*1473*	*1473*	*1473*	*1473*

*: p<.0.05; **:p<0.01;***:p<0.001

Table 12-69: Regression results exploring relationships between food security and components of adaptive capacity

D.V. food security; tobit estimator	Model specifications, w/village fixed-effects						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Bridging social capital score (0-12)	0.053						
Linking social capital score (0-3)		0.321					
Aspirations index (-5 to 5)			-2.104**				
Livelihood diversity score (1-3)				1.194**			
Asset index (0-100)					0.474		
Human capital index (-1 to 1)1						-1.822**	
Access to information score (0-8)							1.665*
# of shocks (in the past 5 yrs.)	-2.029	-2.060	-1.724	-2.037	-1.985	-1.778	-1.558
Household size	-0.345	-0.330	0.107	-0.406	-0.354	-0.372	-0.779
Percent females 30 plus a/							
Females 0-16	0.273	0.271	0.411	0.085	0.307	0.366	0.247
Females 16-30	-0.253	-0.249	-0.256	-0.168	-0.291	-0.237	-0.449
Males 0-16	0.259	0.233	0.355	0.216	0.222	0.462	0.162
Males 16-30	0.278	0.238	0.465	0.053	0.239	0.335	-0.070
Males 30 plus	0.137	0.116	0.395	0.126	0.151	0.197	-0.037
Female-adult-only HH	-0.343	-0.354	-0.416	-0.363	-0.338	-0.303	-0.559
Program area: STORRE a/							
PROGRESS	3.973***	4.016***	3.671***	4.136***	4.128***	3.929***	3.614***
REAL	2.086	2.063	1.865	2.081*	2.177*	1.988	1.847
Number of observations	*1473*	*1473*	*1325*	*1473*	*1473*	*1473*	*1470*

*: p<.0.05; **:p<0.01;***:p<0.001

Table 12-70: Regression results exploring relationships between food security and components of transformative capacity

D.V. food security; tobit estimator	Model specifications					
	(1)	(2)	(3)	(4)	(5)	(6)
Bridging social capital score (0-12)	-0.038					
Linking social capital score (0-3)		3.443***				
Formal safety networks score (0-2)			-1.404*			
Access to markets score (0-6)				0.692*		
Access to services score (0-3)					0.682*	
Access to infrastructure score (0-3)						4.076***
# of shocks (in the past 5 yrs.)	-1.371***	-1.377***	-1.346***	-1.308***	-1.351***	-1.146***
Household size	0.170	0.179	0.165	0.179	0.206	0.145
Percent females 30 plus a/						
Females 0-16	-0.009	-0.009	-0.009	-0.012	-0.016	-0.012
Females 16-30	-0.011	-0.010	-0.011	-0.010	-0.011	-0.010
Males 0-16	-0.022	-0.021	-0.021	-0.025	-0.025	-0.021
Males 16-30	0.028	0.026	0.028	0.021	0.016	0.020
Males 30 plus	-0.021	-0.024	-0.021	-0.027	-0.025	-0.024
Female-adult-only HH	-0.686	-0.772	-0.720	-0.723	-0.531	-0.661
Locality type: Rural a/						
Urban	-3.151***	-3.127***	-3.393***	-3.006***	-3.387***	-4.750***
Program area: STORRE a/						
PROGRESS	-2.660***	-2.520***	-2.956***	-4.050***	-2.220***	-1.339*
REAL	-2.942***	-3.093***	-3.022***	-4.836***	-3.375***	-3.121***
Number of observations	*1877*	*1877*	*1877*	*1877*	*1877*	*1877*

*: p<.0.05; **:p<0.01;***:p<0.001

Table 12-71: Regression results exploring relationships between recovery, shocks and resilience capacities

D.V. Recovered from low rainfall; probit estimator	Model specifications			
	(1)	(2)	(3)	(4)
Overall index	0.135			
Absorptive capacity		-1.661		
Adaptive capacity			0.586	
Transformative capacity				3.370*
# of shocks (in the past 5 yrs.)	-1.978	-2.707	-1.886	-1.177
Household size	-0.341	-0.605	-0.479	0.011
Percent females 30 plus a/				
Females 0-16	0.253	0.510	0.174	-0.200
Females 16-30	-0.259	-0.242	-0.321	-0.312
Males 0-16	0.240	0.436	0.224	-0.115
Males 16-30	0.240	0.595	0.103	-0.378
Males 30 plus	0.125	0.237	0.085	0.031
Female-adult-only HH	-0.348	-0.335	-0.375	-0.197
Locality type: Rural a/				
Urban	-1.041	-1.450	-1.098	-1.824
Program area: STORRE a/				
PROGRESS	3.975***	4.068***	4.014***	4.701**
REAL	2.074	2.277*	2.084*	1.812
Number of observations	*1471*	*1471*	*1473*	*1473*

*: p<.0.05; **:p<0.01;***:p<0.001

Table 12-72: Regression results exploring relationships between recovery, shocks and components of absorptive capacity

D.V. Recovered from low rainfall; probit estimator	Model specifications					
	(1)	(2)	(3)	(4)	(5)	(6)
Bonding social capital index (0-6)	0.626					
Livestock asset index (TLU; 0-76)		0.151				
HH has savings (0-1)			-1.062**			
Informal safety network score (0-8)				-0.725		
Disaster planning and mitigation score (-.3 to 4)					-1.787*	
Conflict mitigation committee (0-1)						-0.636
# of shocks (in the past 5 yrs.)	-1.995	-2.037	-2.037	-2.085	-2.618	-2.305
Household size	-0.319	-0.353	-0.374	-0.471	-0.444	-0.439
Percent females 30 plus a/						
Females 0-16	0.195	0.264	0.305	0.417	0.303	0.385
Females 16-30	-0.242	-0.257	-0.234	-0.243	-0.326	-0.226
Males 0-16	0.240	0.243	0.342	0.344	0.327	0.333
Males 16-30	0.245	0.252	0.298	0.416	0.521	0.372
Males 30 plus	0.113	0.111	0.166	0.209	0.140	0.178
Female-adult-only HH	-0.317	-0.364	-0.333	-0.321	-0.414	-0.322
Locality type: Rural a/						
Urban	-0.910	-1.059	-1.066	-1.103	-1.097	-1.257
Program area: STORRE a/						
PROGRESS	3.976***	4.061***	3.935***	3.575**	4.446***	4.065***
REAL	2.089*	2.140*	2.061	1.944	2.217*	2.235*
Number of observations	*1473*	*1473*	*1473*	*1473*	*1473*	*1473*

*: p<.0.05; **:p<0.01;***:p<0.001

Table 12-73: Regression results exploring relationships between recovery, shocks and components of adaptive capacity

D.V. Recovered from low rainfall; probit estimator	Model specifications						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Bridging social capital score (0-12)	0.053						
Linking social capital score (0-3)		0.321					
Livelihood diversity score (1-3)			-2.104**				
Aspirations index (-5 to 5)				1.194**			
Human capital index (-1 to 1)1					0.474		
Access to information score (0-8)						-1.822**	
Asset index (0-100)							1.665*
# of shocks (in the past 5 yrs.)	-2.029	-2.060	-1.724	-2.037	-1.985	-1.778	-1.558
Household size	-0.345	-0.330	0.107	-0.406	-0.354	-0.372	-0.779
Percent females 30 plus a/							
Females 0-16	0.273	0.271	0.411	0.085	0.307	0.366	0.247
Females 16-30	-0.253	-0.249	-0.256	-0.168	-0.291	-0.237	-0.449
Males 0-16	0.259	0.233	0.355	0.216	0.222	0.462	0.162
Males 16-30	0.278	0.238	0.465	0.053	0.239	0.335	-0.070
Males 30 plus	0.137	0.116	0.395	0.126	0.151	0.197	-0.037
Female-adult-only HH	-0.343	-0.354	-0.416	-0.363	-0.338	-0.303	-0.559
Locality type: Rural a/							
Urban	-1.040	-1.036	-0.697	-1.164	-1.116	-0.897	-0.728
Program area: STORRE a/							
PROGRESS	3.973***	4.016***	3.671***	4.136***	4.128***	3.929***	3.614***
REAL	2.086	2.063	1.865	2.081*	2.177*	1.988	1.847
Number of observations	*1473*	*1473*	*1325*	*1473*	*1473*	*1473*	*1470*

*: p<.0.05; **:p<0.01;***:p<0.001

Table 12-74: Regression results exploring relationships between recovery, shocks and components of transformative capacity

D.V. Recovered from low rainfall; probit estimator	Model specifications					
	(1)	(2)	(3)	(4)	(5)	(6)
Bridging social capital score (0-12)	0.053					
Linking social capital score (0-3)		0.321				
Formal safety networks score (0-2)			-0.410			
Access to markets score (0-6)				4.495*		
Access to services score (0-3)					0.858	
Access to infrastructure score (0-3)						3.669***
# of shocks (in the past 5 yrs.)	-2.029	-2.060	-2.010	-0.967	-1.896	-0.790
Household size	-0.345	-0.330	-0.360	0.371	-0.212	-0.161
Percent females 30 plus a/						
Females 0-16	0.259	0.233	0.269	-0.273	0.106	0.169
Females 16-30	0.278	0.238	0.294	-0.162	0.026	-0.044
Males 0-16	0.137	0.116	0.142	-0.131	0.077	0.206
Males 16-30	0.273	0.271	0.294	-0.177	0.102	0.192
Males 30 plus	-0.253	-0.249	-0.250	-0.139	-0.291	-0.288
Female-adult-only HH	-0.343	-0.354	-0.345	-0.167	-0.354	-0.182
Locality type: Rural a/						
Urban	-1.040	-1.036	-1.076	-0.786	-1.226	-3.211*
Program area: STORRE a/						
PROGRESS	3.973***	4.016***	3.799***	3.665*	4.111***	5.740**
REAL	2.086	2.063	2.018*	1.310	1.979	3.303*
Number of observations	*1473*	*1473*	*1325*	*1473*	*1473*	*1473*

*: p<.0.05; **:p<0.01;***:p<0.001

Appendix 4: Summary of projects and implementation status

This appendix provides a summary table for each project showing overall goals and purposes and the implementation status of activities at the time of data collection.

Table 12-75: CARE project status update, January-March 2016

Planned beneficiaries:	25,440 beneficiaries
Duration:	3 years
Region:	Sanaag
Districts:	Erigavo and Badhan
Villages:	20
OBJECTIVES, RESULTS AND ACTIVITIES:	
Goal: Inclusive resilience strengthened in households and communities in Sanaag region	
Purpose 1: Households adapt livelihoods and practices to adjust to shocks, stresses and opportunities	
Sub-purpose category	**Implementation status**
Livelihoods diversity	Extension agents facilitate gender-sensitive pastoralist field schools (PFS) and extension services and promote improved pastoralist practices. Status: *Activities in progress.* An agricultural tools assessment has identified appropriate tools to be distributed to one hundred agro-pastoralists as part of the planned Agro-Pastoral Field Schools (APFS).
Household assets	Households protect and increase savings and assets through promotion of village savings and loans associations (VSLA) participation and avoiding distress sales. Status: *Activities in progress.* 42 VSLA groups have been established and trained; 40 of these groups have participated in monitoring exercises, while two groups in drought-affected Dhoob village were unavailable to participate. Monitoring exercises included on-the-job training in bookkeeping.
Household adoption of health behaviors	Households and community members build knowledge regarding health, hygiene, and nutrition practices and include both men and women in health-related household decision-making. Status: *Activities in progress.* The project has facilitated the provision of household nutrition and hygiene messages to VSLA members, community health workers (CHWs), and traditional birth attendants in two districts.
Purpose 2: Gender responsive, inclusive community governance and institutions function to strengthen resilience and reduce risk	
Community-provided safety nets	Village councils (VCs) develop cash-for-work (CFW) activities to support vulnerable households during periods of stress, in line with the Community Action Plan (CAP).

Table 12-75: CARE project status update, January-March 2016

	Status: *Activities in progress.* 180 families in five villages have earned an average of $140 USD during the reporting period.
Community infrastructure and natural resources	Develop or rehabilitate community assets, including infrastructure, water resources, and public-private partnerships (PPP). Status: *Activities in progress.* As part of the CFW activities listed above, 180 families have worked to rehabilitate communal water sources for human, agriculture, and animal use in five villages. Additionally, a PPP assessment undertaken by CARE identified two villages in which a PPP arrangement to manage boreholes can be piloted.
Community Action Plans (CAPs)	Communities are on schedule and equipped with the resources to implement gender-inclusive CAPs to support resilience and risk reduction. Status: *Activities in progress.* CAPs were developed during the previously implemented Climate Vulnerability and Capacities (CVCA) exercise and reviewed and validated at the beginning of PMERL rollout (see below).
Village councils	Existing Village Councils (VCs) are strengthened and inclusive of women, youth, and other marginalized groups. VC members are trained in disaster preparedness and peace promotion. Status: *Activities in progress.* A two-day meeting in Erigavo allowed VCs to meet with district authorities, government offices, and Somalia's National Environment Research and Disasters Preparedness Authority (NERAD) to strengthen communication and share early warning (EW) information.
Participatory Monitoring, Evaluation, Reflection, and Learning (PMERL) participation	Equal participation of men and women in the PMERL process to involve all sections of the community in building resilience. Identify champions of positive change to engage community members around resilience issues. Status: *Activities in progress.* The PMERL process has been facilitated in 19 communities, beginning with the review and validation of CAPs which were developed during a prior Climate Vulnerability and Capacity Analysis (CVCA) exercise. Men and women participated in community mobilization, review and validation of CAPs, stakeholder analysis, and development of PMERL plans.
Community Early Warning System (CEWS)	EW committees formed and members trained in CEWS to form functional CEWS integrated with regional and national EWS. Status: *Activities in progress.* As stated above, EWS training among VCs, district authorities, government offices, and NERAD during a two-day workshop in Erigavo.
Purpose 3: Robust learning valued and adopted by household and community governance structures	
Sharing of raw information between CARE and Tulane University	PMERL reports and community data produced by Tulane and received by CARE, SomReP, and other relevant actors. Status: *Activities not started.*
Analysis of information	Reflection sessions, reviews, and reports led by Tulane or CARE shared with communities and other stakeholders. Status: *Activities in progress.* As stated above, CVCA and CAP processes have been reviewed and validated with village committees as part of the PMERL process in 19 villages.

Table 12-75: CARE project status update, January-March 2016

Sharing knowledge	Studies, summaries, exchange visit reports, and best practices shared with communities and stakeholders. Status: *Activities in progress.* CARE engaged Tulane and an experienced consultant to conduct three-day PMERL training for CARE and partner staff.
Adaptive interventions and systems	Interventions and policies developed or modified as a result of learning. Status: *Activities in progress.* A one-day workshop in Nairobi among CARE, Tulane, USAID and other stakeholders provided an opportunity to review and reflect upon the CVCA previously implemented in 20 communities in order to discuss resilience programming and strategies based on the results of the analysis.

Sources: (1) CARE Somalia. 2014. Somalia Towards Reaching Resilience Project. Approved APS application submitted to USAID/OFDA, in collaboration with Tulane University. 9 July. (2) Information regarding current status of activities is reported according to USAID and CARE Somalia. 2016. STORRE Project Quarterly Report, Reporting Period: January 2016 – March 31 2016.

Table 12-76: CRS project status update, January-March 2016

Planned beneficiaries:	96,000 beneficiaries
Duration/start date:	3 years
Districts by region:	Afgooye district of Lower Shabelle region; Baidoa district of Bay region; Belet Xawa district of Gedo region
Villages:	33
OBJECTIVES, RESULTS AND ACTIVITIES:	
Goal: Increased resilience of 16,000 Somali households and target communities to recurrent shocks in Belet Hawa, Baidoa and Afgooye	
Purpose 1: Increased institutional capacity of target communities to adapt to shocks and stresses	
Effective implementation of planned risk management and contingency plan activities	Development and functionality of disaster risk reduction (DRR) and contingency plans and community resilience committees (RCs), as well as increased access to resources for prioritized planned activities. Status: *Activities in progress.* Six Participatory Disaster Risk Assessments (PDRAs) conducted in target communities; six RCs formed; six community-managed DRR plans developed; 100 RC members trained in Resilience Leadership in two sites; and eight innovation grants implemented for prioritized CM-DRR activities.
Purpose 2: Increased capacity of male and female members of 16,000 households to adapt to economic, nutrition, ecological and social shocks	
Diversified livelihood options and productive assets	Increased access to savings and loans, especially through SILC groups Status: *Activities in progress.* SILC groups formed in all project areas.
Improved nutrition practices	Increase knowledge of communities and households on Essential Nutrition Actions (ENA).

Table 12-76: CRS project status update, January-March 2016

	Status: *Activities in progress.* Mother to Mother support groups formed; community members trained in ENA and Essential Hygiene Action (EHA) messages; vegetable gardens established; cooking demonstrations and ENA/EHA community outreach sessions conducted.
Increased sustainable Natural Resource Management (NRM) practices	Farmers in target communities are trained in NRM knowledge and skills. Status: *Activities in progress.* Farmers trained in sustainable NRM practices.
Increased peace and social cohesion	Increased awareness of communities and stakeholders on social cohesion, conflict prevention, protection and sexual and gender-based violence (SGBV) Status: *Activities in progress.* Community members trained in protection and conflict prevention/mitigation.
Purpose 3: Enhanced resilience learning of communities, implementers, USAID and others	
Sharing of resilience learning between stakeholders	Appropriate resilience models and pathways developed based on the identification and prioritization of context-specific resilience dimensions. Status: *Activities in progress.* Three district-level context-specific resilience frameworks created with resilience intervention pathways; Year 1 resilience framework validated with additional primary data collection.
Decision-making and project implementation continually informed by lessons learned	Community knowledge management (KM) system developed and linked with other partners. Status: *Activities not reported.*

Sources: (1) CRS USCCB. 2014. Program to Enhance Resilience in Somalia (PROGRESS). Approved APS application submitted to USAID/OFDA. 10 July. (2) USAID and CRS Somalia. 2016. PROGRESS Quarterly Report, Reporting Period: January – March 2016.

Table 12-77: WV project status update, January-March 2016

Planned beneficiaries, by HH:	23,076 beneficiaries
Duration/start date:	3 years
Region:	Gedo
Districts:	Luuq
Villages:	14 (9 riverine agro-pastoral, 3 pastoral, 1 IDP camp, 1 peri-urban host community)
OBJECTIVES, RESULTS AND ACTIVITIES:	
Goal: Increased resilience of Luuq households and communities to recurrent shocks	
Purpose 1: Households and communities function to actively manage vulnerability, and risk to shocks and stresses	

Table 12-77: WV project status update, January-March 2016

Communities increase capacity to mitigate against risk	Increased participation, knowledge, capacity, and communication among community committees, as well as reduced inter-community conflict over natural resources. Status: *Activities in progress.* Formation and meetings of Luuq Business Promotion Network (LBPN), working to link Luuq market to seed market system and manage livestock marketing yard. Natural resource management (NRM) inter-community dialog held in two locations.
Improved preparedness to respond to shocks	Communities and households act to strengthen EWS in order to increase preparedness to shocks and stresses, in addition to improving and preserving resources during shocks. Status: *Activities in progress.* Refresher training provided to EWC and Village Development Committee (VDC) members from twelve sites to strengthen knowledge of early warning indicators and risk triggers.
Purpose 2: Increased human, ecological and economic well-being of households and communities in Luuq	
Improved health	Increased knowledge, access, and consumption of diverse and nutritious foods. Status: *Activities in progress.* Women's groups in the 14 project villages have received tools and seeds to begin kitchen gardens. Improved household and community health, including maternal and child health and nutrition (MCHN), healthcare services, and reduced gender-based violence (GBV) and conflict. Status: *Activities in progress.* Continuous health and nutrition training sessions facilitated by Community Health Promoters (CHPs) targeting mothers and women of childbearing age in twelve villages; building capacity of CHPs to deliver services, enhance screening of malnourished children, and refer acutely malnourished children for supplementary feeding; refresher training provided to CHPs and WASH committees in all 14 target villages to build capacity in behavior change communication (BCC); nomination of 42 women champions by CHPs to support community mobilization and campaigns against GBV; peace-building soccer tournament held among four communities. Improved hygiene behavior, WASH practices and access to improved water source. Status: *Activities in progress.* Twelve villages targeted for Community Led Total Sanitation (CLTS) to increase knowledge of hygiene and sanitation and begin constructing pit latrines; rehabilitation of 3 shallow wells to date.
Improved livelihoods	Improve, maintain, and rehabilitate community and household assets, improve management practices, and increase the adoption of diversified, shock-resistant livelihood practices, including the production of marketable agricultural products, in order to increase household income. Status: *Activities in progress*. Eight communities identified for rehabilitation of range and grazing lands; participation of 280 beneficiaries in CFW activities for rangeland rehabilitation; Farmer Field Schools (FFSs) formed in nine villages to share information and establish demonstration plots; irrigation infrastructure improved in one village; tools for construction or rehabilitation of water infrastructures, rangelands and irrigation canals distributed to 4 villages; 26 savings groups established to date.
Purpose 3: Robust learning by communities, implementers, USAID and others.	

Table 12-77: WV project status update, January-March 2016

Increased resilient behaviors among households and community governance structures	New knowledge utilized to adapt community resiliency plans, including those implemented by VDCs. Status: *Activities in progress.* Community feedback documented regarding numerous project activities; several key lessons identified, including (but not limited to) the benefits of reducing the amount of time women spend fetching water, providing communities with sufficient information to solve issues independently, and linking REAL activities with other activities in the area.
Research applied to adaptive project management	Timely and relevant project research and lessons learned, disseminated in scientific and practice communities, and informing appropriate modifications to project implementation. Status: *Activities in progress.* Development and revision of summaries/overviews of research plans by REAL and Tulane; development and revision of assessment questionnaire and data management plan regarding rapid seed system and agro-ecological system security; operational research on market systems, including livestock value chains, which is responsive to emergent knowledge based on lessons learned.

Sources: (1) World Vision. 2014. Resilience and Economic Activity in Luuq (REAL) Project. Approved APS application submitted to USAID/OFDA, in collaboration with Tulane University and SomReP. 10 July. (2) USAID and World Vision. 2016. REAL Quarter 6 Report. Reporting period: 01 January 2016 – 31 March 2016.

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