



FEED THE FUTURE

The U.S. Government's Global Hunger & Food Security Initiative

Feed the Future Ethiopia Livelihoods for Resilience (L4R) Learning Activity

Impact Evaluation Baseline Report

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LIST OF ACRONYMS

AFDM	African Flood and Drought Monitoring
AGRA	Alliance for a Green Revolution in Africa
ASE	Agri-Service Ethiopia
CSI	Coping Strategies Index
C4R	Center for Resilience
DFSA	Development Food Security Activity
ETB	Ethiopian ETB
EWS	Early Warning Information Systems
FEMA	Farmers Economic and Marketing Association
FGD	Focus Group Discussion
FIES	Food Insecurity Experience Scale
FTF	Feed the Future
GoE	Government of Ethiopia
GRAD	Graduation with Resilience to Achieve Sustainable Development
HABP	Household Asset Building Program
HDSS	Household Dietary Diversity Score
IE	Impact Evaluation
IGA	Income Generating Activity
KII	Key Informant Interview
KM	Kilometer
L4R	Livelihoods for Resilience
MCS	Ethiopian Catholic Church Social and Development Commission of Meki
MFI	Microfinance institution
NGO	Non-governmental organization
ORDA	Organization for Rehabilitation and Development in Amhara
PDS	Permanent Direct Support
PLW	Pregnant and Lactating Women
PPS	Probability proportional to size
PSM	Propensity score method
PSNP	Productive Safety Net Programme
PWS	Public Works Support
REST	Relief Society of Tigray
SNNPR	Southern Nations, Nationalities, and Peoples' Region
TANGO	Technical Assistance to NGOs
USAID	United States Agency for International Development
VESA	Village Economic and Social Associations
VSLA	Village Savings and Loan Association

EXECUTIVE SUMMARY

Purpose of the baseline study and study questions

This report presents the baseline resilience analysis of the USAID Feed the Future (FTF) Livelihoods for Resilience (L4R) activity in Ethiopia. The overarching goal of L4R is to increase economic growth and resilience in Ethiopia by enhancing livelihood opportunities for chronically food insecure households in targeted woredas.

The objective of this report is to provide insight into the extent to which L4R activities improve key household resilience outcomes and strengthen resilience capacities of food insecure and vulnerable households in the project areas. The impact evaluation (IE) baseline study provides estimates against which to monitor and assess the progress and effectiveness of L4R activities during implementation and after the activity is completed. Given that the endline of the IE will occur one year after the L4R activities have ended, the final results will also be able to measure the sustainability of the project's impact.

The L4R impact evaluation seeks to answer eight research questions. This baseline study gathers data that answers some of the research questions now; other questions will be addressed in subsequent recurrent monitoring surveys and the endline report.

Project background

The five-year activity is being implemented in targeted woredas in Amhara, Oromia, Tigray, and Southern Nations, Nationalities, and Peoples' Region (SNNPR). The program seeks to address the root causes of global hunger by sustainably increasing agricultural productivity, supporting and facilitating access to markets, and increasing incomes for the rural poor so they can meet their food and other needs, including reducing malnutrition.

Evaluation design / Methods

The baseline study has a qualitative component and two quantitative components—a household and a community survey. Surveyed households were spread across 34 L4R woredas and 23 non-L4R woredas in each of the four program areas. One challenge encountered during field work was the issue of having fewer number of PSNP households than expected in some of the clusters (all except one in Oromia).

The timing of the survey occurred one and half years into the L4R activity programming. As such, the results presented in this report are already showing signs of improvement in the L4R woredas. The imbalance at baseline will be taken into account in the final analysis using propensity score methods (PSM) and other regression techniques; the sample has been designed to accommodate PSM by oversampling in the non-L4R woredas.

Findings

Household demographics: Livelihood diversity, which is thought to bolster households' resilience to shocks, is severely limited as households are engaged in an average of three activities across all program areas. These consist primarily on widespread reliance on safety nets followed by agricultural and livestock production which are vulnerable to climate shocks. Only 12 percent of households or fewer are employed in wage or salaried labor of any kind.

About one-quarter of the sampled households has an additional source of income besides just relying on agricultural and/or livestock production, making them less vulnerable to future shocks/stressors compared to those who rely on additional income from off-farm activities. Those, in turn, are less vulnerable than the roughly 50 percent of households who rely solely on agricultural and/or livestock production.

Almost two out of three households across the program areas are considered poor according World Bank's international poverty line set at USD 1.90 per capital per day, which is almost double that of the national average. Food is the biggest household expenditure.

Nearly three-fourths of the sample report knowing about health insurance. Awareness of crop or livestock insurance, on the other hand, is minimal across the sample. About half the sample has health insurance, and of those, nearly all have CBHI and are responsible for paying their own premiums.

Very few households indicated the typical barriers to borrowing such as meeting qualification requirements, unavailability of loan providers or suitable loan products, or lengthy loan processes. These results may suggest that understanding repayment terms, and designing repayment terms that are realistic and achievable, are areas for raising awareness.

More than half of all households took a loan in the year prior to the baseline survey, half of which used the loan to feed their family. The predominance of loans for feeding families, and lesser use for business investment and maintenance needs, suggests that households are struggling to meet basic needs, having fewer investments that can improve their productivity.

More than half of households overall currently have savings, a slight increase from two years prior to the baseline survey, and close to half of those households use MFIs and VSLA/VESAs. Overall, less than one in ten households in the sample has savings in any other category of savings institutions.

On average, one-fifth of households participated in a mobile money transfer in the year prior to the baseline survey. All mobile money transactions were related to PSNP transfers; households received such transfers more than three times within that time period.

Hardly any household is a member of FEMA, but about one-quarter of the sample belongs to a farmer cooperative. Of those farmers that belong to cooperatives, about one-fifth sell their products through the cooperative.

For any given decision category, approximately three out of four female respondents state that they make these decisions alone or jointly, which reflects a high level of women's agency. Women's decision-making voice was especially high for health and education matters.

Shock exposure: The L4R area is highly shock-prone, and nearly all households experienced a shock that at least slightly impacted their food consumption and/or income in the year prior to the baseline survey. Households experienced on average, between three and four shocks in the past year. The main shocks experienced by the majority of households are increased food prices and delays in Productive Safety Net Programme (PSNP) transfers. Other common shocks included variable rain/drought, excessive rains or flooding, increased prices of agriculture or livestock inputs, and illness in the household.

Coping strategies: Over half the households in the overall sample reduced food consumption when faced with any shock; in SNNPR, nearly three-quarters adopted this strategy. Other common coping strategies are reducing non-essential household expenses, selling livestock, taking up new/additional work, and taking loans within the community. When we consider how households cope with the most common economic shock (increased food prices) and the top climate shock (variable rain/drought), households are more likely to sell livestock and rely on cash/food support when faced with drought relative to increased food prices.

Food security: Household Dietary Diversity Scores (HDDS) indicate that households in the project areas access and consume approximately 5 out of 12 food groups. This indicates that households may not have the resources to access a more diverse set of food groups or that more diverse foods may not be readily available. The Food Insecurity Experience Scale (FIES) indicates that two-thirds of households in the survey area experienced moderate-to-severe food insecurity in the previous 30 days, and about 15 percent experienced severe food insecurity.

To cope with food insecurity, more than half of all households limited portion size at mealtimes and reduced the number of meals in a day. Another common but less prevalent strategy is to eat less-preferred and less-expensive foods. L4R households are less likely than non-L4R households to rely on many of the food coping strategies.

Baseline resilience: This report presents and analyzes the absorptive, adaptive, and transformative resilience capacity index scores (on a 0-100 scale) for the overall sample and for L4R and non-L4R households by region, along with the components that comprise each index. The absorptive capacity index value for the sample as a whole is 39.0 and is significantly lower in non-L4R households than L4R households.

For adaptive capacity, the mean index score for the overall sample is 50.9; there is little variation between regions and by L4R participation. The same pattern holds true for the component indicators – there is little deviation across the sample, regardless of region or L4R participation.

The average transformative capacity index score for the sample as a whole is 41.7, and scores range from 20.6 in non-L4R households in Oromia to 61.0 in L4R households in Amhara. The index value for L4R households overall is 21 percent higher than for non-L4R, a statistically significant difference; this difference is also significant and more pronounced in Amhara, where the index is 31 percent higher in L4R households.

Absorptive and adaptive capacities are significantly associated with per capita expenditures, poverty, dietary diversity, hunger and recovery from increased food prices. Households with more

transformative capacity are significantly more likely to have greater food diversity. Overall, the data confirm that higher resilience capacity is associated with a greater expenditures and dietary diversity and lower probability of a household experiencing poverty or hunger and recovering from increased food prices.

Next Steps

In the next step in this evaluation of the L4R project, two recurrent monitoring surveys will be implemented, one each in Years 2 and 4 of the impact evaluation, to capture real-time household and community responses to shocks and stresses as they occur over the next four years. The RMS will begin at the same time of the year as the baseline (July/August). This allows for capturing the hungry season in the first round, and tracks changes across the seasons, i.e., from one hungry season to the next. The RMS portion of the IE will collect and analyze high-frequency panel data regarding household shock exposure, responses, well-being outcomes, and changes in household resilience capacity, as well as qualitative data and information regarding community resilience. Data from the RMS contributes to the IE, which focuses on the relationships between household- and community-level resilience; how the mix of interventions undertaken under the L4R activity contribute to both household and community resilience capacity; and how resilience capacities at the community level affects the impact of L4R programming on household resilience outcomes.

The L4R IE endline survey will take place one year after the end of project activities, in approximately 5 years (2022/2023). Data will be collected from a subset of the same households and communities as those surveyed for the L4R IE baseline to enable an empirically valid evaluation of the impact of the L4R IE project on household resilience and well-being outcomes. This ex-post evaluation design will also serve as a measure of the sustainability of the project activities.

I. INTRODUCTION

USAID's Feed the Future (FTF) program seeks to address the root causes of global hunger by sustainably increasing agricultural productivity, supporting and facilitating access to markets, and increasing incomes for the rural poor so they can meet their food and other needs, including reducing malnutrition. The Livelihoods for Resilience Activity (L4R) in Ethiopia contributes to this goal as well as to USAID Ethiopia's Development Objective I (DOI), which is to increase economic growth and resilience in Ethiopia.

L4R builds on the evidence and successes of the Graduation with Resilience to Achieve Sustainable Development (GRAD) project, and complements activities of the Government of Ethiopia's (GoE) Productive Safety Net Program (PSNP IV). The goal of L4R is to reduce food insecurity and increase resilience for households in 27 PSNP woredas of Amhara, SNNPR, and Tigray, and nine PSNP woredas in Oromia. The purpose of the five-year activity has the following four sub-purposes:¹

- 1) Members of PSNP IV households have increased capacities for undertaking resilient livelihoods;
- 2) PSNP IV households have economically viable and resilient livelihood portfolios;
- 3) An enabling environment supports resilient livelihoods for PSNP IV households; and
- 4) Collaboration, learning and adaptive management processes enhance, scale up, or facilitate replication of impact.

The L4R activity focuses on four priority areas that support and enhance livelihood opportunities for chronically food insecure households in targeted regions and woredas:

- (1) on-farm income generating activities (IGAs) and crop and livestock market systems;
- (2) off-farm IGAs and nonfarm enterprise development;
- (3) non-farm labor and wage employment; and
- (4) collaborative learning for scaling and sustaining gains made in the three livelihood pathways (i.e., on-farm, off-farm, employment).

The activity will support household participation in income-generating and value chain activities, create market linkages and employment opportunities, link beneficiaries to financing, and help PSNP IV beneficiaries increase their incomes, build assets and reduce risk, which in turn facilitates their ability to sustainably graduate from the safety net. L4R also supports the cross-cutting areas of nutrition, climate adaptation, gender empowerment and youth.

In order to assess the progress and effectiveness of L4R, USAID has launched the L4R Learning Activity to provide baseline and endline data with which to measure activity achievements against intended outputs and outcomes. Additionally, the activity will allow for assessing overall impact and performance of the five-year activity.

Resilience Theory of Change

¹ USAID. 2018. Livelihoods for Resilience Activity: Resilience Strategy. December.

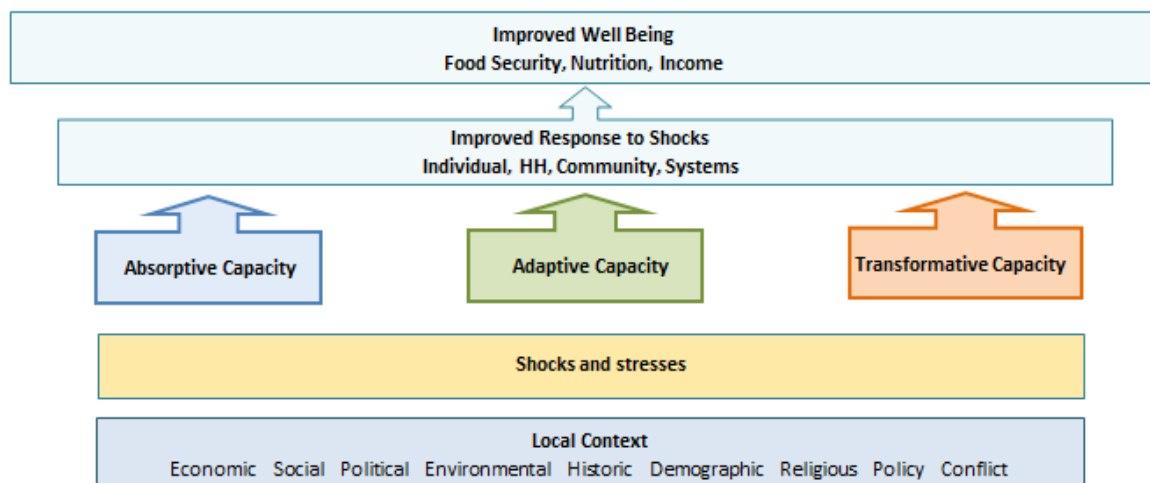
L4R conceptualizes resilience according to the USAID definition: “For USAID, resilience is the ability of people, households, communities, countries, and systems to mitigate, adapt to, and recover from shocks and stresses in a manner that reduces chronic vulnerability and facilitates inclusive growth.”²

While the definition of resilience encompasses various levels, the focus of the IE is primarily at the household level. Community-level resilience capacities are included as determinants of household resilience. According to USAID, resilience is increased by developing absorptive, adaptive and transformative capacities. This baseline study investigates which L4R activities improve household resilience outcomes and strengthen resilience capacities of food insecure and vulnerable households in the project areas. It looks at the project’s resilience impact on both the food insecure and vulnerable, as well as the food secure and non-poor.

L4R refines and scales up the successful elements of GRAD while also introducing new approaches. Key among these is the increased focus on resilience, which is at the center of the L4R theory of change. This focus is based on the understanding that food-insecure households are operating in a context of increasing risk and uncertainty, and that the gains achieved through project activities will only be sustained if people are able to anticipate, absorb, and adapt to shocks and stresses. It also recognizes the role of systems, including economic, government and social systems, in enabling people to be resilient and creating opportunities for transformation.

Figure 1 illustrates the resilience theory of change that underlies the analysis. A central hypothesis of this model is that improved resilience capacities at the household and community levels allow households to maintain their well-being even in the face of shocks and stresses by supporting improved responses to/recovery from shocks.

Figure 1. Resilience theory of change



Source: TANGO International, developed in 2017.

Improving household resilience outcomes (food security and income) requires an integrated approach, and a long-term commitment to improving resilience capacities. Resilience capacities enable households

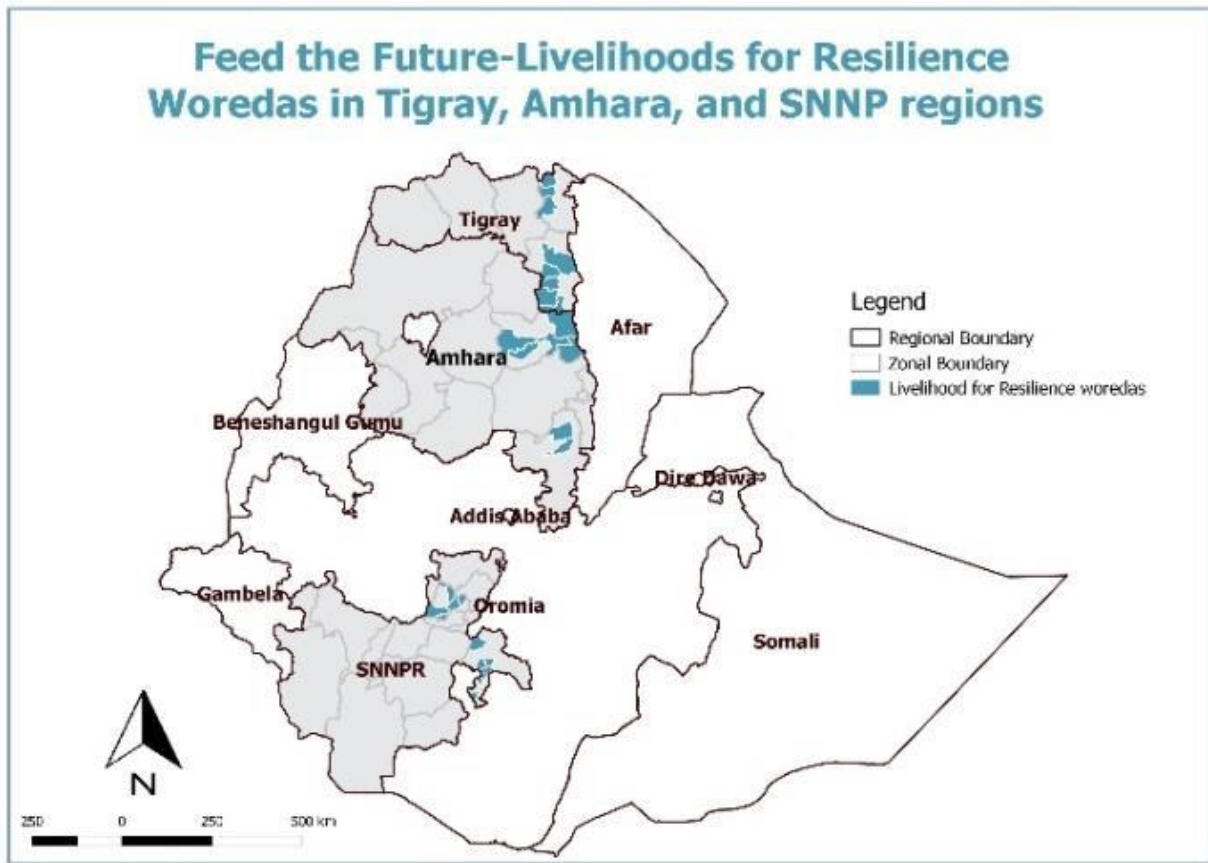
² USAID. 2012. *Building Resilience to Recurrent Crisis: USAID Policy and Program Guidance*.

and communities to effectively function in the face of shocks and stresses and still meet a set of income and food security outcomes.

Areas of operation

L4R operates in 36 chronically food insecure woredas in the four highland regions of Ethiopia. CARE International implements L4R activities in 27 woredas in Amhara, SNNPR, and Tigray (see Figure 2). It partners with the Relief Society of Tigray (REST) in Tigray, the Organization for Rehabilitation and Development in Amhara (ORDA), and Agri-Service Ethiopia (ASE) in SNNPR.

Figure 2. CARE operational areas for L4R activity

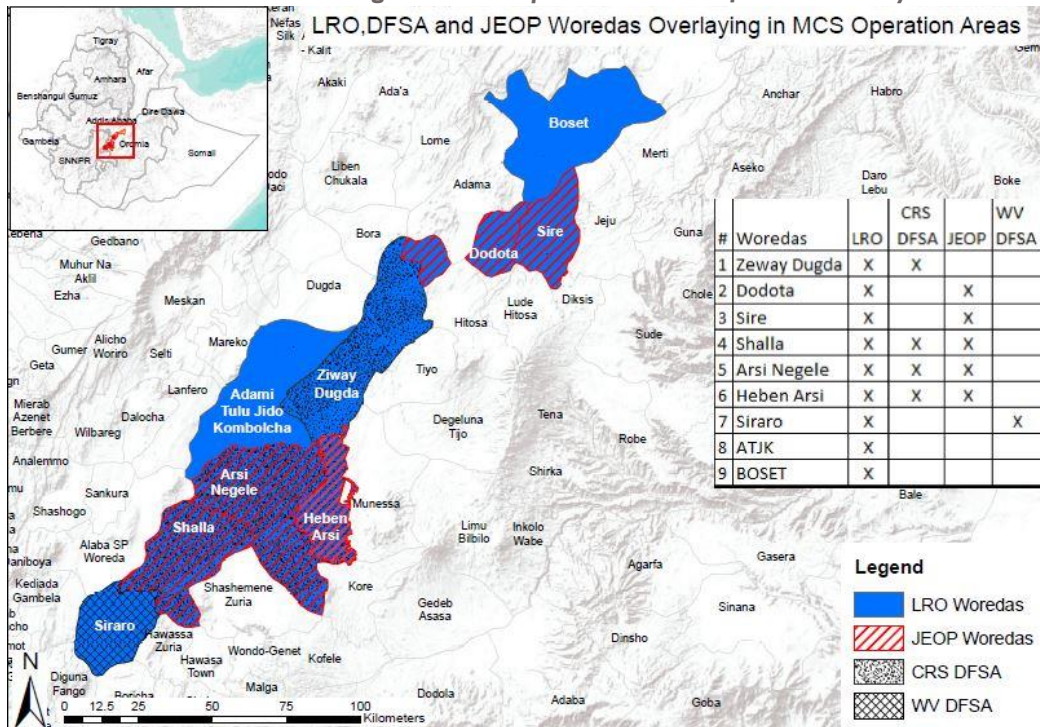


Catholic Relief Services (CRS) implements L4R activities in nine woredas across three zones in Oromia.³ It works in consortium with the Ethiopian Catholic Church Social and Development Commission of Meki (commonly referred to as MCS), as well as the Alliance for a Green Revolution in Africa (AGRA).⁴ Figure 3 shows the detail of the CRS operational area. CRS’ L4R activities overlap with two CRS-led programs: the Joint Emergency Operation and the CRS DFSA, and also with the World Vision DFSA.

³ USAID Feed the Future. Undated. Fact Sheet CRS Livelihoods for Resilience – Oromia. VI-01.

⁴ CRS works with AGRA to co-finance 16 small grants for agro dealer support.

Figure 3. CRS operational areas for L4R activity



Purpose of IE Baseline Study

The IE baseline study provides an information base against which to monitor and assess the progress and effectiveness of L4R activities during implementation and after the activity is completed. It provides baseline estimates to allow the measurement of progress toward outputs and the assessment of contributions to outcomes and impacts to be assessed. Finally, this baseline study will support a robust learning and adapting agenda with a related research agenda.

The L4R IE aims to answer the following research questions. Each are indicated at which time point in the life of the L4R activity it will be addressed: Baseline, Recurrent Monitoring System (RMS), or Endline:

1. What downstream impacts of the salient shock(s) did households experience and how did the incidence of these impacts evolve over the life of the activity? **RMS, Endline**
2. What coping strategies did households employ to deal with the salient shock(s)? What coping strategies helped support better outcomes (i.e., recovery from shock, maintenance, and/or improvements in food security) in the face of shock and stress? **Baseline, RMS, Endline**
3. How did households' food security change over the shock/stress(es) period? Which types of households were able to maintain their food security in the face of shock and stress, i.e., which were resilient to its impacts? Are there any gender or generational differences? **RMS, Endline**
4. How did the severity of exposure to the salient shock(s) affect households' ability to recover from it? Are there any gender or generational differences? **Baseline, RMS, Endline**
5. Did households' resilience capacities before the onset of the salient shock(s) help protect them

- from negative impacts? Are there any gender or generational differences? **RMS, Endline**
6. Did households' resilience capacities before the onset of the salient shock(s) prevent them from using negative coping strategies that undermine their resilience to future shocks? Are there any gender or generational differences? **RMS, Endline**
 7. How did L4R interventions support household and/or community resilience capacity? How did L4R interventions encourage "positive" responses to shock and stresses (i.e., those leading to better well-being outcomes)? **Endline**
 8. How does resilience capacity work with humanitarian assistance to improve well-being outcomes? What resilience capacities reduce the need for relying on humanitarian assistance? Which are complementary? **RMS, Endline**

2. METHODOLOGY

This section provides a brief summary of the methods used to collect the L4R IE baseline data. A more detailed description of the methodology is found in Annex 3.

Objective and Overview of the Data Collection

The baseline study consists of two quantitative components—a household and a community survey—and a qualitative component with the intention to meet the following objectives:

- (1) Collect appropriate data on household well-being outcomes (including poverty and food insecurity), household shock exposure, and household and community capacities that promote resilience; and
- (2) Collect data that will allow evaluators to determine project impact after the endline data collection has been completed.

Data collection took place from July 18 to August 22, 2018.

Quantitative Survey

Quantitative data were collected for “treatment” (L4R) and “control” (non-L4R) groups of households in each of the four L4R regions of Oromia, Amhara, SNNPR, and Tigray. The treatment group is comprised of households residing in 34 woredas with active L4R programming. Households in the control group reside in 23 woredas without L4R programming that are in the same administrative zone as the treatment woredas, and share the highest degree of similarity in livelihood zones⁵ by either being identical to, overlapping with (at least one shared livelihood zone), or similar to the treatment woredas (no overlap of livelihood zone, but share similar characteristics). Treatment and control kebeles were selected using probability proportional to size (PPS). Households were then randomly selected from household listings. Note that the planned empirical technique for the IE necessitated that within each of the four regions, one-third of the households be selected from the L4R intervention stratum and two-thirds from the non-L4R intervention stratum. Non-response rate was less than two percent. The *household* survey was administered to a total of 3335 households across the program areas. The *community* survey was administered in each of the 128 kebeles (64 L4R, 64 non-L4R).

The household questionnaires collected information on the key outcome variables identified in the overall research questions: food security, household expenditures as a proxy for income, household livelihoods, shocks, coping strategies, recovery from shocks, aspirations, and other elements of household resilience capacity. The topics covered in the community survey include community infrastructure and services, community organizations, Government and NGO programs, and governance.

⁵ Livelihoods Integration Unit, *An Atlas of Ethiopian Livelihoods*, Government of Ethiopia/USAID, Addis Ababa, 2014

Table 1. L4R baseline sample size

	Total	All		Oromiya (CRS)		Amhara (CARE)		SNNPR (CARE)		Tigray (CARE)	
		L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R
Households	3335	1537	1798	360	388	397	467	386	475	394	468
Kebeles	128	64	64	16	16	16	16	16	16	16	16

Qualitative Survey

The qualitative survey also collected information from both L4R and non-L4R households. Topical outlines included questions on coping strategies, social capital, and aspirations in order to provide in-depth information about how households use community resources to manage shocks. The qualitative component also sought information about households' experience with L4R and potential pathways through which the interventions lead to outcomes.

Qualitative data collection involved separate focus groups of men and women, from sub-groups of interest where appropriate. Focus group discussions (FGD) were conducted with representative groups from the primary livelihood systems and wealth ranking categories in the community. Groups varied somewhat in size, with efforts made to limit them to 8-10 individuals. Key informant interviews (KII) were conducted simultaneously or immediately following FGDs. Key informants (KIs) were selected based on their special knowledge of some aspect of the population being surveyed and included woreda-level government officials responsible for relevant agriculture, livestock, and other food security programs; local individuals involved in private agro-pastoral trade and/or processing; providers of public services (e.g., health, education); or local resource persons employed by other development actors in the area, for example government and NGOs implementing projects.

Limitations of the Study

Sample: The following issue was ultimately determined not to be a limitation, but bears noting: the number of PSNP households in the control (non-L4R) clusters was fewer than anticipated, but this does not have any methodological implication because this deficit of 117 households was counterbalanced by the oversampling of control households aspect of the design.

Timing: Although the timing of the baseline study did not coincide with the start of the project, it is important to keep in mind that the study was designed to capture change over time using a panel design which will allow us to control for initial baseline between-group differences. The timing will actually allow us to measure not only program impact, but the sustainability of that change.

Women's decision making: Indicators related to women's decision making were considered and explored; however, calculation of the index requires responses from primary adult female respondents who reside in a household with at least one adult male. Inclusion would reduce the sample size by one quarter and result in loss of large losses in statistical power. Additionally, this may bias the estimates if the households responding to the relevant questions were structurally different from those that did not respond.

3. FINDINGS

The IE baseline findings are described in the following sections: (3.1) household and community environment, (3.2) shock exposure, (3.3) well-being outcomes, (4-5) resilience. Each section discusses the findings from the household survey and the qualitative study as related to the relevant variables of interest. Most sections present data for the sample overall, intervention group (L4R and non-L4R households), and region.

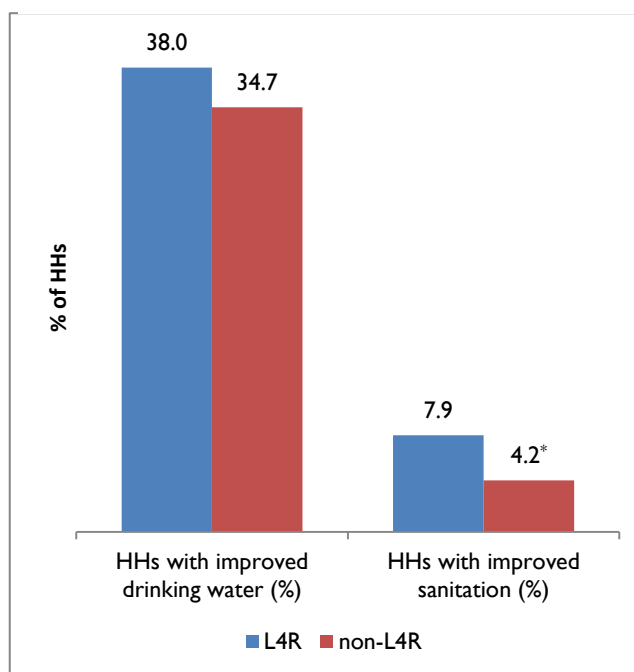
3.1 HOUSEHOLD AND COMMUNITY ENVIRONMENT

3.1.1 HOUSEHOLD CHARACTERISTICS

Figure 4 shows that 3-4 households in 10 has access to improved drinking water.⁶ This is lower than national statistics, which indicate that 57 percent of rural households have such access.⁷ The survey finds that more than 9 in 10 households lack improved sanitation facilities.⁸ This is more in line with national figures, which indicate that 96.1 percent of rural households have unimproved sanitation.⁹ While significantly more L4R households than non-L4R have improved sanitation, the difference is slight. Most households need between 30 minutes and one hour round-trip to fetch water.

Table 2 presents household demographic information. On average, sample households have five household members. Almost one-quarter of households have a female adult and no male adult, and most are comprised of people 0-16 years of age or 30 years and older. One household out of four has a household member with a disability (visual, hearing, mobility, or mental). The demographic profile is very similar in L4R and

Figure 4. Water and sanitation: L4R vs non-L4R



⁶ WHO (2013) considers improved drinking water as either piped water to the house or yard, public taps or standpipes, protected dug wells, protected springs, or rainwater collection.

⁷ Federal Democratic Republic of Ethiopia, Central Statistics Agency. 2017. Ethiopia Demographic and Health Survey 2016. Page 9. The DHS also reports that 97 percent of urban households have access to improved drinking water. <https://dhsprogram.com/pubs/pdf/FR328/FR328.pdf>

⁸ WHO (2013) considers improved sanitation as either flush or pour-flush toilets connected to a piped sewer system, pit latrines with slab, or composting toilets.

⁹ Federal Democratic Republic of Ethiopia, Central Statistics Agency. 2017. Ethiopia Demographic and Health Survey 2016. Page 20. The figure for urban households is 84.1 percent.

non-L4R households and across regions, with virtually no statistically significant differences in these demographic variables.

Table 2. Household demographics: L4R vs non-L4R, by program area

Indicator	All		Oromiya (CRS)		Amhara (CARE)		SNNPR (CARE)		Tigray (CARE)		
	Total	L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R
HH size and age composition											
HH size (mean)	4.9	5.0	4.8	6.0	6.1	4.0	4.2	5.5	5.3	4.5	4.0
Percent 0-16	41.5	41.4	41.5	49.7	53.3	36.0	36.6	44.9	43.4	37.1	34.4
Percent 16-30	20.7	21.4	20.0	22.3	18.7 *	18.3	19.6	22.3	22.5	22.2	19.5
Percent 30+	37.8	37.2	38.5	28.0	28.0	45.6	43.9	32.8	34.2	40.7	46.1
HHs with a disabled member (%)											
Any disabled member	24.2	25.2	23.3	18.3	19.4	26.3	23.2	17.5	23.1	29.3	32.0
Female disabled member	13.5	14.0	13.0	7.7	8.1	16.1	13.9	8.8	10.9	18.2	20.3
Male disabled member	12.9	12.8	13.0	12.6	12.2	13.9	10.3	10.3	13.5	14.5	14.2
Gendered HH type (%)											
Male and female adult	74.7	76.2	73.2	85.6	85.6	77.1	75.0	80.1	79.0	66.5	57.7
Female adult only	22.9	22.2	23.8	13.1	12.6	21.9	22.3	18.7	18.7	31.0	37.4
Male adult only	2.3	1.7	3.0	1.4	1.6	1.0	2.6	1.3	2.3	2.5	4.9
No adult	0.0	0.0	0.1	0.0	0.3	0.0	0.2	0.0	0.0	0.0	0.0

Note: Stars denote a statistically significant difference (at least at the 5% level) between L4R and Non-L4R groups.

The findings in Table 3 shows that education is more common among adult males than adult females and there is no significant variation within either group as far as educational attainment by gender, whether comparing L4R and non-L4R or across regions.

Table 3. Education of adult household members: L4R vs non-L4R, by program area

Education (%)	All		Oromiya (CRS)		Amhara (CARE)		SNNPR (CARE)		Tigray (CARE)		
	Total	L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R
Females: No formal education	64.9	63.6	66.2	65.6	71.7	71.8	70.5	54.6	56.9	63.8	65.6
Females: Primary	28.0	29.2	26.8	29.0	23.9	22.9	23.1	38.8	37.5	25.8	23.8
Females: Secondary or higher	7.1	7.3	7.0	5.4	4.5	5.3	6.4	6.6	5.6	10.4	10.6
Males: No formal education	38.3	36.4	40.3	25.9	30.5	47.7	54.1	30.3	27.2	41.9	51.5
Males: Primary	47.6	48.5	46.6	62.3	55.6	37.7	34.8	57.0	62.0	37.9	32.4
Males: Secondary or higher	14.1	15.0	13.1	11.8	13.9	14.5	11.0	12.7	10.9	20.2	16.0

Note: Stars denote a statistically significant difference (at least at the 5% level) between L4R and Non-L4R groups.

3.1.2 LIVELIHOOD ACTIVITIES

Table 4 reports on households' main sources of income and food (livelihoods reported by less than five percent of the sample are not included but indicated in the footnote of the table). Nearly all households receive food or cash assistance from safety net programs, and the vast majority are engaged in agricultural production and sales. The third-most common livelihood is livestock production, in which one-third of sampled households work. Less than 12 percent of households are employed in wage or salaried labor of any kind. There are no statistically significant differences between L4R and non-L4R households overall or in any program areas. In Tigray, however, more than twice as many non-L4R households than L4R households report engaging in local agricultural wage labor. Qualitative findings do not reveal any discernible differences regarding local agricultural wage labor for L4R and non-L4R sites, though there are numerous reports of wage labor opportunities in irrigated fields in the area, the majority of which – but not all – are from non-L4R FGDs and KIIs. Regardless, it is not possible to infer

from the qualitative findings that this could be contributing to differences observed in the quantitative data and should be explored in more depth in future.

Table 4. Livelihood activities: L4R vs non-L4R, by program area

Livelihood ^{a/}	Total	All		Oromiya (CRS)		Amhara (CARE)		SNNPR (CARE)		Tigray (CARE)		
		L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R	
Safety net food/cash assistance	98.5	98.6	98.4	98.3	97.4	97.7	97.4	99.2	98.9	98.7	99.4	
Agricultural production & sales	93.9	93.7	94.1	98.3	96.1	90.7	91.6	91.5	93.7	94.7	94.7	
Livestock production & sales	33.0	31.1	35.0	45.8	54.9	38.0	41.8	12.7	14.9	31.7	29.3	
Wage labor (ag local)	11.6	10.9	12.3	8.9	8.2	4.0	3.2	25.9	26.5	4.8	11.5*	
Wage labor (non-ag outside)	8.6	9.9	7.4	4.4	2.6	10.8	8.4	14.0	10.7	9.4	7.9	
Petty trade (other products)	6.7	7.9	5.4*	8.1	3.6	3.8	3.0	15.0	13.1	4.8	3.0	
Wage labor (non-ag local)	6.7	7.3	6.0	8.3	7.0	4.0	1.5	7.5	7.8	8.6	7.3	
Gifts/inheritance	6.6	6.0	7.2	5.3	5.7	3.8	2.1	3.6	3.8	9.9	14.5	
Livelihood diversity (mean, 0-18)	3.0	3.0	2.9	3.0	3.0	2.9	2.8	3.0	2.9	2.9	3.0	
	N	3335	1537	1798	360	388	397	467	386	475	394	468

Note: Stars denote a statistically significant difference of at least 5% between L4R and non-L4R groups.

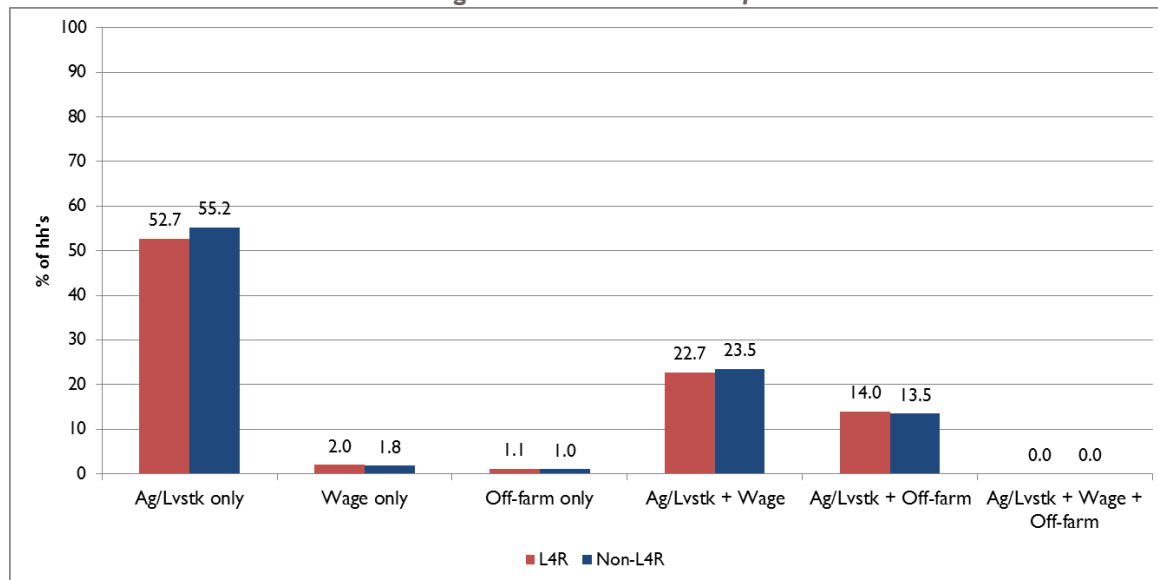
^{a/}Livelihoods reported by less than 5% of the sample households not reported in the table include: wage labor (ag outside); salaried; wild products; honey; petty trade (own products); other self-employment (ag); other self-employment (non-ag); rental of land/house/rooms; remittances; other.

Table 4 also presents a livelihood diversity score, which is a count of the total number of livelihoods in which households engaged, out of a possible 18 included in the survey. Sampled households engage in an average of three different livelihood strategies. There are no significant differences between L4R and non-L4R groups overall or in any program area.

Livelihood diversification helps decrease households' vulnerability and exposure to shocks as different livelihood strategies are not equally vulnerable to the different risks associated with specific shocks/stressors. For example, households with income from crop production and sales as well as from a non-agricultural small business (e.g., barber shop, bicycle repair) may be less vulnerable to climate-related shocks/stressors than if their only source of income was from crop production and sales. Likewise, households that have more than one source of income within a single risk profile (e.g., climate risks) are thought to reduce their exposure to climate-related shocks based on how they are diversified across the value chain (e.g., milk, meat, live animals, hides, veterinary products). Thus, diversification into multiple livelihood activities – particularly when the risk profiles differ – provides the most effective buffer against future shocks/stressors. Livelihood activities that are vulnerable to climate-related risks include crop and livestock production/sales, wild harvested products (e.g., honey, firewood, cut pasture/fodder), agricultural wage labor, small food kiosks/restaurants, land rental, and any other self-employment or petty trade involving an agriculturally-based product (e.g., milk, butter, yoghurt). Livelihood activities vulnerable to economic risks, such as those that decrease labor demand or increase prices (e.g., global food/fuel price increases, inflation, devaluation of currencies or exchange rates), include salaried employment (e.g., government), non-agricultural wage labor, gifts, inheritances, remittances, house/room rental, etc. Rarely are different livelihood strategies vulnerable to only a single type of risk. Rather, their sensitivity to different types of risk may vary, suggesting again that diversification into multiple strategies both within and across risk profiles provides the most effective buffer against future uncertainty.

Figure 5 illustrates the livelihood risk categories. About half of the sampled households rely solely on agricultural and/or livestock production, making them more vulnerable to future shocks/stressors. However, as indicated before, it depends on if and how those activities are diversified across the value chain. In general, additional sources of income are derived more from wage labor than from off-farm activities; those households are less vulnerable than those who rely on off-farm income.

Figure 5. Livelihood diversification



Additional insight on livelihoods from qualitative findings

Consistent with quantitative findings, all FGDs and KIIs suggest that growing crops (e.g., maize, teff, enset, coffee, wheat, barley) and rearing livestock are the two main livelihoods across all four regions. Thus, drought, variable rainfall, and floods significantly affected people’s primary means of earning income. Small landholdings, low soil fertility, degraded and rugged terrain, and lack of irrigation limit production in all four regions. Limited – and sometimes contested – grazing lands, lack of drought-resistant breeds, and rugged terrain limit livestock rearing as well.

Off-farm opportunities are limited as well, though all FGs and KIIs indicated wage labor and petty trade are common livelihood activities. People engage in small shops, cafes, selling local beer (including local drink houses), livestock fattening, weaving, petty trade, selling processed food (e.g., milling maize into flour), stone-cutting, construction, selling firewood, honey production, selling milk and butter, picking coffee, enset processing, etc. In SNNPR, female FGD participants indicated they aggregate small amounts of butter from local farmers into larger amounts (e.g., kilo) and resell it in Yirgelem. Some women also buy staple foods (e.g., beans, pasta) at lower prices in larger urban areas and resell it locally, where they can ask higher prices. In Oromiya, women reported buying potato, onion and chiles in nearby urban areas and reselling them in local markets. In Tigray, FGs in one kebele indicated the lack of certain infrastructure (e.g., roads, electricity) constrains many off-farm income-generating opportunities, such as cafes, small restaurants, or beauty salons for women. Men and women participate equally in farm daily

wage labor. However, these opportunities are more restricted for women as they are typically limited to weeding. Plowing land and harvesting are done primarily by men. In SNNPR, men also engage in mining stone from nearby quarry sites, chiseling (making stone pavers), and loading and unloading eucalyptus poles for transport.

In Oromiya, a KI suggested that political insecurity (i.e., conflict between the Sidama and Aris Oromo) had a major impact on markets. People closed their shops due to security concerns, which made it difficult for people in urban areas to purchase food. Demand for livestock dropped, reducing income for households engaged in livestock rearing. Financial institutions no longer offered many of their services as it was too risky to stay open during periods of instability. The unstable situation also ruptured market linkages between local collectors and farmers, and between large traders and farmers. With many shops and businesses closed, there were fewer opportunities for casual labor. Some opportunities still exist, such as with a nearby mining company or in the transportation services sector. However, wages are very low for most types of casual wage labor, while food prices were high.

3.1.3 PARTICIPATION IN TRAININGS

Table 5 presents the percent of households who indicate participating in any of 17 trainings. The primary information presented here is L4R households are significantly more likely to attend or receive trainings compared to non-L4R households. This finding is one possible explanation for better well-being outcomes in the L4R group (discussed in section 3.3); we suspect that it is an artifact from the previous GRAD programming, and that this baseline survey occurred one and a half years into the L4R activity operation.

Table 5. Training support: L4R vs non-L4R, by program area

Trainings	Total	All		Oromiya (CRS)		Amhara (CARE)		SNNPR (CARE)		Tigray (CARE)	
		L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R
Hygiene and sanitation	22.2	27.3	17.1 *	32.2	18.8 *	29.7	22.5	39.6	24.2 *	12.4	6.4
NRM	17.0	20.6	13.4 *	28.3	17.8 *	21.9	21.6	32.1	12.8 *	5.6	4.3
Seed packets	16.8	22.9	10.6 *	26.1	7.2 *	13.4	10.1	37.3	14.5 *	16.0	10.7
Agricultural production	15.8	20.1	11.4 *	18.1	12.6	17.6	13.7	25.6	11.8 *	18.8	8.3 *
Nutrition	12.2	15.2	9.0 *	17.8	10.1	10.8	8.8	24.4	12.8 *	9.4	5.6
Readiness for Graduation	8.0	11.3	4.6 *	10.6	2.6 *	10.8	9.0	18.4	6.1 *	6.3	1.9
Adult education	7.3	9.2	5.5 *	13.1	4.4 *	15.1	12.2	4.4	2.5	6.3	3.6
Gender and social norms	7.3	9.5	5.1 *	17.5	9.5	12.3	7.7	8.8	2.5 *	3.0	1.5
Vocational/skill training	7.1	8.1	6.0	12.8	9.5	3.5	4.1	12.7	6.9	4.6	3.8
Group governance	6.3	9.6	2.9 *	11.1	1.5 *	11.8	7.5	14.2	0.4 *	3.3	2.6
Early warning training	6.0	6.9	5.1	15.8	9.5	8.8	6.4	4.4	3.6	1.8	1.7
Livelihood planning	5.9	9.3	2.5 *	13.1	5.2 *	6.3	3.0	15.5	1.5 *	4.1	0.6 *
Climate change/adaptation	5.3	6.6	3.9 *	14.7	9.0	9.1	6.2	4.7	1.1 *	1.3	0.4
Business development	5.1	7.5	2.6 *	11.1	3.9 *	4.3	3.2	9.8	2.3 *	5.6	1.3 *
Marketing	4.2	7.0	1.4 *	9.2	1.8 *	5.5	2.8	9.6	0.6 *	4.6	0.6 *
Micro-franchise	3.2	3.6	2.8	7.5	4.9	3.8	5.8	0.8	0.4	3.3	0.9
Mobile phone use	0.6	0.7	0.5	1.9	0.3 *	0.5	0.9	0.0	0.0	0.5	0.9

Note: Stars denote a statistically significant difference (at least at the 5% level) between L4R and Non-L4R groups.

3.1.4 PARTICIPATION IN L4R

Table 6 provides information on household membership in VSLA/VESA and enrollment in L4R. The sample here is restricted to L4R households only. In general, just over one third of L4R households are VSLA/VESA members. Regionally, Tigray has the lowest membership. This is a counterintuitive finding, given that all GRAD 2 households are enrolled in VESAs, and REST started long before other implementing partners. SNNPR is the most recently activated programming region and should have the lowest figure. Of those L4R households who are members of a VSLA/VESA, six in 10 are enrolled in an L4R activity. Enrollment is highest among SNNPR and Tigray household; most SNNPR households had been enrolled at least one year at the time of the baseline survey.

Table 6. Participation in L4R, by program area

Indicator	All	Oromiya (CRS)	Amhara (CARE)	SNNPR (CARE)	Tigray (CARE)
HH member of VSLA/VESA	35.5	34.3	47.4	46.2	19.5
<i>N (of all L4R hhs)</i>	1535	359	397	385	394
HH enrolled in L4R Activity (MCS/AGRA, REST, ORDA, ASE)	62.5	43.1	53.2	77.0	72.7
<i>n (of VSLA/VESA HHs)</i>	566	123	188	178	77
enrolled more than 1 year ago	60.8	50.9	42.0	81.0	50.0
enrolled less than 1 year ago	39.2	49.1	58	19.0	50.0
<i>n</i>	346	53	100	137	56

3.1.5 PSNP STATUS

The data in Table 7 indicate that nearly the entire sample receives some form of PSNP support. Of those households, the majority rely on Public Works Support and about one in three receive Permanent Direct Support (PDS).

Table 7. PSNP Status: L4R vs non-L4R, by program area

Indicator	Total	All		Oromiya (CRS)		Amhara (CARE)		SNNPR (CARE)		Tigray (CARE)	
		L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R
HH receives PSNP support	98.7	98.9	98.5	98.6	97.7	97.7	97.6	99.5	99.2	99.5	99.4
<i>N</i>	3335	1537	1798	360	388	397	467	386	475	394	468
Type of support received											
Public Works Support	68.3	68.5	68.1	84.8	87.3	64.2	62.9	73.2	72.4	57.4	53.8
Permanent Direct Support	30.0	30.0	30.3	15.2	12.7	34.5	36.2	26.8	27.4	37.8	42.2
<i>n</i>	3290	1519	1771	355	379	388	456	384	471	392	465

Note: Stars denote a statistically significant difference (at least at the 5% level) between L4R and Non-L4R groups.

Eight of ten households stated they are not confident they will be ready to graduate from PSNP within one year – a fairly consistent finding across all program areas (Table 8). Of these, roughly one-fifth indicated they would be ready to graduate in one to two years' time; L4R households tended to be more confident of this than non-L4R households. One-fourth of the overall sample intend to graduate of their own accord, with some variation across regions.

Table 8. Graduation from PSNP: L4R vs non-L4R, by program area

Indicator	Total	All		Oromiya (CRS)		Amhara (CARE)		SNNPR (CARE)		Tigray (CARE)	
		L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R
Not ready to graduate PSNP	80.6	80.5	80.6	80.8	90.0 *	88.4	88.8	79.7	76.2	75.5	70.8
<i>N</i>	3290	1519	1771	355	379	388	456	384	471	392	465
Ready within 1-2 years	16.8	18.9	14.6 *	22.0	13.5 *	16.6	14.6	19.0	9.2 *	18.6	20.1
Graduate on own accord	25.9	27.5	24.2	25.4	26.1	31.8	25.2	40.5	29.5 *	14.5	17.0
<i>n (not ready to graduate)</i>	2666	1232	1434	287	341	343	405	306	359	296	329

Note: Stars denote a statistically significant difference (at least at the 5% level) between L4R and Non-L4R groups.

3.1.6 AWARENESS OF AND ACCESS TO INSURANCE

The first section of Table 9 reports the percentage of households responding affirmatively to the question(s), *Is there [health, crop, livestock] insurance in your area?* As we do not have verifiable information about the availability of insurance, low “awareness” could mean that a household is simply not aware that insurance is available in their community. Alternatively, it could mean that such opportunities do not exist; i.e., insurance is simply not offered in that community. For example, crop and livestock insurance tend not to be widely available.

Nearly three-fourths of the sample report knowing about health insurance. Overall, the difference in awareness between L4R and non-L4R households is significant, but varies by region. In Oromia and Amhara, more non-L4R households report awareness of health insurance than L4R households, though the differences are not large. In stark contrast, more than twice as many L4R than non-L4R households in Oromiya report awareness of health insurance. Awareness of crop or livestock insurance, on the other hand, is minimal across the sample; as noted above, this may be because these types of insurance are not available, but this cannot be verified by the data available.

The lower section of the table reports that about half the sample has health insurance; it is most common in Amhara, and significantly less common among non-L4R households in Oromiya relative to L4R households. Among households with health insurance, nearly all have CBHI and are responsible for paying their own premiums, which average ETB 209 (USD 8) per month.¹⁰

Table 9. Insurance awareness and ownership: L4R vs non-L4R, by program area

Indicator	All		Oromiya (CRS)		Amhara (CARE)		SNNPR (CARE)		Tigray (CARE)			
	Total	L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R	
Percent of HHs aware of insurance availability												
Health	72.4	77.7	66.9 *	76.8	28.1 *	90.2	94.4 *	51.2	58.2 *	90.9	84.4	
Crop	1.3	0.5	2.1	0.3	0.3	0.3	0.4	1.0	0.2 *	0.5	6.2	
Livestock	0.4	0.6	0.1	0.0	0.0	0.5	0.2	0.5	0.0 *	1.3	0.2	
	<i>N</i>	3330	1534	1796	358	388	397	466	385	474	394	468
Health Insurance												
HHs with health insurance	49.0	52.6	45.2 *	42.7	19.3 *	78.3	81.1	37.9	44.7	52.8	40.2	
	<i>N</i>	3330	1534	1796	358	388	397	466	385	474	394	468
% have CBHI	99.4	99.3	99.5	95.8	97.2	100.0	100.0	100.0	100.0	100.0	99.4	
% pay own CBHI premiums	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
Amount paid (in Birr)	209	211	207	214	211	203	204	192	174	229	241	
	<i>n</i>	1491	727	764	143	71	262	319	145	210	177	164

Note: Stars denote a statistically significant difference (at least at the 5% level) between L4R and Non-L4R groups.

3.1.7 LOANS

Table 10 describes the responses to questions about taking out loans. More than half of the sample had an active loan two prior to the baseline survey. Borrowing was highest in SNNPR (almost three-quarters of households) and lowest in Amhara (approximately half of households). Of those households that did not take a loan, the most common reasons given were fear of not being able to repay it and not needing one. About one in ten households reported being averse to debt; significantly more non-L4R than L4R households in SNNPR did not take loans for this reason. In Oromia, significantly more non-L4R than L4R households did not take a loan because they already had a loan outstanding; barely any households in other regions reported this as a reason for not borrowing. Interestingly, very few households cited the typical barriers to borrowing such as meeting qualification requirements, unavailability of loan providers or suitable loan products, or lengthy loan processes. These results may suggest that understanding repayment terms, and designing repayment terms that are realistic and achievable, are areas for raising awareness.

¹⁰ Unless otherwise noted, all currency conversions per www.oanda.com using exchange rate effective 10 August 2018, midway through data collection.

Table 10. Reasons for not taking loans: L4R vs non-L4R, by program area

Indicator	All		Oromiya (CRS)		Amhara (CARE)		SNNPR (CARE)		Tigray (CARE)		
	Total	L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R
HHs with active loan 2 years ago	58.5	57.8	59.1	51.7	59.5	48.9	49.4	72.5	70.9	56.2	57.0
N	3328	1533	1795	358	388	397	466	385	472	393	467
Reason for not having loan											
Afraid could not pay back	59.8	57.8	61.9	68.2	74.5	63.4	64.0	48.1	50.0	50.6	56.7
Did not need	30.0	33.1	26.7	22.0	14.0	25.6	23.3	48.1	33.3	39.5	35.8
Do not like to be in debt	10.7	1.0	11.9	5.2	4.5	10.8	11.9	2.8	13.8 *	15.1	16.4
Cannot qualify	3.0	2.1	4.0	1.7	4.5	4.4	5.9	1.9	7.2	0.6	0.5
Already have outstanding loan	1.6	1.0	2.3	1.7	8.2 *	0.0	0.0	0.0	0.0	1.7	1.0
No loan met my needs	1.1	1.1	1.1	1.2	1.3	1.0	3.0	0.9	0.0	1.2	0.0
No loan providers in area	1.1	0.7	1.6	1.2	2.5	1.5	0.8	0.0	2.9 *	0.0	0.0
Process too long	0.3	0.0	0.6	0.0	0.0	0.0	0.4	0.0	0.0	0.0	1.5
n	1386	654	732	173	157	203	236	106	138	172	201

Note: Stars denote a statistically significant difference (at least at the 5% level) between L4R and Non-L4R groups.

The qualitative findings provided additional insight into the reasons for not borrowing. One relates to the group lending model common in MFIs. This can be a useful opportunity for women, who are often much less likely to be able to secure a loan by themselves. Some loan groups also have a savings component whereby all members contribute to the group's savings, which are used to help repay the loan. Group loans can be disadvantageous; however, if someone in the group leaves, resigns, or dies, as the remaining members of the group must assume that person's share of the debt.

Qualitative data also provide insight as to why interest rates may also be a barrier to taking loans. KIs in Amhara described this as a challenge, giving the example of a group loan to 3-7 persons with a 19 percent interest rate and a one-year loan term. In Tigray, male and female FGs indicated interest rates on loans from the MFI (REST) were as much as 17 percent, though some NGOs provided loans at 9 percent. These reports are consistent with the quantitative findings on interest rates, shown in Table 11. Sample-wide, the average interest rate for loans from informal lenders is 17.8 percent, versus 12.1 percent for formal lenders.

Table 11. Average interest rate (%) on loans, by lender type: L4R vs non-L4R, by program area

Source of loan	All		Oromiya (CRS)		Amhara (CARE)		SNNPR (CARE)		Tigray (CARE)		
	Total	L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R
Formal lender ^a	12.1	12.0	12.4	13.8	^	12.6	13.4	10.3	7.4	11.6	11.3
n	531	311	220	37	19	130	117	46	46	98	38
Informal lender ^b	17.8	18.7	15.8	^	^	^	^	19.7	15.7	^	^
n	523	305	218	7	3	14	15	278	198	7	4

Note: Stars denote a statistically significant difference of at least 5% between L4R and non-L4R groups.

^a Formal lenders include: micro credit, VLSA/VESA, Livelihood group, RuSACCO, CBO, MFI.

^b Informal lenders include: money lender, friend/neighbor/family in village, friend/neighbor/family outside village, religious institution, input supplier, local trader.

^ Estimates for sample size less than 30 are not calculated.

Another constraint noted is the lack of availability of government or MFI loans for shock recovery. The government provides one-year household loans for the purchase of seeds and fertilizer; however, this loan is not given for shock-related cases. The same constraint was described regarding MFI loans.

Several FGs and KIs also mentioned that people are unwilling to borrow money for starting small businesses (e.g., selling beer) because people prioritize food for their families during times of stress.

The results in Table 12 indicate that more than half of all households took a loan in the last year. Households in Tigray are least likely to have taken a loan, and within Tigray, borrowing is more common in L4R households. Households took out an average of 1.3 loans. The average loan amount is ETB 2,941 (USD 106), with no significant difference between L4R and non-L4R households.

Friends and neighbors are the most common loan source: about one-third of the sample borrowed from these sources. Formal loans from micro-finance institutions (MFIs) – which lend to groups (e.g., farmer cooperatives), rather than individuals – are less common overall. While it would be reasonable to assume that the higher prevalence of MFI borrowing in Amhara is related to participation in cooperatives, this assumption is not supported by the data: as shown later in Table 17, there is no meaningful variation in cooperative membership across program areas.

The tendencies to borrow from MFIs and friends/neighbors do not follow a uniform pattern across the sample. Loans from friends and neighbors are more common than MFI loans in Oromia and SNNPR (regardless of L4R participation); the reverse is true in Amhara. Tigray conforms to neither of those patterns: loans from friends and neighbors are more common than MFI loans in non-L4R households and less common in L4R.

Loans from moneylenders are most common in SNNPR; use of these lenders is 5 percent or less in all other program areas. Use of Village Savings and Loan Associations (VSLAs) and Village Economic and Social Associations (VESAs) is also low (10 percent or fewer of households in any region have loans from this source) with the notable exception of Amhara L4R households. No households reported taking loans from banks or NGOs.

Table 12: Loan information: L4R vs non-L4R, by program area

Indicator	All			Oromiya (CRS)		Amhara (CARE)		SNNPR (CARE)		Tigray (CARE)	
	Total	L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R
HHs took loan in last 12 months	53.4	53.9	52.8	57.8	66.5	42.8	47.9	80.8	77.2	37.7	27.4 *
N	3329	1533	1796	358	388	397	466	385	474	393	468
Mean number of loans	1.3	1.4	1.3	1.3	1.2	1.3	1.2	1.6	1.4	1.3	1.2
Mean amount of loan (ETB)	2941	3228	2641	2494	912	6273	5763	1244	1214	4949	4159 *
Source: Formal lender											
MFI	17.4	19.7	15.0	7.2	3.9	58.2	52.5	0.3	1.6	34.5	17.2 *
VSLA/VESA	6.9	11.3	2.3 *	9.2	0.4 *	24.1	0.4 *	10.3	6.0	4.7	0.8 *
Micro credit	4.5	4.1	4.9	6.3	4.3	2.9	7.2	0.6	1.4	8.8	10.9
Livelihood group	2.0	3.7	0.2	0.0	0.0	0.0	0.0	0.6	0.5	15.5	0.0
RuSACCO	1.3	1.5	1.0	1.9	0.4	1.2	0.9	0.3	0.0	3.4	4.7
CBO	0.9	0.8	1.0	2.4	0.4	0.0	0.0	0.3	2.2	0.7	0.8
Bank	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NGO	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Source: Informal lender											
Friend/neighbor in village	35.1	28.3	42.2 *	51.2	62.8	7.6	13.0	28.3	41.8 *	22.3	39.8 *
Money lender	17.1	21.8	12.2 *	0.5	1.6	2.9	4.5	52.1	31.1 *	5.4	2.3
Family in village	15.7	12.8	18.7 *	12.1	20.5 *	11.2	17.5	13.2	17.2	14.2	19.5
Family outside village	6.6	6.6	6.7	7.7	3.1 *	7.1	9.0	6.4	5.7	5.4	12.5
Friend/neighbor outside village	3.9	2.7	5.1 *	7.7	5.0	1.2	2.2	0.6	6.8 *	2.7	5.5
Local trader	1.3	1.0	1.6	0.0	3.9 *	0.0	0.0	2.3	1.4	0.7	0.0
Religious institution	0.8	1.1	0.5	0.0	0.0	1.8	0.9	1.6	1.1	0.7	0.0
Input supplier	0.3	0.1	0.6	0.0	0.0	0.0	0.0	0.3	1.4	0.0	0.8
Purpose of loan											
Household expenses											
Feed family	56.7	51.6	62.0 *	50.7	67.4 *	28.8	35.0	71.7	78.4	35.8	50.8 *
Pay medical fees	14.0	14.6	13.4	22.2	18.6	4.7	5.8	20.3	18.0	5.4	3.1
Pay school fees	2.6	1.3	3.9 *	0.5	4.3 *	1.8	1.8	2.3	4.1	0.0	5.5 *
Income generating activities											
Purchase livestock	16.3	18.3	14.3	5.3	4.3	48.2	48.4	1.6	1.1	35.8	18.8
Production input	15.4	19.6	11.1 *	25.6	3.9 *	18.8	11.2	14.5	14.8	23.0	17.2
Business capital	3.3	4.1	2.5	1.9	1.2	1.8	0.9	4.8	3.6	6.8	4.7
Lease land	0.4	0.5	0.3	1.0	0.4	0.0	0.4	0.3	0.0	0.7	0.8
Pay veterinary fees	0.1	0.2	0.1	0.0	0.4	0.0	0.0	0.0	0.0	0.7	0.0
n	1811	836	975	207	258	170	223	311	366	148	128

Note: Stars denote a statistically significant difference of at least 5% between L4R and non-L4R groups.

Table 12 also reports details regarding the purposes for which households take loans. More than half used their loan to feed their family. This was more likely in non-L4R households overall; this pattern was the same across all program areas though the difference is only statistically significant in Oromia and Tigray. The next-most-frequent purposes for taking loans were to purchase livestock, purchase production inputs, and pay medical fees, each of these representing about 15 percent of the overall sample. Again, region-wise comparisons reveal nuance in these findings. Hardly any SNNPR households took loans for livestock, nor was this common in Oromia. Around one-fifth of households in Oromia and SNNPR used loans to pay medical fees, compared to less than five percent in Amhara and Tigray. Very few households used loans for business capital. The predominance of loans for feeding families and lesser use for business investment and maintenance needs, suggests that households are struggling to meet basic needs – much less investments that can improve their productivity.

Table 13 presents abridged information about what households use the loans for by the type of lender. As expected, households appeal more to informal lenders (such as family and friends) than to formal ones for loans to pay household expenditures (such as food). Conversely, loans to support income generation are more commonly provided by formal lenders.

Table 13. Purpose of loan by lender: L4R vs non-L4R, by program area

Source	Total	All		Oromiya (CRS)		Amhara (CARE)		SNNPR (CARE)		Tigray (CARE)		
		L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R	
Formal lenders												
Household expenditure	27.4	26.8	28.5	31.6	^	24.8	14.2	49.0	77.1	18.9	11.4	
Income generating activity	66.4	66.6	66.1	63.2	^	67.8	80.9	36.7	14.6	77.4	81.8	
<i>n</i>	623	366	257	57	24	149	141	49	48	111	44	
Informal lenders												
Household expenditure	78.3	76.2	80.4	77.0	85.3	46.6	69.0 *	82.6	80.7 *	60.5	75.5 *	
Income generating activity	14.2	16.6	12.0	16.8	4.8	36.2	20.4 *	11.2	14.7	30.9	16.0 *	
<i>n</i>	1756	783	973	196	292	58	113	448	462	81	106	

Note: Stars denote a statistically significant difference (at least at the 5% level) between L4R and Non-L4R groups.

Table 14 disaggregates loan information by sex of household head. Regardless of L4R participation, in the last year, male-headed households were more likely to take loans than female-headed ones, though there was no meaningful variation in the number of loans taken – all households took about one loan.

There are substantial and statistically significant differences between male- and female-headed households in the size of the loans held. The value of loans taken by male-headed households is more than one-and-a-half times that of loans taken by female-headed households.

The only gendered difference in loan use that is statistically significant is in the area of household expenditures by non-L4R households: women in non-L4R households are more likely than men to apply loans to household spending. This trend holds regardless of whether the loan is taken from a formal or an informal lender. In contrast, men and women are equally likely to use loans to support income-generating activities.

Table 14. Loan information: male- vs. female-headed households, by L4R vs non-L4R

Indicator	All			L4R		Non-L4R	
	Total	Male HH	Female HH	Male HH	Female HH	Male HH	Female HH
HHs took loan in last 12 months	53.4	59.0	43.5 *	58.8	45.5 *	59.2	41.3 *
<i>N</i>	3329	2147	1180	984	549	1163	631
Mean number of loans	1.3	1.4	1.3	1.4	1.3	1.3	1.3
Mean amount of loan (ETB)	2941	3299	2095 *	3648	2288 *	2948	1874 *
<i>n</i>	1811	1291	518	587	249	704	269
Formal lenders							
Household expenditure	27.4	24.6	34.7	24.8	31.4	24.3	42.7 *
Income generating activity	66.4	69.5	58.4	68.9	61.3	70.5	51.5
<i>n</i>	623	462	161	262	104	200	57
Informal lenders							
Household expenditure	78.3	77.0	81.5 *	75.3	78.5	78.7	84.4 *
Income generating activity	14.3	14.4	13.9	16.3	17.2	12.6	10.7
<i>n</i>	1756	1255	499	562	221	693	278

Note: Stars denote a statistically significant difference of at least 5% between male- and female-headed households.

3.1.8 SAVINGS

Table 15 presents findings describing household savings practices in L4R and non-L4R areas. More than half of households overall have current savings, a slight increase from two years prior to the baseline survey. More L4R households save than do non-L4R households, with the exception of Tigray, where this difference is not significant. Particularly in Oromia and Amhara, this difference is quite substantial. These patterns are similar to those seen two years ago, though the current differences are more pronounced. The average amount of monthly savings sample-wide is ETB 95.1 (USD 3.41). Savings are highest in Tigray and generally three to four times higher than other program areas. SNNPR is the only program area where the difference in savings comparing L4R and non-L4R is statistically significant, with non-L4R households saving about ETB 32.8 (about USD 1.18) more per month than L4R.

Close to half of all households with savings use MFIs and VSLA/VESAs. However, there are different patterns across regions and household type. L4R households are less likely than non-L4R households to save at MFIs in Oromia and Amhara – these differences are both statistically significant and sizeable – whereas MFI use by L4R and non-L4R households in SNNPR and Tigray is comparable. Conversely, L4R households in Oromia and Amhara are more likely than non-L4R households in those areas to keep their savings in VSLA/VESAs – again, with large and statistically significant differences. Overall, less than one in ten households in the sample has savings in any other category of savings institutions; there are some interesting differences, however, at the regional level. Use of RuSACCO is minimal in all program areas except Tigray. Also, savings via livelihood groups is scarce overall, again with the exception of Tigray, where about one-third of L4R households save through livelihood groups compared to less than 4 percent of non-L4R households.

The vast majority of the sample uses savings for emergencies. The only statistically significant comparison is in Amhara, where more L4R households use savings for emergencies. Applying savings for

purchasing livestock or making other investments is uncommon, with the main exception of Oromia, where one in five L4R households buy livestock with their savings. This suggests that the sample overall is unable to save at a level that allows them to invest in their livelihoods, as they exhaust their resources responding to emergencies.

Table 15. Savings information: L4R vs non-L4R, by program area

Indicator	Total	All		Oromiya (CRS)		Amhara (CARE)		SNNPR (CARE)		Tigray (CARE)		
		L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R	
HHs with active savings 2 years ago (%)	42.1	47.4	36.7 *	45.7	24.8 *	51.4	37.3 *	57.9	53.3	37.2	33.4	
HH currently has savings (%)	53.6	64.8	39.8 *	70.2	28.2 *	72.3	38.6 *	90.1	76.2 *	35.6	22.7	
	N	3329	1534	1795	359	387	397	466	385	475	393	467
Mean amount of savings (ETB)	95.1	82.5	127.4	59.7	48.6	68.9	71.5	56.5	89.3 *	184.3	367.0	
Place savings held												
Microfinance institute (MFI)	47.0	40.7	57.6 *	5.6	27.5 *	47.7	83.9 *	67.7	72.9	20.0	16.0	
VSLA/VESA	43.6	58.7	18.4 *	87.3	22.0 *	62.7	8.3 *	53.6	24.3 *	27.1	12.3	
RuSACCO	8.9	5.9	13.8 *	1.2	11.9	3.1	3.3	2.9	6.4	22.1	47.2 *	
At home	7.0	5.2	9.9 *	7.9	13.8	2.1	2.8	3.7	12.7 *	9.3	7.5	
Bank	5.7	4.2	8.2 *	3.6	21.1 *	5.9	4.4	1.7	1.9	7.9	16.0	
Livelihood Group	4.8	6.8	1.4 *	0.4	0.0	0.7	0.0	3.7	1.7	30.0	3.8 *	
Mobile banking	0.2	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.6	0.7	0.0	
Other	1.8	1.3	2.6	0.4	0.9	1.7	1.7	1.7	2.5	0.7	5.7	
Purpose of savings												
To use in emergencies	88.5	88.5	88.9	78.6	87.2	90.6	71.7 *	94.2	96.7	86.4	92.5	
To buy livestock	9.0	11.7	4.6 *	23.4	3.7 *	7.0	13.3	9.2	2.2 *	8.6	0.9 *	
For non-livestock business investment	3.1	4.0	1.5	1.6	1.8	1.7	0.6	8.1	1.7 *	2.1	1.9	
Other	4.4	4.3	4.6	1.6	0.0	7.7	15.6	2.6	0.8	6.4	5.7	
	n	1783	1026	757	252	109	287	180	347	362	140	106

Note: Stars denote a statistically significant difference of at least 5% between L4R and non-L4R groups.

3.1.9 MOBILE MONEY

Table 16 shows the findings on mobile money practices of households that reported having savings. On average, one-fifth of households participated in a mobile money transfer in the last year, though there are marked differences across program areas no clear L4R – non-L4R pattern emerges. For example, mobile transfers did not happen at all in Oromia, but were relatively common in Tigray, especially among non-L4R households. All mobile money transactions related to PSNP transfers, and almost half of all households received transfers more than three times in the last year. Households indicated satisfaction with the transfer.

Table 16. Use of mobile money: L4R vs non-L4R, by program area

Indicator	Total	All		Oromiya (CRS)		Amhara (CARE)		SNNPR (CARE)		Tigray (CARE)	
		L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R
HH used mobile money in past 12 months (%)	18.6	19.8	16.5	0.4	0.0	20.6	4.5	24.8	9.9	32.9	64.2
<i>n (of hh with savings)</i>	1783	1026	757	252	109	287	180	347	362	140	106
Number of times used											
Once	4.8	4.5	5.5	^	^	3.5	^	8.1	5.6	0.0	5.9
Two times	25.4	13.0	50.0	^	^	19.0	^	4.7	19.4	19.6	66.2
Three times	22.7	30.2	7.9	^	^	19.0	^	18.6	16.7	58.7	2.9
More than three times	46.2	51.3	36.0	^	^	58.6	^	67.4	55.6	21.7	25.0
Purpose of transfer											
PSNP cash transfer	100.0	100.0	99.3	^	^	100.0	^	100.0	97.2	100.0	100.0
Satisfaction with transfer (mean; 1-5)	3.6	3.3	4.2	^	^	3.8	^	3.2	5.0	3.2	3.9
<i>n</i>	304	192	112	1	0	59	8	86	36	46	68

Note: Stars denote a statistically significant difference (at least at the 5% level) between L4R and Non-L4R groups.

^ values not estimated for sample < 30.

3.1.10 PARTICIPATION IN FEMA AND COOPERATIVES

As shown in Table 17, hardly any household is a member of FEMA, but about one-quarter of the sample belongs to a farmer cooperative. Cooperative membership is highest among SNNPR L4R households and lowest among Tigray non-L4R households.

Of those farmers that belong to cooperatives, about one-fifth sell their products through the cooperative, but this is much less common in Amhara, Tigray and the non-L4R group in Oromia. Almost half of households who sold products through a cooperative rated the market price for their product as fair (versus moderate or unfair), although this is only accounted for by those in SNNPR; the number of households who sold products through a coop for the other regions was too small to report.

Table 17. Participation in FEMA and cooperatives: L4R vs non-L4R, by program area

Indicator	Total	All		Oromiya (CRS)		Amhara (CARE)		SNNPR (CARE)		Tigray (CARE)	
		L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R
Member of FEMA	2.5	2.9	2.0	1.4	1.5	5.3	1.9	2.6	2.9	2.5	1.7
Member of any cooperative	23.3	28.3	18.3	23.9	15.5	29.0	22.7	40.7	22.1	20.5	14.5
<i>N</i>	3335	1537	1798	360	388	397	467	386	475	394	468
Sold product through coop	19.8	21.7	17.1	16.3	1.7	3.5	4.7	44.9	53.3	6.2	2.9*
<i>n (hh member of coop)</i>	777	438	339	86	60	115	106	156	105	81	68
Market price rated 'fair'	47.4	51.4	39.4	^	^	^	^	52.1	35.7	^	^
<i>n (sold through coop)</i>	158	94	64	14	1	4	5	71	56	5	2

Note: Stars denote a statistically significant difference (at least at the 5% level) between L4R and Non-L4R groups.

^ values not estimated for sample < 30.

3.1.11 GENDER DYNAMICS

The next two tables present results of survey questions regarding two aspects of gender: women's decision making power and norms. Table 18 reports findings regarding female participation in five areas of household-level decision making. The values reflect the percentage of primary female adult decision makers who report that they make decisions in the given area either on their own or with another household member.

For any given decision category, approximately three out of four female respondents state that they make these decisions alone or jointly, which reflects a high level of women's agency. Women's decision-making voice was especially high for health and education matters. No significant differences in women's self-reported decision-making power were found between L4R and non-L4R groups, with the exception of decisions on credit, where slightly more women in L4R groups overall participated in these decisions.

Table 18. Women's decision making: L4R vs non-L4R, by program area

Decision made solely or jointly	All		Oromiya (CRS)		Amhara (CARE)		SNNPR (CARE)		Tigray (CARE)		
	Total	L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R
Health	87.5	88.2	86.7	84.6	82.0	89.4	90.6	85.9	80.4	92.2	95.1
Income	77.7	79.5	75.7	76.2	69.3	82.2	78.9	73.0	69.4	86.3	86.8
Credit	73.5	76.1	70.7 *	74.3	67.2	81.9	76.8	65.2	59.6	83.5	80.8
Household	71.6	74.0	69.0	73.0	63.9	73.8	70.0	68.6	64.3	80.0	78.9
<i>n (of hhs with adult male and female)</i>	2440	1144	1296	304	323	299	349	293	369	248	255
Education	82.8	84.0	81.6	81.3	80.2	90.5	85.8	75.4	70.5	89.5	91.1
<i>n (of hhs with adult male and female and at least one child)</i>	2294	1076	1218	288	318	275	317	276	346	237	237

Note: Stars denote a statistically significant difference (at least at the 5% level) between L4R and non-L4R groups.

Table 19 reports on men's and women's social behaviors and sharing of household tasks. The absence of statistical significance for any comparisons between L4R and non-L4R households indicates that these groups are similar with regard to these indicators of gender equity. The findings show that while sitting together within the home is common, only about one in five respondents stated that women and men sit together in public. This suggests limited social acceptability of male-female interaction in public, which can in turn affect women's access to community decision-making structures, markets, and other community forums.

The results suggest that while females are the primary actors in fetching water and firewood, more than four out of ten receive men's help with these activities. However, childcare appears to be women's realm, with just one-quarter of men helping with childcare.

Table 19. Gender norms: L4R vs non-L4R, by program area

Gender norms	All		Oromiya (CRS)		Amhara (CARE)		SNNPR (CARE)		Tigray (CARE)		
	Total	L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R
Adult men and women sit and eat together	73.6	72.5	74.8	70.8	74.1	76.5	82.9	66.7	71.7	76.4	71.1
Men help fetch water	42.7	43.8	41.4	47.7	43.4	34.3	29.4	49.2	48.3	43.1	43.3
Men help collect firewood	41.9	42.2	41.5	39.3	35.8	41.2	42.3	42.7	48.0	45.0	40.7
Men help with childcare	24.7	24.1	25.3	16.6	14.5	35.0	34.6	18.8	22.1	26.7	32.6
Adult men and women sit together in public	22.5	24.5	20.5	19.5	13.3	29.7	24.6	24.3	25.9	24.5	19.6
<i>n</i>	2508	1181	1327	308	332	306	350	309	375	258	270

Note: Stars denote a statistically significant difference (at least at the 5% level) between L4R and Non-L4R groups.

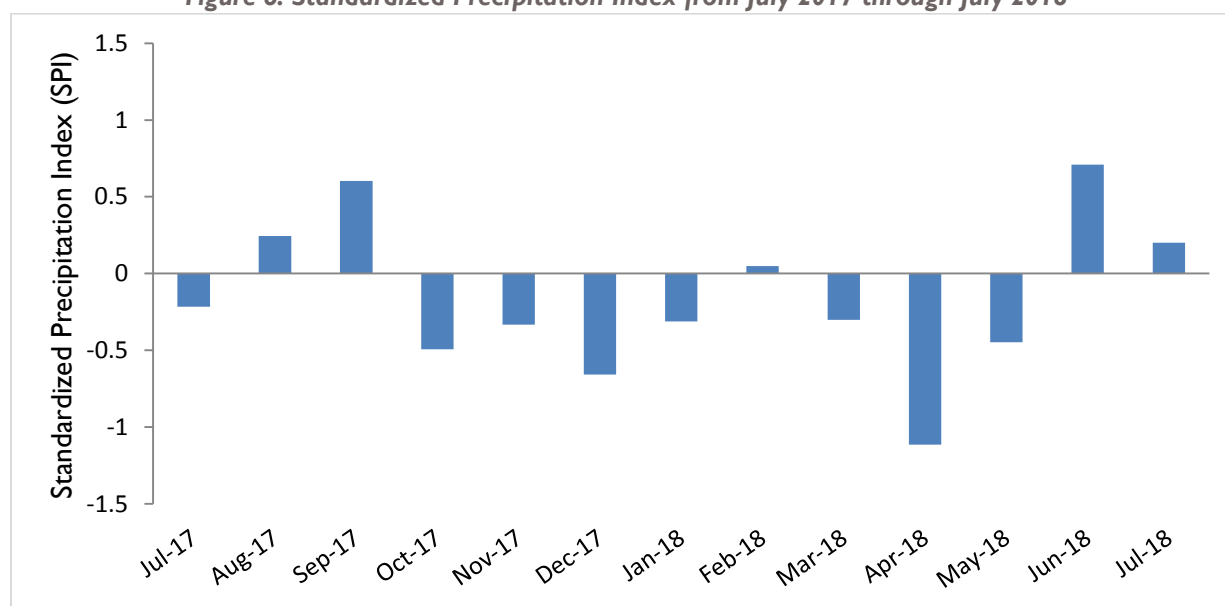
3.2 SHOCK EXPOSURE

This section presents baseline values on the types of, and degree of exposure to, shocks experienced by households in the L4R IE area in the year prior to the baseline survey.

3.2.1 SHOCK EXPOSURE

The data on shock exposure come from two sources: the African Flood and Drought Monitoring system (AFDM)¹¹ and baseline household survey. Matching latitude and longitude from baseline household surveys to AFDM data provided monthly precipitation for the study area. The data presented in Figure 6 show the average monthly precipitation across the study area in terms of deviation from the mean. The horizontal zero line in the middle of the graph represents average precipitation. Columns extending above the zero line represent months that were wetter than normal; those extending below the line represent months that were drier than normal. The figure covers a 12-month period from July 2017 through July 2018, coinciding with survey respondent recall periods that begin 12 months prior to the baseline. With few exceptions, households had been experiencing drought for almost a year prior to the start of the baseline survey.

Figure 6. Standardized Precipitation Index from July 2017 through July 2018¹²



The household survey also provided information about exposure to 26 kinds of shocks. The results are summarized in Table 20. The table only reports on those shocks experienced by at least five percent of the entire sample.

¹¹ http://stream.princeton.edu:9090/dods/AFRICAN_WATER_CYCLE_MONITOR/SPI/MONTHLY.info

¹² Source: AFDM. 2019.

Table 20. Shock exposure: L4R vs non-L4R, by program area

Shock ^{a/}	Total	All		Oromiya (CRS)		Amhara (CARE)		SNNPR (CARE)		Tigray (CARE)		
		L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R	
Climate shocks												
Variable rain/drought	30.8	27.6	34.1	25.3	42.3 *	24.7	21.2	8.8	17.5	46.2	49.4	
Excessive rains/flooding	21.1	21.0	21.2	33.6	31.2	21.7	35.3	14.0	20.8	18.0	3.4 *	
Hail/frost	16.1	17.2	15.1	3.6	3.6	35.3	30.2	10.9	18.7	18.3	10.5	
Landslides/erosion	10.5	9.5	11.6	15.8	18.8	10.1	25.3 *	2.3	2.7	10.7	2.6	
Biological shocks												
Crop disease	18.9	18.0	19.8	35.3	44.1	5.3	6.4	9.1	11.2	22.8	16.7	
Crop pests	17.1	14.9	19.5	36.4	55.7 *	9.1	5.1	15.3	11.2	4.8	7.3	
Livestock disease	12.9	11.7	14.2	10.8	18.0 *	12.3	21.0 *	7.3	8.4	15.2	10.5	
Weeds	5.0	3.6	6.5 *	4.2	13.1 *	6.0	7.3	1.3	1.1	3.3	4.7	
Economic shocks												
Increasing food prices	73.4	70.4	76.5	61.4	78.9 *	66.0	74.3	92.7	85.7 *	61.4	69.2	
Delay in PSNP transfers	61.4	56.8	66.2 *	75.6	88.1 *	25.2	34.7	63.7	73.5	61.2	66.0	
Increased prices of agricultural/livestock inputs	21.0	22.0	20.0	24.7	19.6	24.4	32.1	23.8	16.4	17.0	14.1	
Illness of household member(s)	20.7	22.3	19.1	14.2	17.5	23.4	20.6	31.3	21.9 *	19.5	17.1	
Loss of land/rental property	11.6	10.2	13.1	12.8	27.3 *	18.6	19.7	8.5	5.3	4.1	2.8	
Unemployment for youths	10.3	12.5	8.2 *	6.9	8.0	7.6	5.4	21.5	8.0 *	12.2	10.5	
Unavailability of agricultural/livestock inputs	7.7	8.0	7.4	14.4	12.6	12.3	10.7	2.1	1.9	5.6	4.9	
Number of shocks (mean; 0-26)	3.6	3.5	3.7	3.9	5.1 *	3.3	3.7	3.4	3.3	3.4	3.1	
Shock Exposure Index (mean; 0-260)	22.5	21.1	23.9 *	25.9	36.3 *	20.0	22.5	20.1	21.0	19.6	17.2	
N	3335	1537	1798	360	388	397	467	386	475	394	468	

Note: Stars denote a statistically significant difference (at least at the 5% level) between L4R and Non-L4R groups.

^{a/} Shocks reported by less than 5% of the sample not in the table include: human disease (from contaminated water); theft of money; theft of crops; theft of livestock; theft or destruction of assets; violence against household members; death of household member(s); separation/divorce of spouses; emigration of household member(s); drop in demand for agricultural or livestock products sold; drop in prices for agricultural or livestock products.

On average, households experienced between three and four shocks in the past year; although non-L4R Oromiya households experience, on average, one more shock than L4R households, it may be due to loss higher loss of land, which is typically considered an idiosyncratic shock. The majority of all sampled households experienced economic shocks, with nearly three-fourths reporting increased food prices and two-thirds experiencing delays in PSNP transfers. Other common shocks, experienced by at least one out of five households in the overall sample, included variable rain/drought, excessive rains or flooding, increased prices of agriculture or livestock inputs, and illness in the household. Conflict – of any type – was the least common kind of shock reported, reported by less than five percent of the entire sample.

Some statistical differences emerged between sampled L4R and non-L4R households, though the differences tend to be small. Overall, significantly more non-L4R than L4R households reported experiencing weeds and delays in PSNP transfers. In contrast, more L4R households than non-L4R households reported youth unemployment, driven primarily by household responses in SNNPR, where 50 percent more L4R than non-L4R households reported nearly three times as many youth employment as shocks. Likewise in Tigray, significantly more L4R households reported experiencing excessive rains/flooding compared to non-L4R households .

Households reporting shock exposure were asked to indicate how each shock affected their household income and food consumption, using a 5-point scale where 1 = no impact, 2 = slight impact, 3 = moderate impact, 4 = strong impact, and 5 = worst ever happened. From this, a shock exposure index was calculated as a weighted average of the incidence of each shock (a variable equal to one if it was experienced and zero otherwise) and the sum of its perceived severity. The maximum possible index value is 260 (26 possible shocks x 10 [“worst”] for each shock). On a scale from 0 to 260, the average shock exposure index is 22.5. According to this index, households experienced few shocks (mean number of shocks = 3.6) and of somewhat low severity, generally; non-L4R households tend to have higher values. This difference, however, appears to be driven primarily by household responses in Oromiya, where the index value is 40 percent higher for non-L4R than L4R households, suggesting they experienced more shocks, more severe shocks, or both.

Additional insight on shocks from qualitative findings

Drought/variable rainfall. In seeming contrast to the quantitative data, FGD participants and KIIs across all regions tended to mention variable rainfall/drought as the key shock they had experienced over the year prior to the baseline. This may reflect, in part, the normalization of drought or lack of rain across much of Ethiopia, and particularly in Tigray, Oromia, and Amhara. SNNPR – or at least parts – tend to be somewhat less susceptible to drought; nine to 18 percent of all sampled households in SNNPR reported experiencing variable rainfall/drought (Table 20). In Tigray, FGs and KIIs suggested that there has been drought for the last five years, with the last two years severe. One KII in Oromia described the 2017/2018 drought as “the worst.”

Qualitative data from both FGDs and KIIs also suggest there may be differences in whether people perceive an adverse event as a shock itself or as the impact of a shock, i.e., downstream effect. For example, nearly three-fourths of all sampled households reported experiencing economic shocks, well above the nearly one-third reporting variable rainfall/drought (The household survey also provided information about exposure to 26 kinds of shocks. The results are summarized in Table 20. The table only reports on those shocks experienced by at least five percent of the entire sample.

Table 20). However, variable rainfall/drought was the first and main shock reported by all FGDs and KIIs across all four regions. Economic shocks, such as increased food and agricultural input prices, as well as lower livestock prices, tended to be reported as **effects** of one or more climate-related shocks rather than the shock itself. Thus, qualitative data are not necessarily contradicting the quantitative data, but rather provide valuable insights to further explain it.

Overall, both the timing and amount of rainfall are problematic across all regions. Rains can be early or late, or fail completely. In SNNPR, for example, planting for the *meher* season begins in mid-June (e.g., maize, haricot bean, potato, sweet potato). According to FGD participants, the rains have either started in May, which is too early, or in August, which is too late, for the last several years. As noted by one FGD participant, “*The main planting seasons (June and July) are becoming dry months from year to year.*” For the 2017/2018 season, early rains in SNNPR caused water logging of fields, which resulted in widespread losses of major crops such as maize, teff, and haricot beans. FGDs in Tigray reported that rains arrive late and end early, resulting in a shortened growing season. According to both male and female FGs in Tigray, there has been a severe drought for the last two years, resulting in significant losses in crop and

fruit production. They also noted that there had been no rain for almost an entire year, from August 27, 2017 to June 10, 2018. One man indicated that a spring water source that had never been dry during his lifetime has been dry for the last five years.

Other climate-related shocks that were nearly ubiquitously mentioned by all FGDs and KIIs included floods, hail,¹³ and frost, all of which damage or destroy crops, contributing to lower production, and ultimately, worsening income and food security outcomes. In Tigray, one woman indicated that snow had stayed on the ground for three days before melting, destroying crops in the process. As one KII in Amhara suggested, frost, snow, hail, and sleet damage the leaves of crops, making them more vulnerable to insect attacks. FGD participants in SNNPR indicated specifically that frost and/or hail on coffee is a problem, especially for plantations near the river (e.g., cold air drainage). Enset is also frost intolerant, as are at least some eucalyptus, both of which are important sources of household income in SNNPR.

According to most FGDs and KIIs, hail and cold weather generally are becoming more and more problematic. When asked specifically whether these changes in weather were something “new” or whether it had “always” been a problem, groups in SNNPR indicated local weather shifts occurred approximately five years ago. According to them, 10-20 years ago farmers experienced “normal” predictable weather, i.e., rains during the summer and sunny/dry during the winter. In other words, “rain with snow” is a fairly new phenomenon within the past five years or so. A KII in Amhara indicated that frost was not a problem as recently as 2015, but is now common. According to him, many people are still eating/feeding their animals from stored grain harvested in 2015.

Floods. In Oromia, several floods over the last few years had damaged crops and other assets; deposited sand on crop fields, reducing their productivity; washed away soil nutrients; brought in debris that had to be removed; contaminated drinking water sources; and damaged phone lines such that there was no cell phone service, effectively stopping the flow of market information into communities. In SNNPR, flooding had recently destroyed 50 houses and killed two children. In both Tigray and Amhara, floods were reported to decrease productivity of fields, primarily by washing away land and soil nutrients, damaging crops. In Amhara, floods and heavy rains killed livestock and damaged roads, preventing the movement of people, services, and products both into and out of kebeles (e.g., health extension workers were unable to access areas within the kebele, children and pregnant women were unable to access health services).

Crop and livestock disease. Damage to crops from insects and diseases, as well as livestock disease, were reported as key shocks by FGDs and KIIs across all regions. In particular, outbreaks of what was described as “American army worm” occurred in SNNPR and Tigray. A local government KII in SNNPR indicated that army worm had attacked 640 hectares of maize within the two years prior to the baseline. Army worms were reportedly responsible for damage to tomato, onion, pepper, cabbage, and other garden vegetables in Tigray.

In Amhara, FGD participants and KIIs listed multiple types of insects and diseases that had been damaging various crops, including a disease called *kormed*, which affects beans at the flowering stage, and

¹³ Extensive discussions with qualitative team members suggest that use of “snow” by FGD participants and KIIs is technically hail, though it is obvious that some combination of hail, snow, sleet, or slush is occurring in many surveyed areas.

an insect, *kishkish*, which affects lentils. Wheat and barley are also vulnerable to pests, including *wag*, which FGD participants indicated was exacerbated by a lack of rain. Pest damage to wheat, maize, barley, and sorghum were also reported by FGD participants in Tigray, where infestations were made worse by the lack and high cost of pesticides. According to a female FG participant in Tigray, the pesticide is expensive enough that only large groups of farmers (e.g., 30) are able to afford it. In SNNPR, diseases have also been reducing production in coffee, enset, and eucalyptus.

Livestock disease varies somewhat across the regions, as the types of livestock that are preferred – or affordable – differ somewhat. In SNNPR, FGD participants and KIIs indicated that many cattle had died from disease. One KII noted that, “*Cattle die immediately without knowing the cause and type of diseases, I have seen 4 pregnant cows die immediately after few hours of pain in the last week without knowing the type of disease.*”

In Oromia, FGDs and KIIs focused primarily on oxen, which are considered the most important livestock, at least in those kebeles interviewed. They are used to cultivate fields and are often fattened and killed for meat to sell in the market. Unfortunately, any benefit of such a strategy tends to dissipate quickly and have more negative effects later on. According to one FGD participant, “*A lot of people who have sold their cattle to buy food, then lack cattle to plough, then suffer because of [a] lack of productivity and persistent food insecurity problems.*” Disease also affected cattle in Tigray, where it was noted that cows’ “*tongues were wounded and their abdomen distended.*” Few had the means to vaccinate against or prevent such disease with drugs. According to FGs, the agricultural officer ordered them not to slaughter and consume – or sell – cattle that had died this way, as their flesh was contaminated. Instead, the cattle were buried.

Disease also affected sheep and poultry. In Amhara, FGs mentioned widespread losses of sheep from disease during the dry season. According to them, every household lost at least some sheep. Sheep are considered an easily converted asset, or hedge against bad times. The large losses of sheep to disease reduced people’s marketing activities and therefore household income. One female FG in Tigray indicated that many poultry had also died from disease, especially during the month of January. Although the agricultural extension office provided medicine, they did not survive.

Conflict. One male FG in SNNPR indicated there was no conflict in the area over the last five years. According to a participant, “*Our culture is to communicate, negotiate and understand each other. So conflict is not a feature in our community.*” In general, however, a number of conflicts were mentioned, most of which were common across all regions.

Conflict over grazing land: Conflict over grazing land is fairly common across all regions. In general, issues arise when too many people are using what is essentially a critical and somewhat limited resource across these regions – pasture. These conflicts often involve different ethnic groups, or clans, but also neighbors and neighboring communities. In Tigray, men indicated that youths in one kebele “stole” pasture from remote communal grazing lands to feed to their cattle. Communities adjacent to the communal grazing lands would retaliate, either by fighting or seeking justice from the police.

The situation in Oromia is primarily one of increasing pressure on declining resources, but is complicated by the presence of multiple ethnic groups and their different historical senses of ownership. In some kebeles, participants felt that “competing” communities were backed by woreda and zone

officials, who had sanctioned fencing of pastures, effectively cutting off their access. Others indicated that conflicts over grazing between some Sidama and Oromo communities are resolved by elders from both sides mediating to solve the problem. However, they also admitted that the problem arises every year and gets worse during drought.

Conflict over water: According to FGs and KIs in SNNPR, increasing frequency and severity of shocks over the last five years had led to increased conflicts over water. The main issue tends to revolve around waiting your turn to get water, rather than on how much is taken. For example, women and youths spend much of their day waiting in line at water pumps. Disputes break out when someone tries to cut into the line ahead of others who have been waiting. Elders and local leaders may resolve conflicts, though local administrators were considered to be the most responsible in resolving disputes, such as “*breaking of teeth*”. Because women tend to be the ones fetching water, they are also the ones that tend to get into fights. As one male participant in Tigray noted, “*They have conflicts with neighboring kebeles when women fetch water from their territory. During the hard times, women wake up at five o’clock in the morning and travel 3 hours to fetch water.*” Conflicts also arise when community members who have no water sources attempt to take water from neighboring water sources, or if they try to take more than their allocation (e.g., 50-60 liters). Especially during times of drought, this can be a contentious issue.

These water points are only for household purposes but livestock may drink from the water run-off, particularly during times of drought. However, male FGD participants in one kebele recalled a conflict that had occurred with a neighboring kebele over a communal pond for livestock. Elders recommended additional ponds be dug by both kebeles.

Smaller, idiosyncratic conflicts were also mentioned by FGs and KIIs. In one kebele in SNNPR, male FGD participants recalled that a nearby kebele, which was known for a long grass used to make roofs of traditional houses, stopped selling them the grass, which they had done historically. Apparently this resulted in a conflict, though no mention was made of what happened or if/how it was resolved. In Amhara, flooding of farmland by farmers upriver creates conflict. Some FG participants felt that disagreements between couples were increasing, mostly because it is getting harder and harder from them to cover basic household expenses and care for their families. In Tigray, women FGD participants noted that PSNP support was a source of conflict in their kebele when the government provided support only to certain families, leaving others behind. According to the women, everyone in the kebele was of similar social status and needed help.

Availability and quality of land: A common shock reported by most FGs and KIIs revolved around population pressure, particularly as it relates to land. In essence, land is generally degraded, both from erosion (e.g., floods) and loss of soil nutrients from overuse. Arable land is limited in many areas and plots are typically planted every year, with no fallow or cover cropping possible. As a result, conflicts over land can occur. In SNNPR, the conflict was framed as primarily the result of parents not being able to divide land among their children, but that young men are attempting to claim it because they have no other good options for making a living.

Violent conflict: Some kebeles in Oromia where qualitative data were collected indicated “political instability” or conflict was one of the top three shocks they experienced. As several KIs explained, a border conflict between the Sidama and Arsi since 2013 has had serious effects on local communities in

the region. Many people were injured in violent protests. Violence and insecurity created fear, the result of which was that many people migrated out of the area, leaving farms and other assets abandoned, or at least ill-maintained. Community leaders worked with communities to raise awareness about the issues and helped resolve conflicts. According to one KI, *“There was no peace in the area for a long time.”*

Downstream Effects of Shocks on Households

As previously noted, some shocks/stressors can be considered as downstream effects of other shocks/stressors. According to FGDs and KIs across the sampled kebeles, drought or variable rainfall reduced crop yields and fodder, dried up or contaminated water sources, and led to food insecurity and increased malnutrition and poverty. Food prices also increased as a result of drought, reducing people’s purchasing power. According to a KI in Tigray, *“Availability of foods and other goods are reduced, markets for crops and livestock are decreasing and the purchasing power of the community shows gradual decrease.”* Although the following can be considered as “stand-alone” shocks as well (see The household survey also provided information about exposure to 26 kinds of shocks. The results are summarized in Table 20. The table only reports on those shocks experienced by at least five percent of the entire sample.

Table 20), these effects and others are discussed here as downstream effects, primarily of drought but also flooding and other weather-related events.

Reduced crop and livestock production. All FGs and KIs mentioned reductions – sometimes dramatic – in crop production due to drought and/or poorly timed or limited rains. Reductions were also the result of floods, frost and hail damage, which can strip plants of all its leaves. Respondents in Tigray indicated there had been no crop production at all in 2017.

In SNNPR, land that used to produce 10 quintals of maize now only produces two. According to respondents, on average, maize productivity declined from 30 to 10 quintals per hectare. Maize needs large amounts of water early in its life cycle (e.g., for germination), at flowering and seed set (i.e., kernels are filled). Enset (i.e., false banana) is a common and important food crop in SNNPR and also requires good rains. Plants become “thin,” which do not have as high a market value as “thick” enset. Shortages or failed rains resulted in dramatically reduced production of maize and enset for household consumption as well as plant materials (e.g., stalks, leaves) for livestock feed/fodder. Fodder shortages were reported across all regions, and resulted from drought, hail, and frost.

Coffee is an economically important crop to farmers in SNNPR, with 95 percent of farmers in at least one interviewed woreda growing coffee. As such, it is the primary source of household income in the woreda. KIs have suggested that the woreda market economy, which is based on coffee, is currently in recession due to a decline in coffee production primarily from drought and erratic rainfall. Producing high-quality coffee beans requires sufficient water during critical stages of the life cycle, especially flowering, seed fill, and maturation (e.g., the seed coat color becomes brown). FGs and KIs in SNNPR indicated that climate change has resulted in unreliable rainfall and that now *“rain can’t be counted on when it’s needed.”* In the absence of good rains, particularly during critical periods of the life cycle, coffee beans are smaller and weigh less, both of which impact farmers’ income. More beans are required to make up one kilo of coffee when they are “lighter than normal”. Thus, a farmer’s harvest does not earn the same as it would with fuller, heavier beans. When damaged by frost (e.g., complete loss of leaves, death of small branches and growing tips), coffee requires as much as three years to recover. According

to a woreda-level KI in SNNPR, coffee was harvested from 26 million coffee plants in 2016/2017 but only from 8.5 million plants in 2017/2018, a 66 percent reduction in harvested plants. There are a total of 54 coffee processing plants in the woreda, yet only 22 were operating this year. With coffee prices determined by the international market, declines in production had little effect on local coffee prices. Thus, the impacts – both direct and indirect – of lower production had profound effects on local markets, value chains, and businesses, with farmers and coffee producers/exporters suffering the most. Interestingly, the KI indicated that financial institutions also felt the impact; people were unable to repay loans and MFIs were unwilling to make loans.

In addition to drought, floods reduced crop production in Amhara, according to FGDs and KIs. Waterlogged fields produced little, as plants died when submerged in water for any length of time. Soils and soil nutrients were washed away, leaving land eroded and impoverished. Seeds and fertilizer were also washed away in the floods, compounding the loss in terms of productive investments. Farmers lost everything and had nothing left with which to start again. In addition to these more obvious effects, low agricultural productivity and high risks discourage many youths from agriculture and push them towards seeking temporary or wage employment in urban areas.

Livestock production was similarly affected by drought/variable rainfall and floods (i.e., animals drowned or swept away). Lack of fodder and water meant livestock body conditions deteriorated, making it difficult to get a good price in the market. Their weakened body conditions also made them more susceptible to disease. Ultimately, livestock production declined because animals died. Many farmers use loans to purchase livestock and had to default on their loans, worsening the impact.

Increased food prices. As shown in The household survey also provided information about exposure to 26 kinds of shocks. The results are summarized in Table 20. The table only reports on those shocks experienced by at least five percent of the entire sample.

Table 20, the most commonly reported shock was an increase in food prices. FGs and KIs across the regions indicated that food prices had increased in the year prior to the baseline. Households experienced a noticeable reduction in their purchasing power as income from sale of their agricultural products (e.g., milk, butter, eggs, meat, maize, enset) went down while prices of goods they wanted to buy (e.g., sugar, soap, fertilizer, clothes, school materials) increased. One KI in SNNPR noted, “*People can’t afford buying food from the market, it is expensive and buying in small amounts is not sufficient for the family even for breakfast or lunch.*” Reduced enset production resulted in inflated prices for foods prepared from enset, such as *kocho*, which is then used in other traditional foods (e.g., *bursame*, *omolcho*, *bula*). In SNNPR, the price of a kilo of maize increased from ETB 5 (USD 0.18) to ETB 12 (USD 0.43). The kebele DA indicated that the high food prices had resulted in closure of many roadside cafes/restaurants and that the price of some food items had doubled or tripled in 2018.

Respondents in Tigray indicated prices of household consumables (e.g., wheat, maize, edible oil, sugar) had increased “alarmingly.” They reported a 20 percent increase in the price of wheat between 2017 and 2018; one quintal of wheat cost ETB 850 (USD 30) in 2017 but had increased to ETB 1,050 (USD 38) in 2018.

Food insecurity/food shortages. Overall, food insecurity was the primary effect of drought or variable rainfall on households across all regions. Elders in SNNPR indicated that households used to

produce enough food to last for nine months of the year, leaving only three months in which they depended on purchases. Household production has declined enough in recent years that households now only produce enough for about six months, doubling the number of months for which they must purchase food. In particular, maize and enset production have been declining over the last four years, leading to prolonged food shortages in SNNPR. Although no children had yet died from lack of food, some people had turned to begging, which “*is not a culture in the Sidama area,*” according to one KI.

In Amhara, farmers used to harvest twice per year, in both the *meher* season (June-October) and the *belg* season (March-May). Now, however, recurring climate-related shocks limit harvests primarily to the *belg* season, according to FGD participants and KIIs. Respondents in Tigray indicated that farmers are cultivating fields using rotation, cultivating twice over a three year period. Nonetheless, maximum yields are estimated at two quintals per year when fields are fallowed for a year between plantings. As a community-level KI said, “*Families have no crop surplus to supply it to the market... [and the] price of crops was rising and people were unable to afford it from the market.*”

Shocks mainly affect land productivity, resulting in food shortages. The shocks cause households to rely more on bought food as a result. This can also have more long-term effects as households struggling with food shortages are forced to sell their livestock, which means they are unable to farm in the next season, and continue to be dependent on buying food from the markets rather than producing it themselves. Frost causes food shortages, as it damages crops and decreases the amount that families are able to harvest from their farmland. Food shortages are also prevalent in the dry season when there is drought and the community is not able to grow any crops. Food shortages cause malnutrition, particularly in children, and cause children to drop out of school.

Less production and availability of food meant households consumed less food, but they also consumed less diverse foods, both of which contributed to undernutrition and susceptibility to disease, especially among children and pregnant and lactating women. As noted in Oromia, children became “*very skinny after the drought began*” and women, particularly pregnant lactating women (PLW), more vulnerable to anemia. As one woman put it, “*As a result of the drought, a lot of people in the area have been a victim of malnutrition, mainly for pregnant women and lactating mothers, even if there is a provision of Faffa and Plumpy Nut for their kids from the health facility.*”

Lack of fodder and water for livestock. Livestock suffered throughout the L4R program areas. Shortages of fodder and water meant declining body conditions of livestock and ultimately death. A KI in Oromia noted that, “*People migrated out of the woreda with their livestock because the shortage of water in the area is such a dire problem.*” Undernourished and unhealthy livestock are difficult to sell, or must be sold at extremely reduced prices. One FG in SNNPR reported that 10 cattle had died in one day and overall 20 households lost all their cattle due to lack of fodder from the drought. One male FGD participant suggested that the majority of livestock deaths in his community resulted from lack of fodder. Shortages of rainfall and therefore of fodder/pasture over the previous three years in Tigray contributed to widespread death of livestock as well. FG participants in Tigray indicated that livestock prices had sky-rocketed; the price for hybrid cows reaching as high as ETB 60,000 (USD 2,152), depending on age and productivity. According to several FGDs and KIIs, most farmers purchase cows with loans from an MFI (e.g., DECSI) and livestock deaths can make it very difficult to repay the loans, often resulting in a spiral of borrowing and debt.

Lack of potable water. Both drought and flooding had negative effects on potable water. Water sources dried up from the lack of rainfall and flooding tended to result in their contamination. One community in Tigray indicated five of their hand-pumped water sources had dried up due to the drought, leaving the women to travel long distances for potable water. A female FG in SNNPR reported their natural spring had dried up and they now had to get water from a neighboring (one-hour journey by foot) semi-urban area, where they pay ETB 5 (USD 0.18) per jerrycan of water.

Increased competition for water between humans and livestock also resulted in contamination of potable water sources. FGD participants in Oromia indicated that waterborne diseases, such as typhoid, in contaminated water were especially hard on children and that three children had died. Another kebele in Oromia reported their only source of potable drinking water (Lake Hawassa) has high levels of fluoride, which causes problems with people's teeth and bones. Although over 70 kilometers (km) away, the kebele still gets its water from the lake. Another community had to close down its one protected source of water due to high fluoride levels, forcing community members to purchase water in Hawassa for ETB 15 (USD 0.54) per jerrycan. Many people still drink directly from the lake, and attribute illness, diarrhea, malaria, osteoporosis, and paralysis to its use. Women and the elderly are the most vulnerable, but timely treatment is difficult as there is no clinic close to the kebele and no transportation.

Social networks. Based on FGDs and KIs in SNNPR, shocks have weakened the strong social bonds that existed previously. In general, people are less able to support each other, or at least to the same degree as in previous years. For example, neighbors used to help each other harvesting their crops (e.g., maize, enset). It was customary to share what was harvested with those who had helped. Nowadays, however, harvests are so small that people cannot afford to share with their neighbors, thus everyone harvests by themselves. This is especially difficult for the landless, who depend on helping harvest other people's crops and receiving a share. As one KI stated, "*Neighbors don't even know when their neighbor is going to harvest, let alone [have anything] to share.*"

Another KI observed that there used to be much socializing associated with markets; people used to get together to socialize after returning from selling their products in the market (e.g., "celebrate" their success at market). With declining production and prices, people no longer gather together to socialize. A religious leader in Tigray indicated that the drought had made it more difficult for people to save money regularly, including for burial societies and other social groups.

Increased prices for agricultural inputs. Approximately one in five households reported experiencing increased prices for agricultural inputs (The household survey also provided information about exposure to 26 kinds of shocks. The results are summarized in Table 20. The table only reports on those shocks experienced by at least five percent of the entire sample.

Table 20). Female FGD participants in SNNPR indicated they were not able to purchase improved seed and fertilizers due to their high prices; a quintal of DAP fertilizer cost ETB 800 (USD 29) six years ago but now costs ETB 1,300 (USD 47). Even with fertilizer, crop productivity is diminishing from year to year.

Other effects. Although discussed in more detail elsewhere (see Coping Strategies), other downstream effects of the drought included higher rates of migration and school drop-outs in all four regions. As summed up by a KI in Oromia, "*...those who are endowed with an opportunity to leave the area*

are doing it seasonally, and [coming] back when they think that things get better.” Households cut back on expenses by pulling their children out of school in order to use that money for food. Being out of school and unemployed, combined with reduced household income and food shortages, youths (both males and females) migrated in search of jobs in nearby urban cities (e.g., Hawassa, Yirgelem, Addis), where they sought temporary work as daily laborers, housemaids, and street vendors (e.g., chewing gum, candy). As one KI indicated, “They [young people] will come back home after 3-6 months and give their parents a small amount of money, like ETB 500 (USD 18), from what they have left.”

There was also mention of borrowing and indebtedness, though no one indicated that either had increased specifically as a result of shocks. Across all four regions, farmers often used loans to purchase livestock, as well as agricultural inputs (e.g., seeds, fertilizer) from MFIs, farmers’ cooperatives, etc. Most FGs and KIs felt that one of the effects of drought and other weather-related shocks generally was on people’s ability to access financial products; people defaulted on their loans and were unable to secure loans for investments (e.g., replanting, livestock restocking). Indebtedness was likely to have increased somewhat, though again, was not specifically mentioned as a common effect.

3.2.2 COPING STRATEGIES

Coping strategies are household actions engage in to reduce the impact of shocks. Households’ choice of coping strategies depends in large part on their resilience capacities. It is worth noting that data from other studies¹⁴ indicate that to cope with a drought, households progressively draw down resources, beginning with savings, then household and productive assets, then small livestock, then large livestock. Households without savings or assets to sell cope by reducing food consumption, removing children from school, or sending children to work. These are considered to be negative coping strategies because they have both short- and long-term negative impacts on well-being, especially for children.

Coping strategies for any shock

Table 21 shows that over half of households reduced food consumption when faced with any shock. This may be driven primarily by households experiencing increases in food prices (see The household survey also provided information about exposure to 26 kinds of shocks. The results are summarized in Table 20. The table only reports on those shocks experienced by at least five percent of the entire sample.

Table 20), especially in SNNPR, where nearly three-quarters adopted this strategy. Other common coping strategies, each employed by at least one-fifth of all households, are reducing non-essential household expenses, selling livestock, participating in food-for-work/cash-for-work, taking up new/additional work, and taking loans within the community.

While statistically significant differences between L4R and non-L4R groups exist in the sample as a whole and in the regional comparisons, no pattern emerges and the differences tend to only a few percentage points, with the exception in SNNPR where borrowing from money lenders is higher, and even more so among L4R households. In Oromia, loans from within the community were somewhat more common

¹⁴ TANGO International, 2016, Zimbabwe Resilience Research Initiative (ZRRI) Final report. Oct 31.

than in the other regions. Another notable region-wise difference concerns direct food support: more than one out of five households in Tigray received this aid, versus just 1-12 percent elsewhere.

Table 21. Shock coping strategies for ANY shock: L4R vs non-L4R, by program area

	Total	All		Oromiya (CRS)		Amhara (CARE)		SNNPR (CARE)		Tigray (CARE)	
		L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R
Reduce current expenses											
Reduce food consumption	57.0	54.1	60.0 *	62.5	71.6	41.3	46.5	73.3	79.4	41.0	44.1
Reduce non-essential hh expenses	34.4	30.3	38.6 *	34.0	44.7 *	28.9	28.6	22.5	37.9 *	35.5	41.0
Get food on credit from local merchant	6.2	4.8	7.7 *	5.3	3.9	0.0	0.2	7.6	16.0 *	5.2	9.8
Livestock and land holdings											
Sell livestock	28.8	27.3	30.3	37.0	49.6	31.7	33.5	9.7	9.1	33.1	28.4
Get more food or money											
Participate in food/cash-for-work	32.2	33.8	30.6 *	37.0	39.5	46.1	50.5	20.4	10.0 *	35.0	25.2
Take up new/additional work	25.5	25.2	25.8	27.9	29.2	17.1	11.4	36.1	33.2	19.7	27.5 *
Borrow from family/friends within community	21.4	20.3	22.5	26.7	32.3	10.7	14.2	20.2	26.0	22.7	17.2
Receive direct cash transfer	17.8	14.5	21.2 *	4.7	18.3 *	15.7	27.0 *	2.1	4.7	30.6	32.9
Receive direct food support	10.9	12.5	9.3	11.7	9.0	4.8	1.2	0.5	0.4	28.4	22.6
Borrow from money lender	10.1	13.1	7.1 *	2.6	0.5	2.8	3.3	40.8	25.1	3.0	0.9
Engaged in spiritual efforts	6.8	6.3	7.3	11.1	10.9	7.0	7.0	4.2	2.3	4.4	8.4
Borrow from family/friends outside community	5.2	4.5	6.0	8.8	12.7	1.7	2.8	2.6	4.3	5.2	4.0
Other	44.4	47.3	41.6 *	36.1	36.2	57.9	53.5	42.1	26.6 *	51.9	49.7
n	3161	1445	1716	341	387	356	430	382	470	366	429

Note: Stars denote a statistically significant difference (at least at the 5% level) between L4R and Non-L4R groups.

Note: Data are only presented for households that experienced at least one shock in the last year and reported at least a slight impact on household food consumption and/or income (94.5 percent of households at baseline).

a/ Coping strategies adopted by less than 5% of the sample not in the table include: move to less expensive housing; take children out of school; lease out land; send livestock in search of pasture; slaughter livestock; receive food/money from family/friends within community; receive food/money from family/friends outside community; borrow from MFI/RuSACCO; receive emergency cash transfer; receive emergence food aid; used own savings; relied on remittances; send children to work for money; sell households assets; borrow from bank; sell productive assets; migration of some family members; send hh member to stay with relatives; migration of the whole family; did nothing.

Additional insight on coping strategies from qualitative findings

Reduce food consumption and current expenses. Households in Tigray and Amhara reduced the quantity and quality of food they ate, used savings and spent less on marriages and burials. In Amhara, adults reduce their food intake in order to give priority to their children for whatever food the household may have.

Livestock and land holdings. In L4R areas households coped with drought shock in various ways. The most common strategy discussed in the qualitative interviews was selling livestock in order to buy food, though in Oromia, “the number of people having livestock are very few in numbers” having sold livestock and crops to cope with previous shocks. In Oromia and Amhara, L4R households sell crops and livestock to cope with drought, and in Oromia households will seek out local markets that offer the best prices. In Tigray, households will sell livestock, send them to relatives in neighboring woredas, or buy forage though that is increasingly expensive. Selling livestock can become a negative coping strategy for households when it saps the future productive agricultural capacity of the household. Households in Amhara build ponds to preserve water for livestock during drought. Several areas said that men may undertake livestock fattening activities to recover from some shocks, but this is likely to be done by better-off households and not during a drought.

Get more food or money. Many households in both L4R and non-L4R areas rely on food from PSNP. Negative coping strategies during drought in L4R and non-L4R areas in Oromia, Amhara and Tigray include both boys and girls from grade 7 and up youth from poor families dropping out of school in order to work. In Amhara, youth may turn to illegal tree-cutting or theft to obtain money. In Amhara, people rely on PSNP to help them cope, and elderly people affected by shocks become entirely dependent on PSNP and savings and loans associations in order to access money and obtain food.

Many households try to diversify their livelihoods to cope with drought, with mixed success. Some L4R households in Amhara grow and sell vegetables though most lack the technical knowledge to do so. Better-off households in Amhara that own cattle sell milk products, In both areas, men will do casual labor or purchase crops from other areas and resell them in their communities, while women resell butter and cheese and engage in petty trade; young men will form groups to crush stone to sell to home and road builders and young women will work in shops. In Tigray, most attempts to diversify into small-scale production of chickens, honey, or horticulture failed due to drought-related problems such as pests and disease. Only a few households in L4R areas of Oromia and Tigray reportedly receive remittances from relatives living abroad as the migrants often earn very little and are not able to send money to their families.

Loans. Some young and adult men in Tigray take microfinance loans to rent irrigated land in the southern part of the region, where they can grow crops for income. In Amhara, respondents said “there is no farmer who has not borrowed money at least for fertilizer” from farmers’ cooperatives. Some households in Amhara take productive loans but due to the drought use part of the loan to purchase food; households who spend their entire loan on food frequently default on repayments and cannot obtain new loans.

Migration. The qualitative interviews suggest that migration is a more widely used coping strategy among poor families than the quantitative data indicate. In Oromia, households respond to drought by temporarily migrating in search of pasture and water for their animals. People also migrate seasonally for casual work, and qualitative respondents report that many households have moved out of the area in search of better opportunities. Tigrayan youth and adult men migrate to regional towns seeking casual labor, and to other parts of Ethiopia but face discrimination in finding employment; in Amhara respondents also said that migration options to other regions were limited due to ethnic conflicts. A few male and unmarried female youth migrate illegally to other countries (Somalia, Kenya, Sudan, the Middle East) for unskilled work; while this was common in Tigray, few youth did so in SNNP or other regions.

Other. When drinking water is scarce, households purchase clean water from towns to protect themselves from disease. In Amhara, respondents responded to crop disease by shifting to less affected crops and buying improved disease resistant seed, though some households could not afford the new varieties. Crop pests (i.e., army worm) were also a problem in Oromia, where households mitigated the problem by working together to remove the worms from crops by hand.

Coping strategies for most salient shocks.

Table 22 shows the coping strategies used by households that experienced two of the most salient shocks: increased food prices and drought/variable rain. These two shocks were selected based on the preponderance of “increased food prices” relayed in the quantitative questionnaire, and that “drought”

was a prominent discussion in the qualitative component, even though it was not as apparent in the quantitative survey. This section addresses the following IE research question:

Research question 2. What coping strategies did households employ to deal with the salient shock(s)?

With the exception of “food support”, households adopted the same strategies at differing magnitudes, regardless of the shock. Reducing food consumption is more common when households experience increases in food prices compared to drought, while selling livestock is more common among households impacted by drought, which is logical given the nature of the shock (e.g., a household may need to quickly generate cash income to be able to purchase medical care, thus selling livestock is a more accessible solution than seeking work or reducing consumption).

Table 22. Coping strategies adopted for top two shocks: L4R vs non-L4R

Coping Strategies ^{a/}	Shock				
	Food Price Increases		Variable Rain/Drought		
	L4R	Non-L4R	L4R	Non-L4R	
Reduce food consumption	53.2	54.4	34.1	42.7 *	
Reduce non-essential hh expenses	28.3	32.9	21.0	30.8 *	
Find new work	19.3	18.1	16.3	17.5	
Sell livestock	18.1	19.8	24.3	24.1	
Cash support	9.6	14.5 *	21.3	28.7	
Food support	n/a	n/a	22.3	18.5	
Food-for-work/Cash-for-work	23.2	23.5	32.4	29.7	
	<i>n</i>	1083	1384	405	577

Note: stars denote a statistically significant difference of at least 5% between L4R and non-L4R groups.

^{a/} Values reported only for household experiencing the shock in the past 12 months and reported at least a slight impact on household income or food consumption.

3.3 HOUSEHOLD WELL-BEING OUTCOMES

This section presents baseline values of indicators of key well-being indicators used to evaluate the L4R project’s impact over time.

3.3.1 EXPENDITURES AND POVERTY

Indicators of poverty capture households’ ability to meet the basic survival needs of their members, such as food, shelter and clothing. An income-based measure of poverty indicates whether a household currently has sufficient resources to meet its basic needs. Household incomes are measured using their total expenditures per capita on food and non-food items.¹⁵ For food, which typically makes up the largest proportion of household expenditures in developing countries, data are collected on cash purchases, food consumed from a household’s own production, and food received in-kind. The poverty line below which a household is deemed to be poor is the USD 1.90 per capita daily expenditures line

¹⁵ The expenditures questionnaire contains 80 food items and 42 non-food items.

set by the World Bank.¹⁶ The equivalent poverty line in ETB is derived using 2011 Purchasing Power Parity (PPP) exchange rates.

Across the sample area, two in three households (59.7 percent) are poor, and significantly more are poor overall and in Amhara, SNNPR, and Tigray (Table 23). This is substantially higher than the proportion of the national population below the poverty line: 26.7 percent (2015 figure).¹⁷ Average per capita expenditures across the sample is USD 2.02, and tends to be lower among non-L4R households, particularly those in Amhara. Food accounts for the biggest source of expenditures in all four project areas (74.6 percent), and is significantly higher among non-L4R households overall and in Oromia and SNNPR. A large share of household expenditures spent on food, especially in rural contexts, indicates households' poor economic status.¹⁸

Table 23. Expenditures and poverty: L4R vs non-L4R, by program area

	All		Oromiya (CRS)		Amhara (CARE)		SNNPR (CARE)		Tigray (CARE)		
	Total	L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R
Expenditures poverty (\$1.90/day)											
Poverty (%)	59.7	54.9	64.6 *	63.0	67.8	46.1	64.5 *	82.1	84.8	34.0	47.0 *
Per-capita expenditures (daily USD)											
Per capita daily expenditures (USD)	2.02	2.18	1.86 *	2.23	1.76	2.31	1.82 *	1.38	1.21	2.70	2.45
Food	1.46	1.56	1.36 *	1.67	1.33	1.67	1.39 *	0.89	0.84	1.96	1.75
Non-food	0.56	0.62	0.50 *	0.56	0.42	0.65	0.43 *	0.49	0.37	0.74	0.71
% of expenditures on food	74.6	73.3	75.9 *	73.0	77.8 *	76.0	78.8	69.3	73.3 *	74.9	74.4
N	3334	1536	1798	359	388	397	467	386	475	394	468

Note: Stars denote a statistically significant difference of at least 5% level between L4R and non-L4R groups.

3.3.2 FOOD INSECURITY

Food security exists “...when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life.”¹⁹ In this report, food security is measured using two types of indicators: (1) indicators based on reports of food consumption (Household Dietary Diversity Score (HDDS)); and (2) indicators that reflect respondents' perceptions of and experiences with hunger and food insecurity (Food Insecurity Experience Scale (FIES) and Coping Strategies Index (CSI)).

Household Dietary Diversity Score. The HDDS reflects the quality of households' diets and is the total number of food groups, out of 12, from which household members consumed food in the last day. The indicator employed and calculation methods were developed by the USAID-funded Food and

¹⁶ In October 2015, the World Bank announced a new international poverty line of USD 1.90 per capita per day using 2011 PPP.

¹⁷ United Nations Department of Economic and Social Affairs, Statistics Division. Accessed 3 January, 2019. <https://unstats.un.org/sdgs/indicators/database/>

¹⁸ In general, lower the share of food expenditures on total income of the households, lesser the prevalence of poverty. For example, the non-poor households in South Africa spend less than 20 percent of their income on food (<http://www.statssa.gov.za/?p=2564>, retrieved on December 27, 2017).

¹⁹ FAO. 2006.

Nutrition Technical Assistance (FANTA) project.²⁰ As shown in Table 24, on average, households in the project areas access and consume approximately 5 out of 12 food groups. This indicates that households may not have the resources to access a more diverse set of food groups or that more diverse foods may not be readily available. While the difference in the mean HDDS of L4R and non-L4R groups is statistically significant, the difference is small. This trend extends to all regions except Tigray, where L4R and non-L4R groups have the same HDDS.

Table 24. Food security indicators: L4R vs non-L4R, by program area

Food security indicators	Total	All		Oromiya (CRS)		Amhara (CARE)		SNNPR (CARE)		Tigray (CARE)		
		L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R	
Household dietary diversity (HDDS) (mean, 0-12)	4.8	5.0	4.6 *	5.2	4.4 *	4.7	4.0 *	4.6	4.2 *	5.4	5.4	
Moderate-to-severe food insecurity (FIES) (%)	61.3	58.3	64.4 *	83.6	88.9 *	27.0	39.8 *	85.7	94.1 *	41.9	40.6	
Severe food insecurity (FIES) (%)	15.1	13.3	16.8	18.1	25.0	3.5	1.9	32.2	43.8	2.0	0.9	
	N	3334	1536	1798	360	388	397	467	385	475	394	468

Note: Stars denote a statistically significant difference of at least 5% level between L4R and non-L4R groups.

Food Insecurity Experience Scale (FIES). The FIES is an indicator of moderate-to-severe and severe levels of food insecurity based on 30-day recall.²¹ Two-thirds of the households in the survey area experienced moderate-to-severe food insecurity in the 30 previous days; about 15 percent experienced severe food insecurity. Findings for the FIES generally follow the same pattern seen with HDDS: non-L4R households experience greater food insecurity than L4R households (though the differences in Tigray are not statistically significant).

Food Coping Strategies. Table 25 reports results on 11 coping strategies households employed when faced with food insecurity.²² Respondents were asked how many days they employed each strategy in the last week.

²⁰ Swindale and Bilinsky (2006).

²¹ FIES is a new indicator recently formulated by FAO in 2016 and adopted by FFP in 2017. FAO-prescribed methodology was used to compute the FIES indicator. Details about FIES calculation can be found at: [The Food Insecurity Experience Scale-Development of a Global Standard for Monitoring Hunger Worldwide](#).

²² Maxwell and Caldwell (2008).

Table 25. Food coping strategies: L4R vs non-L4R, by program area

Food coping strategies	Total	All		Oromiya (CRS)		Amhara (CARE)		SNNPR (CARE)		Tigray (CARE)		
		L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R	
Percent of households relying on various food coping strategies												
Limit portion size at mealtimes	63.9	60.3	67.6 *	75.6	87.1 *	30.2	52.0 *	90.1	97.1 *	47.7	41.5	
Reduce number of meals eaten in a day	50.6	45.7	55.7 *	71.7	84.3 *	14.6	30.2 *	69.1	89.9 *	32.0	25.9	
Rely on less preferred and less expensive foods	43.9	38.7	49.2 *	62.5	74.0	13.1	26.1 *	59.2	78.5 *	24.9	24.1	
Restrict consumption by adults in order for small children to eat	16.0	13.9	18.1 *	25.8	35.3	3.8	9.0 *	23.4	29.9	5.6	2.4	
Borrow food, or rely on help from a friend or relative	13.4	12.3	14.6	24.2	24.2	2.5	6.2	19.2	24.4	5.8	5.8	
Purchase food on credit	12.9	11.6	14.2	13.9	20.6	2.8	6.2 *	23.6	26.3	6.6	5.8	
Consumed seed stock held for next season	7.0	6.7	7.4	10.8	12.1	2.5	6.2	9.9	10.7	4.3	2.1	
Send household members to eat elsewhere	5.2	4.0	6.4 *	6.4	11.3	1.5	2.8	7.3	12.2 *	1.5	0.9	
Skip entire days without eating	4.9	3.9	5.9	8.3	4.6	1.3	0.9	7.0	17.9 *	0.5	1.5	
Gathered wild food, hunt, or harvested immature crops	3.4	2.6	4.3 *	5.6	6.7	0.3	0.6	2.9	10.5 *	2.3	0.2 *	
Feed working members of household at the expense of non-coping strategies index	1.4	1.7	1.1	3.3	2.6	1.5	1.9	1.0	0.4	1.3	0.0 *	
	5.5	4.9	6.0	7.6	8.9	1.8	3.4	7.7	10.1	3.2	2.6	
	N	3334	1536	1798	360	388	397	467	385	475	394	468

Note: Stars denote a statistically significant difference of at least 5% level between L4R and non-L4R groups.

More than half of all households limited portion size at mealtimes and reduced the number of meals in a day; over one-quarter relied on less-preferred and less-expensive foods. Relative to non-L4R households, L4R households are less likely than others to limit portion sizes, reduce the number of daily meals, rely on less-preferred foods, restrict their consumption to allow children to eat more, send household members to eat elsewhere, or gather wild foods – though these differences are no greater than 10 percentage points.

The data reveal more substantial differences in the use of specific coping strategies when we examine the findings by region. Non-L4R households in Amhara and SNNPR are much more likely to reduce the number of daily meals and resort to less-preferred foods than L4R households, with differences ranging from 13-21 percentage points, and in Amhara, half of non-L4R households limit portion size compared to one-third of L4R households.

In the qualitative survey, L4R households in Tigray and Amhara also reported that they reduced the quantity and quality of food they ate. In Amhara, adults reduce their food intake in order to give priority to their children for whatever food the household may have. In SNNPR, it is the females and elders who eat less to preserve more food for the children; in a non-L4R area, women said that “We eat less amount of food than what we used to eat. We eat only once a day and chew chat to lose appetites so that we can spend the day without food.” In SNNPR, people also reduce the number of daily meals from three to two, and/or substitute less expensive or less preferred foods, such as *enset (amcho)* root, which is normally used as animal food. Women in Tigray also eat less food and lower quality food so that their husband and children can eat more.

3.3.2 RECOVERY FROM SHOCKS

For each of the 26 shocks, respondents were asked if they were exposed to the shock and to what extent their household had recovered. Households were considered “recovered” if they reported (3) or (4) from the list of response options below:

- 1) *Did not recover*
- 2) *Recovered some, but worse off than before*
- 3) *Recovered to same level as before*
- 4) *Recovered and better off*

Table 26 shows the percentage of households considered to be recovered from two of the salient shocks, increased food prices and drought. This section addresses the following IE research question:

Research question 4. How did the severity of exposure to the salient shock(s) affect households’ ability to recover from it? Are there any gender or generational differences?

It is notable that only roughly ten percent of the households are recovered from either shock. The findings indicate some statistically significant differences between L4R and non-L4R households, and the trend shows L4R households are more likely to be recovered compared to non-L4R households.

Table 26. Recovery from shocks: L4R vs non-L4R, by program area

Shock ^{a/}	Total	All		Oromiya (CRS)		Amhara (CARE)		SNNPR (CARE)		Tigray (CARE)	
		L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R
Increased food prices	8.5	10.3	6.8 *	10.6	2.6 *	9.4	5.3	13.6	11.4	6.6	7.7
<i>n</i>	2391	1055	1336	281	305	254	341	354	405	229	285
Variable rain/drought	11.7	14.7	9.2 *	12.4	11.3	26.1	14.1	18.2	6.0 *	10.9	6.9
<i>n</i>	948	398	559	89	160	92	99	33	83	175	217

Note: Stars denote a statistically significant difference of at least 5% level between L4R and non-L4R groups.

a/ Values reported only for households experiencing the shock in the past 12 months.

Additional insight on recovery from shock from qualitative findings

FGD participants and KIs felt that wealthy households are better able to deal with shocks/stresses. That is, they felt that households who have large land holdings, many livestock, remittances (especially from educated children), savings, and are able to spread their risks by diversifying their crops (e.g., sorghum at lower elevation combined with coffee at higher elevation), livestock (cattle, sheep, goats, poultry), and other income-generating opportunities (e.g., off-farm, non-farm) are better able to deal with and recover from shocks and stressors.

In SNNPR, wealthier households have more than four large animals (e.g., dairy cattle, diverse breeds), more than 2 hectares (ha) of land, coffee, enset and eucalyptus trees, nice houses with corrugated iron sheets for roofing, and eat at least three meals/day. Poor households have no cattle but 2-3 sheep/goats, 0.25 ha land, grass-roofed houses and very poor households live in huts, only have chickens, less than 0.2 ha of land, and do not eat more than twice a day. As one FGD participant in SNNPR noted, “As there is a difference in limbs of a hand, there is a difference in households’ ability to respond to shocks.”

The elderly and female-headed households are considered less able to deal with or recover from shocks/stresses. In the former, there are no children to help and in the latter, women have many responsibilities, including growing crops (including ploughing), rearing livestock, preparing food, and taking care of the children. Especially when children are young, female heads of household are not able to stray far from the homestead, let alone migrate in search of work. As summed up by a man in Tigray, “Men can leave their children with their mother and they can go out to search for food or money.” The landless are also severely affected by shocks, especially climate-related shocks. Not only do they experience a loss in production – either partial or complete – but they may also become indebted by being unable to repay any loans for renting land.

One FG in Oromia suggested that some households are more willing to “do the work needed to recover” from shocks. As an example, they indicated that some households simply put in the effort to deal with the outbreak of army worms (see shocks) as soon as they appeared while others waited for help before doing anything.

There was widespread consensus across FGDs and KIIs that for the most part, communities were not recovering from the shocks and stresses they had experienced. Nor did they feel they were better able to deal with future shocks than they were five years ago. The key reasons for both sentiments are that shocks are more frequent and more severe now than they used to be, and that there is no reliable support when they need it. A female FGD participant in SNNPR noted, “*Because there is not any support [they get] to recover and the shocks are continuously increasing.*” In Tigray, people felt that multiple shocks (including drought) over a few years, sale of most of their livestock, increased price, and reduced cash from PSNP all combined to make it very difficult for them to recover. As long as the weather continues to be variable and crops fail, most respondents felt they would not be able to deal effectively with any shocks. Several FGs in Oromia agreed with the statement, “*This [lack of recovery] is due to increments in frequency of shocks, absence of strong political will from our leaders and non-existence of relevant technical expertise to help us successfully recover from the shocks we have been suffering from.*” FGs in Amhara also indicated people were losing confidence in their ability to recover, in large part due to markets and their unpredictability and fluctuating prices.

3.3.3 WELL-BEING OUTCOMES BY MALE- AND FEMALE-HEADED HOUSEHOLDS

Table 27 disaggregates the findings on well-being outcomes by gender of household head. Only two indicators show a statistically significant difference associated with gender. First, poverty is higher among male-headed households in both L4R and non-L4R areas; the difference is more pronounced in L4R households. Second, total per capita expenditures are higher in female-headed households and again, the difference is greater in L4R households. These are atypical findings; poverty tends to be higher in female-headed households, and per capita expenditures tend to be lower. There is no meaningful variation between male- and female-headed households for any other well-being outcome measured.

Table 27. Well-being outcomes by male- and female-headed households: L4R vs non-L4R

Outcomes	All		L4R		Non-L4R			
	Total	Male HH	Female HH	Male HH	Female HH	Male HH	Female HH	
Expenditures	2.02	1.89	2.24 *	2.03	2.44 *	1.76	2.03 *	
Poverty	59.7	64.3	51.5 *	60.5	45.2 *	68.2	58.1 *	
Household dietary diversity (HDDS) (mean, 0-12)	4.8	4.8	4.8	5.0	4.9	4.5	4.7	
Moderate-to-severe food insecurity (FIES) (%)	61.3	61.6	60.8	58.1	58.6	65.2	63.0	
Severe food insecurity (FIES) (%)	15.1	15.4	14.4	13.4	13.2	17.4	15.8	
	<i>N</i>	3334	2149	1185	985	551	1164	634
Recovery: Increased food prices	8.6	8.7	8.4	10.7	9.7	6.9	7.0	
	<i>n</i>	2404	1573	831	687	374	886	457
Recovery: Variable rain/drought	12.1	13.0	10.3	15.8	14.8	10.8	6.4	
	<i>n</i>	955	629	326	255	139	374	187

Note: Stars denote a statistically significant difference of at least 5% between male- and female-headed households.

3.4 RESILIENCE CAPACITIES: DESCRIPTIVE ANALYSIS

This section presents and analyzes the absorptive, adaptive, and transformative resilience capacity index scores overall and for L4R and non-L4R by region, along with the components that comprise each index. Computation of the three resilience capacity indices – absorptive, adaptive, and transformative – follows USAID/TANGO methods; factor analysis is the key feature of these methods. Accordingly, the first factor is retained and variables with negative loadings are dropped. Factor analysis is re-run until the remaining variables all have positive loadings. Annex 3 details how each component is computed and cross-references survey questions used to gather data for the component. Note that some components are part of more than one index (e.g., asset score is a component of both the absorptive capacity index and the adaptive capacity index). All resilience capacity components included in this section are presented on their original scales to facilitate understanding of the disparate factors – and their differing measurement – contributing to resilience capacities.

3.4.1 ABSORPTIVE CAPACITY

Absorptive capacity is the ability to minimize exposure to shocks and stresses (ex ante) where possible and to recover quickly when exposed (ex post).²³ Improved disaster risk management is aimed at strengthening absorptive capacity at the community and household levels, helping them to both reduce disaster risk and absorb the impacts of shocks without suffering permanent, negative impacts on their longer-term livelihood security.

Table 28 shows that the absorptive capacity index for the sample as a whole is 39.0 (on a 0-100 scale), which is driven primarily by households' access to cash savings and humanitarian assistance. The absorptive capacity index for L4R households is higher than for non-L4R households overall and within each region. More than two-thirds of L4R households in Oromia have cash savings, versus less than one-third of non-L4R households. Similarly, in Amhara, approximately twice as many L4R households than non-L4R households have savings.

²³ The descriptions in the paragraph of absorptive, adaptive, and transformative capacity are from Frankenberger et al. (2012b).

Table 28. Absorptive capacity and component indicators: L4R vs non-L4R, by program area

	All		Oromiya (CRS)		Amhara (CARE)		SNNPR (CARE)		Tigray (CARE)		
	Total	L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R
Absorptive capacity (mean, 0-100)	39.0	40.6	37.3 *	42.2	39.4	40.3	33.2 *	41.0	37.2	39.4	38.8
Bonding social capital (mean, 0-6)	2.9	2.9	3.0	3.4	3.7 *	2.4	2.3	3.0	3.2	2.8	2.8
Households with cash savings (%)	52.4	64.6	39.8 *	70.0	28.1 *	72.3	38.5 *	89.9	76.2	35.5	22.6
Shock preparedness and mitigation (mean, 0-4)	1.3	1.4	1.3	1.4	1.2	1.3	0.9 *	1.4	1.3	1.4	1.6
Households with agricultural insurance (%)	0.2	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.6
Availability of humanitarian assistance (%)	47.8	53.4	42.1	38.3	59.5	44.3	32.8	61.1	18.7 *	63.2	52.6
Asset ownership index (mean, 0-53)	9.2	9.3	9.2	9.3	9.9	10.4	10.3	7.2	6.8	10.1	9.6
Household (mean, 0-22)	1.8	1.8	1.7	1.5	1.7	1.7	1.3 *	1.5	1.3	2.4	2.4
Productive (mean, 0-22)	5.2	5.2	5.2	5.4	5.2	6.0	6.2	4.2	4.2	5.4	5.3
Livestock (mean, 0-9)	2.2	2.2	2.3	2.4	3.1 *	2.6	2.8	1.5	1.4	2.3	1.9
N	3335	1537	1798	360	388	397	467	386	475	394	468

Note: Stars denote a statistically significant difference (at least at the 5% level) between L4R and Non-L4R groups.

Ownership of any type of asset – household, productive or livestock – is extremely low throughout the sample; the highest score in this respect is in Amhara, where households have an average of six productive assets out of a maximum of 22. Overall, households own few livestock, with a mean of only two animals.

In general, Table 28 shows that households in all regions exhibit no current ownership of **agricultural insurance**, **low shock preparedness**, but have somewhat moderate levels of **bonding social capital**²⁴.

Additional insight on absorptive capacity from qualitative findings

Absorptive capacity involves both ex ante strategies put into place before a shock or stressor is experienced as well as ex post strategies after a shock or stressor. How households exercised their absorptive capacity after shocks/stressors is described in detail in Section 3.2.2 (Coping Strategies). The discussion that follows focuses primarily on what, if anything, households do to mitigate the impact of shocks and stressors before they occur.

Shock preparedness plays a critical role in household and community resilience; recovery is facilitated by taking active measures to minimize negative impacts of shocks in anticipation of and before they occur. At the community level, shock preparedness happens through disaster risk reduction (DRR) planning. Across all four regions, FGDs and KIIs revealed that DRR planning happens at the woreda level and does not typically involve participation by community members – at least not in a pro-active sense. KIIs tended to suggest that communities are included in planning, while community members (FGs) tended to indicate they are not. This may simply reflect differences in who is being asked; community and kebele-level leaders – who are often key informants – are more likely to be involved in planning and decision-making activities than individual households. For example, a community KI in Tigray said, “As a community leader, I’ve had lots of invitations by government officials at woreda and regional levels for the inputs of

²⁴ *Bonding social capital* is seen in the bonds between community members. It involves principles and norms such as trust, reciprocity, and cooperation, and is often drawn on in the disaster context, where survivors work closely to help each other to cope and recover (Frankenberger et al., 2013). The bonding social capital score is based on responses to two questions: one asking whether the household would be able to get help from various categories of people in their community if they need it, and one asking whether the household would be able to give help to people in need in their community. The possible responses are *relatives, non-relatives within my ethnic/caste group, non-relatives of other ethnic/caste groups* or *no one*, and the maximum score is 6.

community members about what to do about disaster risk management/response and other issues.” Thus, while he may perceive the community is directly involved in planning, the community may not.

In general, most FGD participants and some KIs felt communities had little or no input into woreda DRR plans. Said one KI in SNNPR, “Leaders of this community were not participating in woreda-level DRR/DRM because they [weren’t] given the chance to participate.” In Amhara, FGD participants indicated, “We didn’t come through the experience of participating in a disaster risk reduction plan so far. We don’t know why local officials don’t allow us to participate in our own issues. The local officials are just giving us information on how and what to cultivate to resist shocks, where to plant trees and how to conserve soils at the great expense of engaging us in an early warning system at planning level.” In Amhara, some communities report having committees, composed of development groups (e.g., women’s, health, agricultural), women, youths, and households, to develop a kebele-level DRR plan that theoretically makes its way up to woreda, regional and zonal levels. Other communities indicated they only receive advice and/or warnings from DAs regarding impending rains, drought, floods, etc. and how to deal with them (e.g., when and what to plant).

Several KIs in SNNPR indicated the woreda has a 5-year strategic plan for DRR and response as well as resilience building. The woreda DRR plan includes response activities, such as providing in-kind grain support (or cash) to coffee farmers whose crops are affected by hail or frost. Although there is a budget for DRR, no monies have been released. Thus, as one man suggested, the woreda DRR and response plans were “stuck at the woreda office, left on desks.” FGD participants in Tigray felt the same, “The plan was just paper work.”

Although there were strong perceptions that “disaster risk reduction/management does not exist” throughout the four regions, it is clear that communities engage in activities to mitigate negative effects of at least some types of shocks/stressors, whether officially or “unofficially”. In some cases the process may be constrained by politics, ineptitude, or corruption, and funding to implement woreda DRR plans is a challenge. But regardless of whether communities have input into the woreda’s DRR plans, most communities reported engaging in certain “public works”, often perceived as part of the PSNP or even a form of voluntary community mobilization. Thus, in all four regions households are “preparing for future shocks” by building water-harvesting infrastructure (e.g., communal ponds for domestic and livestock use, boreholes, diversion channels); implementing soil conservation practices (e.g., terracing, bunds); diversifying their livelihoods, especially those less vulnerable to climate-related shocks; saving crops (even at the expense of current consumption), fodder, and cash (from sales of eucalyptus, livestock, etc.); fattening livestock (e.g., cattle, oxen, goats) to sell; switching to more drought-tolerant livestock breeds (e.g., goats); growing quick-maturing (e.g., peppers, onion, tomato, haricot beans) or more frost-tolerant (e.g., carrots) vegetables for both household consumption and to sell; planting fodder (e.g., elephant grass); and engaging in wage labor (e.g., stone work), especially youths. As a woman in Oromia put it, “I used different mechanisms to prepare against future shocks/stresses; saving grains rather than selling, reducing my expenditures, storing cattle fodder, and also by saving money at [the] rural savings group.”

Other ways households engage their ex post absorptive capacity is through social assistance, whether in-kind or cash, which primarily involves *ad hoc* interactions among individual households and neighbors or through community and religious leaders or structures. Qualitative findings indicate the presence of some informal community-based mechanisms that provide community assistance and support – whether

material, monetary, or interpersonal. For instance, social support through *iddir* (e.g., burial societies or other help groups) was mentioned in all four regions, even while the amount of support provided to families in need was decreasing. *Iddir* groups in some communities have expanded from primarily providing funds for funeral and associated costs to providing money to help members in need more generally, including to recover from shocks. In Oromia, a men's FG noted, *"The most important asset of our community is the social support we have been having since our establishment. We have a strong iddir through which we support each other in any problems including problems from shocks. The assistance is in the form of cash, crop, clothes, and labor."* For a more detailed discussion of social capital, see "Additional Insight on Social Capital from Qualitative Findings" at the end of Section 4.1.

As previously noted, FGs often perceive that their communities do little – or nothing – to prepare for future shocks/stressors, even though they also acknowledge participation in public works activities that reduce their exposure to negative impacts of some types of shocks (e.g., drought, floods). At least one FG in every region indicated they did nothing but *"prayed to God."* As a female FGD participant in SNNPR indicated, *"[We] just worship God and believe that God will help in times of rainy season; we are not confident about the future and what comes next."* There is also widespread reliance on help from the government, in particular PSNP or *"other emergency program interventions"*. In Tigray, a women's FG indicated they are *"wishing"* for government and private investment to create wage employment, and a male FG indicated they had *"no plans to protect [against] future shocks...our only guarantee is getting help from PSNP."*

3.4.2 ADAPTIVE CAPACITY

Adaptive capacity involves making proactive and informed choices about alternative livelihood strategies based on changing conditions. Interventions to improve adaptive capacity are aimed at improving the flexibility of households and communities to respond to longer-term social, economic, and environmental change. This necessarily entails promoting livelihood diversification, supporting asset accumulation, and improving the social and human capital available to vulnerable populations.

Table 29 presents the findings on adaptive capacity and its eight component indicators. The mean index score for the overall sample is 50.9; disaggregation by region and by L4R participation shows minimal deviation from the mean. The same pattern holds true for the individual component indicators – there is little deviation across the sample, regardless of region or L4R participation. In addition, while there are some statistically significant results for L4R and non-L4R in Oromia and Amhara, the differences are very small. Nevertheless, some results are worth noting because they help describe the resilience characteristics of the sample as a whole.

Table 29. Adaptive capacity and component indicators: L4R vs non-L4R, by program area

	Total	All		Oromiya (CRS)		Amhara (CARE)		SNNPR (CARE)		Tigray (CARE)	
		L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R
Adaptive capacity (mean, 0-100)	50.9	52.2	49.5 *	55.7	50.9 *	51.0	51.1	51.5	48.1	51.3	48.2
Bridging social capital (mean, 0-6)	1.8	1.9	1.7 *	2.3	1.8 *	1.6	1.5	2.2	2.1	1.5	1.5
Linking social capital (mean, 0-4)	0.4	0.4	0.3 *	1.0	0.3 *	0.1	0.2 *	0.3	0.2	0.4	0.3
Education/training (mean, 0-3)	1.4	1.5	1.4 *	1.8	1.5	1.4	1.3	1.7	1.5	1.3	1.1
Livelihood diversity (mean, 0-18)	3.0	3.0	2.9	3.0	3.0	2.9	2.8	3.0	2.9	2.9	3.0
Adoption of improved practices (%)	90.1	90.9	89.3	96.1	94.1	90.4	94.0	96.6	94.5	83.2	78.2
Exposure to information (mean, 0-19)	7.2	7.7	6.8 *	6.9	5.4	7.8	8.0	6.6	5.8	8.8	7.7
Availability of financial services (mean, 0-2)	1.2	1.2	1.3	0.5	1.0	1.5	1.0	2.0	2.0	0.9	1.1
Aspirations/confidence to adapt (mean, 0-16)	9.9	10.0	9.7 *	10.3	9.9 *	9.8	9.7	10.3	9.9	9.8	9.6
<i>N</i>	3335	1537	1798	360	388	397	467	386	475	394	468

Note: Stars denote a statistically significant difference of at least 5% between L4R and non-L4R groups.

a/ Asset ownership is not shown under adaptive capacity as it is previously listed under absorptive capacity.

Bridging social capital²⁵ connects members of one community or group to other communities/groups. It often crosses ethnic/racial lines, geographic boundaries and language groups, and can facilitate links to external assets and broader social and economic identities. Bridging social capital makes a direct contribution to community resilience in that those with social ties outside their immediate community can draw on these links when local resources are insufficient or unavailable (Wetterberg 2004, cited in Frankenberger et al., 2013). On a scale from 0-6, the bridging social capital mean score is 1.8, a moderate level of social connection with outside communities or groups.

By comparison, the sample has very low **linking social capital**: a mean score of 0.4 on a scale of 0-4. Linking social capital is seen in trusted social networks between individuals and groups interacting across explicit, institutionalized, and formal boundaries in society. Linked networks are particularly important for economic development and resilience because they provide resources and information that are otherwise unavailable. This type of social capital is often conceived of as a vertical link between a network and some form of authority or power in the social sphere. The linking social capital score is based on answers to questions regarding whether household members know a government official and/or NGO leader, how well they know them, and whether they believe the official/leader would help their family or community if help was needed.

Education is also low throughout the sample. This variable ranges from 0-3 and is a sum of the values of three binary variables: (1) value = 1 if any adults in the household can read or write; (2) value = 1 if any household adult has a primary or higher education; and (3) value = 1 if the respondent or any adult household member has had any of the following training: vocational (job) training, business development training (including financial literacy), early warning training, natural resources management training, adult education (literacy or numeracy), or how to use mobile phones to get market information (e.g., prices). The mean value of the education variable for the overall sample is 1.4, indicating a fairly low level of education.

²⁵ The bridging social capital score is based on responses to two questions: one asking whether the household would be able to get help from various categories of people living outside their community if they need it, and one asking whether the household would be able to give help to people in need living outside of their community. The possible responses are relatives, non-relatives within my ethnic/caste group, non-relatives of other ethnic/caste groups and no one.

Households across the sample have low **livelihood diversity** as measured by a simple count of livelihoods engaged in. On average, households engage in about three different livelihoods out of a possible 18 inquired about in the survey.

More than 9 out of 10 households report **adopting improved agricultural practices**, whether in crop production, livestock production, natural resource management, or storage methods. Tigray has lower adoption rates than the other regions, but they are still high.

Nearly all FGs reported making requests to their community leaders and kebele administrators for various types of government assistance.²⁶ Specific requests included agricultural inputs such as forage for cattle (SNNPR), fertilizer (Amhara, SNNPR), and improved seed, such as fast-growing varieties that would allow farmers to harvest their crops before the onset of cold weather and frost (Amhara). There was also a need for assistance in managing crop pests and animal disease (Amhara, SNNPR, Tigray); respondents frequently mentioned pesticides, most commonly to combat army worm, to which crops are susceptible during drought (Tigray), and vaccinations for small and large livestock (Amhara, Tigray). A KI in Amhara also noted a community request for soil testing.

In the past year, households in the overall sample were **exposed to information**, on average, on seven of the 19 possible topics inquired about in the survey. This question asks about information received that potentially improves livelihood outcomes, quality of life, and human and animal health; the low values for this indicator suggest that communities have very poor access to information that would help them to make positive livelihood and other adaptations.

Access to **information about markets** is of critical importance to crop and livestock producers, in particular where and when are traders buying, and where are the best prices. Qualitative data suggest that generally, there is no system or structure for getting reliable market information within most communities. Agricultural DAs provide advice, though any market information is likely somewhat dated and therefore not terribly relevant. Advice on animal fattening does not typically include where the best markets are for the fattened animals. KIs in Amhara said, “*We shop for crops during November and December when crop prices are lower. We sell what we have in May and June when crop prices are expensive. A very good time to sell livestock is during national and religious holidays, like New Year, Easter and Christmas.*”

Information on crops and livestock markets from local, regional and national sources are available, and lead farmers and farmer traders are typically helpful at a local level. Some communities mentioned getting information from friends and relatives via mobile phones or word of mouth.

Qualitative data also suggests that none of the regions have any structured and well-coordinated early warning information systems (EWS). Woredas usually track major trends related to the weather and longer-term climate (e.g., onset of rains, expected drought), crop and livestock diseases, human disease outbreaks, market conditions, etc. In Oromia, such information is monitored, including by CRS and can be used in planning and response, though this is usually quite inadequate.

²⁶ One notable exception was a male FG in SNNPR, where respondents stated that they fear asking for support and that in the Sidama culture (predominant in SNNPR), “*asking for support is shame.*”

Woreda DAs provide some advance warning, though primarily as best practices related to climate-smart agriculture (e.g., use of drought-tolerant and/or early-maturing crop varieties). One FG in Oromia reported, “We don’t have any early warning system, but if giving some information on what to cultivate and how to cultivate, and advising to build terraces and plant [eucalyptus] trees as a long-term response is considered as an early warning system, yes we have that. However, if an early warning system is the one which is given by officials or other bodies after having advance information of shocks that would happen to us, we do not have that at all. But I believe that if we have this warning system, it would have been better – to increase our response ability.” Weekly SMS messages serve as early warning in still other communities and Debub/south radio and TV broadcasting programs in SNNPR.

Still another way some people get early warning information is through local or indigenous knowledge. However, this can be as harmful as helpful. According to a KI in Amhara, “Our church believes that the snow is manmade and is a result of bad religious practice. Our church teaches the community not to work on [their] farms on holidays to protect the farm from snow. We tell community members if they work on a holiday there will be a snow. They all know the fate that follows snow fall. Such advance information protects the community from heavy snow. Aside from this, our community does not have access to any other early warning information.”

The **availability of financial services** variable equals zero if there is no institution in the household’s village that provides credit or savings support, one if there is only one type of support, and to two if there are both types of support. The average scores of 1.2 indicate that access is generally available to at least one of these two types of financial services.

Across the regions, off-farm and non-farm IGAs are limited by lack of access to financial services. According to a FGD participant in Oromia, government loans are not enough to start a business, “A loan that the government provides is too insignificant, and with complex bureaucracies, it is difficult to have it. The loan is not above ETB 5000 (USD 179). What are our youths supposed to do with this amount of money? For instance, my son wants to buy a motorbike and engage in transportation activities in our area; [he] went to the government for loan services. They told [him] that ETB 5000 (USD 179) is the maximum amount of money that one can borrow from their institution. Let alone a motorbike, [that] amount of money doesn’t buy him a cart working with a donkey.”

Another organized structure reported as useful for community self-help is the traditional financial institution of the *equb* or *iqub*. This was described in SNNPR as a local savings group whereby members contribute on a daily, weekly, or monthly basis; the collected savings is periodically re-distributed to a member using a lottery system: each period, one member is paid the total sum and the re-distribution continues until the last member collects the sum. The savings amount varies depending on the group; it is as low as ETB 10 (USD 0.36) for a daily *iqub*, but can reach ETB 10,000 (USD 359) for a weekly *iqub*. It was suggested that savings from these groups be used for post-shock rehabilitation activities. Similar savings groups were described in Oromia, including a women’s savings group. One such group was noted as an informal association having 20 members, each of whom contribute ETB 10-20 (USD 0.36 – 0.72), giving the money to the person experiencing high risk. Examples of uses of the money provided include the purchase of household items and assistance after an accident or death “...or other difficult incidents that are too difficult for one family to cope with alone.”

The *aspirations/confidence to adapt* mean value for the sample is 9.9, out of a possible 16. This suggests a fairly strong degree of confidence to adapt, aspirations, and exposure to and openness to a variety of experiences.

3.4.3 TRANSFORMATIVE CAPACITY

Transformative capacity involves the governance mechanisms, policies/regulations, infrastructure, community networks, and formal and informal social protection mechanisms that constitute the enabling environment for systemic change. As shown in Table 30, the average transformative capacity index scores range from 20.6 in non-L4R households in Oromia to 61.0 in L4R households in Amhara (maximum possible value = 100); the mean score for the sample as a whole is 41.7. The index value for L4R households overall is 21 percent higher than for non-L4R, a statistically significant difference; this difference is also significant, and more pronounced, in Amhara: the index is 31 percent higher in L4R households.

Table 30. Transformative capacity index and component indicators: L4R vs non-L4R, by program area

	Total	All		Oromiya (CRS)		Amhara (CARE)		SNNPR (CARE)		Tigray (CARE)	
		L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R	L4R	Non-L4R
Transformative capacity (mean, 0-100)^{a/}	41.7	44.9	37.1 *	29.1	20.6	61.0	46.6 *	47.8	44.6	41.5	37.7
Availability of/access to formal safety nets (mean, 0-4)	2.0	2.4	1.5 *	1.0	0.9	2.4	1.9	2.6	1.2 *	3.1	2.1 *
Availability of markets (mean, 0-3)	1.7	1.9	1.6	1.3	0.9	1.9	2.0	2.4	2.1	1.8	1.6
Availability of communal natural resources (mean, 0-4)	2.1	2.2	2.0	2.0	1.6	2.5	2.5	1.8	2.0	2.5	2.0
Availability of basic services (mean, 0-3)	1.6	1.7	1.5	1.1	1.3	2.3	1.3 *	2.1	2.3	1.5	1.4
Availability of infrastructure (mean, 0-4)	1.4	1.6	1.3 *	1.6	1.0 *	1.6	1.1 *	1.7	1.3	1.4	1.6
Availability of/access to agricultural extension services (%)	41.7	38.3	45.3	25.0	33.5	75.1	87.6	25.6	44.2	31.2	24.8
Availability of/access to livestock services (%)	25.8	26.2	25.4	38.6	8.0 *	62.2	49.7	9.8	37.7	6.3	12.4
Gender norms index (mean, 0-5)	2.9	2.9	3.0	2.2	2.6	3.5	3.3	2.8	2.8	3.1	3.2
Participation in local decision-making (%)	37.1	41.9	32.6 *	34.7	45.9	56.2	40.3	29.5	19.4 *	45.2	26.5 *
N	3335	1537	1798	360	388	397	467	386	475	394	468

Note: Stars denote a statistically significant difference (at least at the 5% level) between L4R and Non-L4R groups.

a/ Bridging and linking social capital are not shown under transformative capacity as they are previously listed under adaptive capacity.

The results for the component indicators are similar across regions, regardless of L4R participation, with two exceptions. First, the percentage of households with **availability and access to agricultural extension services** is far higher in Amhara than in the other three regions; in fact, Amhara non-L4R households have the highest percentage of this availability/access overall and compared to L4R households in the same region. Interestingly, this trend holds for Oromia and SNNPR as well, where it is more common for non-L4R households to benefit from agricultural extension. Second, **availability and access to livestock services results** vary widely across regions. L4R households have higher availability/access to livestock services in Oromia and Amhara, but the opposite is true in SNNPR and Tigray. The lowest percentage is found among Tigray L4R households, the highest in Amhara L4R.

According to Table 30, households have some **access to markets** (e.g., close proximity of crop, livestock, and input markets), though it varies by region. Generally, there is somewhat better market access in SNNPR and somewhat less in Oromia. There are no significant differences in market access between L4R and non-L4R households overall or in any region.

Qualitative data suggest that both crop and livestock markets have been fairly heavily impacted by shocks, in particular drought. FGs and KIs across all regions felt that recurrent shocks, small land holdings, high transportation costs, high interest on loans, physically inadequate marketplaces, and sometimes lack of knowledge all contribute to less-than-well functioning markets. As one member of a male FG mentioned, there would be better market opportunities for both crops and livestock if rainfall was consistent and the frequency of drought reduced. A respondent in Tigray said, “[because] of not having enough grazing land and forage, no one dares get involved in livestock production because it has a risk. If someone is getting involved in livestock production, and if by chance there is a possibility of drought, he simply sells at a discounted price, for fear of death.” In Oromia, FGs indicated that the price of livestock at the time of the shock declined because everyone was trying to sell livestock. In contrast, the price of crops increased because no one had surplus to sell, as did prices for butter, milk, and meat.

Lower livestock prices benefitted livestock traders, lower livestock prices provided an opportunity for large-volume livestock traders, but many small traders (e.g., women) could no longer afford to participate in buying, fattening, and selling. People were discouraged from participating in livestock and crop markets because they had little to sell and no profit. A KI in SNNPR said, “It is like fetching water in a cup and pouring it back and forth in another similar cup.” For those who were able to organize collectively in order to sell their products, loans were possible (e.g., poultry raising), according to a number of FGs.

In Amhara, respondents indicated that livestock traders require a license and are taxed regardless of whether they actually sell any livestock. According to several FGs, sellers are taxed (e.g., ETB 3 per sheep, ETB 20 per oxen) just for bringing their livestock to market, regardless of whether any sales are made. This provides a large disincentive, particularly during times of drought. Additional similarities and characteristics of the sample are worth noting. **Household participation in local decision making** is also high across the sample. Over one-third of the sample is involved to some degree in local decision making. L4R households tend to be more active in this realm overall, but particularly in SNNPR and Tigray.

The data also suggest that L4R and non-L4R households have limited adequate **infrastructure**²⁷ (water, power, communication and transportation). The mean score for this indicator is 1.4, with little deviation across regions or L4R and non-L4R households; this suggests substantial challenges to facilitating increase in livelihood opportunities.

Communities also expressed to officials their needs for the construction or improvement of infrastructure. In Tigray, one community requested a primary market to be constructed in their kebele, as their closest market required a three hours’ walk to a neighboring woreda. Another community in the same region requested a canal be constructed to protect against recurrent flooding. Flood mitigation was also a need expressed in Oromia. In Amhara, villagers asked the government to build a water access

²⁷ This community-level summary variable ranges from 0-4, with a value of 1 given for meeting any of the following conditions: (1) at least one-half of households in the village have access to piped water; (2) at least one-half of households in the village have electricity from the main grid; (3) the village either has mobile phone service/network coverage or a public telephone/kiosk; and (4) the village can be reached with a paved road all year or is served by a public transportation system.

point for use in the dry season; similarly, in Oromia, the community wanted government support to improve access to safe drinking water.

Additional insight on governance from qualitative findings

The majority of insights from FGs indicate a delayed, limited or otherwise ineffective government response to expressed community needs, giving numerous examples of unanswered requests and lack of follow-through. For instance, a women's FGD participant in SNNPR stated, *"We asked the government for support and they visited our farm plots in many occasions. But they did nothing then or after."* Some KIs and FGs reported that late response by the government resulted in loss of crops, for example in Tigray. Women in one Tigray FG described how local leaders took requests to the woreda, *"It was only promises that help would [be] sent. But it was not happening."* Respondents in Oromia also spoke in terms of broken promises.

Lack of response was often attributed to inaction at the woreda level: many issues raised at the kebele level are referred to woreda officials, who were commonly described as either slow or inadequate in their response, or simply that despite requests, the problem presented was not resolved. For example, men in one community in Tigray described that they *"lost all they had on their land"* due to snow and appealed to the kebele for support, but *"Officials at kebele level stated higher officials were not responding quickly."* One KI in Oromia gave the example of a community that collected ETB 100 (USD 4) from each household as a community contribution toward construction of a water point. This was given to the woreda, which built a single borehole but did not complete construction and it therefore remains out of service. *"When we asked the kebele leaders why this couldn't be solved, they just promised us that the woreda people will soon come fix the water and the community will get better; but we didn't see any change."*

Focus group respondents generally viewed their community and kebele leaders as the ones responsible to organize community requests and advocate for them at higher levels. In some cases, people indicated that their kebele leaders were ineffective; one men's FG in SNNPR noted that their leaders' limited efficiency and capacity and weak facilitation skills had caused them to lose hope in their leaders. Male discussants in SNNPR remarked that no particular support was organized by kebele/community leaders, but kebele leaders were good at encouraging and giving moral support to the community when there are public works like pond and road construction. In Amhara, discussants in some FGs stated that their kebele leaders understated the level of food insecurity in the area to other officials because they did not want to lose their leadership position, or they wanted to receive an award given by woredas to kebeles that are deemed food secure.

Focus groups across all regions voiced several complaints about the government support for pesticides specifically. A FG in Tigray described the process: at first signs of pest infestation in maize, sorghum, or other crops, they send a sample of the infected crop with their representatives to the woreda agriculture office to obtain pesticide. Some stated that the agriculture office required that the pesticide be distributed in packages designed to cover a full hectare, but farmers do not want to buy this because their parcels are much smaller.²⁸ It was common across regions for the delivery of pesticides to be

²⁸ A similar issue was mentioned in Tigray about the availability of fertilizer only in larger amounts than a single farmer could effectively use, which suggests that agricultural inputs need to be packaged in amounts that are better suited and priced to the needs of smallholders. However it also raises the question whether farmers have the technical knowledge needed to apply fertilizer appropriately; as one farmer commented, *"As the soil is thin and lost*

delayed, arriving too late to save crops. Others noted that the pesticide was unavailable locally, and farmers had to travel long distances (e.g., more than 40 km by vehicle) to obtain it. Farmers also were concerned about whether or not the pesticide would “cure” the crop. As with pesticides, timeliness in the delivery of livestock vaccines was also noted as a problem in some areas (e.g., Tigray).

Respondents were also frustrated with the nature of government support, especially in times of acute need. A male FG respondent in Tigray stated, “Kebele administrators are not responsive at the time a disaster occurs. Rather the development agents advised us to use irrigation, to work on bench terracing, and to get involved in soil and water conservation.” Women in Oromia reported, “What we usually asked for, and keep on asking for via our local leaders, is both short-term and long-term relief from recurring shocks, particularly flood. However, their response is incompatible with our requests: what they have provided, and continue to provide, are household items such as blankets, cooking dishes and plates and the like.” And in SNNPR, a woman’s FG shared, “Five years ago, the woreda government provided pesticides to all farmers in the village for the army worm on maize farmlands. All they did in the past five years is advise the farmers to kill army worms by using their hands.” There was widespread dissatisfaction with the timeliness and amount of PSNP support, and some complaints about the fairness of the selection process. A main complaint was that the government had reduced the PSNP support amount to a maximum of five household members, which for many families was too little to meet their needs or to support their preparation for future shocks.

Numerous focus groups across regions described corruption and nepotism as substantial problems hindering fair and effective delivery of government services. Women in Tigray related their particular case: “The government provides sugar and edible oil at a fair price to the poorest of the poor families. However, the kebele leaders sell the goods on the black market to private traders. Because of this disruption, 1 kg of sugar that should cost ETB 20 (USD 0.72) in a consumers shop in the kebele will be sold for ETB 50 (USD 1.79) in private shops.” Many respondents spoke of favoritism in the distribution of government benefits, such as the selection by kebele officials and recruitment committee members of their own family, neighbors, and friends to participate in public works projects. Another example, from Oromia, was of lack of consultation with the community at large on issues related to shocks such as how to manage shocks and decisions on who should be screened to receive support. Focus groups indicated that such consultations were made usually with friends and family of those with decision making power.

A challenge noted in one FG in Oromia was the unequal access of women and men to the communication channels with government. The women in this kebele had asked their leaders to seek support from different organizations on their behalf; this is usually done in community meetings to which women are rarely invited. As a member of this women’s FG said, “No one will call us for a public meeting unless the meeting agenda is specifically for females.”

Exclusion of access channels to government support was also mentioned in the context of ethnic discrimination. Respondents in one Oromia FG said, “The woreda administration bodies discriminate and undermine us because we are from the Kembata ethnic group.”

its fertility, a small amount of fertilizer is enough for the land. However, when we use that much fertilizer for the crop it starts to dry out.”

A kebele administrator interviewed in Tigray validated the complaints of FGs that there was corruption and absence of good governance in their kebele. The KI stated that now, however, they were appraising and evaluating political leaders so that the corrupt ones are terminated and demoted to lower positions.

The critique of government response was not uniform; there were some nuances, and some KIs and FGD participants acknowledged where officials had heard and satisfied their requests. Two FGs in Tigray, for example, concurred *“If [higher-level officials] know the problem and if they are capable, they will solve it; if not, they leave it and do another job.”* A women’s FG participant in SNNPR – the oldest in the group and a newcomer to the village with no family and no job – praised the kebele government for doing its best to organize collective actions. While all others in the FG reported that they had no in-kind or cash support, she pointed out that she is a PSNP beneficiary who has received food and oil through the program and is also supported by local churches. With others insisting that this woman was the exception, this case highlights that the need for assistance is great and many are frustrated with the level of support they receive.

A respondent in Oromia explained, *“We fully trust our kebele leaders because they always give us a chance for the community to participate in every affair. For example, when there is PSNP aid distribution and emergency aid, up to planning of DRR/DRM, they screen the beneficiary fairly and in a transparent way.”* However, further discussion of this issue in this group aligned with the more widely-held sentiment, that the accountability for addressing many community concerns lies at higher levels, and that these have not yielded an adequate response: *“The problems remain with leaders in the woreda and zonal administration system. Our kebele leaders are effective in coordinating and managing the community, but they are not effective in providing support because the degree of problem is not solved at their level. It needs woreda or higher-level administration intervention. But woreda leaders never responded to what was expected or required from them.”*

Additional insight on social capital from qualitative findings

As previously noted, the scores for all three social capital indices are low: 3 and 2 on a scale of 0-6 for bonding and bridging social capital indices, respectively, and less than 0.5 on a 0-4 scale for linking social capital. The social cohesion score, on the other hand, suggests stronger social bonds (4 on a scale of 0-5). The latter is more reflective of the qualitative data, which repeatedly emphasize the traditional importance of social bonds for managing a crisis. This section describes in more detail the nature and extent of the use of social capital in L4R and non-L4R areas, as revealed in FGDs and KIIs. Nevertheless, a couple of methodological points are worth noting to explain why the quantitative survey findings and the qualitative data are not more fully aligned.

First, unlike the three social capital indices, which are designed to capture experiences at the household level, social cohesion is a community-level summary variable meant to capture whether members of the kebele came together socially or to help others over the last year – whether or not the respondent’s individual household participated. This means that while the community as a whole may be quite active in assistance efforts to individual households, participation of any specific household may vary. Hence the low social capital index scores and the higher social cohesion score are not necessarily at odds.

Second, the component questions for the social capital score are a mix of hypothetical questions – *“Would the household be able to get – or offer – help from/to neighbors if they needed it – and recall questions regarding actual assistance given or received in the past 12 months. The hypothetical question*

allows this indicator to capture some dimension of intent – even if, in practice, a household may be unable to make the contribution it would like to make. Indeed, as described in the ensuing discussion, the qualitative data indicate a strong history of, and desire and intention for mutual assistance – simply, the capacity to deliver on this assistance has diminished in the face of repeated shocks. This may introduce a downward bias to the quantitative social capital measures, especially bonding and bridging, as these relate to interactions within and between communities, which in the sample area are likely to be similarly affected by covariate shocks.

Mutual sharing. A tradition of mutual inter-household support within villages was expressed in all FGDs, and happens primarily via the provision or sharing of food, cash, clothes, farm labor, and/or livestock in times of hardship. This practice was summarized in a men’s FG in SNNPR: *“Sharing resources happens not only during shocks/stresses but also in the day-to-day life of communities because it’s a culture and way of life.”* Women in SNNPR indicated that, *“no household is excluded from social support.”*

Across regions, many reported that the practice of sharing resources to cope with shock events remains strong, especially with households most affected by the shock and those that do not generate sufficient income or food for themselves, such as households without able-bodied workers.²⁹ As reported in Oromia, *“We helped each other to deal with shock/stress by sharing farming equipment, labor, and oxen. We also borrow crops/grain and cooking inputs like oil and flour.”* In Amhara, a KI noted community sharing of agricultural labor and helping reconstruct homes lost to flood or fire. Informants in Tigray described loaning oxen to households for ploughing their land; community members also volunteered labor to help with farm work. Additional common forms of in-kind sharing include giving seed and providing or facilitating access to forage. In Tigray, men indicated that they *“... shared their labor to bring forage from the neighboring woredas. Sometimes, when the amount of forage to be purchased is bulky, it is very difficult to transport it: [we] prefer to send our cattle with a watcher to those woredas than to transport the forage. In this case, if somebody has a relative in those areas, he can arrange space and food for his neighbor who does not have family or a friend in the area.”*

Informants also mentioned the value of participating in community group activities (e.g., public works projects) as a way of strengthening social bonds and mutual support. As noted in Tigray, *“The government organized 1-30 people into a ‘development army’ for public works. But we have also used this grouping to solve our communal challenges. We usually support each other when members face death or their children marry. If a member dies, the others contribute flour and food and observe a 12-day mourning period. In the case of marriage, each member will contribute ETB 20 (USD 0.72) for the event owner.”*

Communities also have mechanisms for providing cash to families in need. One Amhara FG respondent said, *“Last year we collected two dishes of wheat grain from one family and ETB 10 (USD 0.36) from those who did not have wheat to give, and shared this with families who were seriously affected by shocks/stress. This support was organized by our community leaders.”* In Tigray, community members assisted the disabled and elderly by contributing ETB 30 (USD 1) each; however they stated that the support was one time only and not enough to sustain people during the drought. FGs in each region recognized the importance of cash assistance as it provides flexibility in purchasing items based on the needs of the household. For example, cash can be used to purchase medicine for livestock or fertilizer for crops rather than for food, depending on the household’s needs. However in SNNPR, one women’s group argued that sharing

²⁹ Recall that one in four households has a person with a disability (see Section 2.1, Household Characteristics).

crops is more helpful because cash is affected by price inflation and can be spent on non-essential items (e.g., alcohol), unlike crops or food that provide immediate relief for households experiencing food shortages as a result of a shock.

Another important benefit of strong social capital and mutual sharing involves accessing information, both in times of shocks and otherwise. This was noted in a men's FG in Tigray: *"In case of information, we have shared it. We searched the market price of crops in different places and shared this with neighbors. Last time for example, we checked the price of sorghum in the neighboring woreda, then when the market price was proved as fair we decided to buy sorghum as a group and share the transport cost."*

Changing trends in sharing resources. Focus groups and KIs across all four regions perceived that over the last five years there has been a decrease in the ability of households to share resources with each other in times of need. In large part they feel this is due to the recurrence and widespread impact of primarily climate-related shocks. A male FG in SNNPR indicated: *"People help each other less now than five years ago because the majority of farmers are becoming worse-off these days and it is difficult to find help from others."* A KI in Amhara summarized the trend as follows: *"Households rarely gather resources to donate to other households in need in their community due to shocks, because most households are all at the same standard so there is little they can do to help each other."* A men's FGD participant in SNNPR said: *"The social bond is diminishing in our community. Support for each other is decreasing because the shocks/ stresses affected production, so we do not have any surplus to share. Even our consumption is limited and is not enough to provide support for others. Remittances during shock times are not increasing because everywhere there is inflation and no one is able to support others. In our area the only support during these days is based on the church."*

In addition to the erosive effects of recurrent shocks and stressors on social capital and mutual sharing, it was noted that a generational shift is also contributing to changes in sharing behavior. A KI in Amhara indicated that people work more independently now, with everyone responsible only for themselves and their own crops and land. According to him, his father and others used to help each other, *"anything they had, they would share."* But these days, *"People only work for themselves. People are not concerned about supporting those who are in need of help, such as elders, or about sharing food or money because they say 'We have the same status.'"* In SNNPR, a KI noted, *"Peoples' social relationships and networks have been affected because people are not willing to get together if there is nothing to eat and get satisfied."* Several FGs perceived an increase in "selfishness" and lack of trust that people will not be able to pay them back or share when they are in need.

The ability to give or lend money, and to send remittances, has also decreased over the last five years. Generally, respondents indicated receiving remittances from their closest relatives in times of shocks (as well as other times), but this often no longer happens on a regular basis. Although support from remittances has diminished overall, it remains an important source of money for those households who receive it. Some FGs stated that in times of shock they rely on their children or other family living in unaffected kebeles – especially in towns and cities. A women's FG in SNNPR indicated that households who receive remittances often do so because they have literate, educated children who work in urban centers, including Hawassa Industrial Park.

Although the trend tends to be downward, sharing is such an integral part of the culture that reciprocal sharing continues – and in some cases has increased – despite widely-felt hardship. One KI in Amhara

stated that communities often maintain a collection of money (to which all community members contribute) that is provided to households in need (e.g., poor households, households where the husband dies and leaves a widow with children). Women in SNNPR said, *“The social bond is strong in our community. We are supporting each other during shocks/stresses through sharing of resources like food, money and related issues, and remittances from relatives or friends. Religious leaders give us psychosocial support, and we also pray together for God. Our culture of helping each other is increasing regardless of the increasing price of items or shocks. The challenges increase our social bond even as we face them more. Only the households that are better-off in their economic capacity may not need help, but they support others. The culture of helping each other is magnificent in females.”* Likewise, one men’s FG in SNNPR remarked on the generosity and good will of community members: *“People who earn money from day labor will invite others to share food and for coffee ceremonies. They share this because of the shocks and they already know people are deprived of basic needs but they don’t have available cash.”*

Psychosocial and moral support. While the ability to share material support has declined, several FGs noted the value of social relationships to psychological and moral support during shock recovery. In SNNPR, a men’s FG indicated that psychosocial support is common but increases during shock/stresses, and in Amhara, respondents stated that psychological support from friends and community leaders is always there: *“Religious leaders, village leaders, and elderly fathers keep advising the community to pray to God to give them strength.”*

The importance of religious leaders to organizing support, providing guidance, and giving spiritual comfort in hard times emerges often in the qualitative data. For instance, a FG respondent in Tigray stated, *“Religious leaders have been very important in giving guidance to boost people’s morale and relief from the effects of the drought; this gives a glimmer of hope to most community members.”* A similar sentiment was expressed in a women’s FG in SNNPR: *“Our religious leaders help us during shocks/stresses. They have endless desire to support us.”* Women in Oromia described that in their church, *“we allocate a budget and visit members of the church who were affected by the shock, giving the allocated money and praying together.”*

However, there were some reports of disillusionment with or distrust of religious leaders. For example, one FG in Tigray reported that their religious leader gave almost no psychosocial support, and advised them to donate money to the church instead of supporting each other during shocks. One FG in Amhara indicated they avoided religious leaders because they kept asking for money.

3.5 LINKS BETWEEN RESILIENCE CAPACITY AND WELL-BEING OUTCOMES

This chapter explores the relationships between household shock exposure, resilience capacities, and key well-being outcomes of interest for the L4R activity-monetary outcomes, food security outcomes, and recovery outcomes—using multivariate regression analysis. The objective is to understand whether the patterns seen in the data are consistent with the hypothesized impacts of shock exposure and resilience.³⁰ The key questions explored are: *“Does greater resilience capacity have a positive impact on these outcomes?”*, and *“Does greater resilience capacity reduce the negative impact of shocks on the outcomes?”* If so, then we can say that it assists households in withstanding and recovery from shocks.

³⁰ The independent variables for the regressions include household demographic characteristics (number of adult equivalents, number of household members (where applicable), the percentage of household members in various age groups, gendered household type), intervention group (L4R, non-L4R), and region.

3.5.1 DOES GREATER RESILIENCE CAPACITY HAVE A POSITIVE IMPACT ON WELL-BEING OUTCOMES?

This section presents regression results examining the relationship between resilience capacity and well-being outcomes. The aim of this analysis is to determine which resilience capacities and their components are associated with better outcomes, while controlling for shock exposure. Relationships found between the resilience capacities and well-being outcomes suggest an association between the two, and does not give insight into the causality in one direction or another. The findings inform our understanding of the kinds of outcomes we can expect given investments in a particular resilience capacity, and give some idea of the direction and degree of this influence.

Each of the tables in this section include the percent change of values from “low” to “high” for each indicator. For continuous variables, the values of the indicators are set at the 25th (“low”) and 75th (“high”) percentiles of the sample. The percent change for binary variables is defined as the difference between the absence of (a value of ‘0’) and presence of that indicator (a value of ‘1’) (e.g., not having versus having savings). This permits comparability across variables that use different scales. Full results are available in Supplemental Tables: Table 3 to Table 16.

While the coefficient on the resilience capacity index is not always significant, when it is, it shows that households with higher levels of resilience capacity have greater per capita expenditures, less poverty, better dietary diversity, less hunger, and greater likelihood of recovery. In other words, as hypothesized, greater resilience capacity is positively associated with the outcomes of interest. We will discuss these specific outcomes further below.

3.5.1.1 MONETARY OUTCOMES: PER CAPITA EXPENDITURES AND POVERTY

Values in Table 31 show a significant and positive relationship between per capita expenditures and absorptive and adaptive capacities. On average, households with higher levels of these two capacities experience an increase of expenditures by 30 percent relative to those with lower levels. The increase in expenditures in L4R households is lower compared to that among non-L4R households. exposure to shocks is associated with higher expenditures. However, a positive coefficient on shock exposure should be understood to mean that households experiencing higher levels of shock exposure have to spend more to maintain their consumption (possibly by divesting some liquid assets), thereby giving the false impression that households with greater shock exposure are “better off” in terms of per capita expenditures.

Table 31: Relationship between monetary outcomes and resilience capacity

Resilience Capacity	Per Capita Expenditures						Poverty					
	All		L4R		non-L4R		All		L4R		non-L4R	
	Coeff.	% change	Coeff.	% change	Coeff.	% change	Coeff.	% change	Coeff.	% change	Coeff.	% change
Absorptive capacity	0.026 **	29.5	0.021 **	21.3	0.031 **	39.2	-0.021 **	-19.0	-0.017 **	-17.1	-0.026 **	-20.6
Shock exposure	0.002		-0.003		0.008 **		-0.003		0.002		-0.007 *	
Adaptive capacity	0.026 **	28.2	0.023 **	23.5	0.030 **	33.6	-0.023 **	-20.1	-0.020 **	-20.5	-0.017 **	-20.3
Shock exposure	0.001		-0.003		0.006		-0.002		0.002		-0.005	
Transformative capacity	-0.001	-0.9	-0.01	-7.4	0.004	6.3	-0.003	-4.2	-0.002	-2.6	-0.004	-5.0
Shock exposure	0.002		-0.002		0.008 **		-0.003		0.002		-0.006 *	
Observations	3333		1535		1798		3331		1535		1796	

Note: Stars represent statistically significant difference the 0.05 (*) and 0.01 (**) levels.

As expected, the results for poverty mirror the results for per capita expenditures. Results in **Error! Reference source not found.** show that poverty and absorptive and adaptive capacities are associated in the expected direction: households that are more resilient are about 20 percent less likely to live in poverty. Keeping in mind that the poverty measure is based on expenditures (not income) the same interpretation can be given to the negative coefficient on the shock exposure index in the poverty regression. In other words, households experiencing more severe shocks make an effort to spend more to counteract other problems meaning that fewer households spend less (and therefore fewer fall below the poverty line – remember, that the poverty line is based on expenditures and not income).

3.5.1.2 FOOD SECURITY OUTCOMES: DIETARY DIVERSITY AND HUNGER

The results in Table 32 indicate that all three resilience capacities are significantly associated with household dietary diversity. This relationship implies that households with more resilience are five to 15 percent more likely to consume more food groups compared to those with lower levels of resilience. Shock exposure is significantly related with HDDS in expected directions, where significant.

Table 32: Relationship between food security outcomes and resilience capacity

Resilience Capacity	HDDS						FIES					
	All		L4R		non-L4R		All		L4R		non-L4R	
	Coeff.	% change	Coeff.	% change	Coeff.	% change	Coeff.	% change	Coeff.	% change	Coeff.	% change
Absorptive capacity	0.006 **	12.4	0.005 **	10.3	0.006 **	13.0	-0.017 **	-13.8	-0.01 **	-12.6	-0.020 **	-13.8
Shock exposure	-0.002 **		-0.002 *		-0.001		0.026 **		0.027 **		0.026 **	
Adaptive capacity	0.007 **	15.0	0.007 **	15.2	0.007 **	14.2	-0.017 **	-13.7	-0.016 **	-14.2	-0.020 **	-13.8
Shock exposure	-0.002 **		-0.002 **		-0.002 **		0.027 **		0.028 **		0.028 **	
Transformative capacity	0.002 *	5.4	0.002 *	4.4	0.002 *	5.0	0.000	0.0	-0.000	-0.1	0.001	0.8
Shock exposure	-0.002 **		-0.001 *		-0.001		0.025 **		0.026 **		0.025 **	
Observations	3333		1535		1798		3333		1535		1798	

Note: Stars represent statistically significant difference the 0.05 (*) and 0.01 (**) levels.

Using FIES, households scoring four or greater on the eight-point scale are given a value of ‘1’ indicating moderate to severe hunger and a value of ‘0’ for a scores three and under. Table 32 shows that moderate and severe hunger is negatively associated with increased absorptive and adaptive capacity across both the L4R and non-L4R groups, meaning that as resilience increases, the likelihood of experiencing hunger decreases. On average, households with higher absorptive and/or adaptive capacity are 14 percent less

likely to experience hunger. Shock exposure is related in the expected direction (more shocks increases the likelihood of experiencing hunger).

3.5.1.3 RECOVERY OUTCOMES: INCREASED FOOD PRICES AND DROUGHT

Results in Table 33 show that households with higher levels of absorptive and adaptive capacity are 54 to 65 percent more likely to recover from increased food prices. Shock coefficients are in the expected direction, supporting the notion that household exposed to more shocks are less likely to recover. Recovery from drought is only significantly related to absorptive capacity.

Table 33: Relationship between recovery outcomes and resilience capacity

Resilience Capacity	Recovery from increased food prices						Recovery from drought					
	All		L4R		non-L4R		All		L4R		non-L4R	
	Coeff.	% change	Coeff.	% change	Coeff.	% change	Coeff.	% change	Coeff.	% change	Coeff.	% change
Absorptive capacity	0.013 **	53.7	0.020 **	84.0	0.006	22.6	0.012 *	45.8	0.017	-17.1	0.005	16.2
Shock exposure	-0.037 **		-0.04 **		-0.040 **		-0.009 *		-0.007		-0.014	
Adaptive capacity	0.017 **	65.3	0.016 **	58.4	0.018 **	69.9	0.008	30.8	0.008	-20.5	0.007	24.5
Shock exposure	-0.038 **		-0.035 **		-0.042 **		-0.010 *		-0.007		-0.015 *	
Transformative capacity	-0.004	-18.6	-0.007	-26.6	-0.001	-2.6	0.002	7.0	0.002	-2.6	0.004	17.5
Shock exposure	-0.037 **		-0.034 **		-0.040 **		-0.009 *		-0.006		-0.014	
Observations	2403		1060		1343		954		394		545	

Note: Stars represent statistically significant difference the 0.05 (*) and 0.01 (**) levels.

3.5.2 WHICH RESILIENCE COMPONENTS HAVE A POSITIVE IMPACT ON WELL-BEING OUTCOMES?

The same regression models are applied in this section with the exception that the individual resilience capacity components are now the predictor variables rather than the three resilience capacity indexes. The aim is gain insight into which capacities are significantly associated with improved well-being outcomes in order to inform programming efforts. The full model output for the sample overall and separately for L4R and non-L4R intervention groups are located in Supplemental Annex: Table 21 to Table 26.

3.5.2.1 MONETARY OUTCOMES: PER CAPITA EXPENDITURES AND POVERTY

Data in Table 34 show that across the monetary well-being outcomes, per capita expenditures and poverty, assets, education, and availability of basic services are significant and in the expected direction. These account for increases in per capita expenditures by 7.5 percent to 24.2 percent and similar magnitudes of decreases in poverty. Additional components that are associated with higher per capita expenditures include: bonding social capital, savings, aspirations, and livelihood diversity.

Households with more assets, education, higher levels of bridging social capital, education, greater access to basic services, and higher rates of participating in local decision making are less likely to be living in poverty. Of these, assets has the greatest magnitude of impact with an associated 20 percent reduction in poverty. .

Table 34. Relationship between resilience capacity components and monetary outcomes

Resilience capacity component	Per capita expenditure		Poverty	
	Coeff.	% change	Coeff.	% change
Bonding social capital (mean, 0-6)	0.050 *	5.0	-0.016 -	-1.6
Households with cash savings (%)	0.002 *	7.9	0.000 -	-1.9
Shock preparedness and mitigation (mean, 0-4)	0.082 -	4.1	-0.014 -	-0.7
Availability of humanitarian assistance (%)	0.000 -	-1.3	-0.001 -	-4.5
Asset ownership index (mean, 0-53)	0.072 ***	24.2	-0.077 ***	-20.2
Aspirations/confidence to adapt (mean, 0-16)	0.022 *	4.4	-0.014 -	-2.9
Bridging social capital (mean, 0-6)	0.035 -	5.3	-0.047 **	-6.8
Linking social capital (mean, 0-4)	0.039 -	1.9	-0.061 -	-3.0
Education/training (mean, 0-3)	0.096 ***	10.2	-0.086 ***	-8.1
Livelihood diversity (mean, 0-18)	0.001 ***	6.3	0.000 -	-2.3
Adoption of improved practices (%)	-0.001 -	-5.7	0.000 -	-0.1
Exposure to information (mean, 0-19)	-0.003 -	-1.1	0.003 -	1.0
Availability of/access to formal safety nets (mean, 0-4)	0.048 -	4.9	-0.050 -	-5.0
Availability of markets (mean, 0-3)	-0.128 **	-12.1	0.078 *	8.0
Availability of communal natural resources (mean, 0-4)	-0.006 -	-0.5	-0.024 -	-2.3
Availability of basic services (mean, 0-3)	0.144 **	7.5	-0.121 **	-5.9
Availability of infrastructure (mean, 0-4)	0.006 -	0.3	-0.011 -	-0.6
Availability of/access to agricultural extension services (%)	0.000 -	-2.1	0.001 -	3.5
Availability of/access to livestock services (%)	-0.001 -	-6.4	0.000 -	1.6
Gender norms index (mean, 0-5)	-0.042 -	-4.1	-0.050 -	-4.9
Participation in local decision-making (%)	0.001 -	3.1	-0.002 ***	-10.2

*** indicates estimated coefficients are significant at 1%, ** at 5% and * at 10%

3.5.2.1 FOOD SECURITY OUTCOMES: DIETARY DIVERSITY AND HUNGER

Table 35 provides the results from the resilience component analysis for the food security outcomes, dietary diversity and hunger. Components that are significantly associated with better dietary diversity are: shock preparedness, assets, aspirations, linking social capital, education, livelihood diversity, exposure to information, availability of infrastructure, and access to agricultural extension services. The percent change ranges between 1.8 and 12.7 percent,

Households who are better prepared for shocks, have more assets, have higher levels of aspirations and confidence to adapt, more diversified livelihoods, and greater access to formal safety nets are 3.5 to 17.1 percent less likely to be food insecure.

Table 35: Relationship between resilience capacity components and food security

Resilience capacity component	HDDS		FIES	
	Coeff.	% change	Coeff.	% change
Bonding social capital (mean, 0-6)	0.004 -	0.8	-0.038 -	-3.1
Households with cash savings (%)	0.000 -	0.7	0.001 -	3.9
Shock preparedness and mitigation (mean, 0-4)	0.018 *	1.8	-0.083 *	-3.5
Availability of humanitarian assistance (%)	0.000 -	0.0	0.000 -	-1.5
Asset ownership index (mean, 0-53)	0.020 ***	12.7	-0.072 ***	-17.1
Aspirations/confidence to adapt (mean, 0-16)	0.005 **	2.2	-0.021 *	-3.5
Bridging social capital (mean, 0-6)	0.001 -	0.3	0.046 -	6.1
Linking social capital (mean, 0-4)	0.018 **	1.8	0.032 -	1.4
Education/training (mean, 0-3)	0.017 ***	3.5	-0.029 -	-2.4
Livelihood diversity (mean, 0-18)	0.000 **	1.5	-0.001 ***	-5.0
Adoption of improved practices (%)	0.000 -	-2.1	-0.001 -	-2.1
Exposure to information (mean, 0-19)	0.005 ***	3.8	-0.002 -	-0.7
Availability of/access to formal safety nets (mean, 0-4)	-0.014 -	-2.7	-0.067 **	-5.5
Availability of markets (mean, 0-3)	-0.011 -	-2.1	0.000 -	0.0
Availability of communal natural resources (mean, 0-4)	0.005 -	1.1	-0.028 -	-2.4
Availability of basic services (mean, 0-3)	0.015 -	1.5	-0.014 -	-0.6
Availability of infrastructure (mean, 0-4)	0.052 ***	5.3	-0.018 -	-0.7
Availability of/access to agricultural extension services (%)	0.000 *	4.3	0.002 *	8.1
Availability of/access to livestock services (%)	0.000 -	3.4	0.001 -	6.0
Gender norms index (mean, 0-5)	0.000 -	0.0	-0.057 -	-4.7
Participation in local decision-making (%)	0.000 -	-1.5	0.000 -	1.5

3.5.2.3 RECOVERY OUTCOMES: INCREASED FOOD PRICES AND DROUGHT

Resilience components that are significant drivers of recovery from increased food prices include shock preparedness, assets, and adoption of improved agricultural practices. Recovery from drought is driven primarily by savings, availability of humanitarian assistance, livelihood diversity, availability of communal natural resources, and equitable gender norms.

Table 36: Relationship between resilience capacity components and recovery

Resilience capacity component	Increased food prices		Drought	
	Coeff.	% change	Coeff.	% change
Bonding social capital (mean, 0-6)	-0.004 -	-1.3	0.068 -	21.3
Households with cash savings (%)	0.001 -	0.2	0.003 **	56.5
Shock preparedness and mitigation (mean, 0-4)	0.112 *	19.6	0.125 -	19.9
Availability of humanitarian assistance (%)	0.000 -	0.0	0.004 ***	81.9
Asset ownership index (mean, 0-53)	0.037 ***	42.9	0.002 -	1.4
Aspirations/confidence to adapt (mean, 0-16)	-0.027 -	-12.1	-0.009 -	-4.9
Bridging social capital (mean, 0-6)	0.047 -	25.5	-0.061 -	-15.9
Linking social capital (mean, 0-4)	0.027 -	4.4	-0.040 -	-5.6
Education/training (mean, 0-3)	0.073 -	26.9	0.015 -	4.5
Livelihood diversity (mean, 0-18)	0.001 -	29.3	0.003 ***	70.3
Adoption of improved practices (%)	0.004 **	0.7	0.001 -	9.8
Exposure to information (mean, 0-19)	0.006 -	6.0	-0.007 -	-7.5
Availability of/access to formal safety nets (mean, 0-4)	-0.017 -	-5.2	-0.141 **	-33.4
Availability of markets (mean, 0-3)	0.021 -	7.0	0.079 -	25.3
Availability of communal natural resources (mean, 0-4)	0.013 -	4.2	0.097 *	33.1
Availability of basic services (mean, 0-3)	-0.154 **	-21.3	-0.138 *	-18.1
Availability of infrastructure (mean, 0-4)	-0.033 -	-5.1	-0.153 -	-20.0
Availability of/access to agricultural extension services (%)	0.001 -	0.1	0.002 -	27.9
Availability of/access to livestock services (%)	-0.002 -	-0.3	0.002 -	42.3
Gender norms index (mean, 0-5)	0.061 -	21.3	0.146 *	53.8
Participation in local decision-making (%)	-0.001 -	-0.2	-0.002 -	-25.3

3.6 DOES GREATER RESILIENCE CAPACITY REDUCE THE NEGATIVE IMPACT OF SHOCKS ON WELL-BEING OUTCOMES?

To answer this question, we now include an interaction term for shock exposure and resilience capacity. The same approach is used in the second part of this section to test the interaction effect for the individual resilience capacity components.

Without the interaction term, we expect the sign of the resilience capacity coefficient to be positive for outcomes such as dietary diversity and recovery; this indicates higher levels of resilience capacity are associated with better outcomes. At the same time, we expect the coefficient for shock exposure to be the opposite direction, meaning more shocks are associated with lower expenditures, less dietary diversity, for instance. For that model, the resilience capacity is essentially off-setting the negative impact of shock. When the interaction term is included in the equation, the expectation is that both the resilience and shock coefficients will retain the same direction, and the sign of the interaction should be

positive. However, in most cases, the sign of the resilience capacity coefficient switches, the interaction term is negative, and even if significant, of a negligible magnitude. This type of result does not support the hypothesis that higher resilience capacities increasingly mitigate the negative impact of shocks. Please see results provided in Supplementary Annex: Table 23 to Table 34.

4. CONCLUSIONS

This report presents findings from the Ethiopia L4R IE baseline survey. The following tasks were undertaken in the report. First, it described the environment of households in the evaluation area. Second, it provided baseline estimates of the key indicators of household well-being outcomes, shock exposure, and resilience capacities. Third, it explored baseline differences in indicators between the L4R and non-L4R groups, overall, and within each of the four geographical regions (Oromia, Amhara, SNNPR, and Tigray) to help measure L4R project impact. Fourth the report used multivariate regression to examine the relationships among household outcomes, shock exposure, and resilience capacities in the L4R IE area. Key findings include:

- The IE area is highly shock-prone: nearly all households (96.5 percent) experienced a shock with at least a slight impact on their food consumption and/or income in the year prior to the baseline survey. On average, households experienced between three and four shocks in the past year. The majority of households experienced economic shocks (increased food prices and delays in PSNP transfers) followed by variable rain/drought, excessive rains or flooding, increased prices of agriculture or livestock inputs, and illness in the household. While there are some differences by type of shock, the level of shock exposure is typically higher among households in non-L4R areas relative to those in the L4R area. However, insight from the qualitative findings reveal that FGD participants and KIIs tended to mention variable rainfall/drought as the key shock they had experienced in the past year with economic shocks functioning as a downstream effect of climate-related shocks. As such, these were identified as the two recovery outcome variables that were used in the multivariate analyses.
- Over half of the households reduced food consumption as a coping mechanism which may be attributed to households experiencing increases in food prices. Other common coping strategies include reducing non-essential household expenses, selling livestock, taking up new/additional work, and taking loans within the community.
- Households adopted the same coping strategies at differing magnitudes, regardless of whether they experienced increased food prices or drought. Reducing food consumption is more common when households experience increases in food prices compared to drought, while selling livestock is more common among households impacted by drought.
- Two in three households (59.7 percent) across the activity areas are considered poor according World Bank's international poverty line set at USD 1.90 per capita daily expenditures, which is almost double that of the national average. Food accounts for the biggest source of spending which points to poor economic status of households. In general, L4R households have higher expenditures and, conversely, less poverty than non-L4R households.
- Using HDDS and FIES as measures of food insecurity, data show that non-L4R households experience greater food insecurity than L4R households. On average, households consume approximately 5 out of 12 food groups according the HDDS; this indicates that households may not have the resources to access a more diverse set of food groups or that more diverse foods may not be readily available. According to the FIES, over half of the households experienced

moderate-to-severe food insecurity in the past 30 days. Approximately one in ten households considered themselves as having recovered from increased food prices or drought. Recovery among non-L4R households is generally less prevalent compared to L4R households.

- With respect to resilience capacity, the psychosocial capacities of aspirations and confidence to adapt that facilitate greater resilience in the face of shocks show little difference between L4R and non-L4R areas. All three types of social capital—bonding, bridging, and linking—also vary minimally between the two IE areas.
- Livelihood diversity, which is also thought to bolster households’ resilience to shocks, is severely limited as households are engaged in an average of three activities across all activity areas. These consist primarily on widespread reliance on safety nets followed by agricultural and livestock production which are similarly vulnerable to climate shocks. Only 12 percent of households or fewer are employed in wage or salaried labor of any kind.
- Nearly three-fourths of the sample report knowing about health insurance. Awareness of crop or livestock insurance, on the other hand, is minimal across the sample. About half the sample has health insurance, and of those, nearly all have CBHI and are responsible for paying their own premiums.
- Very few households cited the typical barriers to borrowing such as meeting qualification requirements, unavailability of loan providers or suitable loan products, or lengthy loan processes. These results may suggest that understanding repayment terms, and designing repayment terms that are realistic and achievable, are areas for raising awareness.
- More than half of all households took a loan in the 12 months prior to the baseline survey, half of which used their loan to feed their family. The predominance of loans for feeding families and lesser use for business investment and maintenance needs, suggests that households are struggling to meet basic needs – much less investments that can improve their productivity.
- More than half of households overall have current savings, a slight increase from two years prior to the baseline survey, and close to half of those households use MFIs and VSLA/VESAs. Overall, less than one in ten households in the sample has savings in any other category of savings institutions.
- On average, one-fifth of households participated in a mobile money transfer in the 12 months prior to the baseline survey, and all mobile money transactions related to PSNP transfers. Of those who received a transfer, almost half of all households received more than three.
- Hardly any household is a member of FEMA, but about one-quarter of the sample belongs to a farmer cooperative. Of those farmers that belong to cooperatives, about one-fifth sell their products through the cooperative.
- For any given decision category, approximately three out of four female respondents state that they make these decisions alone or jointly, which reflects a high level of women’s agency. Women’s decision-making voice was especially high for health and education matters.

- Regression analyses examining the relationship between the resilience capacity indexes and key well-being outcomes show that overall, the data confirm that households with higher levels of absorptive and adaptive capacity are more likely to have higher expenditures, a more diverse diet, and a lower probability of living in poverty or experiencing hunger. They are also more likely to recover from increased food prices.

Greater dietary diversity is also associated with higher levels of transformative capacity, and households are more likely to recover from drought the more absorptive capacity they have.

- Per the resilience component analysis, the following components are significant contributors to well-being outcomes:
 - Expenditures: Assets, education, savings, bonding social capital, bridging social capital, availability of basic services, bonding social capital, aspirations
 - Poverty: Assets, education, bridging social capital, availability of basic services
 - HDDS: Assets, education, shock preparedness, aspirations, livelihood diversity, linking social capital, exposure to information, availability of infrastructure, availability of agricultural extension services
 - FIES: Assets, shock preparedness, aspirations, livelihood diversity, availability of formal safety nets
 - Recovery from increased food prices: Assets, shock preparedness, adoption of improved practices
 - Recovery from drought: Savings, humanitarian assistance, livelihood diversity, availability of communal natural resources, equitable gender norms

Next Steps

In the next step in this evaluation of the L4R project, two recurrent monitoring surveys in Years 2 and 4 of the IE will be implemented to capture real-time household and community responses to shocks and stresses. Each RMS will begin at the same time of the year as the baseline (July/August). This allows for capturing the hungry season in the first round, and tracks changes across the seasons, i.e., from one hungry season to the next. The RMS portion of the IE will collect and analyze high-frequency panel data regarding household shock exposure, responses, well-being outcomes, and changes in household resilience capacity, as well as qualitative data and information regarding community resilience. Data from the RMS contributes to the IE, which focuses on the relationships between household- and community-level resilience; how the mix of interventions undertaken under the L4R activity contribute to both household and community resilience capacity; and how resilience capacities at the community level affects the impact of L4R programming on household resilience outcomes.

The L4R IE endline survey will take place near the end of project activities, in approximately 5 years (2022/2023). Data will be collected from a subset of the same households and communities as those

surveyed for the L4R IE baseline to enable an empirically valid evaluation of not only the impact of the L4R IE project on household resilience and well-being outcomes, but the sustainability of such impacts.