

ZRBF OUTCOME MONITORING SURVEY ROUND 2: Programme Learning Report



ABOUT ZRBF

The Zimbabwe Resilience Building Fund (ZRBF) is a multi-donor program managed by the United Nations Development Programme (UNDP) and co-funded by the European Union (EU), the Embassy of Sweden, the UK Department for International Development (DFID) and the Government of Denmark. The lead implementing partner of ZRBF is the Ministry of Lands, Agriculture, Water, and Rural Resettlement (MLAWRR).

ZRBF seeks to improve the resilience of about 830,000 people through the generation and use of evidence to inform programming and policy; projects building capacities to absorb, adapt to, and transform livelihoods and systems to reduce risks at the individual, household, community, ward, district and province levels; and a crisis modifier that enables early action in response to early warning of crises in order to protect the development gains of the program. Seven ZRBF consortia operate in 18 districts of Zimbabwe to build the resilience of individuals, households, communities and systems.

ACKNOWLEDGEMENTS

Designing and executing a comprehensive Outcome Monitoring Survey (OMS) for a large resilience program in a short period of time is an extremely complex process, and requires the coordination of many individuals and organisations. The success of the round two OMS study has been due to the collaborative efforts of many individuals. The study would not have been possible without the enormous support and hard work from the Project Management Unit (PMU), Resilience Knowledge Hub (RKH) and consortium partners. Our special thanks to staff from the Food Nutrition Council (FNC) who provided valuable inputs during the training session and field data quality monitoring.

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Disclaimer

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LIST OF ACRONYMS

| | |
|----------------|-----------------------------------------------------------------------------------------------|
| AGRITEX | Department of Agricultural, Technical and Extension Services |
| BRACT | Building Resilience through improving the Absorptive and Adaptive Capacity for Transformation |
| CI | Confidence interval |
| CIS | Climate Information Service |
| CLICs | Crop and Livestock Improvement Centres |
| CSA | Climate Smart Agriculture |
| CSI | Coping Strategy Index |
| DDC | District Development Coordinator |
| DFID | UK Department for International Development |
| DRR | Disaster Risk Reduction |
| ECRAS | Enhancing Community Resilience and Sustainability |
| ECRIMS | Enhancing Community Resilience and Inclusive Market Systems |
| EU | European Union |
| FAO | Food and Agriculture Organization |
| FCS | Food Consumption Score |
| FGDs | Focus Group Discussions |
| FIES | Food Insecurity Experience Scale |
| FNC | Food and Nutrition Council of Zimbabwe |
| GBV | Gender-based Violence |
| GMB | Grain Marketing Board |
| HDDS | Household Diet Diversity Score |
| HFMS | High Frequency Monitoring System |
| HH | Household |
| HHS | Household Hunger Scale |
| ICT | Information and communications technology |
| ISAL | Internal Savings and Lending |
| ISNs | Informal Safety Nets |
| KIIs | Key Informant Interviews |
| LCSI | Livelihood and Asset-based Coping Strategy Index |
| MELANA | Matabeleland Enhanced Livelihoods Agriculture and Nutrition Adaptation |
| MLAWCRR | Ministry of Lands, Agriculture, Water, Climate and Rural Resettlement |
| NGO | Non-Governmental Organization |
| NRM | Natural Resource Management |
| NTFP | Non-timber forest production |
| ODK | Open Data Kit |
| OLS | Ordinary Least Squares |



| | |
|-----------------|--------------------------------------------------------|
| OMS | Outcome Monitoring Survey |
| PCA | Principal component analysis |
| PMU | Project Management Unit |
| PPS | Probability Proportional to the Size |
| PROGRESS | Program for Growth and Resilience |
| RKH | Resilience Knowledge Hub |
| RMS | Recurrent Monitoring System |
| RTGS | Real-time gross settlement dollar, Zimbabwe |
| RWIMS | Rural WASH Information Management System |
| SIZIMELE | SIZIMELE Action for Building Resilience in Zimbabwe |
| SLI | Sequencing, layering and integration |
| TANGO | Technical Assistance to Non-Governmental Organizations |
| UNDP | United Nations Development Programme |
| USD | United States Dollar |
| VC | Value-chain |
| WASH | Water, Sanitation and Hygiene |
| WFP | World Food Programme |
| ZimVAC | Zimbabwe Vulnerability Assessment Committee |
| ZRBF | Zimbabwe Resilience Building Fund |
| ZVA | Zambezi Valley Alliance for Building Community |



EXECUTIVE SUMMARY

OMS PURPOSE AND OBJECTIVES

This report presents findings from a mixed-methods study with quantitative and qualitative components. The OMS surveys were designed to collect data for Zimbabwe Resilience Building Fund (ZRBF) annual reporting and to measure the impact of ZRBF funded interventions. The findings from the first round of the Outcome Monitoring Survey (OMS1), carried out in April 2019, highlighted a need for qualitative inquiry to understand the drivers and influences of change more fully; thus, a qualitative component was added in the second round (OMS2). The findings are based on quantitative and qualitative data collected in OMS2 between March 2 and April 17, 2020. The focus of this report is to provide comparisons to results from OMS1 with OMS2, and to investigate a set of qualitative research questions to better understand the dynamics of change. Complete round 1 results, which collected only quantitative information, are reported in *ZRBF Outcome Monitoring Survey Round One: 2019 Program Learning Report*.¹ The OMS survey rounds took place in April 2019 and March/April 2020 and collected data on 10 ZRBF topline indicators including outcome variables (e.g., use of practice of project-supported activities) and impact variables (e.g., household income, food security and nutrition). The report is intended to inform ZRBF partners and stakeholders of the findings from the OMS round 2, and changes from round 1 of the OMS to guide adaptive management and programming decisions.

The ZRBF is a multi-donor program managed by the United Nations Development Programme (UNDP) and co-funded by the European Union (EU), the Embassy of Sweden, the UK Department for International Development (DFID) and the Government of Denmark. The lead implementing partner of ZRBF under the UNDP national implementation modality is the Ministry of Lands, Agriculture, Water, and Rural Resettlement (MLAWRR).

ZRBF seeks to improve the resilience of about 830,000 people through building evidence to improve the policy environment and stimulate service provision to enhance household and community resilience; investing in projects to build capacities to absorb, adapt to, and transform livelihoods and systems to reduce risks at the individual, household, community, ward, district and province levels; and generating and using a crisis modifier that enables early action in response to early warning of crises in order to protect the development gains of the program. Seven ZRBF funded Consortia operate in 18 districts of Zimbabwe to build the resilience of individuals, households, communities, and systems.

OMS QUESTIONS, DESIGN, METHODOLOGY AND LIMITATIONS

The OMS is designed to measure changes in project indicators over time, using a beneficiary-based sample with representative sample sizes for seven ZRBF Consortia partners and stratified into two categories based on level of programming intensity. The OMS is a panel survey in which the same households were interviewed in both rounds. Panel data allow for measurement of change over time at the household level: researchers can test causal hypotheses about the effects of conditions and interventions in one time period on outcomes later on. Households that completed round 1 surveys comprised the sample for round 2, across 18 districts. Of the 3,440 round 1 households, enumerators were able to successfully interview 3,353 households in round 2. Statistical analysis compared round 1 to round 2. To better understand ZRBF results and program intervention effectiveness, survey data were disaggregated by intervention intensity, beneficiary sex, and consortia partner. The main report discusses overall findings and findings by intervention intensity. Comparisons are between rounds for each disaggregation. Statistical analysis between or among disaggregates was not performed. This is especially important for consortium level results. Differences among consortia partners are due to the ratio of high to medium programming intensity within each.

Additionally, even though some consortia cover districts with very different livelihood profiles, the sample size does not allow for valid comparisons at the district level. Budget and time constraints limited the sample size to be representative of the 7 consortia partners but not the 18 districts.

The quantitative component of the OMS utilized a beneficiary-based sample and therefore lacks a true control group, that is, a group that received “no treatment.” This limits the interpretation of the study in terms of true impact evaluation. Nevertheless, the stratification of beneficiary households into “High-Programming Intensity” and “Medium Programming Intensity” categories, based on the number of specific project activities that each beneficiary is engaged in, allows the study to address

¹ UNDP (2019), ZRBF Resilience Knowledge Hub: Langworthy, M., Aziz, T., and Stack, J. 2019. ZRBF Outcome Monitoring Survey: Round One Program Learning Report. <https://mercycorps.panapps.co/resource/zrbf-outcome-monitoring-survey-round-one-program-learning-report>.



a key objective of the OMS which is to measure the impact of project interventions on household resilience capacities and impact variables (household livelihood assets and food security and nutrition outcomes). This provides an opportunity for better understanding how programming intensity and patterns of sequencing and layering of interventions contribute to household resilience capacities. The qualitative component used semi-structured focus groups and key informant interviews to gather insights on changes in resilience capacities over time, in relation to ZRBF interventions.

KEY FINDINGS

Higher programming intensity improves outcomes. Bi-variate analyses show associations between improved indicators and programming intensity. The bi-variate analyses show that in some cases where improvements between rounds are evident for the total sample, results are due to improvements for households in the high intensity category. Multi-variate analyses go further and provide evidence that improved resilience capacities, increased climate-smart practices and improved outcomes can be attributed to program layering. In turn, use of climate-smart practices and higher resilience capacities lead to improved well-being outcomes, coping strategies and recovery from shocks. Qualitative findings support these findings. In addition, more households reported high-intensity programming in round 2 than in round 1. Multi-variate analyses (Section H) combined information on programming intensity, shock intensity and outcomes and shows better outcomes for households that moved from medium to high intensity. Deep dive analysis (Annex 6) examined programming by type and showed that layering increases use of climate-smart practices, improves resilience capacities and leads to better outcomes. Qualitative data show that layering of multiple ZRBF interventions—such as participation in a savings group coupled with training in climate smart agricultural practices and implementation of a solar garden or poultry production together lead to improved food security outcomes.

Despite these gains, overall food security and other outcomes worsened from round 1 to round 2. The declining food security status across the entire sample is consistent with the increase in exposure to and severity of shocks. The analysis shows that shock exposure erased some of the gains from programming. Qualitative and quantitative data document a shifting array of shocks and household responses. Households were exposed to drought and flooding against the backdrop of high inflation and cash shortages. Drought and macro-economic volatility were already affecting households in round 1 and continued through round 2. Climate and macro-economic shocks generating downstream shocks: crop loss, crop disease and pests, loss of livestock and food and input price shocks. Water shortages and the difficulty in reaching water sources have led some households to stop watering productive gardens. Drought and heat waves destroyed some the maize crop before it reached maturity. Rainfall variation has reduced crop yields in other areas as well. Data also show that households engaged in a number of different strategies to cope with shocks, and used increasingly extreme or negative coping strategies over the course of a drought, usually starting by reducing food consumption, then drawing down savings, selling household and productive assets, and selling small livestock. When those assets are depleted, households sell large livestock, which are the most valuable. Households without savings or assets cope by continuing to reduce food consumption, begging, removing children from school, or sending children to work. Reported shock severity did not increase greatly across the rounds, but this is because the average reported severity was already close to the maximum value of the scale in OMS1.

Recovery from drought is up but from livestock death and disease is down, others are unchanged. This may be because, just as shocks have staggered onset, they also have staggered recovery. The only type of shock with lower reported recovery rates in OMS2 was death or disease of livestock, which was also reported by more respondents and with higher reported severity in OMS2. There was little change in the profile of livelihood activities of households across the two survey rounds. The most frequently cited principal source of cash income for surveyed households was income from casual labour, in both OMS1 and OMS2, followed by sale of livestock and sales of food crop production. There was a significant shift in the major source of food for household consumption across the rounds, with the percent of households reporting own-production as the main source declining by almost 40 percent, with offsetting increases in reliance on purchase with household income and, especially, reliance on food aid. Qualitative data suggest that access to information, training and inputs for improved agricultural and livestock practices led to more diversified livelihood options for participating households. Some alternatives emerged as particularly beneficial to certain categories of ZRBF participants, such as mushroom cultivation among elderly women and vocational training (e.g., welding) for youth.



Use of improved agricultural practices increased substantially from OMS1 to OMS2. Overall rates of use were much higher for the high-intensity group than for the medium-intensity group, but both groups showed significant increases in the use of most technologies from round 1 to round 2. Deep dive analysis showed that these practices improved well-being outcomes, use of coping strategies and recovery from shocks.

With respect to household income, there was little change over the two rounds, although reliance on in-kind income increased substantially. Expenditures also showed little change across the two rounds. This indicates that households are spending all available cash and supplementing with food-assistance and other in-kind assistance.

Overall resilience capacity increased significantly in the one-year interval from OMS1 to OMS2. The percentage of households that experienced an increase in resilience capacity between the two rounds was higher in the high-intensity group than in the medium-intensity group. For the total sample, absorptive, adaptive and transformative capacities all increased. All four capacities increased for high intensity households. Adaptive capacity decreased for the medium-capacity group. The decrease was due to productive and livestock assets and less livelihood diversification in round 2 than round 1. Qualitative findings reveal that ZRBF programming may help to sustain livelihoods – reports from beneficiaries, community key informants, and institutional stakeholders indicate that ZRBF programming is building resilience capacities and increasing household members' ability to face shocks and stresses. As a result of their participation in ZRBF programming, beneficiaries experience a more diverse suite of livelihood approaches, greater economic and financial options, and an improved ability to make decisions attributed to ZRBF's ongoing capacity-building.

Through its capacity-building and direct support to livelihoods, ZRBF has also contributed to strengthening linking social capital between institutional stakeholders and beneficiary households in the program area. Qualitative data suggest that, overall, ZRBF participants experienced improved relationships with extension workers, government stakeholders, and community leaders as a result of ZRBF investments in resilience programming. Finding indicate this has improved the social fabric in the program area and contributed to improved services and support to the community.

Two sets of regression analysis modelled resilience pathways to understand 1) the impacts of ZRBF interventions on enhancing resilience capacities and the relationships between resilience capacities on improved well-being outcomes, coping strategies and recovery from shocks and 2) the impacts of ZRBF interventions on increased use of climate-smart practices and how use of climate-smart practices improves well-being outcomes, coping strategies and recovery. Both are discussed in Annex 6. Results can be summarized as follows:

- Analyses show that ZRBF program participation, by increasing resilience capacities, improve well-being outcomes, coping strategies and recovery from shocks.
- By increasing use of climate-smart practices, ZRBF program participation improves well-being outcomes, coping strategies and recovery from shocks.
- Program layering works through both pathways to improve well-being outcomes, coping strategies and recovery from shocks.
- RBF interventions improve food security outcomes, controlling for exposure to shocks. In other words, while greater exposure to shocks has a negative effect on food security outcomes, participation in resilience programming reduces the negative effects of the shocks. Households would have been worse off in OMS2 due to their increased exposure to shocks if they had not also benefitted from resilience programming, which enhanced their resilience capacities and in turn mitigated the negative effects of shocks on their food security status.





INTRODUCTION

A. BACKGROUND AND OBJECTIVES OF THE OUTCOME MONITORING SURVEY

The Zimbabwe Resilience Building Fund (ZRBF) Outcome Monitoring Survey round 2 (OMS2) is the second round of an annual panel study designed to measure change in the impacts of ZRBF interventions over time, comparing findings from the same sampled households in OMS round 1 (OMS1) with OMS2. While OMS1 was purely quantitative, OMS2 was designed as a mixed-methods study, which included a qualitative component to contextualize quantitative findings and investigate a series of qualitative research questions focused on dynamics of change related to ZRBF interventions. The quantitative component utilized a beneficiary-based sample survey to measure changes between the two rounds for ten outcome indicators identified in the ZRBF indicator reference guideline,² in addition to data on shocks, resilience capacities, and key food security outcomes. The qualitative component used focus group discussions (FGDs) and key informant interviews (KIIs) at both the community and district levels. The quantitative indicators are described in Table 1 and in more detail in Annex 3; qualitative research questions are presented in Section J: Qualitative Research Findings. The two main objectives of the OMS are to:

1. Conduct a beneficiary-based sample survey to estimate point prevalence of the outcome indicators for ZRBF annual reporting; and
2. Measure the impact of project interventions on outcome variables (uptake of project-supported activities with increased household and community resilience capacities) and impact variables (household income, food security and nutrition outcome variables).

In addition to household and community resilience capacities, the OMS2 also uses qualitative inquiry to investigate institutional-level change related to ZRBF interventions (see qualitative research question 5, below). To address the second objective, the quantitative survey design stratifies the sample into “High-Programming Intensity” and “Medium Programming Intensity” categories based on the number of specific project activities per beneficiary according to project records (0 to 2 activities and 3 or more activities respectively). The quantitative survey captures findings by level of intensity, and across the seven consortia partners of ZRBF. Note statistical analysis compares round 1 to round 2 results. Differences among consortia partners are due to differences in the share of the sample made up of high-intensity households.

The initial sample design was to have equal numbers of high and medium intensity beneficiaries in the sample. High and medium intensity designations for analysis use data from survey questions asking about participation in 35 different interventions (33 in round 1). In round 1, high intensity households made up close to half, 51 percent, of the sample, which increased in round 2 to 66 percent. Among consortia partners, differences were more pronounced. In round 1, 90.7 percent of the sample in ECRAS was households reporting high-intensity program participation. This compares to 18.6 percent in SIZIMELE and 30.5 percent in ZVA. Apparently differences across consortia partners are due differences in program intensity levels in the sample and needs to be considered when viewing findings disaggregated by consortia partner. The analysis compares change between rounds for each consortia partner. It does not allow for comparisons among partners.

The OMS is primarily designed to report the topline indicators described in Table 1 and to investigate program learning between survey rounds. This report also includes results from multi-variate analyses that examine more complex relationships between household resilience capacities, shocks and program intensity levels

² ZRBF Survey-Based Indicators Reference Guide, February 2019.



across a number of well-being indicators including food security, coping, per-capita income, and recovery. As noted, qualitative findings help foster a better understanding of the quantitative results.

Overall, the OMS2 findings indicate that households and communities have faced an increase in the experience of shocks over the previous year, which in turn led to increases in food insecurity and a greater reliance of coping strategies. Qualitative and quantitative data document a shifting array of shocks and household responses. Households were exposed to drought and flooding against the backdrop of high inflation and cash shortages. Drought and macro-economic volatility continued through round 2, generating downstream shocks: crop loss, crop disease and pests, loss of livestock, and food and input price shocks. Water shortages and the difficulty in reaching water sources have led some households to stop watering productive gardens. Drought and heat waves destroyed some the maize crop before it reached maturity. Rainfall variation has reduced crop yields in other areas as well. Data also show that households engaged in a number of different strategies to cope with shocks, and used increasingly extreme or negative coping strategies over the course of a drought, usually starting by reducing food consumption, then drawing down savings, selling household and productive assets, and selling small livestock. When those assets are depleted, households sell large livestock, which are the most valuable.

Households without savings or assets cope by continuing to reduce food consumption, begging, removing children from school, or sending children to work. The data also show that ZRBF interventions have strengthened the resilience capacities of program participants to mitigate the effects of economic, climate-related, and other shocks and stresses. But for most households, the gains were not enough to offset the impact of long-term exposure to shocks and stresses. More detailed analysis showed that well-being outcomes, coping strategies and recovery from shocks were much better than they would have been without programming.

Table 1: Outcome Monitoring Survey Indicators

| INDICATOR | UNIT OF MEASUREMENT | DISAGGREGATION |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|------------------------------------------------------------------------|
| 1. IMPACT 2: Prevalence of households with moderate or severe Food Insecurity Experience Score (FIES) | Percent of HHs | Beneficiary sex, Consortium, HH head sex, program intensity |
| 2. OUTCOME 1: Number of women and men whose resilience has been improved as a result of ZRBF support | Number of male and female | Beneficiary sex, Consortium, HH head sex, program intensity |
| 3. OUTCOME 2: Average Food Based Coping Strategy Index score for households in targeted communities as a result of ZRBF intervention | Average Score/ Index per HH | Beneficiary sex, Consortium, HH head sex, program intensity |
| 4. OUTCOME 3: Average livelihoods and Assets based Coping Strategy Index for households in targeted communities | Average per HH | Beneficiary sex, Consortium, HH head sex, program intensity |
| 5. OUTCOME 4: Average monthly household income or proxy of income | Average (in USD) per HH | Beneficiary sex, Consortium, HH head sex, program intensity |
| 6. OUTCOME 7: Percentage of households with improved Household Dietary Diversity Score (HDDS) | Percent HHs (acceptable DD and medium DD) | Beneficiary sex, Consortium, HH head sex, program intensity categories |
| 7. INTERMEDIATE RESULT 2.3: Percentage of households who used financial services in the past 12 months | Percent of HHs | Beneficiary sex, Consortium, HH head sex, program intensity |
| 8. INTERMEDIATE RESULT 2.6: Proportion of households adopting climate smart agricultural production technologies | Percent of HHs | Beneficiary sex, Consortium, HH head sex, program intensity |
| 9. INTERMEDIATE RESULT 2.7: Percentage of people who practiced the value chain activities (on-farm and off-farm) promoted by project in the past 12 months | Percent of beneficiary/HHs | Beneficiary sex, Consortium, HH head sex, program intensity |
| 10. INTERMEDIATE RESULT 2.10: Percentage of people (household) reporting improved service delivery by duty bearers | Percent of beneficiary/HHs | Beneficiary sex, Consortium, HH head sex, program intensity |



DESCRIPTION OF ZRBF

The Zimbabwe Resilience Building Fund (ZRBF) was convened as a response to several severe economic, environmental and social shocks and stresses affecting rural communities in Zimbabwe. ZRBF is a \$83.3m programme managed by UNDP and co-funded by DFID, EU, Embassy of Sweden, Government of Denmark and UNDP. The ZRBF is implemented collaboratively with the Government of Zimbabwe, led by the Ministry of Lands, Agriculture, Water, Climate and Rural Resettlement (MLAWCRR).

ZRBF strives to contribute to the increased capacity of at-risk communities to protect development gains and achieve improved well-being in the face of shocks and stresses. A core focus of ZRBF is to build the resilience of individuals, households, communities, and systems. In order to reach its aim, ZRBF has organised activities around three inter-connected components related to: building evidence; supporting long-term household and community resilience; and a crisis modifier mechanism that can provide agile and flexible funding in times of shocks and stresses.

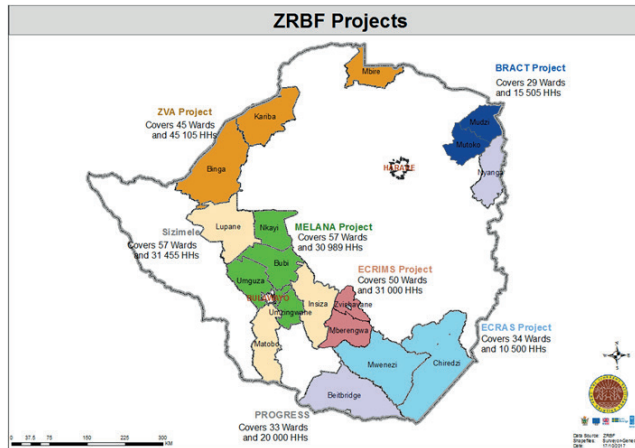


Figure 1. ZRBF Consortia Map

social capital across ZRBF partners and between ZRBF partners and external stakeholders. The RKH is working to build an effective coalition for change, bringing together a strategic, multi-disciplinary team of actors to collectively learn, iterate, and strategize towards a more resilient Zimbabwe.

The ZRBF Theory of Change is based on the hypothesis that if investments are made to (i) directly support targeted communities to improve absorptive, adaptive and transformative capacities; (ii) avail timely and cost effective response to emergencies rolled out; and (iii) generate learning and utilise evidence in policies and decisions; then, not only will targeted communities be more resilient and food secure, but there will also be a better understanding of what works and what does not work to strengthen communities' resilience in Zimbabwe.





OUTCOME MONITORING SURVEY METHODOLOGY

As noted above, OMS2 employed a mixed-methods approach, with both quantitative and qualitative methods. This approach is particularly important for monitoring resilience programming, which focuses on strengthening capacities, shocks/stresses, coping and livelihood strategies, and wellbeing outcomes. The quantitative component used a population-based survey designed to enable the comparison of data between OMS1 and OMS2. The qualitative study was designed with two purposes. First, the qualitative design and tools were designed to complement the quantitative sample and survey tools, by exploring the experience of beneficiaries to cope with and manage shocks and stresses, and the ways in which ZRBF interventions affected their coping and livelihood strategies. Second, the qualitative component investigated a series of key research questions that emerged from OMS1, for which qualitative methods are well suited. For example, OMS round 1 showed that beneficiary households reporting high level program participation had much better resilience capacities and positive relationships with outcome indicators compared to households reporting medium level participation. The qualitative component of OMS2 explored the dynamics underlying these findings, focused on the impacts of layering and sequencing of ZRBF interventions on resilience capacities at the household, community and institutional levels.

This section describes the OMS2 methodology for both the quantitative and qualitative components, including sampling, training and tools for data collection, data management and analysis, and limitations of the study.

A. SAMPLING DESIGN

I. QUANTITATIVE COMPONENT

The OMS surveys are structured as a panel design. The purpose of this design is to obtain more statistically accurate estimates of changes over the two rounds. Sample size is adequate to be representative for each of the 7 consortia partners. Time and budgetary constraints precluded a sample large enough to be representative of the 18 districts. Since the same households are surveyed in the two rounds, individual household characteristics are controlled for in estimating changes in indicators over time. Under this panel study design, OMS2 used the same households that were surveyed in OMS1.³ In the two-stage cluster sample design, wards were considered as clusters. Ten wards were selected from the medium intensity sampling frame and 10 wards from the high intensity sampling frame for each consortium.³ The clusters were selected using the statistical procedure probability proportional to size (PPS). Clusters were selected across the districts, with the selection of clusters within individual consortium implementation areas proportional to the number of consortium beneficiaries in each district. Cluster samples were selected randomly from the list of beneficiaries from the respective selected clusters. The beneficiaries selected for OMS1 were then re-interviewed in OMS2.

Of the 3,440 households interviewed in the quantitative component of the OMS1, 3,353 were successfully interviewed for round 2 (OMS2), and there were no replacement households. Enumerators were unable to contact beneficiaries in 82 households and five beneficiaries refused to be interviewed, resulting in an attrition rate of 2.5 percent. Refer to Annex 2 for a discussion of sampling issues for panel surveys and an analysis of the potential effects of attrition on the OMS2 sample.

³ As described above, “medium intensity” is defined as beneficiaries participating two or fewer program interventions; in “high intensity” programming areas, beneficiaries participated in more than two activities.



II. QUALITATIVE COMPONENT

The qualitative study employed a purposive sampling strategy, aligned with the quantitative sample design. Qualitative sites were purposively selected among the clusters sampled for the quantitative study to investigate key characteristics of interest across and within the clusters, across the seven consortia. In addition to program intensity (high/medium), the study identified a set of selection criteria to capture a range

of ZRBR programming in terms of intervention type and level of uptake and proximity to an urban center or access to infrastructure. Within sites, the qualitative research teams conducted separate male and female focus groups and included younger (under 35) program participants, to gain insights and enable analysis of the data by gender and age. These criteria and the selected sites were determined in consultation with the ZRBF/ RKH and consortia members.

Within each consortium, the number of sites was limited to two to three purposively sampled sites, to enable research teams to collect rich information, rather than thin data spread over too many sites (see Table 2). Thus, research sites and key informants were selected to provide in-depth information on topics covered in the quantitative survey tool and the qualitative research questions.

While purposive sampling may introduce selection bias, the mixed-

methods approach allows for the convergence of qualitative findings with statistically representative data from the quantitative study. The sampling design was intended to ensure that the qualitative component captured an adequate range of variation across the ZRBF program area to address the qualitative research questions and provide contextual information for the quantitative OMS2 findings across the seven consortia.

B. DATA COLLECTION TOOLS

For the quantitative component, a structured questionnaire was designed to collect information for the 10 ZRBF topline indicators and associated information for the descriptive analysis. The OMS questionnaire is consistent with the ZRBF indicators reference guidelines (February 2019) and other tools from similar surveys, such as ZimVAC 2018 Rural Livelihood Assessment Tools, ZimVAC 2018 Resilience Measurement questionnaire and other resilience and outcome monitoring surveys conducted by TANGO. The OMS questionnaire is provided in Annex 7.

The qualitative study used three tools to guide data collection, including topical outlines for community-level FGDs, FGDs at the district/institutional level, and key informant interview at both the community and institutional levels. The tools were designed to complement and contextualize findings from the quantitative survey, and to investigate the qualitative research questions. The Topical Outlines, included in Annex 8, were finalized after review and refinement with qualitative research teams during the training.

C. SURVEY TEAM TRAINING

Survey enumerators, qualitative researchers, field supervisors, and consortium M&E staff participated in a

| Consortia | District | Ward | Distance from Urban/ Town Center (km) |
|-----------|------------|------|------------------------------------------|
| BRCT | Mudzi | 2 | 40 |
| | Mutoko | 4 | 31 |
| ECRAS | Chiredzi | 22 | 85 |
| | Mwenezi | 6 | 35 |
| ECRIMS | Mberengwa | 6 | 37 |
| | Zvishavane | 5 | 45 |
| MELANA | Nkayi | 25 | 95 |
| | Umguza | 11 | -- |
| PROGRESS | Nyanga | 18 | 80 |
| | Beitbridge | 6 | 20 |
| SIZIMELE | Insiza | 17 | 15 |
| | Lupane | 8 | 42 |
| | Matobo | 11 | 25 |
| ZVA | Binga | 21 | 162 |
| | Kariba | 7 | 210 |
| | Mbire | 9 | 85 |



five-day training (February 27 to March 2) prior to data collection. Qualitative researchers co-convened with quantitative counterparts in Bulawayo, and a parallel quantitative training was simultaneously held in Harare to facilitate timely implementation of the survey across ZRBF program areas.

Participants received an overview of the ZRBF approach to resilience programming, and an orientation to the principles and norms of quantitative and qualitative research, the research questions, sampling methodology, data collection and recording methods, data management and transfer, and quality assurance. The quantitative training centered on review of the paper-based and electronic questionnaires, validating questions and responses, and language use among respondents, as well use of the electronic devices and ODK software. The qualitative component focused on intensive review of the research questions and topical outlines for FGDs and KIs, implementation of the tools, data recording and data entry. The training included simulations through role play and a field test, followed by in-class refinement of the tools and their implementation.

D. DATA COLLECTION, MANAGEMENT AND ANALYSIS

I. QUANTITATIVE COMPONENT

a. Data Collection, Entry and Quality Assurance

Data collection began March 3 and ended April 17, 2020. Survey enumerators collected data using an electronic questionnaire form on Samsung tablets equipped with Open Data Kit (ODK) software. The use of mobile devices and an electronic questionnaire improved data quality by allowing data validation rules and consistency checks. Mobile devices reduced data entry burden as data were entered at the interviewer level and records were uploaded to the cloud server using the built-in internet connectivity of the devices. For the OMS survey, the data was uploaded to the server maintained by UNDP to ensure data protection and confidentiality. The data analysis team, led by team supervisors, reviewed real-time data daily to check for consistency and quality of data remotely. This was useful to ensure data readiness for immediate analysis after the completion of data collection for all sample beneficiaries.

ZRBF engaged enumerators from ZimVAC under the auspices of the Food and Nutrition Council (FNC) of Zimbabwe, as well as ZRBF consortia partners and M&E staff to collect data during fieldwork, with technical support and oversight from TANGO and ZRBF PMU. Staff from RKH, FNC, local government, Ministry of Agriculture, and PMU also checked data quality in the field and provided another level of supervision and monitoring. A continuous and instant feedback system was established by creating a WhatsApp group for data quality assistance and instant problem-solving for challenges encountered during field work.

b. Data Analysis

The ODK dataset (XML format) was converted into STATA 15.1 and SPSS 20.0 databases for data editing, management and analysis. Validated data was accumulated in the main STATA database. TANGO prepared a comprehensive data analysis and tabulation plan based on the ZRBF Indicator Reference guideline (February 2019). Syntax files were created for data editing and analysis using both STATA and SPSS. Except for the resilience indicators, indicators were analysed using SPSS. The detailed analysis process (principal components and multivariate) using STATA and definitions of resilience indicators are presented in Annex 4 on Resilience Capacities Analysis.

OMS2 used the same sampling weights used for OMS1, adjusted slightly for the difference in attrition rate (Annex 2).

Following the structure of the OMS1 report, findings are reported for the ten ZRBF topline indicators. The survey data were disaggregated into the following three beneficiary categories to better understand the results of ZRBF to date:

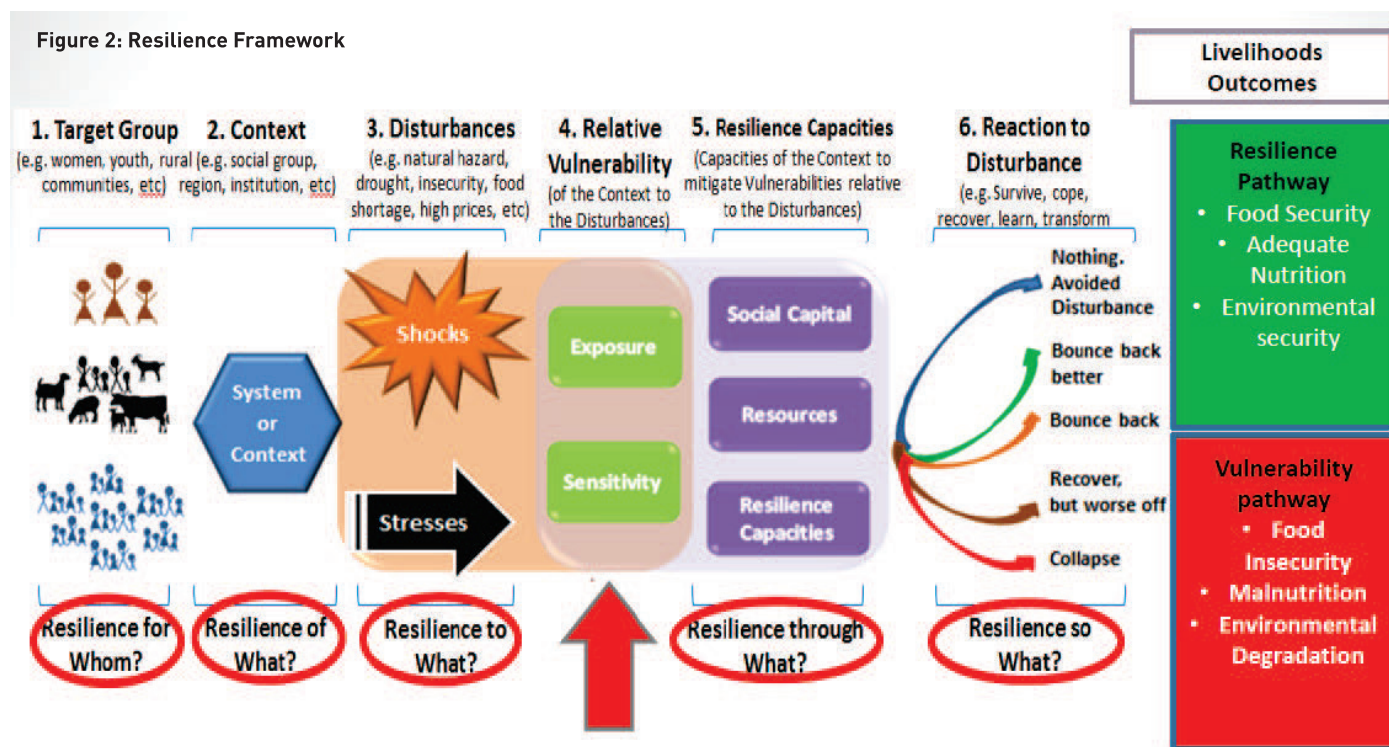
1. Sex of the beneficiary (Male v Female)
2. Consortium partner (BRACKT, ECRAS, ECRIMS, MELANA, PROGRESS, SIZIMELE and ZVA)
3. Program intervention intensity (High or Medium)



Tables containing statistical significance tests for differences across program intervention intensities are presented within the body of the report.

c. Measurement of resilience capacities

The resilience framework⁴ and pathways of shock recovery in Figure 2, below, show the dynamics of vulnerabilities, resilience capacities and shock recovery. The framework shows that resilience is not an outcome, but rather a capacity that can influence various outcomes, such as food security, economic well-being (per capita expenditure or per capita income), shock recovery, and coping strategies.



A combined resilience capacity index and three individual resilience capacity indices (absorptive, adaptive, and transformative) are calculated using the Principal Component Analysis (PCA)/multivariate factorial analysis procedure in STATA software. The estimated scale of the indices ranges from 0 to 100, where 0 indicates the least and 100 indicates the highest resilience capacity. The combined resilience capacity index was derived from the average of the standardized scores from PCA of the following 20 absorptive, adaptive, and transformative resilience capacity components (Figure 3). Annex 4 presents additional detail on the methodology utilized to compute the resilience capacities.

Two sets of multivariate regression analyses explored the relationships between program participation, resilience capacities and well-being outcomes (food security, coping strategies, per-capita income, and recovery). Other used as controls include shock exposure and severity and household demographic characteristics.

II. QUALITATIVE COMPONENT

a. Data Collection, Entry and Quality Assurance

Data collection for the qualitative research began March 2 and ended March 13, 2020. The study engaged a sample of ZRBF participants and key informants from each of the seven Consortia programming areas.

⁴ Tim Frankenberger, Mark Langworthy, Tom Spangler and Suzanne Nelson. 2012. Enhancing Resilience to Food Security Shocks in Africa. Discussion Paper, TANGO International, Inc.





¹Livestock and productive asset ownership capacity are common to absorptive and adaptive capacities

²Bridging social capital and linking social capital are common to adaptive and transformative capacities

Absorptive capacities:

- 1) Access to informal safety nets
- 2) Bonding social capital
- 3) HH cash savings
- 4) Access to remittances
- 5) Livestock assets¹
- 6) Productive assets¹
- 7) Access to humanitarian assistance
- 8) Shock preparedness and mitigation

Adaptive capacities:

- 5) Livestock assets¹
- 6) Productive assets¹
- 9) Bridging social capital²
- 10) Linking social capital²
- 11) Human capital
- 12) Livelihood diversification
- 13) Access to financial services
- 14) Exposure to information

Combined Resilience
Capacity
(21 capacities)

Transformative capacities:

- 9) Bridging social capital²
- 10) Linking social capital²
- 15) Access to agricultural services
- 16) Access to formal safety nets
- 17) Access to markets
- 18) Access to basic services
- 19) Access to infrastructure
- 20) Gender Norm
- 21) Collective action

Figure 3: Components of Resilience Capacity Indices



Gender-balanced research teams collected data through separate female FGDs and semi-structured KIIs, at both the community and institutional/systems levels. The teams included ZRBF program and M&E staff, researchers from the Zimbabwe Food and Nutrition Council, and a limited number of independent research consultants, as well as TANGO and RKH research staff. Each team employed a technical research lead from TANGO or RKH and a supervisor. Research leads took primary responsibility for quality assurance, including daily debriefs with research teams to iteratively triangulate findings, identify knowledge gaps, and refine qualitative inquiry, supervisors took responsibility for logistics and data management.

During FGDs and KIIs, one researcher facilitated the discussion while another was responsible for recording raw notes in field notebooks. Recording devices were used as back-up and for reference as needed during data entry. Research teams sat together to transfer raw notes into data entry matrices, which were provided to all teams as MS Word documents and aligned with topical outlines. Data entry occurred in the field, immediately after data collection, in English. The fieldwork schedule allocated a full day for data entry following FGDs and KIIs at each site, to enable time for detailed data entry, review, and collective triangulation and identification of emergent themes or gaps with respect to the research questions.

To ensure collection of high-quality data, research leads and supervisors reviewed data matrices on-site with research teams, and then uploaded matrices to a cloud server. TANGO research leads then reviewed matrices and provided real-time feedback to field teams, noting any questions or gaps to be addressed before matrices were finalized. To back up data, each team was provided with a data stick, collected at the close of fieldwork. TANGO/RKH research leads maintained daily contact with all research teams throughout the fieldwork, to support field operations and monitor data collection and management, and to ensure adequate coverage for desired categories of key informants.

While somewhat variable across sites, overall the ZRBF OMS2 qualitative data was of high quality. Research leads attribute this to the recruitment of high caliber qualitative research teams, general familiarity with resilience concepts and ZRBF programming among the researchers, well-executed logistical and operational components, full days built in to the data collection schedule to allow for comprehensive real-time data entry and full team debriefing sessions, and thorough qualitative training. The five-day training emphasized researchers' intimate understanding of the study research questions and tools, pilot testing, and framing the training to communicate to the teams their significant role as engaged researchers. The training also highlighted issues of bias and quality assurance throughout the research process, which is particularly important for studies that employ research staff from implementing partners rather than independent researchers. For this reason, this study incorporated multiple layers of review to check for bias in data recording, internally at the field/data collection level and additional external review by TANGO analysts during the analysis stage.

Data Analysis

Research leads used a manual matrix approach to analyze the data. The matrix approach is a low-tech and proven method of organizing both data entry and analysis of qualitative data. Analysts reviewed, synthesized, and analyzed data using Microsoft Excel spreadsheets, which allow narrative data to be condensed and filtered according to key characteristics of disaggregation (e.g., consortium, gender, age). The approach also allows researchers to organized and analyze data to identify patterns, trends and outliers with respect to each of the research questions.

E. LIMITATIONS

Design limitations. In its overall design, the OMS is not a pure impact evaluation as it lacks a true control group, that is, a group that received “no treatment.” This limits the interpretation of the study in terms of true impact evaluation. Conceptually the population includes the following categories of programming:

1. No resilience programming support
2. Indirect programming support, where beneficiaries do not participate directly in any resilience programming activities
3. “Medium-intensity” where beneficiaries participate directly in less than three programming activities



4. “High-intensity” where beneficiaries participate in three or more resilience programming activities

The two rounds of the OMS only included beneficiaries in the sample that fall within categories three and four above. Specifically, the main text focuses on surveyed households that participated in less than three resilience programming activities (medium-intensity group) are compared with those that participated in three or more activities (high-intensity group). Deep dive analysis presented in Annex 6 uses results from multi-variate regression equations to simulate well-being outcomes, recovery from shocks and use of coping strategies for households with no program participation. It also simulates the effects of layering on well-being outcomes. However, the results cannot address questions about how indirect participation in resilience interventions contributes.

Sampling limitations. The sampling design aimed to provide a consortium sample of roughly equal numbers of beneficiaries in high and medium intensity categories. However, owing to differences among the consortia in number and type of interventions, intervention intensity categories were recalculated using actual data on program intervention information from survey findings. Survey findings provide the most direct and up-to-date data on beneficiary direct engagement with ZRBF activities. Results of the recalculation process presented in Table 3 show that some consortia beneficiary samples (e.g., ECRAS and BRAC) included a higher representation of high-intensity beneficiaries than others, while other consortia beneficiary samples (e.g., SIZIMELE and ZVA) include a larger proportion of medium-intensity beneficiaries. This variation makes direct comparisons of outcome and impact variables across consortia more difficult and should be considered in interpreting the findings. The deep dive analysis groups programming into 7 categories, community asset building, gender and youth, business training and support, crop and livestock technical support and training, humanitarian assistance and ISALs to show how they work through resilience pathways to improve outcomes.

| | BRAC | ECRAS | ECRIMS | MELANA | PROGRESS | SIZIMELE | ZVA |
|----------|-------------|--------------|---------------|---------------|-----------------|-----------------|------------|
| Round 1 | 61.6 | 90.7 | 50.4 | 57.3 | 49.4 | 18.7 | 30.5 |
| Round 2 | 89.9 | 97.2 | 79.4 | 68.1 | 54.6 | 41.9 | 30.1 |
| <i>n</i> | 516 | 472 | 494 | 445 | 474 | 503 | 449 |

The minimum required sample size for the OMS survey was calculated at 3,500 households (see *ZRBF Outcome Monitoring Survey Report Round One*¹). The round 1 sample of 3,440 was only slightly below this threshold. The round 2 sample size was 3,353, which is four percent less than the minimum required size. As a result, the statistical accuracy of estimates may be somewhat less than the desired levels (95% confidence, 80% power).

The sample size does not allow for valid comparisons at the district level. Budget and time constraints limited the sample size to be representative of the 7 consortia partners but not the 18 districts. District level representation requires a sample size of 9,000 households.

Attrition. The OMS surveys have been implemented with a panel design in which the same households have been interviewed across the two rounds. This design permits analysis of changes in individual households between the two rounds so that changes over the rounds are measured at the level of individual household, not changes in sample means. This provides a much more robust comparison of changes and more precise estimates because the impacts of household level factors on observed changes are directly controlled for. One possible drawback with panel design is attrition, the loss of households in the later survey. However, the attrition in this study was small, less than 3 percent (87 households). Furthermore, the characteristics of households that fell out of the sample are not significantly different from those that remained, so comparison of results across the two rounds is valid and unbiased. Refer to Annex 2 for the results of this comparison. If this panel of households is surveyed in the future, household replacement methods should be developed and implemented to offset attrition.

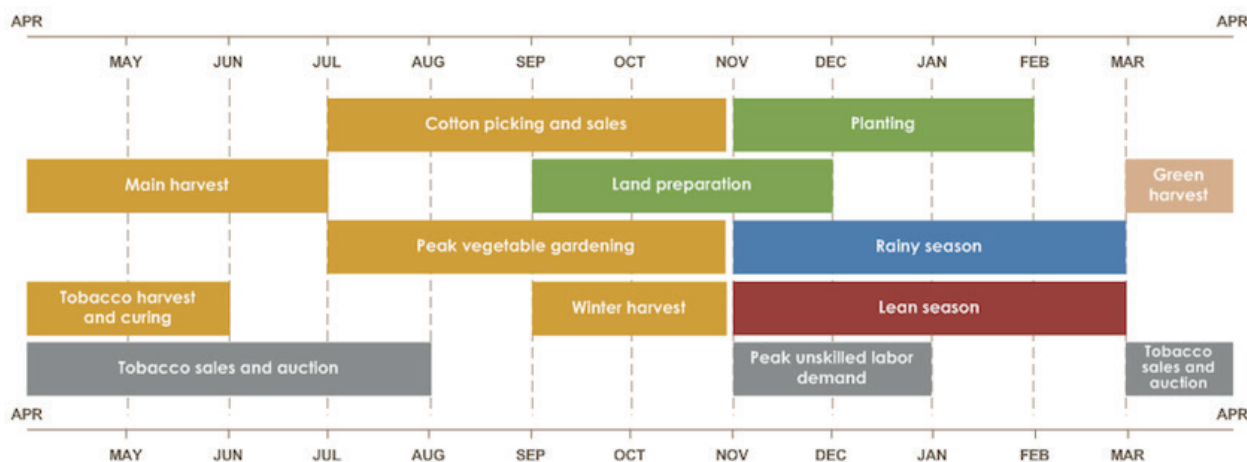
Timing of the panel study. Data for OMS2 was collected March 2020 during the lean season, while the data collection for OMS1 occurred in April 2019, a month later and at the beginning of the harvest season⁵. This is important to note as a limitation because it may impact the results collected for food security recall questions presented in subsequent sections of the report. For reference, Figure 4 shows a typical seasonal calendar and depicts the lean and main harvest seasons in Zimbabwe. The lean period begins in November and continues until the end of February. Green harvesting begins in early March, with the main harvest typically from April

⁵ The start of field work in round 1 was delayed. If there are future rounds of this panel they should coincide with round 2 and take place in March.



to July. This is particularly relevant for the Food Insecurity Experience Scale (FIES) 12-month recall period, which for OMS1 reflects the period from April 2018 to April 2019. For OMS2, the FIES recall period is from February 2019 to March 2020 and includes the entire lean period. The FIES 30-day recall period reflects only the past 30 days from the day of the interview (i.e., mid- February to mid-March 2020). The data for the 30-day recall period reflects the time during the lean period and before the main harvesting phase.

Figure 4: Zimbabwe Seasonal Calendar



Source: FEWS NET Zimbabwe country brief: <https://fews.net/southern-africa/zimbabwe>

Tool design. Some additional questions were added to the round 2 questionnaire, including questions around livestock assets, more details about disposition of crops harvested, current household-level food stocks, and fodder production. Since information about these variables was only collected in round 2, it is not possible to measure change between OMS1 and OMS2.

In round 1 and 2, enumerators were recruited from FNC and had extensive experience conducting similar surveys (ZimVAC). As a result, the quality of data collection in the field is believed to be similar in round 1 and in round 2.

Topline Indicator 2, ‘*Number of women and men whose resilience has been improved as a result of ZRBF support*’, has complex data collection requirements and computational methods. The components of the resilience capacity index are fixed. If components are dropped or missing from a future survey questionnaire, the index would need to be re-estimated (backcast). If new components are added, the indicator is not comparable over time.

Qualitative component. Qualitative research teams were of high calibre and well-balanced in terms of gender and age. They also were well-staffed, as each team included four researchers, a supervisor to support logistic arrangements, and a team lead to manage technical review quality assurance of data collection and entry at the field level. Since the OMS2 was a monitoring activity that served the dual purpose of training in qualitative methods for ZRBF, most researchers were also program staff. As this increased the possibility of introducing bias into data collection and data entry, study leads and team leads took extra steps to mitigate and monitor the process to reduce bias, including: intensive training; real-time data review; inclusion of an “observations/ insights” column in the data entry tool to provide researchers with a space to indicate their own observations and insights separate from raw data collected from study participants; multiple rounds of data cleaning; and timely and transparent action if there was a question of bias in the data set.

OMS1 did not include a qualitative component, which limited the depth of interpretation as well as verification of the quantitative results. While OMS2 include a qualitative component, there is not similar information from the first round for comparison.

The geographic scope of the qualitative data collection aligned with the quantitative study, such that sites reflect variability across consortia, with two to three sites selected for each consortium. As a result, the qualitative study does not include all 18 districts where ZRBF operates.



OUTCOME MONITORING SURVEY FINDINGS AND SUPPORTING QUALITATIVE EVIDENCE

OMS2 findings are organized in such a way to provide the reader the most comprehensive understanding of the changes observed from round 1 to round 2. The first section (A) of the report gives an overall description of the household characteristics and demographics of the respondents in OMS2, followed by data on shock exposure and household ability to recover in section (B). The increase in the number of shocks experienced by households from round 1 to round 2 is helpful in shaping the narrative around in the subsequent sections that explore the ZRBF topline indicators. These include (in order) food security indicators; livelihood and asset, and food-based coping strategies; information on household income and expenditure; agriculture technologies and value chain practices; and household resilience capacities. Qualitative evidence collected during the OMS2 is also presented to explain survey results as well as to highlight any differences between the quantitative and qualitative findings.

A. BACKGROUND CHARACTERISTICS AND DEMOGRAPHICS

Table 4 shows the characteristics of the OMS2 respondents. Household head (52.4 percent) and the spouse of the household head (37.2 percent) were the largest contingent of primary respondents. Approximately two-thirds (64.9 percent) of primary respondents were female while a third (35.1 percent) were male. The average age of the primary respondent was 48.1 years.

| Respondents | Total Sample |
|-------------------------------------|---------------------|
| Respondents by HH member (%) | |
| Household head | 52.4 |
| Spouse | 37.2 |
| Son/daughter | 6.1 |
| Other household member | 2.4 |
| Other relative | 1.6 |
| Not related | 0.3 |
| Respondents by sex (%) | |
| Male | 35.1 |
| Female | 64.9 |
| Respondents by age (mean) | 48.1 |
| Total Respondents | 3353 |

Table 5 shows the characteristics of respondent households obtained from the household roster in OMS2. The overall average family size among ZRBF communities in OMS2 is 5.9 members which is above the overall national average household size of 4.2⁶ members. The average family size is comparatively higher in high-intensity households (6.2 members) compared to medium-intensity households (5.5 members).

Nearly three-quarters (71.6 percent) of households overall were below the age of 35 and the mean age was 24.5 years. Overall, the proportion of males (49.1 percent) is slightly lower than the proportion of females (50.9 percent). Comparatively, the Zimbabwe national average⁷ is 48 percent male and 52 percent

female. Medium-intensity households have a lower proportion of males (48.8 percent) compared to females (51.1 percent), which might indicate slightly more out-migration of male household members compared to high-intensity households whose sex ratio is marginally more balanced.

Over half (55.1 percent) of all respondents were either divorced, separated, widowed, or had never been married while less than half (44.9 percent of those age 10 and above) of all respondents were married (either living together or apart). Qualitative data suggests that economic stressors, such as couples living separately to earn a living as well as food insecurity, exacerbate tension and contribute to divorce rates. Price volatility and high inflation rates are increasing poverty in households across the Consortia areas, which in turn has an impact in divorce rates. In the Mudzi District, male FGD respondent, for instance, note that economic shocks are increased gender-based violence and divorce in the community (BRAC Consortium). Comparatively, the national average⁸ shows that

⁶ Zimbabwe National Statistics (ZimStat), Inter-Censal Demographic Survey, 2017.

⁷ Ibid.

⁸ Ibid.



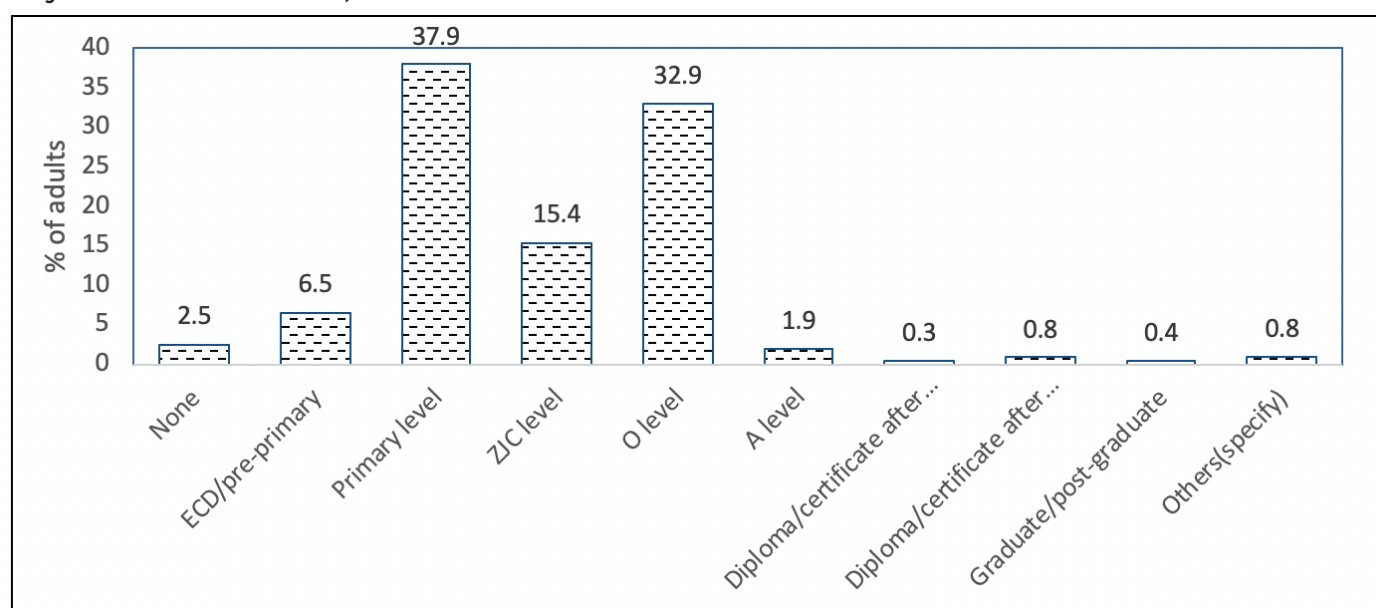
| Table 5: Household Demographics, By Program Intensity | | | |
|-------------------------------------------------------|--------------|-----------------------|--------|
| Household Demographics | Total Sample | Programming Intensity | |
| | | High | Medium |
| Average household size | 5.9 | 6.2 | 5.5 |
| Age categories (%) | | | |
| Below 15 (%) | 41.5 | 41.7 | 41.2 |
| 15-34 (%) | 30.1 | 30.7 | 29.4 |
| 35+ (%) | 28.4 | 27.6 | 29.3 |
| Age (mean) | 24.5 | 24.2 | 24.8 |
| Sex (%) | | | |
| Males | 49.1 | 49.3 | 48.8 |
| Females | 50.9 | 50.7 | 51.1 |
| Marital status, (ages 10 and older %) | | | |
| Married (living together) | 41.2 | 41.1 | 41.3 |
| Married (living apart) | 3.7 | 3.4 | 4.1 |
| Divorced or separated | 3.8 | 3.6 | 4.1 |
| Widowed | 7.3 | 6.0 | 9.0 |
| Never married | 44.0 | 45.9 | 41.5 |
| Total households | 3353 | 2223 | 1130 |

a larger proportion of the population in the country were currently married (56.4 percent of those age 15 and above) in 2017, compared to a smaller proportion (43.6 percent) who were either divorced, separated, widowed or had never been married.

In round 2, the vast majority of participants aged 18 years and older have completed some school (Figure 5). About 37.9 percent of family members who ever attended school were able to complete primary level education, where slightly less (32.9 percent) completed Ordinary Level (O-Level), 15.4 percent completed Zimbabwe Junior Certificate (ZJC) levels, 1.9 percent

completed Advanced Level (A-Level), and 6.5 percent completed Early Childhood Development (ECD)/Nursery/Kindergarten. A smaller percentage of only 2.4 percent of family members reported that they had not been to school or completed any education.

Figure 5: Educational Attainment, OMS2



Note: Adult refers to persons aged ≥18 years

B. HOUSEHOLD SHOCKS EXPOSURE AND RECOVERY

Concurrent economic and natural shocks/threats are continuing throughout the country aggravating the food insecurity situation and adversely impacting livelihoods, especially for poor households. ZRBF's main





objective is to build household resilience capacities to cope with shocks or stresses and mitigate their effects on livelihoods and food security. Household-level information was collected for a 12-month recall period to get a better understanding of the types of shock exposures, household-level impacts, coping strategies utilized, and extent of recovery.

I. Shock Exposure

Qualitative and quantitative data document a shifting array of shocks and household responses. Households were exposed to drought and flooding against the backdrop of high inflation and cash shortages. Drought and macro-economic volatility were already affecting households in round 1 and continued through round 2. Climate and macro-economic shocks generating downstream shocks including crop and livestock losses, crop disease and pests and food and input price shocks. Price shocks from the macro-economic situation were magnified by the effects of drought (and other climate shocks) on prices.

Respondents were exposed to an increased variety of shocks over the past 12 months. Table 6 shows that an overwhelming majority (98.7 percent) of beneficiary households reported that they had experienced at least one shock in the past 12 months. On average, beneficiary households experienced a total of 4.7 shocks in round 2, which is an increase from 3.8 shocks experienced in round 1. Additionally, 34.0 percent of sampled households in OMS1 reported that they were exposed to at least five shocks, which increased to over half (50.6 percent) in OMS2. The recall periods overlap by one month, shocks that occurred in April 2019 could be counted in both periods.

The six most salient shocks for beneficiary households in the past 12 months were sharp food price increases (82.2 percent), drought (81.3 percent), variable rains (74.4 percent), crop disease or pests (53.1 percent), increases in the price of inputs (49.6 percent), and death or disease of livestock (26.8 percent), each of which increased since OMS1 (Table 6). The greatest increase across the two rounds among the salient shocks were households who experienced an increase in the price of agricultural inputs (a difference of 21.0 percent), followed by livestock death or disease (13.0 percent), drought (10.7 percent), and crop disease or pest (8.7 percent).

Exposure to shocks increased for both high- and medium-intensity households. (Table 6). Although analysis did not compare high- to medium-intensity, however more shocks for high intensity households could be due to more assets and household characteristics. For example, a large multi-generational household with wage earnings, crops and livestock are exposed to more kinds of shocks (climate, economic and health) and participate in more program activities compared to small households with work in only one sector. The expectation is that livelihood diversification and program participation help larger households to recover faster.

Table 6: Exposure to Shocks in the Past 12 Months, by Program Intensity and Survey Round

| Shock Exposure in Past 12 Months | Total Sample | | | Programming Intensity | | | | | |
|-------------------------------------|--------------|------------|------|-----------------------|------------|------|------------|------------|------|
| | | | | High | | | Medium | | |
| | Round 1 | Round 2 | Sig. | Round 1 | Round 2 | Sig. | Round 1 | Round 2 | Sig. |
| HHs exposed to type of shock (%) | | | | | | | | | |
| Sharp food price increase | 77.9 | 82.2 | *** | 83.3 | 87.1 | * | 73.6 | 75.0 | ns |
| Drought | 70.7 | 81.3 | *** | 69.0 | 82.0 | *** | 72.1 | 80.3 | ** |
| Variable rains | 67.5 | 74.4 | *** | 74.5 | 79.1 | * | 61.9 | 67.4 | ns |
| Crop diseases or pests | 44.3 | 53.1 | *** | 57.6 | 60.5 | ns | 33.8 | 42.2 | ** |
| Increase price of inputs | 28.5 | 49.6 | *** | 36.5 | 57.8 | *** | 22.2 | 37.5 | *** |
| Death or disease of livestock | 13.8 | 26.8 | *** | 16.9 | 30.9 | *** | 11.4 | 20.6 | *** |
| Reduced soil productivity | 15.0 | 17.6 | *** | 20.3 | 21.7 | ns | 11.2 | 11.7 | ns |
| Crop damage by wildlife | 14.3 | 14.6 | ns | 16.9 | 16.5 | ns | 11.9 | 11.9 | ns |
| Illness of HH member | 11.3 | 11.3 | ns | 11.4 | 12.8 | ns | 11.4 | 9.1 | † |



Table 6: Exposure to Shocks in the Past 12 Months, by Program Intensity and Survey Round

| Shock Exposure in Past 12 Months | Total Sample | | | Programming Intensity | | | | | |
|----------------------------------------------|--------------|------|-----|-----------------------|------|-----|------|------|-----|
| Large medical expense | 9.7 | 10.5 | ns | 11.2 | 12.4 | ns | 8.5 | 7.7 | ns |
| Low price crop or livestock products | 7.8 | 13.4 | *** | 10.7 | 15.4 | ** | 5.3 | 10.3 | *** |
| Death of household member | 6.6 | 6.2 | ns | 6.4 | 6.6 | ns | 6.7 | 5.8 | ns |
| Livestock theft | 6.1 | 8.1 | *** | 7.2 | 9.0 | ns | 5.2 | 6.7 | ns |
| Deforestation | 6.1 | 7.2 | * | 6.6 | 8.1 | ns | 5.8 | 6.0 | ns |
| Excessive rains | 4.9 | 5.3 | ns | 6.4 | 5.5 | ns | 3.7 | 5.2 | ns |
| Veld fire | 1.8 | 2.2 | ns | 1.3 | 2.1 | ns | 2.2 | 2.5 | ns |
| Floods | 0.8 | 1.5 | ** | 0.9 | 1.4 | ns | 0.6 | 1.5 | † |
| HHs exposed to category of shocks (%) | | | | | | | | | |
| Climate shocks | 93.8 | 97.2 | *** | 96.5 | 98.7 | ** | 91.9 | 95.0 | * |
| Destructive shocks | 18.8 | 20.6 | ** | 16.9 | 18.9 | ns | 11.9 | 12.9 | ns |
| Economic shocks | 82.3 | 87.5 | *** | 87.1 | 92.0 | ** | 79.2 | 80.9 | ns |
| Manmade shocks | 1.8 | 2.2 | ns | 1.3 | 2.1 | ns | 2.2 | 2.5 | ns |
| Number of shocks (mean) | 3.8 | 4.7 | *** | 4.4 | 5.1 | *** | 3.5 | 4.0 | *** |
| HHs with any shocks (%) | 97.1 | 98.7 | *** | 98.8 | 99.5 | ns | 95.9 | 97.4 | ns |
| HHs exposed to at least 5 shocks (%) | 34.0 | 50.6 | *** | 27.1 | 41.3 | *** | 16.6 | 24.2 | ** |
| <i>n (weighted)</i> | 4096 | 4184 | | 1802 | 2498 | | 1638 | 1130 | |
| <i>n (unweighted)</i> | 3353 | 3353 | | 1715 | 2223 | | 2294 | 1686 | |

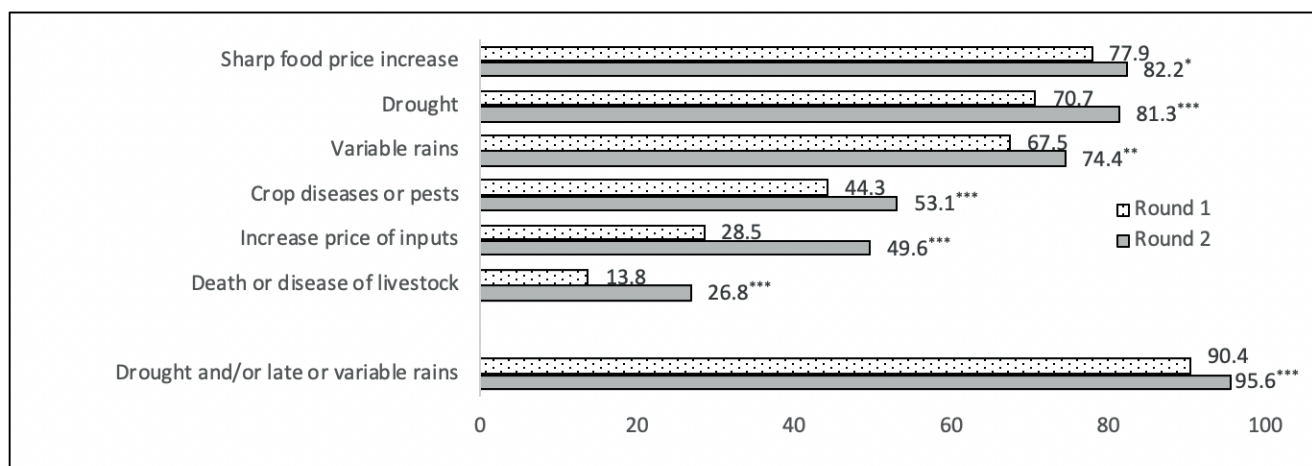
ns = not significant, † p<0.1, * p<0.05, ** p<0.01, *** p<0.001

Figure 6 shows the percentage of households reporting exposure to the top six shocks plus the combined exposure to drought or variable rains. Nearly all respondents (95.6 percent) reported being exposed to either drought and/or variable rains in round 2. Variable rain patterns are often mentioned in the qualitative data, including erratic rainfall patterns, rain arriving later in the season than expected, changes in the amount of rain by season, poor distribution of rain, and periodic dry spells. Both flooding and water shortages are reported throughout the qualitative data.

In Mbire, flash floods impacted both property and farming activities, while in Binga, the community saw flooding in an area that had never previously been flooded (ZVA). These changing patterns destroy crops, such as maize and sorghum, and reduce crop yield. These variations also affected households rearing livestock as animals have less access to water. Areas that have experienced drought for years also experience heavy rainfall, which has resulted in heavy loss of nutrients in soil and led to poor crop yields (FGFGD, Mudzi, BRAC). Households also report animal and crop disease and report in qualitative data. Eye disease affects goats in Binga (ZVA) while an entire crop was wiped out by army worm in the ZVA area.



Figure 6: Percentage of Households Reporting Exposure to Top 6 Shocks, By Survey Round



ns = not significant, † p<0.1, * p<0.05, ** p<0.01, *** p<0.001

Comparisons of change in shock exposure across consortia are provided in Annex 9. Almost all beneficiaries from the BRAC, ECRAS, and ECRIMS consortia reported experiencing both climate shocks (99.4, 98.4 and 98.8 percent, respectively) and economic shocks (100.0, 90.0 and 99.0 percent, respectively) in round 2 (Annex 9, Table 6b). Both of these shocks appear repeatedly throughout the qualitative data collected in all districts across consortia. FGD and KI data points to numerous changes in rainfall patterns, drought, and multiple ways these are impacting communities.

Of the most salient shocks (sharp food price increase, drought, variable rains, crop disease/pests, increase price of inputs, and death/disease of livestock), the SIZIMELE Consortium reported an increase of greater than 10 percent across each from round 1 to round 2. BRAC and ZVA beneficiaries, likewise, reported increases in the same shock exposures with the exception of drought. While ZVA's drought exposure remained consistent across rounds, BRAC had a significant decrease from 95.8 percent in OMS1 to 79.5 percent in OMS2.

Almost all beneficiaries from the BRAC, ECRIMS and ECRAS Consortia reported sharp food price increases in round 2 (99.0, 97.8 and 85.8 percent, respectively). For BRAC beneficiaries, this was a substantial increase of 31.2 percent from round 1. MELANA and PROGRESS household, conversely, reported less exposure to the same shock than the sample average (68.2 and 76.4 percent, respectively) in round 2. Both showed sharp declines from round 1.

Beneficiaries from the BRAC (50.4 to 85.6 percent), ECRAS (36.0 to 50.7 percent), ECRIMS (46.5 to 71.7 percent), and PROGRESS (37.9 to 54.5 percent) Consortia all reported a significant rise in the proportion of households experiencing increases in the price of inputs. Qualitative data indicate that market volatility tied to the fluctuation of currency makes it difficult for households to afford basic goods, suggesting that households experienced price hikes across the consortia area.

Beneficiaries from the BRAC (80.4 percent), ECRIMS (74.8 percent), ZVA (69.7 percent), and ECRAS (64.2 percent) reported above average proportions of households experiencing crop diseases or pests. Specifically, ZVA beneficiaries had an increase in crop disease of two and a half times that of round 1 from 28.4 to 69.7 percent). Similarly, BRAC beneficiaries reported a steep rise in the percentage households experiencing crop disease/pests from 65.7 percent in round 1 to 80.4 percent in round 2. Crop diseases are often cited in qualitative interviews, such as fall army worm. In Chiredzi, a female FGD noted that this disease has reduced crop yields by 50 percent (ECRAS).

Household in SIZIMELE (95.6 percent), MELANA (87.6 percent), and PROGRESS (82 percent) reporting higher than average exposure to drought in round 2. ECRAS households reported the highest drought exposure increase in OMS2 of nearly three times greater than that reported in OMS1 (from 25.2 to 70.8 percent). Data collected during the qualitative collection suggests that drought occurred every ten years in the Chiredzi District in ECRAS; now, female FGD respondents stated that they face drought nearly every year. Conversely, exposure to drought declined among BRAC beneficiaries where 95.8 percent reported exposure to drought in OMS1 while 79.5 percent reported the same in OMS2.



II. Shock Severity, Impacts on Income and Food Consumption

In addition to exposure to different types of shock, respondents were asked about the perceived severity of impact of each shock on household income and food consumption. The severity ranged from 1 to 3. Responses were coded as '1' for households that indicated that income/consumption remained the same; '2' for slight decrease in income/consumption; and '3' for severe decrease in income/consumption.

Figure 7 and Figure 8 show the impacts on income and food consumption for the most salient shocks. Comparing across rounds, death/disease of livestock has the largest increase across both income and food consumption impact. The changes in these severity measures across the two rounds, while statistically significant in most cases, are not very large in magnitude, and it is important to understand the reason for this. From the description of these severity indicators provided earlier, the most extreme value that can be achieved is '3', indicating a severe decrease. The mean values for these severity indicators had already approached this extreme value in round 1, ranging from 2.5 to 2.7. From these initial values, the possible magnitudes of change are limited, since the upper limit of the indicators is 3.

Figure 7: Impact of Top Six Shocks on Income, By Survey Round

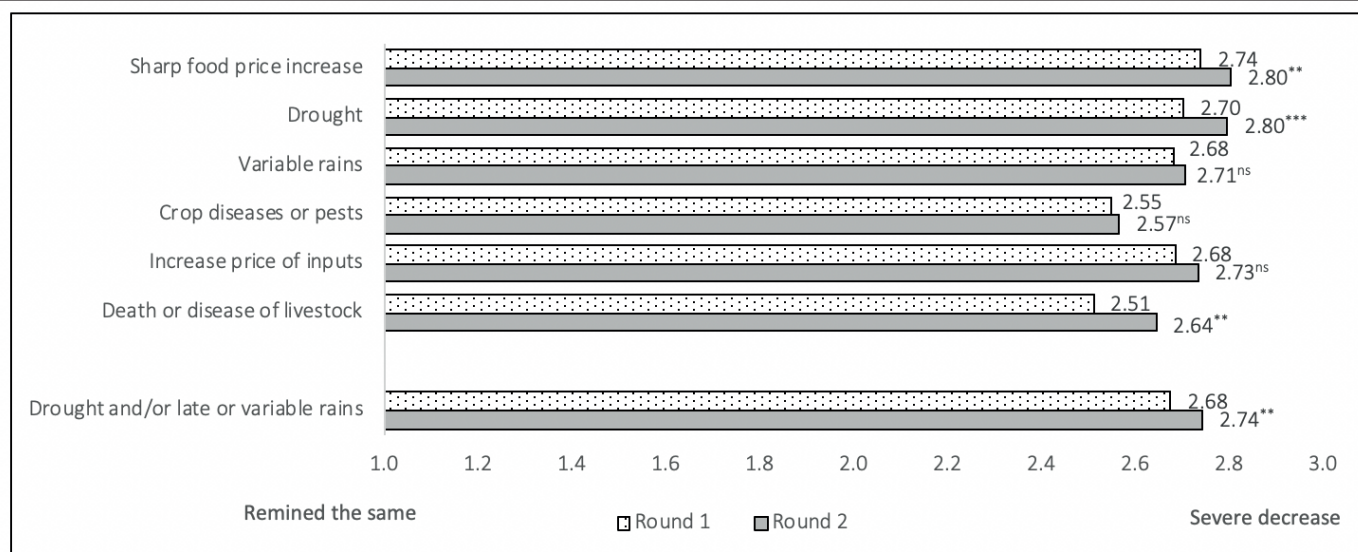
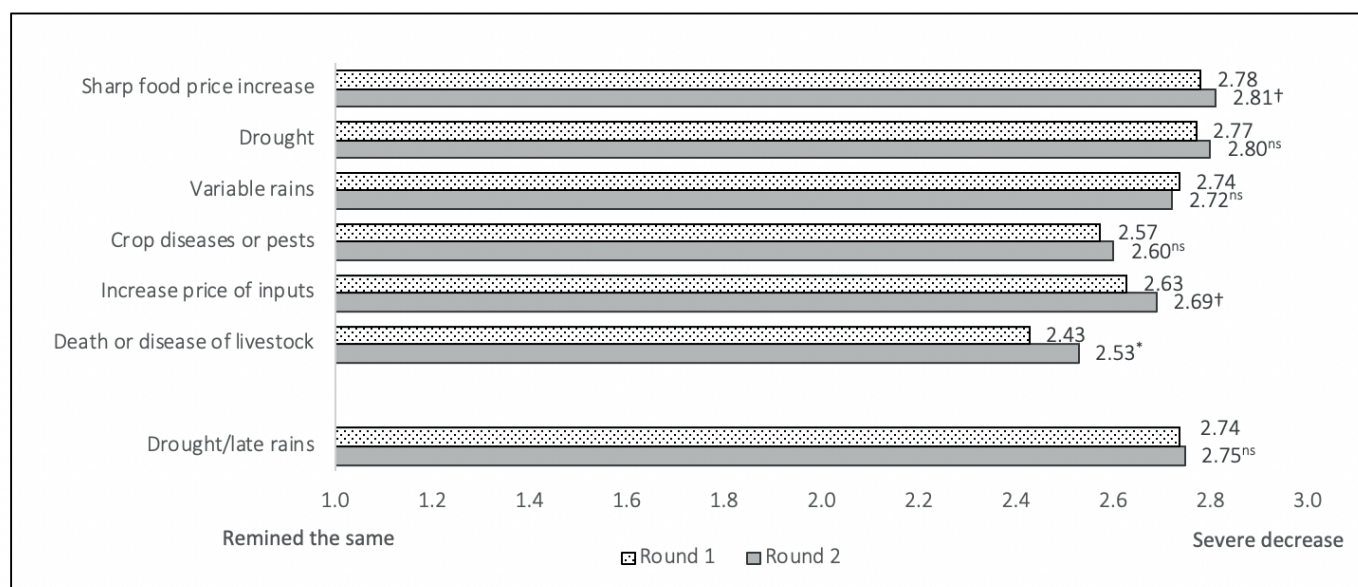


Figure 8: Impact of Top Six Shocks on Food Consumption, By Survey Round



ns = not significant, † p<0.1, * p<0.05, ** p<0.01, *** p<0.001



(12.3 percent) exposed to sharp food price increases in round 2 indicated that they had recovered (Figure 9) and even fewer (1.5 percent) felt that they could recover in the next 12 months (Figure 10). Of the households who reported exposure to drought and/or variable rains, only 15.1 percent reported having recovered in round 2 and 4.4 percent expected to recover in the next 12 months. Recovery from death or disease of livestock dropped by half from 23.5 percent in round 1 to 12.4 percent in round 2; of these households, 6.5 percent expected future recovery. Of the households exposed to crop disease and/or pests, less than a quarter (23.3 percent) reported recovery in round 2 and 5.9 percent felt that they could recover from this in the next twelve months.

Figure 9: Households Reporting Recovery from Top Six Shocks (%)

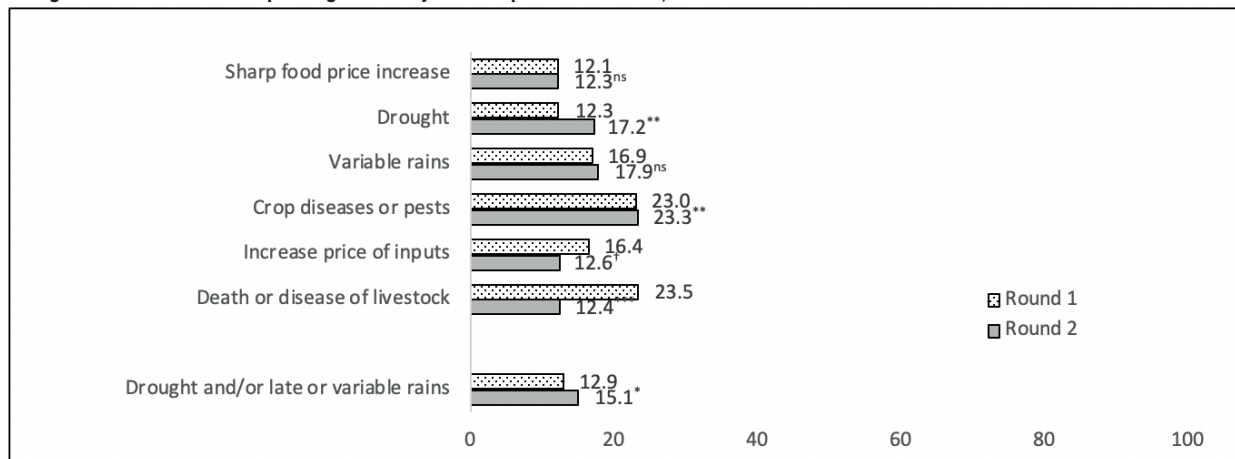
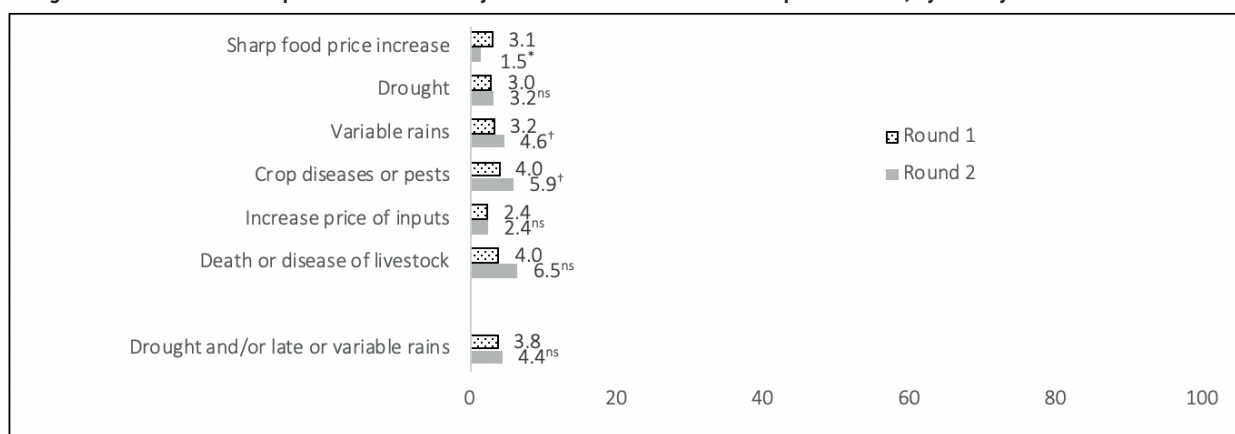


Figure 10: Households' Expectation of Recovery in the Next 12 Months from Top Six Shocks, by Survey Round



ns = not significant, † p<0.1, * p<0.05, ** p<0.01, *** p<0.001

IV. Coping Strategies Across Most Salient Shocks

Table 8 shows the coping strategies that households utilised in the past 12 months across the 5 most salient shocks. The most utilized coping strategies among sampled household for the top five shocks combined were reducing food consumption (47.2 percent), receiving food aid from the government (38.4 percent), receiving food aid from NGOs (34.4 percent), and selling livestock (29.1 percent) in round 2. Those receiving food aid from NGOs nearly tripled from OMS1 (13.5 percent). This may reflect the time of year the survey was undertaken with increases in food aid during the lean season. The proportion of households without any coping strategies were found to be the highest among households who experienced input price increases (19.3 percent), crop diseases/pests (17.6 percent), and food price increases (16 percent) in round 2. Those experiencing drought (5.9 percent) and variable rainfall (6.6 percent) were the least likely to report using no coping strategies in round 2. Almost no households experiencing all five shocks combined reported using no coping strategies at all.





In response to sharp food price increases in round 2, around a third of households reduced their food consumption (36.0 percent) or received food aid from the government (24.4 percent) or an NGO (22.7 percent). Households became more reliant on support from NGOs in round 2 with an increase of 16.3 percent from round 1. For households experiencing drought in round 2, the largest proportion of respondents reported that they reduced their food consumption (36.8 percent), received food aid from the government (31.6 percent) or an NGO (26.4 percent), or sold livestock (23 percent). Those receiving food aid from an NGO more than doubled from 11.1 percent in OMS1. Similarly, those who took up new wage labour (13.9 percent) in response to drought increased by three-quarters from 8.0 percent in round 1.

The highest proportion of respondents who experienced variable or infrequent rainfall in OMS2 either reduced their food consumption (38.4 percent), received food aid from the government (25.9 percent) or received food aid from an NGO (23.3 percent), with those receiving food aid from an NGO increasing nearly threefold from 8.4 percent in OMS1. The coping strategies most utilized for beneficiaries experiencing crop disease were reducing their food consumption (29.1 percent) and receiving food aid or assistance from the government (19.5 percent). Those who took up new wage labour in response to crop disease rose from 6.3 percent in round 1 to 10.8 percent in round 2. Coping strategies most often used by households who experienced increases in the price of agriculture and livestock inputs included reducing food consumption (29.5 percent), receiving food aid or assistance from the government (20.4 percent), and selling livestock (14.9 percent). Additionally, of those experiencing increased prices in agricultural/livestock inputs rose nearly two-and-a-half times from 5.5 percent in OMS1 to 13.5 percent in OMS2.



Table 7: Top Coping Strategies by the Top 5 Shocks Exposed in the Past 12 Months, By Survey Round (Total Sample)

| Coping Strategies (Total Sample) | All Five Shocks Combined | | Sig. | Top 5 Shocks Exposed in the Past 12 Months | | | | | | | | | | | | Sig. | R1 | R2 | Sig. | | |
|-----------------------------------------------------------------------------------|--------------------------------|------|------|--------------------------------------------|------|------|---------|------|------|------------------------------------|------|------|------------------------|------|------------------------------|------|------|-----|------|----|--|
| | | | | Sharp Food Price Increase | | Sig. | Drought | | Sig. | Variable/ In- frequent Rainfall | | Sig. | Crop Disease/ Pests | | Increased Price of Inputs | | | | | | |
| | R1 | R2 | | R1 | R2 | | R1 | R2 | | R1 | R2 | | R1 | R2 | R1 | | | | | R2 | |
| Top 10 Coping Strategies (%) | | | | | | | | | | | | | | | | | | | | | |
| Sell livestock | 24.8 | 29.1 | *** | 14.9 | 18.0 | *** | 20.5 | 23.0 | * | 18.3 | 20.1 | ns | 12.2 | 13.5 | ns | 11.9 | 14.9 | + | | | |
| Reduced food consumption | 41.9 | 47.2 | *** | 31.0 | 36.0 | *** | 33.6 | 36.8 | * | 28.1 | 38.4 | *** | 16.2 | 29.1 | *** | 11.8 | 29.5 | *** | | | |
| Take up new wage labor | 13.4 | 18.9 | *** | 9.1 | 10.6 | + | 8.0 | 13.9 | *** | 11.3 | 16.2 | *** | 6.3 | 10.8 | *** | 6.6 | 10.4 | ** | | | |
| Received money or food from family members within community | 5.1 | 6.5 | ** | 2.6 | 3.5 | + | 3.4 | 3.5 | ns | 1.7 | 2.9 | ** | 2.6 | 2.7 | ns | 1.9 | 3.1 | ns | | | |
| Receive food aid or assistance from the government (including food/cash-for-work) | 32.4 | 38.4 | *** | 16.7 | 24.4 | *** | 29.9 | 31.6 | ns | 22.4 | 25.9 | ** | 15.2 | 19.5 | ** | 13.8 | 20.4 | ** | | | |
| Receive food aid or assistance from an NGO (including food/cash-for-work) | 13.5 | 34.4 | *** | 6.4 | 22.7 | *** | 11.1 | 26.4 | *** | 8.4 | 23.3 | *** | 5.9 | 14.8 | *** | 4.5 | 11.7 | *** | | | |
| Use money from savings | 8.6 | 15.2 | *** | 6.4 | 11.6 | *** | 3.6 | 9.2 | *** | 3.7 | 11.8 | *** | 5.9 | 11.0 | *** | 5.5 | 13.5 | *** | | | |
| Receive money from a relative from outside of village (remittances) | 10.8 | 8.5 | *** | 7.1 | 5.1 | ** | 8.6 | 6.5 | ** | 6.5 | 5.1 | * | 3.4 | 2.4 | ns | 4.0 | 2.4 | + | | | |
| Other | 6.5 | 6.7 | ns | 2.3 | 2.4 | ns | 2.7 | 1.7 | * | 4.5 | 3.2 | * | 1.7 | 0.8 | + | 5.5 | 3.7 | + | | | |
| <i>No coping strategies</i> | 1.0 | 0.2 | *** | 29.7 | 16.0 | *** | 15.7 | 5.9 | *** | 21.0 | 6.6 | *** | 30.9 | 17.6 | *** | 37.0 | 19.3 | *** | | | |
| <i>n (weighted)</i> | 3961 | 3961 | | 2689 | 2689 | | 2458 | 2458 | | 2115 | 2115 | | 1136 | 1136 | | 743 | 743 | | | | |
| <i>n (unweighted)</i> | 3216 | 3216 | | 2244 | 2244 | | 1897 | 1897 | | 1785 | 1785 | | 1071 | 1071 | | 592 | 592 | | | | |

ns = not significant, † p<0.1, * p<0.05, ** p<0.01, *** p<0.001

Table 8 shows the coping strategies that high intensity households utilised in the past 12 months across the most salient shocks. The most utilized coping strategies in round 2 were: reducing food consumption (50.6 percent), receiving food aid from the government (39.7percent), receiving food aid from NGOs (35.4 percent), and selling livestock (31.6 percent). The percentage of high intensity households receiving food aid from NGOs more than doubled from OMS1 (13.5 percent). This may reflect the time of year the survey was undertaken with increases in food aid during the lean season. Use of coping strategies was almost universal, increasing from 99 percent to 99.9 percent between rounds



Table 8. Top Coping Strategies by the Top 5 Shocks Exposed in the Past 12 Months, By Survey Round and Program Intensity (High Intensity)

| Coping Strategies – High Intensity | All Five Shocks Combined | | | Top 5 Shocks Exposed in the Past 12 Months | | | | | | | | | | | | | | |
|-----------------------------------------------------------------------------------|--------------------------|------|------|--------------------------------------------|------|------|---------|------|------|-------------------------------|------|------|---------------------|------|------|----------------------------------------|------|------|
| | | | | Sharp Food Price Increase | | | Drought | | | Variable/ Infrequent Rainfall | | | Crop Disease/ Pests | | | Increased Price of Ag/ Livestock Input | | |
| | R1 | R2 | Sig. | R1 | R2 | Sig. | R1 | R2 | Sig. | R1 | R2 | Sig. | R1 | R2 | Sig. | R1 | R2 | Sig. |
| Top 10 Coping Strategies(%) | | | | | | | | | | | | | | | | | | |
| Sell livestock | 29.8 | 31.6 | ns | 16.5 | 20.1 | + | 23.9 | 24.7 | ns | 20.0 | 21.2 | ns | 12.6 | 14.2 | ns | 14.1 | 15.6 | ns |
| Reduced food consumption | 45.2 | 50.6 | ** | 33.2 | 36.9 | ns | 35.2 | 38.6 | ns | 29.0 | 39.9 | *** | 16.5 | 27.4 | *** | 13.6 | 25.6 | *** |
| Take up new wage labor | 13.9 | 20.7 | *** | 9.3 | 12.0 | + | 8.1 | 14.6 | *** | 10.6 | 16.2 | ** | 6.0 | 9.7 | ** | 6.3 | 9.5 | * |
| Received money or food from family members within community | 4.4 | 7.4 | ** | 1.6 | 4.1 | ** | 3.5 | 3.3 | ns | 1.8 | 3.0 | + | 1.5 | 2.7 | * | 1.4 | 2.9 | + |
| Receive food aid or assistance from the government (including food/cash-for-work) | 30.8 | 39.7 | *** | 15.2 | 24.7 | *** | 27.1 | 30.8 | + | 20.3 | 25.0 | * | 14.2 | 18.4 | * | 13.1 | 21.1 | *** |
| Receive food aid or assistance from an NGO (including food/cash-for-work) | 14.4 | 35.4 | *** | 6.5 | 23.4 | *** | 10.8 | 27.4 | *** | 9.4 | 22.9 | *** | 4.7 | 15.1 | *** | 5.3 | 13.0 | *** |
| Use money from savings | 11.0 | 19.6 | *** | 6.8 | 13.4 | *** | 4.0 | 12.0 | *** | 4.0 | 12.9 | *** | 5.5 | 10.8 | *** | 6.0 | 12.9 | *** |
| Receive money from a relative from outside of village (remittances) | 8.9 | 8.8 | ns | 6.2 | 5.5 | ns | 5.2 | 6.1 | ns | 5.1 | 5.6 | ns | 3.0 | 2.6 | ns | 3.0 | 2.8 | ns |
| Other | 8.7 | 8.0 | ns | 3.3 | 2.8 | ns | 2.1 | 3.1 | ns | 5.7 | 3.5 | * | 1.5 | 1.1 | ns | 7.0 | 3.9 | * |
| No coping strategies | 1.1 | 0.1 | * | 27.7 | 15.1 | *** | 14.0 | 4.4 | *** | 20.6 | 6.9 | *** | 30.1 | 19.7 | *** | 33.2 | 18.8 | *** |
| n (weighted) | 1810 | 2482 | | 1534 | 2177 | | 1268 | 2050 | | 1372 | 1977 | | 1058 | 1512 | | 670 | 1445 | |
| n (unweighted) | 1728 | 2210 | | 1462 | 1956 | | 1114 | 1804 | | 1337 | 1765 | | 1080 | 1388 | | 659 | 1336 | |

ns = not significant, † p<0.1, * p<0.05, ** p<0.01, *** p<0.001





Table 9 shows coping strategies used by medium intensity households exposed to the top 5 shocks. In round 2, the top strategy was reducing food consumption which increased from 38.7 to 41.3 between rounds. Food aid from government was reported by 36.2 percent of households (no significant change from round 1); 32.7 reported food aid from NGOs, increasing from 12.5 percent in round 1. Livestock sale increased to 24.9 percent of households, up from 20.6 in round 1.

| Table 9. Top Coping Strategies by the Top 5 Shocks Exposed in the Past 12 Months, By Survey Round and Program Intensity (Medium Intensity) | | | | | | | | | | | | | | | | | | |
|--------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|------|------|--------------------------------------------|------|------|---------|------|------|-------------------------------------|------|------|------------------------|------|------|----------------------------------------------|------|------|
| Coping Strategies – Medium Intensity | All Five Shocks Combined | | | Top 5 Shocks Exposed in the Past 12 Months | | | | | | | | | | | | | | |
| | | | | Sharp Food Price Increase | | | Drought | | | Variable/ Infrequent Rainfall | | | Crop Disease/ Pests | | | Increased Price of Ag/ Livestock Input | | |
| | R1 | R2 | Sig. | R1 | R2 | Sig. | R1 | R2 | Sig. | R1 | R2 | Sig. | R1 | R2 | Sig. | R1 | R2 | Sig. |
| Top 10 Coping Strategies (%) | | | | | | | | | | | | | | | | | | |
| Sell livestock | 20.6 | 24.9 | + | 13.9 | 15.6 | ns | 16.4 | 19.9 | ns | 15.2 | 18.3 | ns | 8.7 | 12.5 | ns | 8.5 | 13.5 | + |
| Reduced food consumption | 38.7 | 41.3 | ns | 30.0 | 33.7 | ns | 31.8 | 31.8 | ns | 27.4 | 33.4 | ns | 12.5 | 24.8 | *** | 11.2 | 26.0 | ** |
| Take up new wage labor | 12.8 | 15.2 | ns | 8.0 | 7.8 | ns | 8.2 | 11.7 | + | 11.0 | 12.8 | ns | 4.6 | 7.5 | ns | 3.5 | 5.5 | ns |
| Received money or food from family members within community | 5.5 | 4.9 | ns | 2.9 | 2.5 | ns | 3.9 | 3.0 | ns | 1.7 | 2.1 | ns | 2.6 | 2.2 | ns | 2.2 | 0.8 | ns |
| Receive food aid or assistance from the government (including food/cash-for-work) | 32.8 | 36.2 | ns | 19.0 | 25.7 | * | 31.3 | 30.7 | ns | 23.3 | 25.0 | ns | 16.3 | 24.6 | * | 12.4 | 15.8 | ns |
| Receive food aid or assistance from an NGO (including food/cash-for-work) | 12.6 | 32.7 | *** | 6.7 | 23.6 | *** | 10.5 | 26.7 | *** | 7.1 | 25.6 | *** | 6.1 | 16.7 | *** | 4.2 | 14.6 | *** |
| Use money from savings | 6.4 | 8.9 | + | 5.1 | 7.0 | ns | 3.4 | 4.5 | ns | 3.6 | 7.7 | ** | 4.5 | 4.4 | ns | 4.4 | 6.9 | ns |
| Receive money from a relative from outside of village (remittances) | 12.5 | 8.0 | ** | 9.8 | 5.3 | ** | 9.6 | 6.6 | ns | 8.7 | 5.2 | * | 3.1 | 2.1 | ns | 4.6 | 3.0 | ns |
| Other | 4.6 | 4.2 | ns | 1.5 | 1.6 | ns | 2.7 | 0.9 | ** | 3.2 | 1.2 | * | 0.9 | 0.6 | ns | 3.3 | 5.5 | ns |
| No coping strategies | 0.8 | 0.3 | + | 29.6 | 15.8 | *** | 19.4 | 7.8 | *** | 23.3 | 9.6 | *** | 38.7 | 17.9 | *** | 38.4 | 21.0 | *** |
| <i>n (weighted)</i> | 2214 | 1638 | | 1722 | 1264 | | 1686 | 1353 | | 1453 | 1137 | | 790 | 711 | | 519 | 632 | |
| <i>n (unweighted)</i> | 1609 | 1099 | | 1270 | 840 | | 1215 | 911 | | 1055 | 772 | | 633 | 474 | | 427 | 438 | |



With respect to consortia, the top coping strategies used for those exposed to all five shocks in the past 12 months were selling livestock, reducing food consumption, and receiving food aid or assistance from the government (Annex 9, Table 7b). Nearly three-quarters (72.0 percent) of all BRAC beneficiaries who were exposed to all five shocks combined reported reducing their food consumption as the coping strategy most utilized in round 2. Over half of all BRAC beneficiaries also reported using this same coping strategy in round 2 for four out of the five most salient shocks including sharp food price increases (53.7 percent), drought (51.2 percent), variable rains (55.3 percent), and crop disease or pests (52.2 percent). Similarly, nearly half of all MELANA (49.3 percent) and PROGRESS (48.8 percent) beneficiaries and two-out-of-five (41.5 percent) ZVA beneficiaries reported reducing food consumption when exposed to all five shocks combined. Over half of all ECRAS beneficiaries (51.3 percent) reported selling livestock as their top coping strategy utilized when exposed to all five shocks combined in round 2, and nearly half (47.2 percent) of ECRAS beneficiaries also reported selling livestock as a coping strategy for drought in round 2, which is a significant increase with over 27.8 percent reporting the same in round 1. Nearly three-out-of-five (58.6 percent) ECRIMS beneficiaries and almost half of all SIZIMELE beneficiaries (46.1 percent) reported receiving food aid or assistance from the government as their top coping strategy for having experienced all five shocks in round two. Just under a quarter of all ECRIMS beneficiaries in round 2 reported using no coping strategies at all for sharp food price increases (22 percent), crop diseases and pests (24.8 percent), and increased price of agricultural and livestock inputs (20.3 percent). A high proportion of MELANA beneficiaries reported using no coping strategies for the shocks of increased price in agricultural or livestock inputs (43.4 percent) and sharp food price increases (28.4 percent). One-in-five SIZIMELE beneficiaries (20.3 percent) also reported using no coping strategies for crop diseases and pests, while nearly a quarter (23.1 percent) of ZVA beneficiaries reported having no coping strategies for increased prices of agricultural or livestock inputs in round 2.

C. HOUSEHOLD DIETARY DIVERSITY, FOOD CONSUMPTION AND FOOD INSECURITY

This section provides information about food security in the ZRBF project areas, specifically comparing outcomes across rounds. The data collected includes dietary diversity, food consumption, and food insecurity experience at the household levels. The timing of data collection for OMS1 and OMS2 are important to note as they may have an impact on the results presented in this section (see Limitations section).

1. Household Dietary Diversity

This section presents findings for Outcome Indicator 7, “Percentage of HHs with improved Household Dietary Diversity Score (HDDS) score as a result of ZRBF interventions”. HDDS is useful in measuring household food access because it provides information about household consumption of different food groups over a given period of time. Data in this sample were collected across seven food groups over a 7-day recall period; these include: cereals/tubers, beans/legumes, vegetables, fruits, meats/fish/eggs, dairy products/milk, and oil/butter/fat. The HDDS is the count of the total food groups reported consumed by households over the last 7 days.

Each of the seven food groups consumed in the previous 7-days are assigned a value of 1 regardless of frequency of consumption. Dietary diversity is the sum of the seven food groups consumed by the household with a range from 0 to 7. The scores are then grouped into the following three categories:

1. High dietary diversity: 6+ score
2. Moderate dietary diversity: 4 – 5 score
3. Low dietary diversity: <4 score

The percentage of households with an acceptable level of dietary diversity is defined as having a moderate to high diet diversity score (4+ HDDS). Overall, approximately three-quarters of ZRBF households had an acceptable level of diet diversity in both OMS1 and OMS2. Although there is no significant change in acceptable level of HDDS across the survey rounds, the medium-intensity group showed a slight decline from 67.1 percent to 63.0 percent. Similarly, the percentage of households with low dietary diversity remained



unchanged across the two rounds for the high-intensity group, while the percent of households with low dietary diversity increased by about 12 percent in the medium-intensity group Table 10.

The HDDS and the type of food groups consumed in the past seven days are a measure of diet quality as well as household economic conditions. Table 10 shows that across the total sample, households consumed less dairy products/milk, meats/fish/eggs, and fruits from round 1 to round 2 (changes of 9.5, 3.4 and 2.9 percent, respectively). Comparatively, households who consumed fresh vegetables in the last seven days had an increase from 89.0 percent in OMS1 to 95.1 percent in OMS2.

The drop in dairy and milk consumption for medium intensity households may be a result of deteriorating condition of cows and disruptions to livestock breeding that come from climate change. Table 21 shows a decrease in livestock assets for medium intensity households between round 1 and round 2. This suggests that the decrease in dairy and milk consumed at the household level could be tied to increased exposure to shocks.

The results in Table 10 suggest that households in the high programming intensity category fared relatively better than those in the medium-intensity category across the two rounds. While the high-intensity households exhibit no significant change in acceptable diet diversity from OMS1 to OMS2, the percent of households within that same group show a significant increase in moderate diet diversity and a similar decrease in high diet diversity. For medium-intensity households, there is a decrease of 7.6 percent from round 1 to round 2 in the high diet diversity category.

| Table 10: Diet Diversity, by Program Intensity and Survey Round | | | | | | | | | |
|-----------------------------------------------------------------|--------------|---------|------|-----------------------|---------|------|---------|---------|------|
| Diet Diversity | Total Sample | | | Programming Intensity | | | | | |
| | Round 1 | Round 2 | Sig. | High | | Sig. | Medium | | Sig. |
| | | | | Round 1 | Round 2 | | Round 1 | Round 2 | |
| % of HHs with Acceptable level of Diet Diversity | 73.6 | 74.7 | ns | 81.7 | 82.7 | ns | 67.1 | 63.0 | † |
| % of HHs with Diet Diversity: | | | | | | | | | |
| Low (<4 score) | 26.4 | 25.3 | ns | 18.3 | 17.3 | ns | 32.9 | 37.0 | † |
| Moderate (4-5 score) | 47.1 | 53.2 | *** | 45.5 | 54.0 | *** | 48.6 | 52.0 | ns |
| High (6+ score) | 26.5 | 21.5 | *** | 36.2 | 28.7 | *** | 18.5 | 10.9 | *** |
| % of HHs consumed food groups in 7 days: | | | | | | | | | |
| Cereals/tubers | 99.8 | 99.7 | ns | 99.8 | 99.8 | ns | 99.7 | 99.4 | ns |
| Beans/legumes | 60.0 | 61.4 | ns | 67.5 | 68.3 | ns | 53.6 | 51.3 | ns |
| Vegetables | 89.0 | 95.1 | *** | 93.1 | 96.3 | ** | 85.7 | 93.4 | ** |
| Fruits | 22.5 | 19.6 | *** | 27.5 | 24.9 | ns | 18.7 | 11.7 | *** |
| Meats/fish/eggs | 50.6 | 47.2 | *** | 57.3 | 54.8 | ns | 45.2 | 35.9 | ** |
| Dairy product/milk | 40.8 | 31.3 | *** | 49.4 | 35.1 | *** | 34.4 | 25.8 | *** |
| Oil/butter/fat | 84.4 | 83.9 | ns | 89.9 | 90.6 | ns | 79.9 | 73.9 | * |
| Average HDDS | 4.5 | 4.4 | *** | 4.8 | 4.7 | * | 4.2 | 3.9 | *** |
| <i>n (weighted)</i> | 4096 | 4184 | | 1802 | 2498 | | 2294 | 1686 | |
| <i>n (unweighted)</i> | 3353 | 3353 | | 1715 | 2223 | | 1638 | 1130 | |

ns = not significant, † p<0.1, * p<0.05, ** p<0.01, *** p<0.001

Households in Mwenezi eat more starchy foods in the face of hunger (ECRAS). However, qualitative data indicates that ZRBF has contributed to more varied food sources for household members. Beneficiaries in ECRIMS note that they now have year-round crop production as a result of the ZRBF Mlingo solar garden; this has had a positive impact on their nutritional status. In Mwenezi District, a KI highlights that activities that support poultry production, such as breeding practices with improved breeds, have allowed both younger and older women to have quality eggs for consumption (ECRAS). In the ZVA area female FGD respondents indicate that the improved goat activity has allowed households to afford meat and milk as part of their diet (FCFGD,



Binga). One KI in Binga notes that the household diet has improved, thereby reducing cases of malnutrition among infants (IKII, ZVA). Although it is not a ZRBF indicator, the food consumption score discussed in the next section is similar to the HDDS but weights the food groups by nutrient density. As such, it provides more useful information than the HDDS for understanding food security.

II. Food consumption score (FCS)

The food consumption score (FCS) is computed following methods developed by WFP and adopted by FNC⁹. It is a weighted count of household consumption of nine food groups over the seven days prior to the survey. Weights are developed by WFP and reflect 'nutrient density' so that more nutritious foods, like meat and fish, have the largest weight (4) and sugar and condiments have the smallest (0.5 and 0). The maximum possible value is 112 (if a household consumed all food groups every day). Note that sugar and condiments are not included in the OMS dietary diversity module, so scores may be underestimated by up to 3.5 points, and the maximum in this sample is 108.5. ZimVAC methods¹⁰ categorize households as having poor (0 to 21), borderline (21.5 to 35) or adequate (above 35) food consumption.

Table 11 shows that the overall percentage of households reporting adequate food consumption decreased by over nine percent, from 53.8 in round 1 to 49.4 in round 2. More households in the high-intensity group reported adequate food consumption than in the medium-intensity category in both rounds. The medium-intensity group experienced a much larger decrease in the households with adequate food consumption (20 percent decrease), compared with the high-intensity group (8 percent decrease).

The overall Food Consumption Score (FCS) dropped from 41.1 in round 1 to 38.3 in round 2. High-intensity households had a 20% higher FCS in round 2 compared to medium-intensity households, but the score fell by approximately 9 percent for both groups from round 1 to round 2 (Table 11).

| Table 11: Food Consumption, by Program Intensity and Survey Round | | | | | | | | | |
|-------------------------------------------------------------------|--------------|---------|------|-----------------------|---------|------|---------|---------|------|
| Food Consumption | Total Sample | | Sig. | Programming Intensity | | | | | |
| | Round 1 | Round 2 | | High | | Sig. | Medium | | Sig. |
| | | | | Round 1 | Round 2 | | Round 1 | Round 2 | |
| Food consumption categories (%) | | | | | | | | | |
| Poor | 13.7 | 12.3 | ns | 7.7 | 7.2 | ns | 18.4 | 19.9 | ns |
| Borderline | 32.6 | 38.3 | *** | 30.2 | 35.4 | ** | 34.4 | 42.6 | *** |
| Adequate | 53.8 | 49.4 | ** | 62.2 | 57.5 | * | 47.2 | 37.5 | *** |
| Food consumption score (FCS) | 41.1 | 38.3 | *** | 45.2 | 41.1 | *** | 37.8 | 34.2 | *** |
| n (weighted) | 4096 | 4184 | | 1802 | 2498 | | 2294 | 1686 | |
| n (unweighted) | 3353 | 3353 | | 1715 | 2223 | | 1638 | 1130 | |

ns = not significant, † p<0.1, * p<0.05, ** p<0.01, *** p<0.001

III. Household Food Insecurity

The Food Insecurity Experience Score (FIES) indicator replaces the Household Hunger Scale (HHS) indicator. FIES is calculated based on eight severity questions on household hunger. The FIES is generally calculated for a 12-month recall period to account for the household hunger status over all seasons, including the lean period. The HHS was calculated using a 30-day recall period for questions 6-8 of the FIES. To be able to provide a short term as well as a 12-month measure, the FIES indicator was modified by asking the questions for both the 12-month and 30-day recall periods.

The FIES is calculated using severity weights for all eight questions and a standardization process by applying

⁹ World Food Programme, Vulnerability Analysis and Mapping Branch (ODAV). 2008. Food consumption analysis: Calculation and use of the food consumption score in food security analysis. Rome. February.

¹⁰ Zimbabwe Vulnerability Assessment Committee (ZimVAC). 2019. *Rural livelihood assessment*. Harare. October. <https://reliefweb.int/report/zimbabwe/zimbabwe-vulnerability-assessment-committee-zimvac-2019-rural-livelihoods-assessment>



the Rasch model developed by FAO¹¹. 'RM Weights' package in the R software is used to compute the FIES using the Rasch model. The responses from the eight severity questions are coded using '0' for 'No' if the household did not have any food insecurity in past 12 months or 30 days for the respective question and '1' for 'Yes' if the household had that experience. The FIES is grouped into two categories using the thresholds and probabilities obtained from the RM weights including: no to little hunger and moderate to severe hunger. The indicator value is reported for the moderate to severe category only.

Table 12 shows the percentage of responses for the eight severity questions by the 30 day and 12-month recall periods. The percent of respondents who responded affirmatively to each of the eight severity questions for both the 30-days and 12-months recall periods increase overtime from round 1 to round 2. The prevalence of respondents who answered affirmatively to each of the eight severity questions is higher for the 12-month recall period than for the 30 days recall period in both rounds. The top four responses for both the 30-day and 12-months recall periods for the eight severity questions in round 2 is as follows: FEWFOODS (70.7 percent in 30-days, 84 percent in 12-months), HEALTHY (69.6 percent in 30-days, 82.2 percent in 12-months), ATELESS (67.2 percent in 30-days, 79.1 percent in 12-months), and WORRIED (66.9 percent in 30-day, 84.7 percent in 12-month); all of which have significant increases over OMS1. This indicates that greater number of households ate less nutritious and a reduced variety of foods, consumed less, and worried that they would not have enough to eat.

| SEVERITY QUESTIONS (percentage of respondents) | | 30 days | | | 12 months | | |
|------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------|-------|-----------|---------|-------|
| | | Round 1 | Round 2 | Sign. | Round 1 | Round 2 | Sign. |
| 1. WORRIED | During the past <u>12 MONTHS/30 DAYS</u> , you or others in your HH were worried you would not have enough food to eat due to the lack of money or resources? | 56.7 | 66.9 | *** | 72.7 | 84.7 | *** |
| 2. HEALTHY | During the past <u>12 MONTHS/30 DAYS</u> , you or others in your HH were unable to eat healthy and nutritious food due to the lack of money or resources? | 58.3 | 69.6 | *** | 70.6 | 82.2 | *** |
| 3. FEWFOODS | During the past <u>12 MONTHS/30 DAYS</u> , you or others in your HH ate only a few kinds of foods due to the lack of money or resources? | 60.8 | 70.7 | *** | 71.6 | 84.0 | *** |
| 4. SKIPPED | During the past <u>12 MONTHS/30 DAYS</u> , you or others in your HH had to skip a meal due to the lack of money or resources? | 51.8 | 61.9 | *** | 60.6 | 72.8 | *** |
| 5. ATELESS | During the past <u>12 MONTHS/30 DAYS</u> , you or others in your HH ate less than you thought you should due to the lack of money or resources? | 56.1 | 67.2 | *** | 67.0 | 79.1 | *** |
| 6. RANOUT | During the past <u>12 MONTHS/30 DAYS</u> , your household ran out of food due to the lack of money or resources? | 36.8 | 49.0 | *** | 48.3 | 64.6 | *** |
| 7. HUNGRY | During the past <u>12 MONTHS/30 DAYS</u> , you or others in your HH were hungry but did not eat due to the lack of money or resources? | 41.0 | 50.7 | *** | 50.8 | 65.0 | *** |
| 8. WHOLEDAY | During the past <u>12 MONTHS/30 DAYS</u> , you or others in your HH went without eating for a whole day due to the lack of money or resources? | 17.7 | 24.5 | *** | 22.7 | 33.9 | *** |

+ p<0.1, * p<0.05, ** p<0.01, *** p<0.001

Moderate-to-severe FIES, 30-day recall.

Figure 11 shows the prevalence of households with moderate-to-severe FIES within the 30-day recall period. Overall, nearly two-thirds (63.7 percent) of households report a moderate to severe food insecurity experience, an increase of 11.2 percent over round 1. Increases are also reported in households experiencing severe food insecurity (24.8 percent in round 2 compared to 18.0 percent in round 1). Outside of increases in shocks experienced by households between OMS1 and OMS2, these increases may also reflect survey timing. Interviews were conducted in March for round 2, a month earlier than round 1. In round 1, food security conditions of households could have been slightly better since the harvest would have started by April, whereas the round 2 interviews were conducted in the lean season.

11 Introduction to item response theory applied to food security measurement; Basic Concepts, Parameters and Statistics, By Mark Nord, FAO, Rome, 2014; Methods for estimating comparable prevalence rates of food insecurity experienced by adults in 147 countries and areas, Mark Nord et al 2016 J. Phys.: Conf. Ser. 772 012060

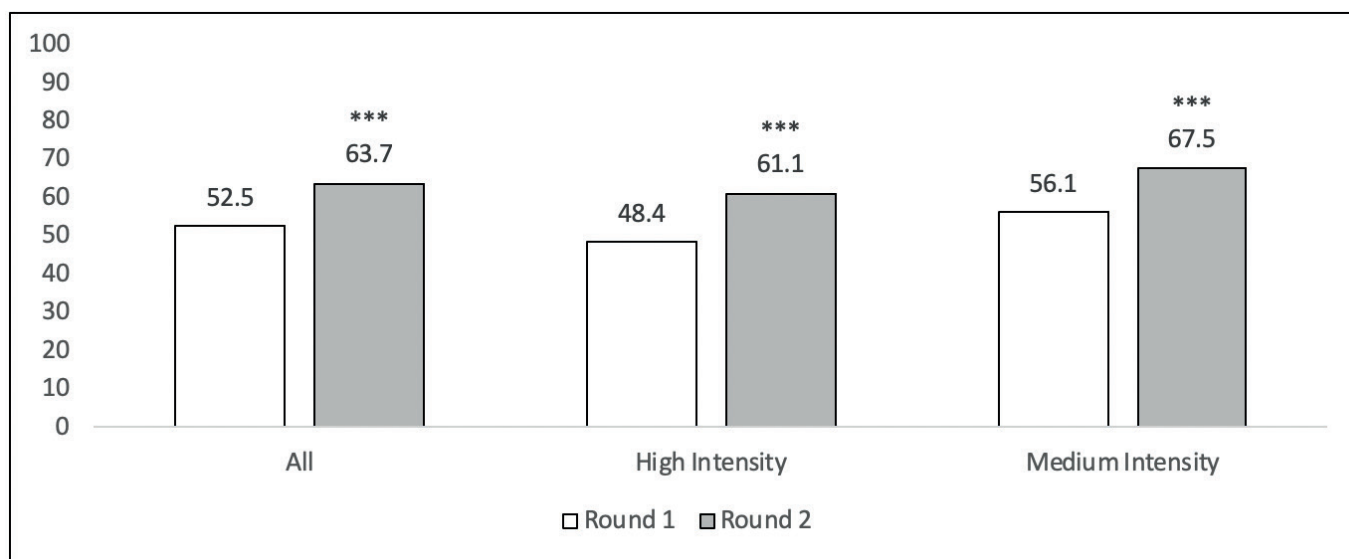


Both high and medium-intensity households increased from round 1 in moderate-to-severe FIES, with medium-intensity households (67.5 percent) reporting a slightly higher percentage over high-intensity households (61.1 percent) in round 2. Beneficiary households receiving a moderate amount of interventions (medium-intensity) had a sharp increase in the proportion of households reporting severe FIES from a quarter (24.2 percent) in round 1 to more than a third (36.1 percent) of households in round 2. A higher percentage of households in the medium-intensity category (67.1 percent) than those in the high-intensity category (58.4 percent) report having skipped a meal with in the last 30 days, though both groups had increases over time. About 20 percent more respondents in the medium-intensity category (54.8 percent) than those in the high-intensity category (45.2 percent) report having run out of food in the past 30 days. Similarly, more households in the medium-intensity category (30.1 percent) than high-intensity households (20.8 percent) report that they did not eat all day at least once in the past 30 days (Figure 11).

Hunger has increased in areas facing extreme climate patterns, such as drought. In Mbire District, data from a male FGD suggests that the region has experienced frequent droughts since 2014, resulting in frequent bouts of hunger (ZVA Consortium). According to a Lead Farmer in Mutoko District, elderly women and child-headed households are particularly at risk of hunger, as they lack the productive assets needed to farm (BRACT). Households engage in a number of coping strategies in the face of food insecurity¹².

Despite these findings, a KI from Mberengwa District highlighted the positive role that ZRBF has had on household food insecurity, noting that the cases of extreme hunger in vulnerable community members have decreased as a result of the activities promoting small grain production which “are almost guaranteed” (CKII, ECRIMS). Male farmers in the same consortia provide a similar account, noting that small grain production in Mberengwa District has contributed to reducing hunger as they have enjoyed greater diversification of productive crops to include small grains. While some households prefer eating maize (IKII, Mbire, ZVA), qualitative information suggests that households are returning to the more traditional practice of producing and consuming small grains which had been abandoned. In the MELANA area, households which had started growing maize are now returning to small grain production, which according to a KI, is a practice that ZRBF has supported in reviving (CKII, Umguza). Non-farm activities have also contributed to reducing negative hunger outcomes. ZRBF trainings that provide skills in welding and dressmaking are reportedly helping to curb poverty and extreme hunger (Mutoko, BRACT).

Figure 11: 30-Day Recall for Moderate -to-Severe FIES, By Program Intensity and Survey Rounds



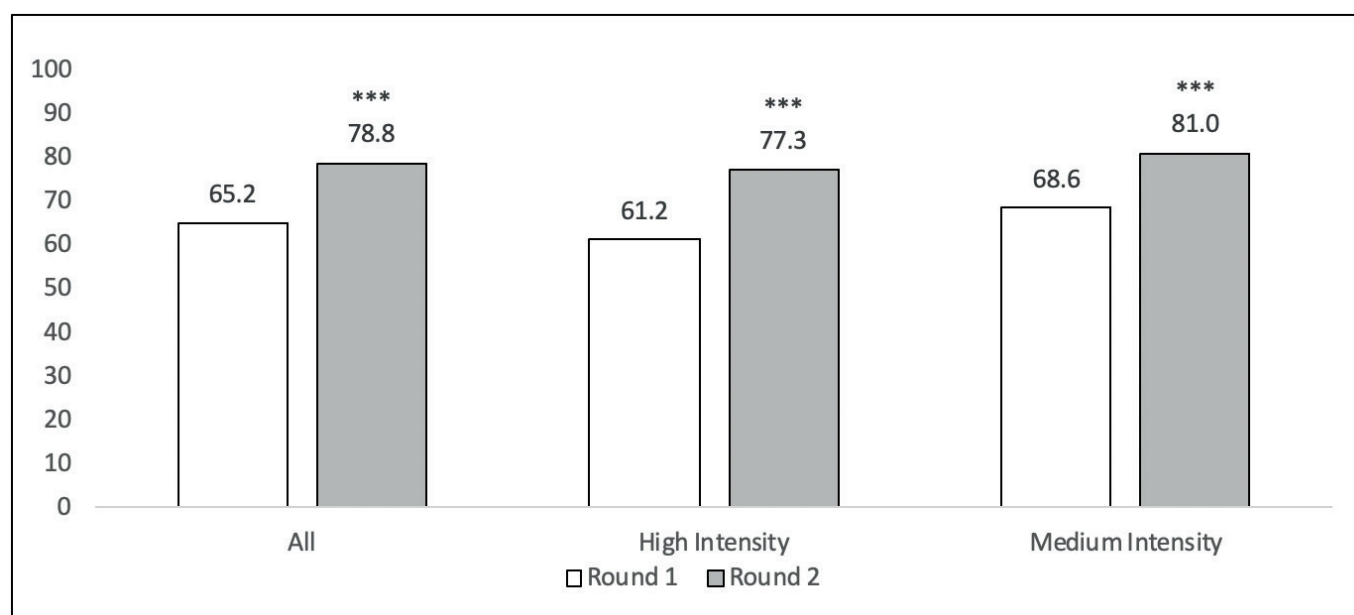
+ p<0.1, * p<0.05, ** p<0.01, *** p<0.001

Moderate-to-severe FIES, 12-month recall. Figure 12 results also show that the total prevalence of households with moderate-to-severe food insecurity based on a 12-month recall rose from 65.2 percent in round 1 to 78.8 percent, with high-and medium-intensity households reporting a larger proportion in round 2.

¹² See [Average Food-based Coping Strategy Index Score.](#)



Figure 12: 12-Month Recall for Moderate to Severe FIES, By Program Intensity and Survey Rounds



+ p<0.1, * p<0.05, ** p<0.01, *** p<0.001

D. HOUSEHOLD LIVELIHOODS ASSETS AND FOOD BASED COPING STRATEGIES

Households' livelihood strategies are collected through household primary and secondary cash and food sources over the past 12 months. These sources are then combined to measure the average number of cash and food scores.

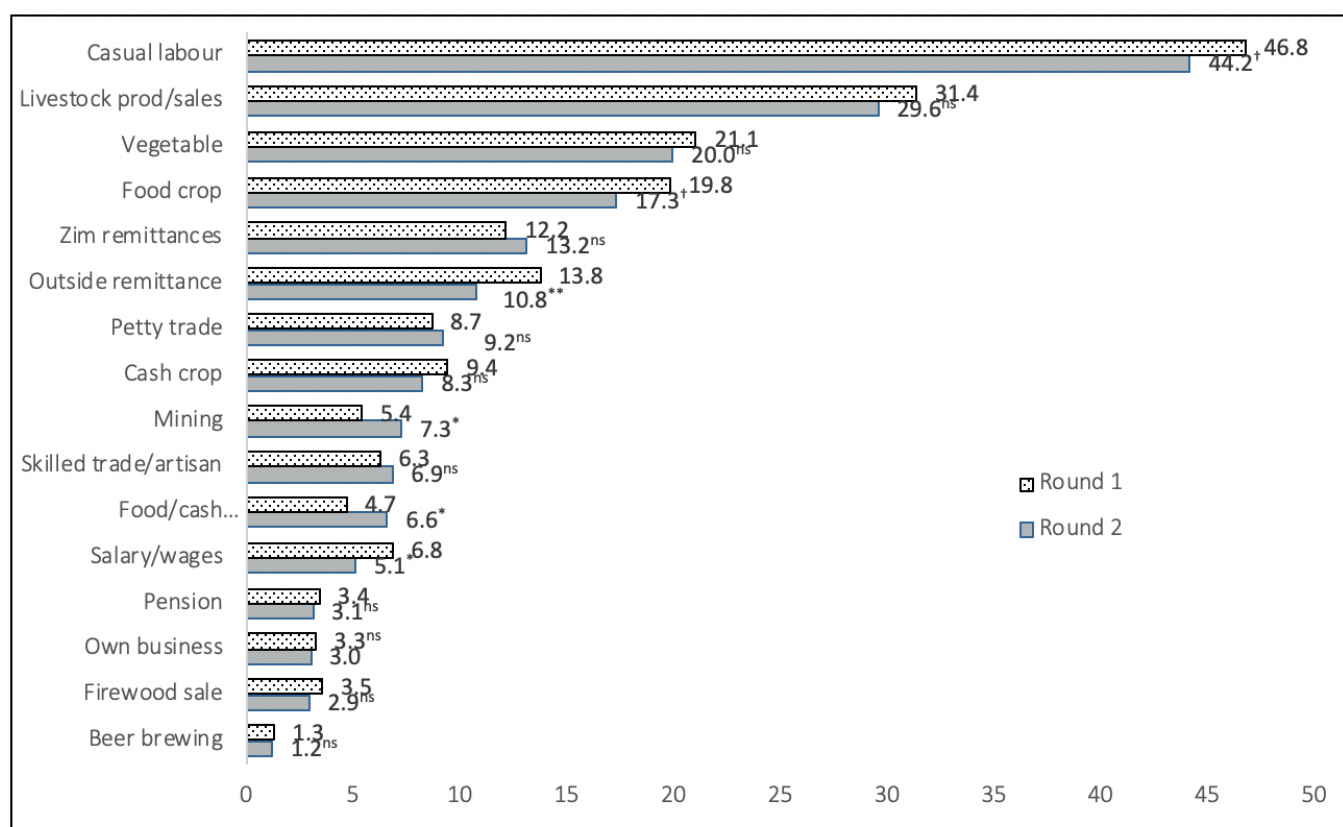
I. Household Livelihood Strategies and Cash Sources

Figure 13 shows the percentage of households reporting cash income sources for the total sample between survey rounds. By far the most widely cited main source of cash income is casual labour – nearly half of all households reported this source of income in both rounds. This is higher than reported in 2018 and 2019 ZimVAC (30 percent and 26 percent of households, respectively)¹³. The difference may be due to survey timing, different geographic coverage and sample base (ZimVAC is a population-based sample, OMS1 and OMS2 are beneficiary-based). The second most frequently reported cash source is sales of livestock/livestock products, about one-third percent of respondents reported it as a cash source. Food crop sales is lower in round 2 than in round 1, probably because harvest season had not yet started. all n OMS1 was closer to harvest season. The percentage of households reporting remittances from outside Zimbabwe was lower in round 2 than round 1, dropping from 13.8 to 10.8 percent. These results show a significant reduction in the number of sources of income across the two rounds for all sampled households from 2.0 to 1.9.

13 FNC. 2019. Rural livelihoods assessment. <http://fnc.org.zw/wp-content/uploads/2019/07/ZimVAC-2019-Rural-Livelihoods-Assessment-report.pdf>



Figure 13: Percentage of Households by All Cash Sources (Livelihoods), By Survey Round



ns = not significant, + p<0.1, * p<0.05, ** p<0.01, *** p<0.001

Qualitative data supports these findings as households often engage in multiple activities throughout the year. Households appear to participate in a variety of diverse livelihoods, some of which are seasonal. Qualitative data from the SIZIMELE consortium, for instance, indicates that men, women, and youth engage in casual labour as they are hired to work on a local farm weeding crop fields. In the Insiza District, men participate in casual labour as a livelihood diversification strategy to earn extra income. In some areas, youth participate in casual labour for a short time a few months at a time and invest their earnings to buy foodstuffs (*kapenta* fish) for resale (Lupane District, SIZIMELE Consortium). In Chiredzi District, men work plough fields and harvest crops for a small fee (ECRAS Consortium). Casual labor is described as an option for women whose husbands have emigrated to earn extra income (Nkayi District, MELANA Consortium).

While maize has been considered a staple crop, perceptions are changing to favor small grain production, including sorghum and millet. Small grains, such as millet and sorghum, as well as wheat are seen as the most viable crop to plant as they are more tolerant to harsh conditions. Maize requires much more water, so small grains are the preferred crop in an area that sees little rainfall (FCFGD, Beitbridge, PROGRESS). Farmers also plant groundnuts and cowpeas. Horticulture gardens produce crops such as leafy green vegetables, onions, and tomatoes. Climate-related shocks and stresses, however, have decreased crop productivity. Households across the Consortia areas note that rainfed agriculture has been impacted by changes climate patterns. In ECRAS, for instance, changes in rainfall patterns, such as infrequent rainfall and late onset of rain, have led to fewer crops to sell in the market.

Qualitative data suggest that households engage in a number of non-farm activities, such as sewing and dressmaking, carpentry, craft work, and brick molding. Households tend to work in non-farm labor during the lean season to complement their earnings from agriculture. Changes in climate patterns has also contributed to households participating in more non-farm activities, including casual labor on others' farms and migration to areas with better opportunities.

Remittances also play an important source of income, as households rely on those who work in neighboring countries like South Africa as well as relatives who work in urban centers and in the capital. Women report



receiving remittances from their husbands in the diaspora in South Africa (FCFGD, Binga, ZVA), while some women receive remittances from their husbands who work outside the country during part of the year (FCFGD, Beitbridge, PROGRESS). Remittances are often used by beneficiaries to fund livelihood activities in their communities. In Mwenezi District, for instance, ISAL members use remittances in the early stages of the ISAL setup (ECRAS). In this way, remittances are used to fund productive ventures and demonstrates that the ISAL model provides a mechanism for households receiving remittances to invest in their economic activities and increase their income. In some cases, communities rely on remittances as an important source of income, particularly for more vulnerable individuals. Working children who have moved outside the rural districts or outside Zimbabwe are able to send remittances to their elderly relatives to provide a financial cushion (SIZIMELE, ZVA, PROGRESS, MELANA, BRACKT, Consortia). In Binga District, sharp price hikes have made it difficult to afford even basic necessities; even when items are more affordable in neighboring cities, the cost of transport is prohibitive and households must settle for paying high prices (ZVA).

II. Household Food Sources

Households have become much less reliant on own production a source for their food from round 1 to round 2. Table 13 shows that reliance on own production fell from 60 percent to 33 percent over the two rounds. The percentage of households that rely on own production fell sharply for medium-intensity households, falling by over 50 percent from round 1 to round 2, compared with a decrease of less than 40 percent for high-intensity households. Offsetting the decreased reliance on own production were increases of cash purchases from their own income (one-third higher in round 2) and humanitarian assistance (almost doubling in round 2).

Table 13: Most Important Reported Food Source in the Past 12 Months, By Program Intensity and Survey Round

| Food Sources | Total Sample | | | Programming Intensity | | | | | |
|----------------------------------------------------------|--------------|---------|------|-----------------------|---------|------|---------|---------|------|
| | Round 1 | Round 2 | Sig. | High | | | Medium | | |
| | Round 1 | Round 2 | Sig. | Round 1 | Round 2 | Sig. | Round 1 | Round 2 | Sig. |
| % of HHs with most important food sources: | | | | | | | | | |
| Own production | 55.9 | 33.6 | *** | 62.3 | 39.7 | *** | 50.0 | 24.6 | *** |
| Cash purchases from HH Income | 15.2 | 20.6 | *** | 14.0 | 20.0 | *** | 16.4 | 21.5 | *** |
| Purchases from cash transfers | 1.3 | 1.0 | ns | 1.2 | 0.9 | ns | 1.4 | 1.3 | ns |
| Food aid (humanitarian assistance) | 13.0 | 24.7 | *** | 9.5 | 22.2 | *** | 15.8 | 28.6 | *** |
| Casual labour for food | 10.3 | 12.3 | ** | 10.2 | 11.3 | ns | 10.3 | 13.9 | ** |
| Remittances | 3.5 | 3.5 | ns | 2.1 | 3.7 | † | 4.9 | 3.2 | ns |
| Average number of HH food sources (main + others) | 2.1 | 2.1 | ns | 2.2 | 2.3 | *** | 2.1 | 2.0 | *** |
| <i>n (weighted)</i> | 4096 | 4184 | | 1802 | 2498 | | 2294 | 1686 | |
| <i>n (unweighted)</i> | 3353 | 3353 | | 1715 | 2223 | | 1638 | 1130 | |

ns = not significant, † p<0.1, * p<0.05, ** p<0.01, *** p<0.001

Less than two-thirds (62.9 percent) of beneficiaries in the ECRAS Consortium report their own food production as being the most important source of food in OMS2; this is a decrease from OMS1 of 10.2 percent (Annex 9, Table 10b). Nearly a third of all beneficiaries from both the ECRIMS (30.2 percent) and the ZVA (32.3 percent) Consortium reported food aid to be among the most important food sources in OMS2, which is an increase from OMS1.





III. Food-based Coping Strategies

The food-based Coping Strategy Index (CSI) was calculated using information on how often a household used a set of 12 short-term food-based coping strategies in situations where they did not have enough food or money to buy food during the previous one-week period. The recommended standard severity weights are found in the WFP/USAID CSI 2008 manual (second edition)¹⁴.

Figure 14 shows the severity weights and percentage of responses on the 12 food-based questions of the CSI. Overall, most households reported that their main food-based coping strategies during round 2 included reducing the number of meals eaten per day (78.7 percent), relying on less expensive or less preferred foods (77.6 percent), and reducing portion sizes (77.0 percent), which have all increased since round 1. Other food-based coping strategies used during round 2 with the highest severity weights included relying on casual labour (50.9 percent), skipping entire days without eating (31.0 percent), harvesting immature crops (29.3 percent), gathering wild foods (24.3 percent), and sending household members to beg for food (14.9 percent). Qualitative data supports these findings as beneficiary households reduce the number of meals, consume less-preferred meals, reduce meal portion sizes, and skip meals.

Figure 14: Severity Weights by 12 Food-Based Coping Strategies

| Severity Weights | Coping Strategies | Round 1 | Round 2 | Sig. |
|------------------|--------------------------------------------------------------|---------|---------|------|
| 4.0 | a. Skip entire days without eating? | 20.5 | 31.0 | *** |
| 1.0 | b. Limit/reduce portion size at mealtimes? | 65.5 | 77.0 | *** |
| 1.0 | c. Reduce number of meals eaten per day? | 67.3 | 78.7 | *** |
| 2.0 | d. Borrow food or rely on help from friends or relatives? | 55.3 | 59.3 | *** |
| 1.0 | e. Rely on less expensive or less preferred foods? | 67.8 | 77.6 | *** |
| 2.0 | f. Purchase/borrow food on credit ? | 30.8 | 33.3 | * |
| 4.0 | g. Gather/hunt unusual types or amounts of wild food? | 24.3 | 24.3 | ns |
| 4.0 | h. Harvest immature crops ? | 31.1 | 29.3 | † |
| 2.0 | i. Send household members to eat elsewhere? | 15.3 | 13.8 | * |
| 4.0 | j. Send household members to beg ? | 15.2 | 14.9 | ns |
| 1.0 | k. Reduce adult consumption so children can eat? | 47.4 | 59.6 | *** |
| 3.0 | l. Rely on casual labour for food? | 47.2 | 50.9 | *** |

+ p<0.1, * p<0.05, ** p<0.01, *** p<0.001

Table 14 provides information on the food-based CSI score over the total sample and across program intensity groups. Data show an increase in the CSI score from 18.5 in round 1 to 19.8 in round 2 across all sampled households. Significant increases were reported in the high intensity households. The proportion of beneficiary households with an acceptable food-based CSI score (CSI score <10) decreased 14.7 percent from round 1 to round 2. The percentage decrease for two the groups is similar (30% decrease from round 1 to round 2).

14 Coping Strategies Index: Field Methods Manual. Copyright 2008 Cooperative for Assistance and Relief Everywhere, Inc. (CARE). Used by permission. https://documents.wfp.org/stellent/groups/public/documents/manual_guide_proced/wfp211058.pdf



Table 14: Food-Based Coping Strategy Index (CSI), by Program Intensity and Survey Round

| Coping Strategies | Programming Intensity | | | | | | | | |
|----------------------------------------------------------------------|-----------------------|---------|------|---------|---------|------|---------|---------|------|
| | Total Sample | | | High | | | Medium | | |
| | Round 1 | Round 2 | Sig. | Round 1 | Round 2 | Sig. | Round 1 | Round 2 | Sig. |
| % HHs utilizing coping strategies: | | | | | | | | | |
| Rely on less expensive food | 67.8 | 77.6 | *** | 66.1 | 76.8 | *** | 68.7 | 78.7 | *** |
| Reduce number of meals | 67.3 | 78.7 | *** | 63.1 | 77.3 | *** | 70.4 | 80.6 | *** |
| Limit portion size | 65.5 | 77.0 | *** | 63.2 | 76.1 | *** | 67.5 | 78.3 | *** |
| Borrow food | 55.3 | 59.3 | *** | 51.6 | 57.3 | ** | 58.3 | 62.4 | ns |
| Reduce adult consumption | 47.4 | 59.6 | *** | 45.3 | 59.2 | *** | 48.7 | 60.0 | *** |
| Rely on casual labour | 47.2 | 50.9 | *** | 47.3 | 51.3 | * | 46.8 | 50.3 | ns |
| Harvest immature crops | 31.1 | 29.3 | † | 30.5 | 27.8 | ns | 31.3 | 31.5 | ns |
| Purchase food on credit | 30.8 | 33.3 | * | 29.9 | 34.8 | * | 31.4 | 31.1 | ns |
| Gather/hunt unusual wild food | 24.3 | 24.3 | ns | 21.9 | 20.9 | ns | 25.5 | 29.4 | + |
| Skip days | 20.5 | 31.0 | *** | 19.1 | 27.2 | *** | 21.4 | 36.6 | *** |
| Send members elsewhere | 15.3 | 13.8 | * | 13.3 | 11.9 | ns | 16.6 | 16.7 | ns |
| Send household members to beg | 15.2 | 14.9 | ns | 12.7 | 12.7 | ns | 17.0 | 18.3 | ns |
| Food-Based CSI (average) | 18.5 | 19.8 | ** | 17.1 | 18.8 | + | 19.4 | 21.2 | ns |
| % HHs with acceptable food-based CSI score (CSI score <10) | 51.8 | 37.1 | *** | 54.5 | 38.3 | *** | 50.2 | 35.4 | *** |
| n (weighted) | 4096 | 4184 | | 1802 | 2498 | | 2294 | 1686 | |
| n (unweighted) | 3353 | 3353 | | 1715 | 2223 | | 1638 | 1130 | |

Beneficiaries from ECRAS and SIZIMELE had the greatest increases in households skipping entire days without eating (from 4.7 percent to 12.8 percent; and from 5.8 percent to 36.3 percent, respectively). Female FGD participants from Mwenezi District in the ECRAS Consortium indicate that “most households are now only eating twice a day [rather] than the three normal meals¹⁵.” While the FGD participants acknowledge that this is not a positive coping strategy, as reducing meals impacts an individual’s nutritional status, this is seen as a solution to hunger.

Households in the Lupane District also reduced meals, from three to one, but note that this affected only the adults of the household, as children had access to daytime meals at school (SIZIMELE Consortium). In the Zvishavane District in ECRIMS, female FGD participants note that female-headed households are particularly vulnerable to these strategies, thereby affecting children’s nutritional wellbeing. While in ECRIMS, the female FGD respondents note that most households are forced to eat only once a day, female-headed households tend to have fewer people they can rely on, leaving them even more at risk.

ECRAS and SIZIMELE beneficiaries reported doubling the proportion of households who gather wild foods (from 9.0 percent to 18.4 percent; and from 7 percent to 16.2 percent, respectively). Conversely, MELANA beneficiaries decreased the use of this coping strategy by more than half over the same time period, from 21.5 percent to 12.0 percent. Qualitative findings suggest that households tend to harvest wild foods, such as local fruit and vegetable varieties, after the farming season (ZVA). In some areas, this activity tends to be done by elderly women (BRAC) and women and children (ZVA).

SIZIMELE Consortium saw significant increases across all food-based coping strategies from round 1 to round 2. BRAC beneficiaries reported decreases for most strategies, especially among those weighted as high severity. Strategies less utilized by BRAC households in OMS2 included harvesting immature food, gathering unusual wild food, skipping days without eating, sending household member to beg for food, buying food on credit, borrowing food, and sending household members elsewhere.

ZRBF activities have played an important role in supporting households by minimizing the negative coping strategies

15 FGD data. 9 March 2020. Chikwalakwala village, Mwenezi District, ECRAS Consortium.



in which they engage. Households who participate in chicken breeding and crop diversification in Zvishavane District are less likely to eat fewer meals a day and increase the variety of food they consume (ECRIMS). In Insiza, SIZIMELE's activities that promote indoor mushroom production are appreciated by beneficiaries as wild mushroom picking has been associated with illness and death after some community members picked poisonous mushrooms.

IV. Livelihoods and Asset-based Coping Strategies

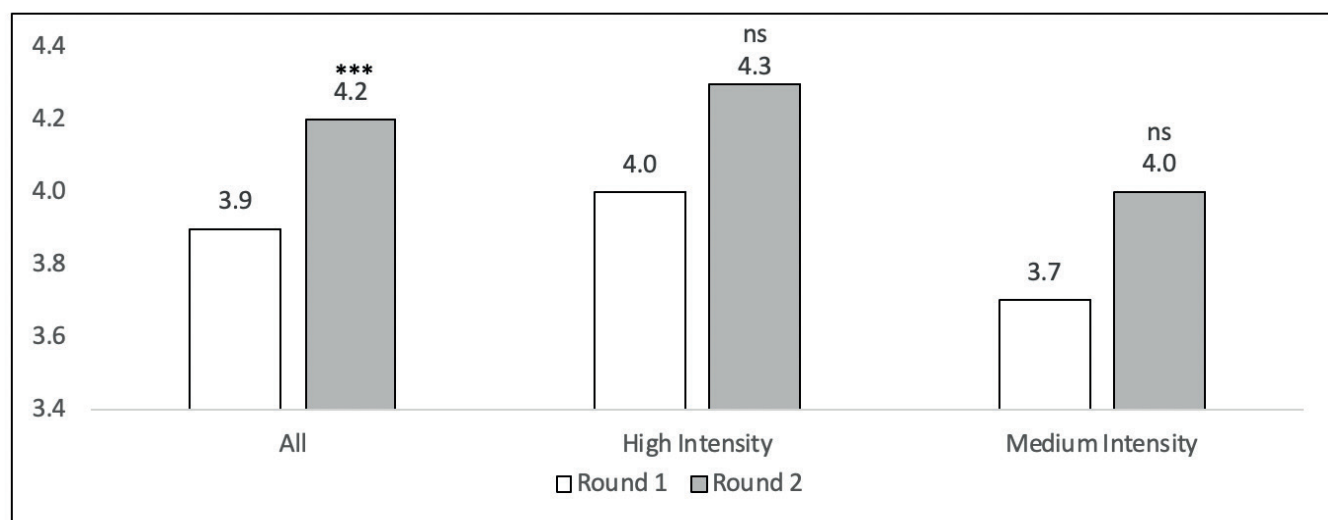
The Livelihoods and Asset-based Coping Strategy Index (LCSI) score is used to measure resilience along with other indicators to enable a better understanding of households' coping capacities over the past 30 days as determined by use of income, expenditures, and assets. It provides an understanding of behaviours that households engage in to adapt to recent crises (such as selling productive assets) and insights into the difficulty of their situation and how likely they will be to meet challenges in the future.

The same method for calculating LCSI used by the Oxford Policy Management (OPM) for the ZRBF baseline is also followed for the OMS analysis. Respondents are asked a set of ten 'yes' or 'no' questions about selling or making changes to assets or livelihoods due to the lack of food or lack of money to buy food. These 10 coping strategies (Table 15) are then weighted by severity into the following three groups:

1. **Emergency strategies** (severity weight=4) affects future productivity and are the most difficult to reverse; includes selling the last female breeding livestock to buy food, begging, and selling more animals (non-productive) than usual.
2. **Crisis strategies** (severity weight=3) are difficult to reverse; includes selling household assets and goods, reducing non-food expenses; selling productive assets or means of transport, and withdrawing children from school.
3. **Stress strategies** (severity weight=2) reduces the ability of households to deal with future shocks and can lead to a current reduction in resources or an increase in debt; includes spending savings, borrowing money from a formal lender/bank, and leasing out land.

LCSI as a weighted index is constructed using the emergency, crisis and stress coping strategies listed above. Figure 15 shows that the average LCSI for round 2 is 4.2. This is a significant increase from round 1. SIZIMELE doubled their LCSI score from 1.9 to 3.8 whereas ECRIMS beneficiaries, conversely, reported a significant drop from 5.0 in OMS1 to 3.8 in OMS2 (Annex 9, Table 15b). Male beneficiary households' LCSI score remained constant over time, while female beneficiary households increase their score from 3.7 in OMS1 to 4.3 in OMS2 (Annex 9, Table 15a).

Figure 15: Average Livelihood and Asset-based Coping Strategy Index (LCSI) by Beneficiary Categories



ns = not significant, † p<0.1, * p<0.05, ** p<0.01, *** p<0.001

Table 15 shows livelihood and asset-based coping strategies that households utilized by program intensity and survey round in the past 30 days. The most common livelihood coping strategies used across the sampled



households in round 2 were reducing non-food expenses (33.9 percent), spending savings (30.5 percent), and borrowing money from a bank (20.5 percent). The least commonly used included leasing out land (0.6 percent) and selling productive assets or transport (3.5 percent). When comparing across rounds, spending savings as a coping strategy had the highest increase, a rise from 23.8 to 30.5 percent. High-intensity households also reported spending more savings over time.

Table 15: Livelihood-Asset Based Coping Strategies (LACS) and Index, by Program Intensity and Survey Round

| Livelihood Coping Strategies | Total Sample | | Programming Intensity | | | | | | |
|------------------------------------------------|--------------|---------|-----------------------|---------|---------|------|---------|---------|------|
| | | | High | | Medium | | | | |
| | Round 1 | Round 2 | Sig. | Round 1 | Round 2 | Sig. | Round 1 | Round 2 | Sig. |
| HHs utilizing livelihood coping strategies (%) | | | | | | | | | |
| Sold household assets/goods | 8.8 | 8.2 | ns | 9.8 | 7.8 | † | 7.6 | 8.7 | ns |
| Reduced non-food expenses | 29.5 | 33.9 | *** | 29.3 | 36.2 | *** | 29.0 | 30.6 | ns |
| Sold productive assets or means of transport | 4.6 | 3.5 | ** | 4.6 | 3.2 | † | 4.5 | 4.0 | ns |
| Spent savings | 23.8 | 30.5 | *** | 26.3 | 35.1 | *** | 21.5 | 23.5 | ns |
| Borrowed money from a formal lender/bank | 19.7 | 20.5 | ns | 23.1 | 23.5 | ns | 17.0 | 16.0 | ns |
| Leased out land | 0.9 | 0.6 | † | 1.3 | 0.5 | * | 0.5 | 0.8 | ns |
| Withdrew children from school | 9.1 | 8.4 | ns | 7.2 | 7.6 | ns | 10.2 | 9.6 | ns |
| Sold last female breeding livestock | 9.5 | 10.6 | † | 11.6 | 9.8 | ns | 7.8 | 11.8 | * |
| Begging | 14.1 | 12.2 | ** | 11.5 | 11.5 | ns | 16.2 | 13.2 | ns |
| Sold more animals (non-productive) than usual | 12.1 | 16.5 | *** | 14.0 | 17.4 | * | 10.4 | 15.1 | ** |
| <i>n (weighted)</i> | 4096 | 4184 | | 1802 | 2498 | | 2294 | 1686 | |
| <i>n (unweighted)</i> | 3353 | 3353 | | 1715 | 2223 | | 1638 | 1130 | |

ns = not significant, † p<0.1, * p<0.05, ** p<0.01, *** p<0.001

Consortia data (Annex 9, Table 15b) show that the utilization of most 'emergency' coping strategies (begging, selling the last female breeding livestock, and selling more than usual non-productive animals), increased for beneficiaries in MELANA, PROGRESS, SIZIMELE and ZVA from round 1 to round 2. BRACT beneficiaries, on the other hand, reported decreases across the three 'emergency' coping strategies. Qualitative information from a KI in BRACT indicates that ZRBF has promoted the "pass on" model in which farmers circulate goats to promote breeding; this suggests that the households have a decreased need for selling their breeding livestock. Meanwhile, FGD data from SIZIMELE indicates that households have been forced to sell productive animals in order to minimize losses from increasing drought conditions. Decreases in the selling of the last female livestock and begging were also reported in the ECRIMS Consortium (14.0 to 10.5 percent; 18.3 to 5.8 percent, respectively). MELANA beneficiaries similarly reduced begging as a coping mechanism from 19.2 percent in round 1 to 11.6 percent in round 2. Although SIZIMELE beneficiaries reported increases across all three emergency coping strategies, higher utilization of these strategies in OMS2 were observed in ZVA, PROGRESS and BRACT.

Of the 'crisis' coping strategies utilized across the consortia, households were most apt to reduce non-food expenses such as clothing, pots and pans, travel, education, and medicine rather than make reduction in human capital formation. In OMS2, greater than half (53.1 percent) of BRACT beneficiaries reduced non-food expenses in the last 30 days whereas 15.3 percent reported withdrawing children from school. From round 1 to round 2, increases in the reduction of non-food expenses were observed in BRACT, ERAS, SIZIMELE, and ZVA; decreases in this coping strategy were only reported among PROGRESS beneficiaries from 38.5 to 31.1 percent.

'Stress' coping strategies most utilized across consortia include spending savings and borrowing money from a formal lender; approximately a third or more beneficiaries in BRACT, ECRIMS and PROGRESS reported the use of both strategies in OMS2. When comparing across survey rounds, BRACT, SIZIMELE and ECRAS beneficiaries



significantly increased spending their savings as a coping strategy from round 1 to round 2 (35.2 to 41.4 percent; 12.8 to 37.7 percent; and 13.6 to 31.0 percent, respectively), whereas MELANA showed a decrease (23.3 to 19.4 percent).

According to qualitative data, children's education was impacted by economic factors and poor wellbeing outcomes. In the MELANA region, for example, hunger and malnutrition impacted children's ability to concentrate in school, while children in the ECRAS region dropout for similar reasons. Other reasons for children dropping out of school included increases in school fees (ZVA), drought impacting a household's capacity to prioritize education in the face of food insecurity (ECRAS), and the need for children to guard crops from being destroyed by wild birds (ECRAS).

E. HOUSEHOLD INCOME AND EXPENDITURE

Monthly household income was collected in February 2020 for 17 separate income sources, both for cash and in-kind income using four currencies (USD, Rand, Pula, and RTGS/Bond). Monthly income was then converted into US dollars using the currency conversion rates for March 2020 (i.e., 1 USD is equivalent to 14.56 Rand, 10.80 Pula, and 10.83 RTGS/Bond)¹⁶. The sum of the 17 income sources in USD yields the total household income for the last month. As a proxy of income, expenditure information was also collected for 31 regular items for the past 30 days and 15 irregular expenses for the last 12 months. Similarly, expenditure information was also collected using the same four currencies and then converted into USD. The 12-month expenditure for each of the 15 items was converted into an average monthly expenditure by dividing by 12. The sum of the monthly expenditures provides the overall monthly expenditure for a household. Both the average monthly income and expenditure is reported for Outcome Indicator 4: "Average monthly household income (or as proxy of income – expenditure or asset index) of vulnerable households receiving ZRBF assistance."

Table 16 shows the average monthly income and expenditures for beneficiary households. Overall, total monthly income (including both cash and in-kind) did not change significantly from round 1 to round 2. However, in-kind income increased 8.32 USD in OMS1 to 13.40 USD in OMS2. Differences were also observed across rounds for in-kind income for both program intensity groups. High and medium intensity beneficiaries increased their in-kind income in round 2.

Table 16 also shows that across rounds, medium-intensity households saw a significant decrease in expenditures from OMS1 (39.21 USD) to OMS2 (31.15 USD).

Table 16: Average Monthly Income and Expenditure (2019 USD), by Program Intensity and Survey Round

| Monthly Income/Expenditures (2019 USD) | Total Sample | | | Programming Intensity | | | | | |
|---------------------------------------------|--------------|---------|------|-----------------------|---------|------|---------|---------|------|
| | | | | High | | | Medium | | |
| | Round 1 | Round 2 | Sig. | Round 1 | Round 2 | Sig. | Round 1 | Round 2 | Sig. |
| Monthly household income¹ | | | | | | | | | |
| Total | 76.01 | 82.75 | ns | 88.93 | 88.87 | ns | 61.24 | 67.00 | ns |
| Cash | 67.69 | 69.34 | ns | 79.27 | 74.51 | ns | 54.44 | 55.28 | ns |
| In-kind | 8.32 | 13.40 | *** | 9.66 | 14.37 | *** | 6.80 | 11.72 | *** |
| <i>n (weighted)</i> | 3498 | 3498 | | 1706 | 2359 | | 2065 | 1425 | |
| <i>n (unweighted)</i> | 3772 | 3783 | | 1637 | 2121 | | 1484 | 968 | |
| Monthly household expenditures | | | | | | | | | |
| Total | 46.43 | 44.47 | + | 55.54 | 53.23 | ns | 39.21 | 31.15 | *** |
| <i>n (weighted)</i> | 4171 | 40286 | | 1801 | 2491 | | 2270 | 1637 | |
| <i>n (unweighted)</i> | 33361 | 33158 | | 1713 | 2218 | | 1623 | 1097 | |

ns = not significant, † p<0.1, * p<0.05, ** p<0.01, *** p<0.001

1 Households reporting no income of any kind were excluded from the analysis.

Beneficiaries from the ZVA Consortium more than doubled their average monthly in-kind income from 4.83

¹⁶ Federal Reserve Bank of Zimbabwe.



USD in round 1 to 9.92 USD in round 2, while monthly in-kind income slightly diminish over time for ECRAS (from 15.93 USD to 13.51 USD) and PROGRESS (10.23 USD to 9.73 USD) beneficiaries (Annex 9, Table 16b).

The average monthly expenditures by consortia remained relatively consistent from round 1 to round 2 except for MELANA whose monthly expenditures significantly decreased 6.74 USD across the two rounds.

I. Monthly Household Income by Cash Sources.

Table 17 shows household income by income source for the month prior to the survey. Livestock sales contributed \$22.37, social transfers from NGOs or the government \$8.80, remittances \$7.96 percent and casual labour \$7.62 percent. Overall, income from crop was \$1.92 lower in round 2 than round 1, dropping from \$5.64 to \$3.72. This may be because round 1 data collection was closer to harvest season.

Table 17: Income Sources Based on Income from Last Month, Program Intensity and Survey Round

| Cash Sources (2019 USD) | Total Sample | | Sig. | Programming Intensity | | | | | |
|----------------------------------|--------------|-------------|------|-----------------------|-------------|------|-------------|-------------|------|
| | | | | High | | | Medium | | |
| | Round 1 | Round 2 | | Round 1 | Round 2 | Sig. | Round 1 | Round 2 | Sig. |
| Remittances | 9.52 | 7.96 | * | 11.62 | 9.82 | ns | 10.83 | 6.70 | + |
| Crop sales | 5.64 | 3.72 | ** | 6.56 | 6.48 | ns | 3.85 | 2.27 | * |
| Casual labour | 8.14 | 7.62 | ns | 8.96 | 8.83 | ns | 8.49 | 9.18 | ns |
| Livestock sales | 13.23 | 22.37 | ** | 19.03 | 27.65 | ns | 12.54 | 32.20 | ns |
| Sale of livestock products | 0.42 | 0.71 | * | 0.46 | 0.90 | * | 0.62 | 0.65 | ns |
| Skilled trade/artisan | 1.78 | 2.81 | ns | 2.63 | 4.52 | ns | 1.55 | 1.64 | ns |
| Own Business/beer brewing | 3.25 | 2.51 | ns | 4.61 | 3.67 | ns | 3.11 | 1.76 | ns |
| Petty trade | 3.10 | 2.04 | * | 5.01 | 2.96 | + | 2.00 | 1.55 | ns |
| Pensions | 2.33 | 1.31 | * | 3.33 | 1.75 | + | 1.99 | 1.04 | ** |
| Salary/wages/earnings | 6.47 | 5.84 | ns | 8.58 | 8.05 | ns | 6.60 | 3.17 | ns |
| Wild products, fishing | 0.53 | 0.59 | ns | 0.56 | 0.55 | ns | 0.61 | 0.90 | ns |
| Small scale mining/mineral sales | 4.68 | 2.59 | ns | 6.65 | 3.36 | ns | 3.15 | 3.19 | ns |
| Social Transfers | 6.23 | 8.80 | *** | 9.38 | 12.35 | ns | 5.50 | 8.54 | * |
| Receipt of money owed | 1.00 | 1.54 | + | 1.84 | 2.42 | ns | 1.20 | 0.78 | ns |
| Loan received | 0.98 | 0.96 | * | 1.31 | 1.63 | ns | 0.54 | 0.43 | ns |
| Rental incomes | 0.65 | 0.76 | ns | 0.85 | 0.57 | ns | 0.47 | 0.97 | ns |
| Other Specify | 0.70 | 0.79 | ns | 0.66 | 1.51 | + | 1.74 | 0.67 | ns |
| n (weighted) | 4096 | 4184 | | 1706 | 2359 | | 2065 | 1425 | |
| n (unweighted) | 3353 | 3353 | | 1637 | 2121 | | 1484 | 968 | |

ns = not significant, † p<0.1, * p<0.05, ** p<0.01, *** p<0.001

Both male and female beneficiaries reported lower remittances. Income from livestock sales was higher for female beneficiaries rising from \$11.00 in rounds 1 to \$12.98 in round 2. (Annex 9, Table 17a).

Qualitative data suggests that community members engaged in a number of activities to earn income. In ECRAS, KI data suggests that improvements in water sources have allowed a greater number of community members to grow and sell their crops (IKII, Mwenezi). Youth, for instance, migrated in search of economic opportunities outside the rural districts (ZVA). The qualitative data shows that youth tend to not view agriculture favourably. In the ECRIMS area, for instance, many youth left their hometowns to neighbouring cities and countries. In SIZIMELE, youth were also not engaged in poultry activities or horticulture. Women engaged in petty trade, although men perceived this as a negative livelihood option for women. Women also performed domestic work in other households (ECRIMS). Some households report that they are pushed to seek casual labor during drought conditions in order to increase household income.

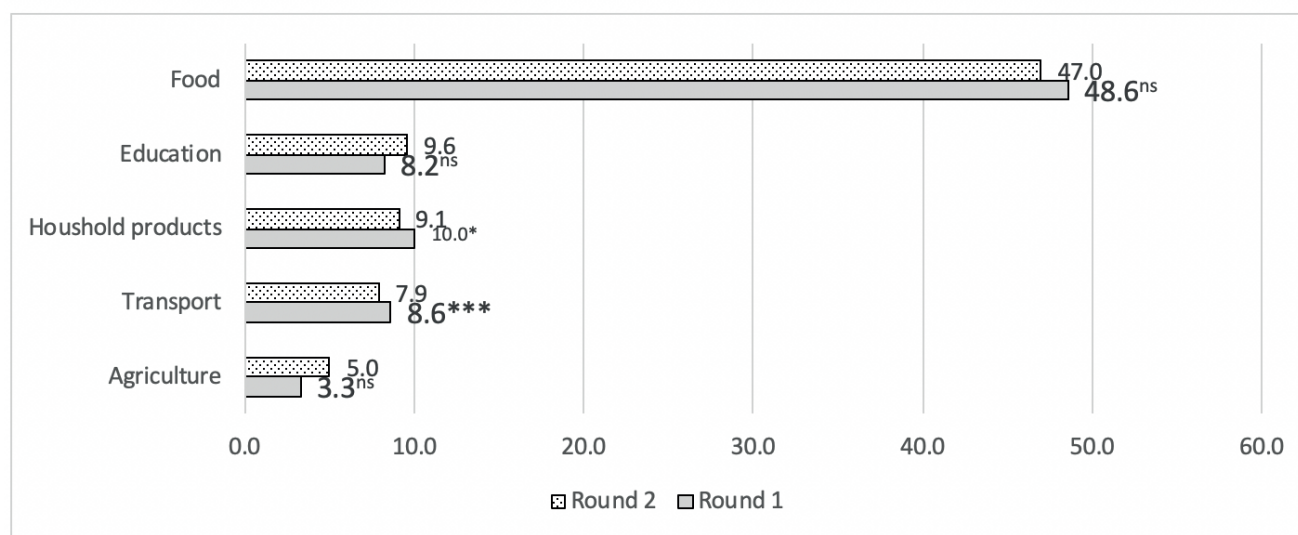


One of the reasons livestock sales may be so high can be explained by qualitative data which suggests that households are forced to sell part of their livestock herds, or destock, in order to be able to purchase basic household goods during times of economic hardship. Some households prefer selling livestock in order to purchase feed or vaccines for their remaining livestock when faced with a shock or stress, thereby reducing the number of livestock deaths. The perception that household members have on destocking appears to be shifting to a more favorable stance. Qualitative data from KIs shows that strategic destocking done to minimize deaths is starting to be seen as an option when facing uncertainty. In Mberengwa, for instance, while farmers were skeptical about selling animals, especially cattle, households now sell one or two heads in order to prevent a greater number of deaths (IKII, X) and that there has been a “gradual mindset change” among farmers who now see the value in downsizing the number of animal heads (IKII Beitbridge, PROGRESS). However, FGD respondents note that the supply or feed they purchase from the sale of destocking does not last a long time (FCFGD, Beitbridge, PROGRESS and FCFGD, Matobo, SIZIMELE). For this reason, the ZRBF activities that support livestock feed are an important contributor that may build the capacity of households to weather further shocks and stresses.

V. Monthly Household Expenditures by Expenditure Item

Figure 16 shows that beneficiary households spent about half, 48.6 percent, of their monthly expenditures on food. This is lower than reported in ZimVAC ¹⁷, which noted that in 2019 food expenditures were 68 percent of the total, 55 percent in 2018 and 54 percent in 2017. Again, differences may be due to survey timing, geographic variation or sample base. of total expenditures. Notably, the percentage of expenditures for food is five times greater than the second highest monthly expenditure category, soap/ toiletries.

Figure 16: Percentage of Total Monthly Expenditure, by Expenditure Items



+ p<0.1, * p<0.05, ** p<0.01, *** p<0.001

F.AGRICULTURE PRODUCTION TECHNOLOGIES AND VALUE CHAIN PRACTICES

ZRBF is promoting the adoption of standard Climate Smart Agriculture (CSA) practices to project beneficiary households for better food security and to build resilience capacity. There is a total of twelve CSA practices. Sustainable crop production looks at reducing reliance on non-renewable external inputs and capitalizing on/enhancing natural biological processes to improve production in a more environmentally friendly way and avoiding degradation of production relevant natural resources. Adoption of CSA practices contributes to food security by addressing different aspects of current and projected climate change impacts through adaptation and mitigation actions.

¹⁷ FNC. 2019. Rural livelihoods assessment. <http://fnc.org.zw/wp-content/uploads/2019/07/ZimVAC-2019-Rural-Livelihoods-Assessment-report.pdf>



While agriculture contributes significantly to climate change, it also provides opportunities for adapting to and mitigating climate change effects. Similar to many efforts across other development organizations, ZRBF is promoting the use of practice of standard CSA practices to increase household food security and resiliency among project participants.

Information on improved production and management practices for agriculture and livestock were collected to measure the “*Proportion of households adopting CSA production technologies*” (IR Indicator 2.6). Information on value chain practices, soil and water conservation techniques, and natural resources management practices related to CSA were also collected. The respondents were asked whether they are familiar with and have used any of the 46 individual climate smart technologies or management practices in the past 12 months. If so, two follow-up questions provide information on whether they received any trainings or orientation and whom within the household had participated.

Table 18 shows the percentages of households familiar with several categories of CSA practices and of those, who have applied these practices in the past 12 months. Overall, the percent of interviewed households who received three or more trainings and were familiar with CSA practices increased substantially from round 1 to round 2 for all four CSA categories, ranging from an increase of 27 percent for crop practices to 70 percent for value chain practices. Not surprisingly, the percent of respondents that received at least three trainings is significantly higher for the high-intensity group than for the medium-intensity group, but the percentage increase over the two rounds was greater for the medium-intensity (25 percent) than the high-intensity category (10 percent).

Adoption of CSA practices increased significantly in all four categories (crop, livestock, value chain, and water/soil conservation). Notably, all the increases in use of practice took place in the high-intensity group. There were not statistically significant changes in use of practice of any of the categories of CSA practices in the medium-intensity category. Households adopting at least three CSA practices increased overall across the two rounds, with the greatest increases registered by high-intensity households, although there was also a small but statistically significant increase for the medium-intensity category. Less than half (39.4 percent) of all high-intensity households used Value-Chain (VC) practices in round 1 but the percentage in this groups that adopted VC practices increased to over half (53.3 percent) in round 2, while less than a quarter (17.5 percent) of medium-intensity households were doing the same in round 2.

Table 18: Climate-Smart Agricultural Practices, by Program Intensity and Survey Round

| Agricultural Practices | Total Sample | | | Programming Intensity | | | | | |
|------------------------------------------------------------------|--------------|---------|------|-----------------------|---------|------|---------|---------|------|
| | | | Sig. | High | | Sig. | Medium | | Sig. |
| | Round 1 | Round 2 | | Round 1 | Round 2 | | Round 1 | Round 2 | |
| HHs with <u>at least</u> 3 trainings/orientation (%) | | | | | | | | | |
| Crop practices | 57.9 | 73.8 | *** | 82.4 | 90.6 | *** | 38.6 | 48.8 | *** |
| Livestock practices | 51.3 | 67.6 | *** | 75.9 | 87.3 | *** | 32.0 | 38.4 | * |
| Value chain practices | 27.1 | 45.5 | *** | 48.2 | 64.2 | *** | 10.5 | 17.8 | *** |
| Water and soil conservation | 20.8 | 34.1 | *** | 38.3 | 50.3 | *** | 7.0 | 10.1 | + |
| HHs using <u>at least</u> 3 practices (%) | | | | | | | | | |
| Crop practices | 66.0 | 75.0 | *** | 83.0 | 88.0 | * | 52.7 | 55.9 | ns |
| Livestock practices | 52.8 | 63.8 | *** | 70.3 | 79.1 | *** | 39.1 | 41.1 | ns |
| Value chain practices | 26.6 | 38.9 | *** | 39.4 | 53.3 | *** | 16.6 | 17.5 | ns |
| Water and soil conservation | 12.7 | 18.6 | *** | 23.5 | 27.7 | * | 4.2 | 5.1 | ns |
| HHs practicing <u>at least</u> 3 CSA production technologies (%) | | | | | | | | | |
| # CSA practices/ technologies (mean) | 10.7 | 13.7 | *** | 15.2 | 17.7 | *** | 7.1 | 7.9 | * |



Table 18: Climate-Smart Agricultural Practices, by Program Intensity and Survey Round

| Agricultural Practices | Total Sample | | Sig. | Programming Intensity | | | | | |
|---------------------------------------------------------|--------------|---------|------|-----------------------|---------|------|---------|---------|------|
| | | | | High | | | Medium | | |
| | Round 1 | Round 2 | | Round 1 | Round 2 | Sig. | Round 1 | Round 2 | Sig. |
| HHs practicing <u>at least</u> 1 VC practice (%) | 58.8 | 70.3 | *** | 72.3 | 83.4 | *** | 48.2 | 50.9 | ns |
| VC practices (mean) | 1.7 | 2.3 | *** | 2.5 | 3.1 | *** | 1.1 | 1.2 | ns |
| <i>n (weighted)</i> | 4096 | 4184 | | 1802 | 2498 | | 2294 | 1686 | |
| <i>n (unweighted)</i> | 3353 | 3353 | | 1715 | 2223 | | 1638 | 1130 | |

ns = not significant, † p<0.1, * p<0.05, ** p<0.01, *** p<0.001

An overwhelming majority of households from the ECRAS (97.1 percent), BRAC (94 percent), and ECRIMS (92.8 percent) Consortia all reported using improved crop practices in round 2, with beneficiaries from BRAC had the highest increase of 69.0 percent, while beneficiaries from the SIZIMELE Consortium saw little change in use of improved crop practices over time. Beneficiaries from the ECRAS (86.7 percent), BRAC (81.6 percent), and ECRIMS (80.4 percent) Consortia all had above average uses of improved livestock practices in round 2, while those from the MELANA, PROGRESS, and SIZIMELE Consortia all had little change in their use of improved livestock practices over time (Annex 9, Table 18b).

The overall percentage of households practicing at least three CSA production technologies rose from 81.3 percent in round 1 to 89.6 percent in round 2. Nearly all ECRAS (99.0 percent), BRAC (98.7 percent), ECRIMS (97.6 percent), and high-intensity (97.6 percent) households were using at least three CSA production technologies in round 2 (Annex 9, Table 18b).. ZVA beneficiaries and male beneficiary households who used at least three CSA practices increased from OMS1. The overall average number of CSA practices reportedly used in round 2 was 13.7, an increase of 3.0 percent from round 1. High-intensity households used, on average, more than two times as many (17.7) CSA practices in round 2 than households in the medium-intensity category (7.9). Across consortia, BRAC beneficiaries doubled the number of CSA practices (20.2) from round 1 to round 2.

Figure 17, panel a) s that over half or more beneficiaries were familiar with at least 11 out of the 17 livestock practices. The top five livestock practices which participants were familiar with in round 2 included dipping (87.5 percent), deworming (76.5 percent), castration (74 percent), spraying at home (70.3 percent), and routine vaccinations (64.2 percent). For all practices, awareness increased significantly from round 1 to round 2.

Panel b) shows that in most cases improved livestock practices also increased from round 1 to round 2. The top five livestock practices overall which beneficiaries reported using in round 2 were dipping (71.9 percent), routine vaccinations (66.6 percent), use of paravets (65.9 percent), home vaccinations (65.1 percent), and deworming (60.9 percent). Only spraying at home, production of homemade feed, fodder production and use of artificial insemination did not exhibit statistically significant increases from round 1 to round 2. Quantitative findings did not show a significant change in fodder production between the two rounds. Local (district) level changes may be masked by looking at the total sample. However, fodder preservation did increase. According to qualitative data across sites from round 2, fodder production is highly valued as it is reported to contribute to lower livestock deaths. During times of shortage and during the dry season, farmers make feed with hay bales from grass, sun hemp, and salt.

In one male FGD in Mudzi, respondents note that ZRBF's fodder production activities had led to the most change in the community as it provides supplementary feeding to livestock and helps curb the use of destocking (BRAC). However, uptake on fodder production activities may been slower in other areas where farmers face a number of challenges around the activity. For instance, heat spells and limited storage options have led farmers to be reluctant to work in fodder production (Mbire, IKII, ZVA). In another area, qualitative data suggests that some farmers have a limited understanding of the importance of fodder production in reducing animal deaths (Matobo, IKII, SIZIMELE).

Data collected during the qualitative interviews highlights that households are aware of the benefits of improved benefits from the livestock practices promoted by ZRBF. CSA is reportedly warmly welcomed in





the community as a long-term farming method because it addresses drought; given that beneficiaries are highly aware of the issues around climate variability, this explains why CSA is so highly appreciated. One of the reasons it was welcome is because CSA practices encouraged the production of small grains which the community now sees as a valid strategy in an environment that sees frequent drought conditions year after year (FCFGD, Beitbridge, PROGRESS).

Beneficiaries interviewed in FGDs reported that the information received from ZRBF on improved breeds had resulted in better production with heavier goats and improved quality meat and milk (Binga, BRACT). Respondents in FGDs also mentioned their understanding of the importance of water conservation practices in efforts to adapt to changing water levels and rainfall. Households have begun adapting their livelihood activities to reflect these changes, including investing in conservation agriculture.

Households in the ECRAS area were working on channelling water runoff to minimize erosion and the effects of flooding. In Mwenezi District, households were building water harvesting structures and boreholes to rely less on rain-fed agriculture. Beneficiaries practice horticulture in order to rely less on rain-fed agricultural practices. For instance, in the ECRAS area, KI data suggests that the solar-powered boreholes have allowed households to practice horticulture when rainfall is inadequate (CKII, Mwenezi).

Households also constructed dams and purchased water pumps to irrigate gardens and horticulture crops (BRACT). To cope with water shortages, some households constructed water harvesting tanks for storage, including roof top water harvesting tanks, which were employed to capture and store rainwater (ECRIMS). Households also invested in drought-resistant crops in line with the ZRBF trainings to mitigate the impact of climate change and low variable rainfall conditions. Qualitative data collected in the ZVA area indicate that small grains and drought-tolerant legumes such as cowpeas and groundnuts were planted for this reason. Other CSA techniques included fencing of fallow land to conserve grass for livestock during the dry season (Matobo District, SIZIMELE).

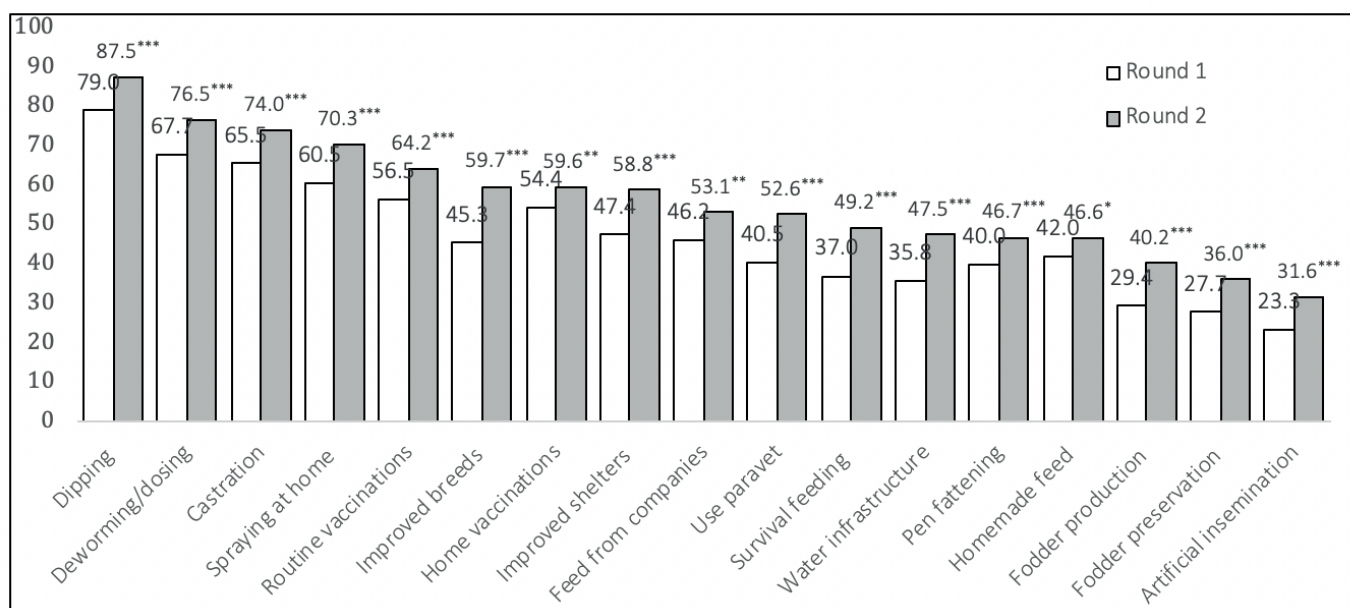
In some communities, households have been able to purchase an abundance of acaricides and store them for future use as a way to anticipate and prepare for price shocks (CKII, Nkayi, Melana), suggesting longer term behaviors that are based on CSA and preparedness. Acaricide use has directly improved the health of productive assets, and it has also provided livestock herders with greater ownership of the dip tanks, suggesting that longer-term use of this practice has been influenced by ZRBF. According to an officer from the Department of Veterinary Services, "farmers have had a paradigm shift towards their animals to take better care of them and not rely on donations" (CKII, Mudzi, BRACT).

However, sustained use of practice may not be even across all practices. Acaricide spray has been provided by BRACT, but skepticism according to KI data remains on whether the farmers will be able to purchase the spray beyond the six-month supply provided by the program. In response to this risk, the vet officer has been strengthening Livestock Dip Tank Committees through trainings in order to increase farmer engagement in the dipping process so they may be able to purchase more supplies. (CKII, Mudzi, BRACT).

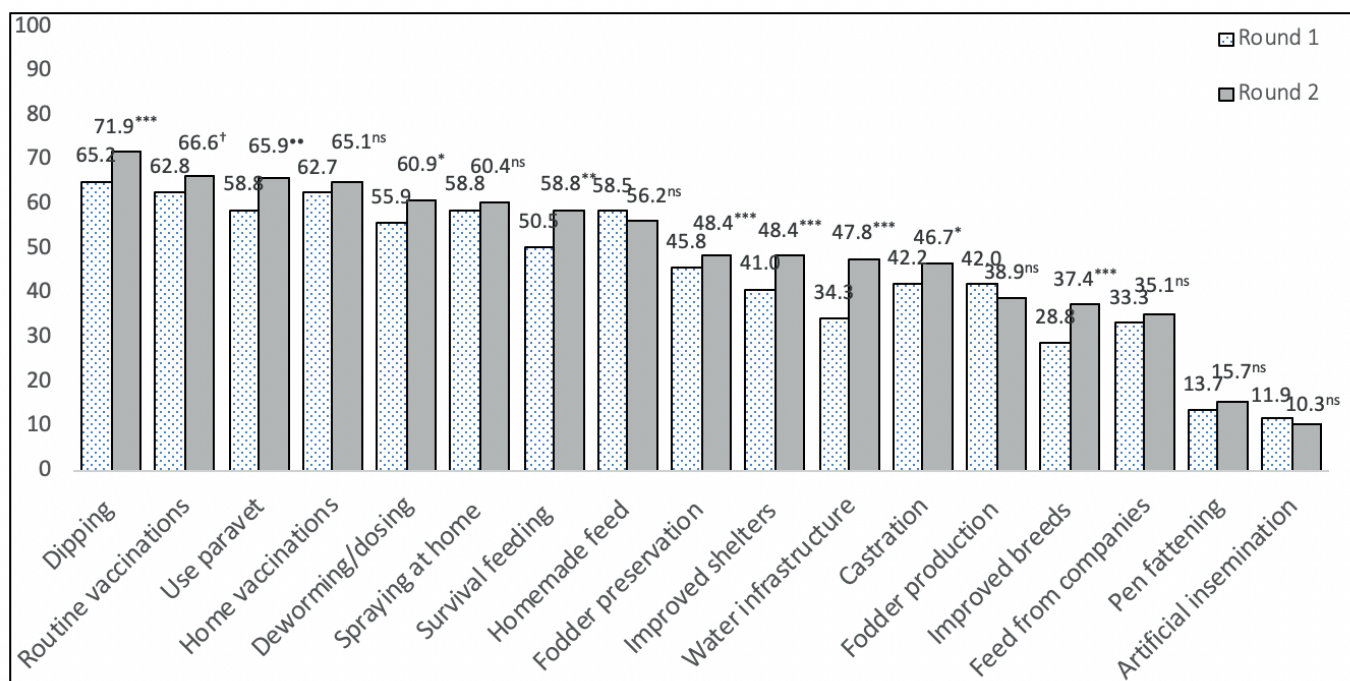


Figure 17: Percentage of Households Familiar with and Used Livestock Practices, By Survey Round

a. Percentage of households *familiar* with livestock practices



b. Percentage of households that *used* livestock practices



ns = not significant, † p<0.1, * p<0.05, ** p<0.01, *** p<0.001

Information about awareness and use of practice of CSA practices applied to crops shown Figure 18 shows similar patterns to those observed for improved livestock practices. Awareness of all types of practices increased significantly over the one-year interval between the survey rounds (panel a).

The use of practice of most CSA crop practices increased somewhat from round 1 to round 2 (panel b). Practices that exhibited the largest increases were cover cropping, use of practice of small grains, crop rotation, pest management, and intercropping.

Qualitative data provides insight on various factors affecting use of practice of agriculture and livestock



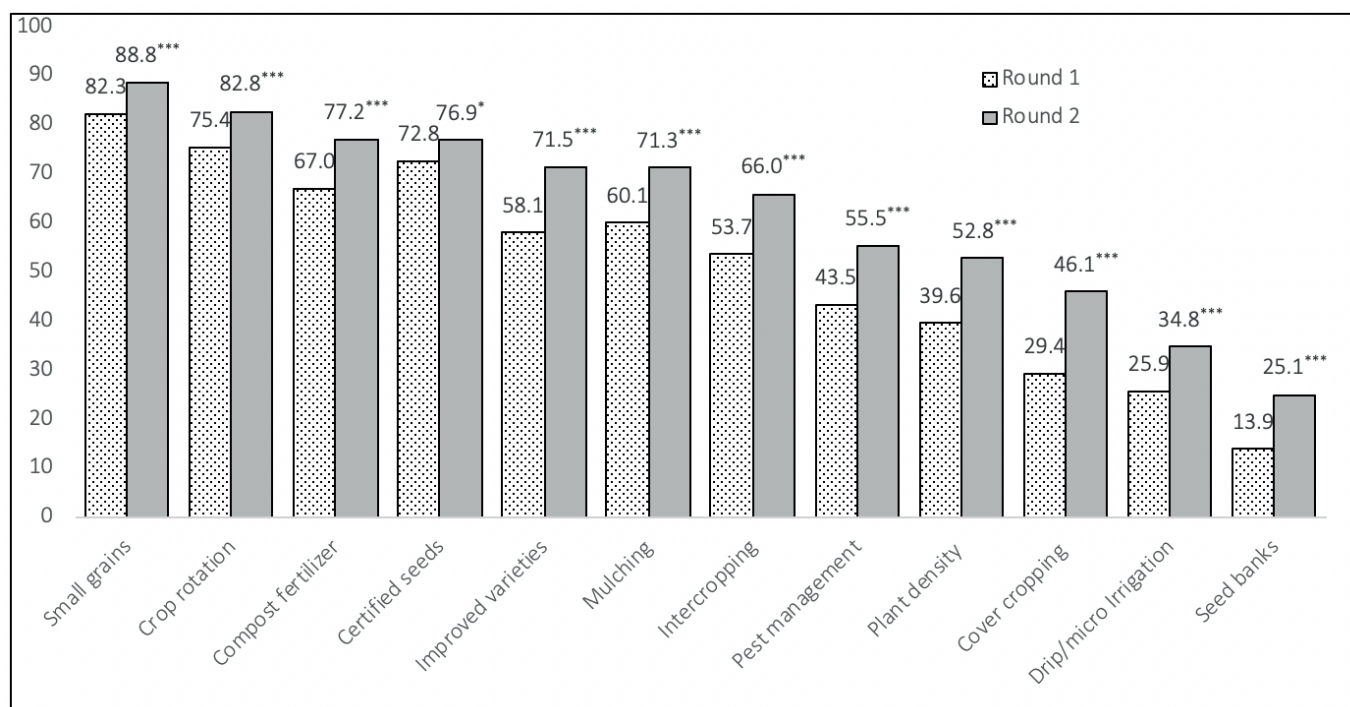
production practices. According to qualitative data, chemical use for crop disease and pest management is seen as a costly expense. In Chiredzi, farmers have been using chemicals to fall army worm, although households perceive that the use of chemicals has increased the costs of production and increased the costs of inputs in the short term. Some households continued to rely on traditional pest management methods (ECRAS). Qualitative data demonstrates that households engaging in improved crop practices, such as intercropping or spacing, provided better yields and also improved soil fertility (ECRAS).

In the ECRIMS area, access to firewood is a stressor. Some households are reportedly now using *tsotso* stoves which are seen as a low-cost intervention that has made an impact. Other households are using residual maize cobs for baking. Solar panels are used in the ECRIMS area to power the borehole used for the Mlingo garden, which benefited fifty households in the area according to the village leader. Some farmers who had been dependent on diesel or petrol have had to stop their irrigation activities due to the cost of fuel; they are now considering using solar irrigation techniques (ECRIMS).

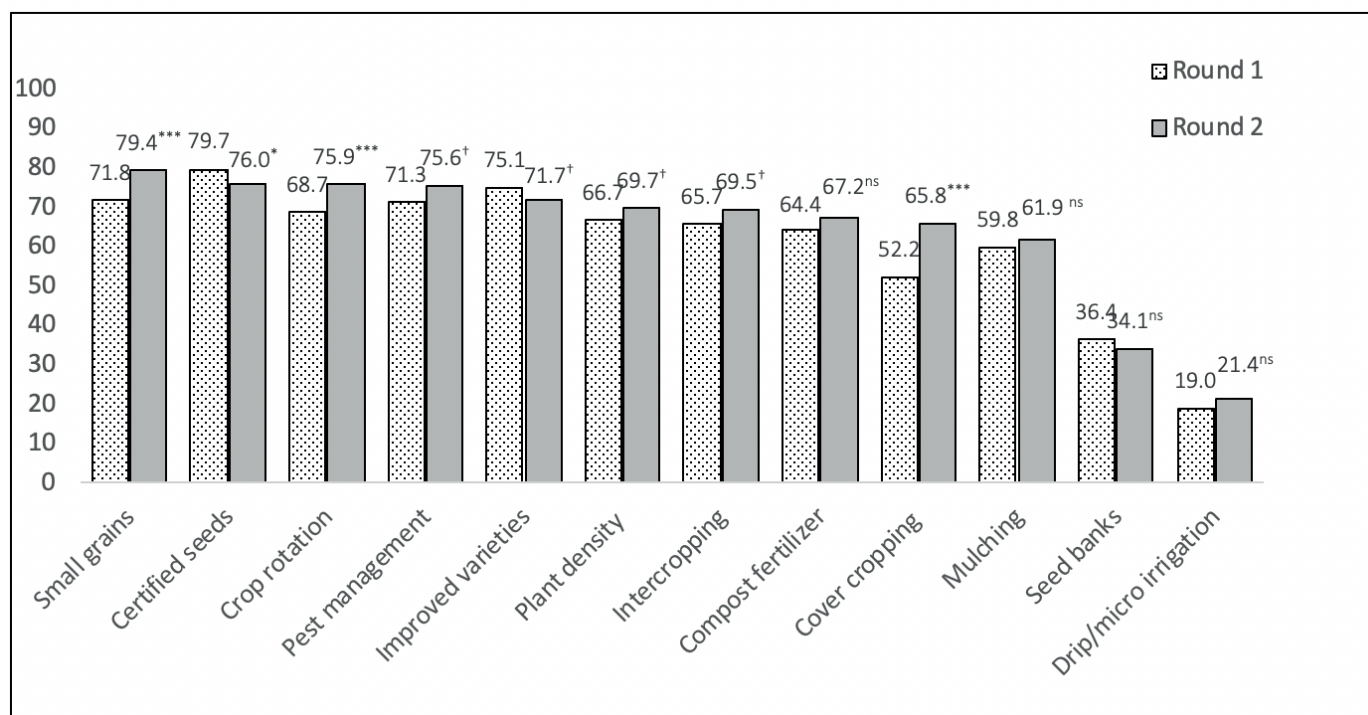
Farmers have benefited from ZRB activities by focusing on drought-resistant crops (millet, sorghum, wheat) (SIZIMELE). Seeds for small grain seeds are also provided by NGOs and government stakeholders who emphasize drought tolerant crops in order to minimize future food shortages (Binga District, ZVA). Short-season varieties have been promoted in order to mitigate the impact of limited rainfall (Kariba District, ZVA).

Figure 18: Percentage of Households Familiar with and Used CSA Practices, By Survey Round

a. Percentage of households *familiar* with CSA practices



b. Percentage of households that *used* CSA practices



ns = not significant, † p<0.1, * p<0.05, ** p<0.01, *** p<0.001

There was a significant increase in the number of households practicing at least one Value-Chain (VC) technique (see Table 18 above). Households engaged in at least one VC practice rose from 58.8 percent overall in OMS1 to 70.3 percent in OMS2. The proportion of high-intensity households (83.4 percent) who practiced at least one VC practice was above the overall average in round 2, while low-intensity (50.9 percent) households were below the overall average and stayed relatively the same from round 1 (48.2 percent). The proportion of BRACT beneficiary households practicing at least one VC practice nearly doubled from 45.8 percent in OMS1 to 89.6 percent in OMS2. The overwhelming majority (94.8 percent) of ECRIMS beneficiaries reported using at least one VC practice in round 2, which is an increase of 18.7 percent from round 1. Similarly, ZVA beneficiaries using at least one VC practice nearly doubled from 35.9 percent in round 1 to 63.6 percent in round 2. The overall average number of VC practices per beneficiary household also increased from 1.7 practices in round 1 to 2.3 practices in round 2.

Figure 19 shows the percentage of households who were familiar with and used VC practices by survey round. The top three overall value-chain practices that beneficiary households were familiar with in round 2 were drying, packaging, and storage (76 percent), receiving market information from an official source (72.2 percent), and improved quality control (69.1 percent) (panel a). Increases in awareness were reported across all VC practices over the two rounds. The largest increases were reported in storing harvest in bags with chemicals, temperature and humidity control of post-harvest storage, and receiving marketing information from official. The top three VC practices beneficiary households used the most included drying, packaging, and storage (55.4 percent), inputs from agro-dealers (54.6 percent), and storing harvest in bags with chemicals (44.4 percent) (panel b). While many respondents were familiar with storing post-harvest crops in bags with chemicals (62.1 percent), receiving market information (72.2 percent) and formal market systems, they reported lower utilization of these practices in round 2 (44.4, 39.5, and 31.6 percent, respectively).

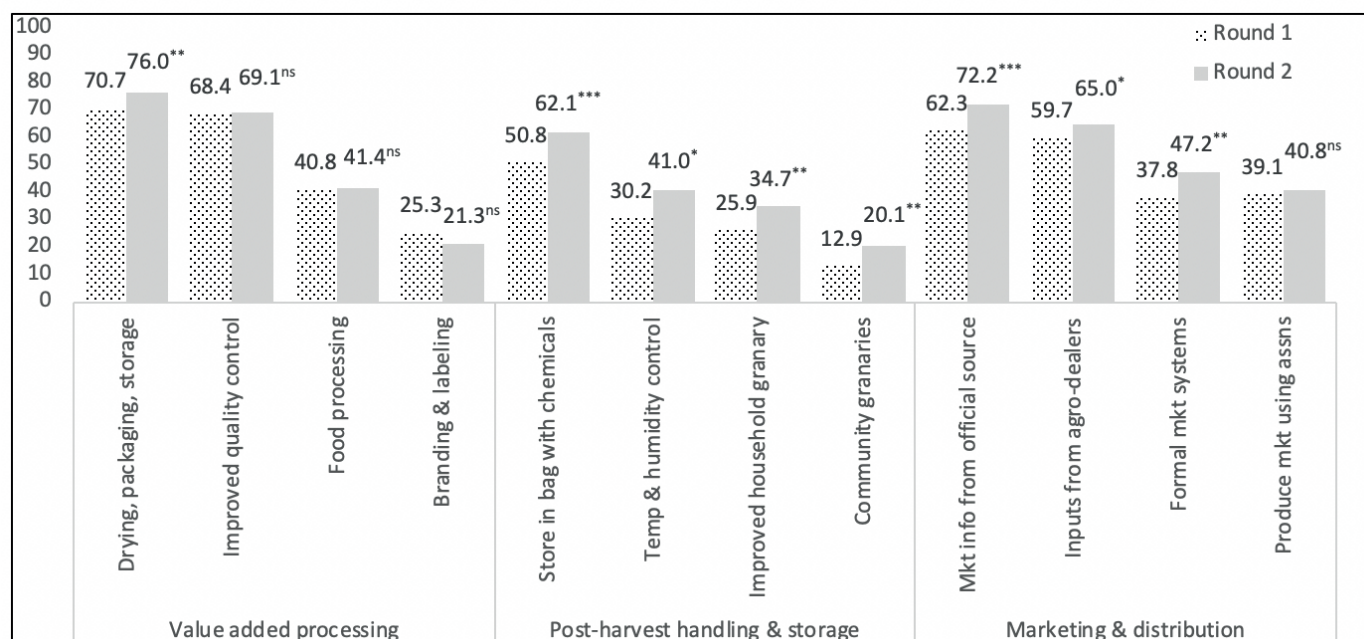
Qualitative data suggests that VC practices were supported by the business Development Office (Matobo District, SIZIMELE). Small and medium enterprises were assisted by helping them reach markets and by encouraging farmers to diversify throughout the year to maintain an income stream throughout the year. Farmers were also encouraged to work in groups to meet market targets. Farmers receive information on pricing patterns to better equip them to price their products for sale. In Matobo District, male FGD respondents



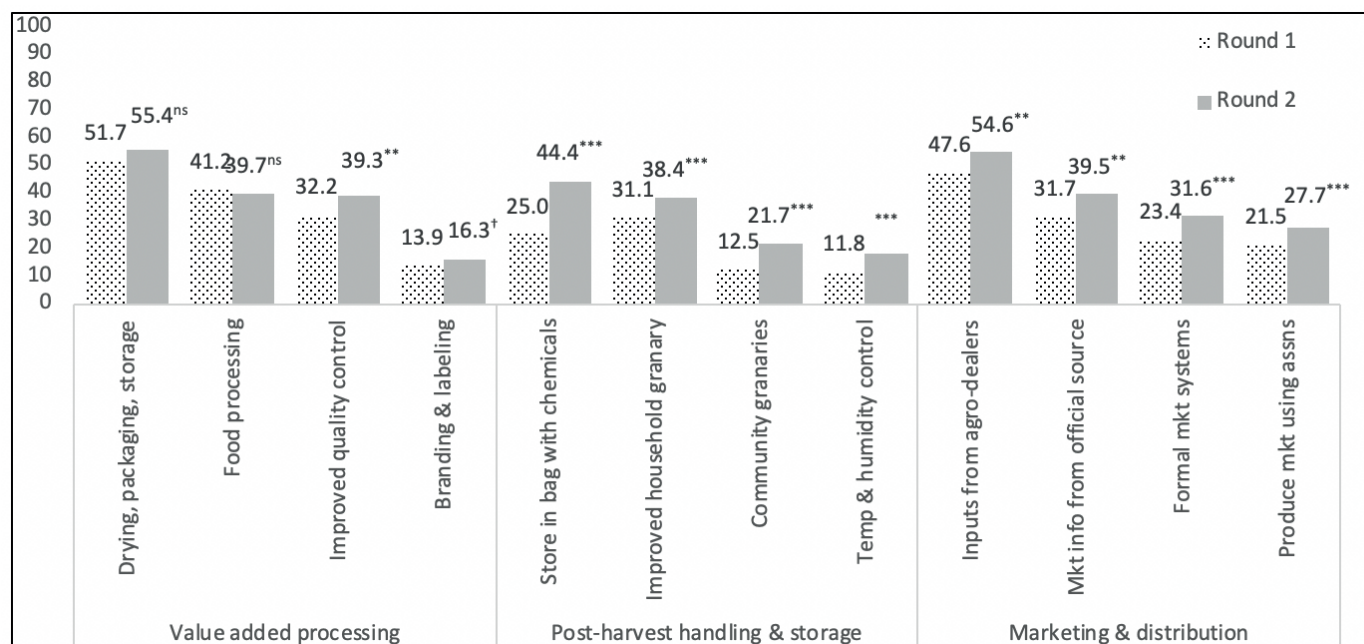
indicated that they plan to establish a butchery in order to process the animals they have been fattening to sell directly to the public; they have now secured a plot of land in a nearby business centre (SIZIMELE).

Figure 19: Percentage of Households Familiar with Value-Chain Practices and Used Any in the Past 12 Months, by Survey Round

a. Percentage of households *familiar* with value-chain practices



b. Percentage of households that *used* value-chain practices



ns = not significant, † p<0.1, * p<0.05, ** p<0.01, *** p<0.001

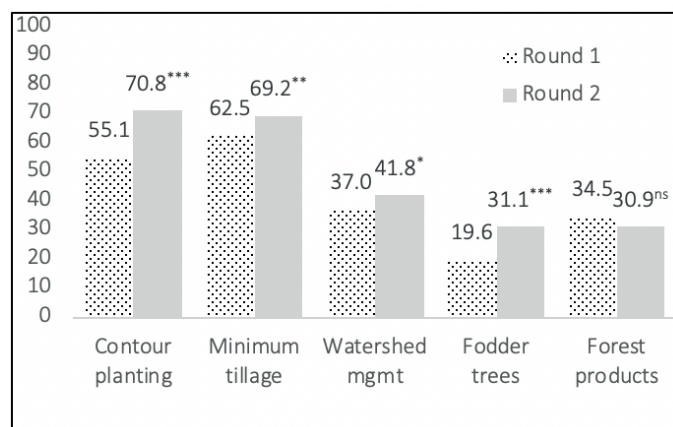
Figure 20 provides information about awareness and use of practice of water and soil conservations techniques across the two survey rounds. Awareness of all techniques increased in round 2 except for forest projects which exhibited no significant change. With respect to use of practice of improved conservation practices, contour planting, minimum tillage, and watershed management practices have increased in round 2, while fodder trees have recorded a significant decrease from round 1 to round 2.



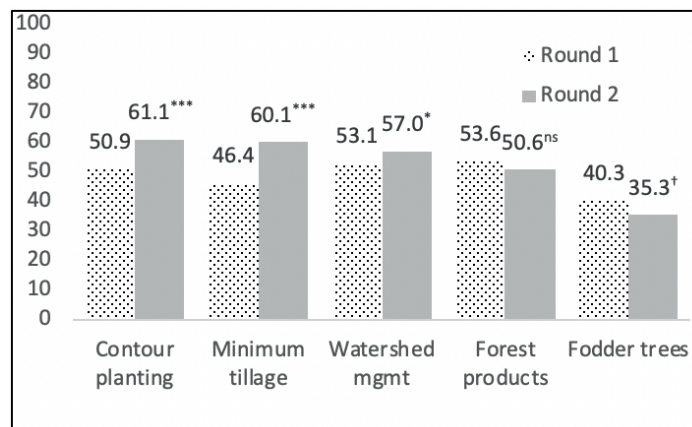
From qualitative interviews, respondents reported that climate change events have caused water levels to change, forcing households to walk longer distances for water used for both livestock as well as human consumption (SIZIMELE). The lack of access to protected water sources and water for livestock remains a systemic constraint in some areas for all districts (ZVA). Beneficiaries in MELANA highlight the breakdown of boreholes as an issue affecting access to water to both livestock and households. The poor economic outlook in the area means that households cannot afford to purchase spare parts to repair the boreholes.

Figure 20: Percentage of Households Familiar with and Used Water and Soil Conservation Techniques, By Survey Round

a. Percentage of households familiar with water and soil conservation techniques



b. Percentage of households that used water and soil conservation techniques



ns = not significant, † p<0.1, * p<0.05, ** p<0.01, *** p<0.001

G. HOUSEHOLD RESILIENCE CAPACITY

The objectives and activities of the ZRBF project are to contribute to building resilience capacities of project communities and households in order to aid in the recovery from shocks/stresses and for improved well-being and sustainable development. This section presents results from the absorptive, adaptive, and transformative resilience capacity index (RCI) scores overall and across the ZRBF beneficiary categories. The overall RCI is computed independently from the absorptive, adaptive and transformative indices. Note that the absorptive and adaptive capacity indices share components (livestock and productive assets) and the adaptive and transformative capacity indices share components (bridging and linking social capital). A separate principal components analysis (PCA) computed each index¹⁸.

Table 19 presents the data across the three types of resilience capacities and the overall resilience capacity index. The data show that overall, there have been increases across all three resilience capacity indices over time for the total sample. Additional tests of statistical significance not reported in the table show that high-intensity households had higher scores on all capacity indices at endline. The beneficiaries in high-intensity households reported greater absorptive capacity, adaptive capacity, and transformative capacity indices compared to medium-intensity households in round 2. The overall resilience capacity index has also had an increase from 38.4 in round 1 to 42.2 in round 2. High-intensity households experienced a significant increase from 46.5 to 47.1 while medium-intensity households showed no change across the rounds.

¹⁸ Table 3 in Annex 6 (Deep dive analysis) shows the components of each capacity and their scores or weights used to compute the resilience capacity index.



Table 19: Resilience Capacity Indexes, By Program Intensity and Survey Round

| Resilience Capacity | Total Sample | | | Programming Intensity | | | | | |
|----------------------------------|--------------|---------|------|-----------------------|---------|------|---------|---------|------|
| | | | | High | | | Medium | | |
| | Round 1 | Round 2 | Sig. | Round 1 | Round 2 | Sig. | Round 1 | Round 2 | Sig. |
| Absorptive capacity index | 30.7 | 32.9 | *** | 36.9 | 38.0 | † | 25.7 | 25.3 | ns |
| Adaptive capacity index | 33.6 | 36.1 | *** | 39.1 | 41.9 | *** | 29.3 | 27.6 | * |
| Transformative capacity index | 50.3 | 54.9 | *** | 57.8 | 61.2 | *** | 44.4 | 45.5 | ns |
| Resilience capacity index | 38.4 | 42.2 | *** | 46.5 | 49.1 | *** | 32.1 | 32.1 | ns |
| <i>n (weighted)</i> | 4096 | 4096 | | 1802 | 2498 | | 2294 | 1686 | |
| <i>n (unweighted)</i> | 3353 | 3353 | | 1715 | 2223 | | 1638 | 1130 | |

ns = not significant, † p<0.1, * p<0.05, ** p<0.01, *** p<0.001

Whereas Table 19 reports the mean value of the resilience capacity index scores (ranging from 0 to 100) across the sampled households, Table 20 reports the percent of household that experienced a change in their capacity score from round 1 to round 2. Households were identified as having experienced no change if the computed change fell within range of the 95% confidence interval (CI) of the indicator in round 1, increased if the observed change was larger than the upper value of the 95% CI and decreased if the change was less than the lower value of the 95% CI. Overall, over 55 percent of households experienced an increase in resilience capacity, compared with approximately 40 percent reporting a decrease. A significantly higher percentage of households in the high-intensity category experienced an increase in resilience capacity compared to those in the medium-intensity category. A multi-variate analysis showed that households more likely to have a decrease in resilience capacity are female headed, lower ZRBF program participation, exposure to more shocks, and lower asset levels. Qualitative data demonstrates that households interviewed during OMS2 faced a number of shocks and stresses. Economic instability, disruptive shocks, and climate-related events forced households to draw upon their resilience capacities to work towards a resilience pathway. Households responded by shifting towards their most immediate needs. Beneficiaries, for instance, report relying on negative strategies, such as changing food consumption patterns or removing children from school, in order to cope. While these actions are necessary, they may push households to fall further down a vulnerable pathway and may leave them with a decreased ability to cope for other shocks, perhaps explaining the decrease in resilience capacities.

FGD and KI data also suggests that beneficiaries highly value ZRBF interventions and make use of the multitude of activities ZRBF promotes to be able to build their resilience capacities. This may suggest that households receiving high programming intensity have been able to minimize the decrease in resilience capacities from one round to the next.

Table 20: Percent of households by change in resilience capacity Index from OMS1 to OMS2

| Change in Resilience Capacity | Total Sample | Programming Intensity | | |
|-------------------------------|--------------|-----------------------|--------|------|
| | | High | Medium | Sig. |
| Increased | 55.3 | 63.5 | 43.0 | *** |
| No change | 5.6 | 5.3 | 6.0 | |
| Decreased | 39.2 | 31.2 | 51.0 | *** |
| <i>n (weighted)</i> | 4184 | 2498 | 1686 | |
| <i>n (unweighted)</i> | 3353 | 2223 | 1130 | |

ns = not significant, † p<0.1, * p<0.05, ** p<0.01, *** p<0.001



I. Absorptive Resilience Capacity

Absorptive capacity is the ability to minimize exposure to future shocks and stresses where possible and to recover quickly when exposed (ex post). 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.

- 1. Access to informal safety nets:** This is the total number of community organizations (groups) that are active in the beneficiary household's community who provided safety nets to the households in general. Information was collected for 14 ZRBF supported community groups that are active in the communities. To compute the access score, each of the 14 groups were assigned with a score of "1" if the individual group was active in the community, otherwise a score of "0" was given, if the group was not active within the community. The sum of the scores for all 14 community groups comprises the total score for the "Access to informal Safety nets," which ranges from 0 to 14.
- 2. Bonding social capital score:** This variable is based on responses from two questions: 1) one asking whether the household would ask for help from people (e.g., relatives, non-relatives within groups and non-relatives of other groups) inside their community if they need money or food, and 2) Asking if they would help these same groups of people inside their community. This variable is an additive index ranging from 1 to 8 based on these responses.
- 3. HHs with any cash savings:** The binary variable was given a score of "1" if respondents reported that any household members currently have cash savings, otherwise they were given a score of "0."
- 4. Access to remittances:** This binary variable was given a score of "1" if respondents reported that the household received remittances regularly or irregularly from somewhere else in Zimbabwe or from abroad, otherwise a score of "0" was given.
- 5. Access to humanitarian assistance:** The binary variable was given a score of "1" if respondents reported the household received any assistance from the government or from NGOs in the past 12 months, otherwise a score of "0" was given if they had not.
- 6. Productive assets:** This score was constructed from 25 productive assets. Each was assigned a score of "1" if the household owned the asset at the time of the interview, otherwise a score of "0" was given if they did not. The sum of all 25 individual scores comprises the asset ownership score, which ranges from 0 to 24 in round 1 and 0 to 22 in round 2.
- 7. Livestock assets.** This measure was revised from the count of livestock used in round 1. It is computed as the total number of each of 7 types of livestock (oxen, cattle, goats and sheep, donkeys, pigs, rabbits and poultry) multiplied by district level median prices for that type of livestock. For livestock types with fewer than 10 households per district with valid price data, the indices were equal to overall median prices. Price information collected in round 1 were used to compute medians. Price indices were validated using information from FNC ZimVAC surveys (2014, 2016 and 2018) and FAO. 2011. Guidelines for the preparation of livestock sector reviews. Animal Production and Health Guidelines. No. 5. Rome. The index was computed by scaling the log-value of livestock assets from 0 to 100.
- 8. Shock preparedness and mitigation:** This summary variable ranges from 0 to 3, summing the positive answers of three questions: 1) Does the community have programs to help HHs with emergency food/cash assistance when exposed to the shock; 2) Does the community have an active disaster risk response/management or civil protection committee? and 3) Does the community have a community action adaptation planning/resilience committee?

The following are the seven components that were used to compute the absorptive capacity index:

Table 21 shows the average value of the absorptive capacity index and the eight component indices ranging from 0 to 100 by ZRBF program intensity and survey round. As can be seen in the table, absorptive capacity increased in the overall sample, and for households in the high-intensity programming category, but not in the medium-intensity category. In the overall sample, a number of components also exhibited significant increases: access to ISN, bonding social capital, access to savings, access to humanitarian assistance, and shock preparedness. All these components can be considered as expected results from ZRBF resilience programming interventions. The components that increased over the two rounds in the high-intensity group are: bonding social capital, access to savings, livestock assets, all of which are expected outcomes associated with resilience programming interventions, and access to remittances. Livestock assets actually decreased for the medium-intensity group, while access to humanitarian assistance increased.



Beneficiaries in the BRAC Consortium improved their absorptive capacity index by 10 points from 25.1 in OMS1 to 35 in OMS2, and ECRIMS, SIZIMELE and ZVA also had statistically significant increases (Annex 9, Table 21b). The PROGRESS Consortium had a decline in absorptive capacity index over time from 34.1 in OMS1 to 30.6 in OMS2.

Bonding social capital. ZRBF contributes to bonding social capital by investing in the revival of ISAL groups in the communities. While these types of savings groups may not be new to the districts, a KI in Nkayi District highlights that prior to the inception of ZRBF, these groups had been considered collapsed. The KI notes that the community appreciates that ZRBF has reinvigorated these groups mechanisms (CKII Nkayi, MELANA). These groups are recognized for the space that members have to network, beyond being able to invest in their livelihoods, and as such, they are an important source of social cohesion among members of the same community.

While the functional aspects of savings groups are important, members appreciate the opportunity to meet with others and offer support to each other. As women tend to dominate ISAL membership, the research team notes that ZRBF's contribution in reinvigorating these groups is improving social cohesion among women. Qualitative data indicates that members work together to build consensus during ISAL meetings, which suggests that group dynamics are strengthened at the community-level for those members (FCFGD, Mwenezi, ECRAS).

Qualitative data also suggests that the presence of ISALs in the community has a way of improving relationships among those members of the group. In Nkayi District, there has been a reduction in late school fee payments among ISAL members. A KI highlights that while community members were previously taken to the village leader for prosecution for late school fee payments, that has decreased through the inception of ISALs in the community (CKII, Nkayi, MELANA). In the same community, ISAL members were able to pay for the school fees of a child with a disability as a way to give back to the community (CKII, Nkayi, MELANA). This suggests that the ISAL mechanism improves the dynamic among active participants but it may also improve relationships outside the group. However, in some areas, savings group members dropped out when the local currency kept losing its value; suggesting that economic volatility can play a role in group membership (FCFGD, Mwenezi, ECRAS). This has implications for the continuity of activities that support social capital within the context of an environment that faces ongoing instability.

It may be possible that bonding social capital is improving as ZRBF beneficiaries pass on information and knowledge to non-beneficiaries outside the community. In Mwenezi District, improvements in food security linked to improved VC practices led non-beneficiaries to sponsor themselves for silage pits (ECRAS).

Access to remittances. Remittances play an important source of income, especially for women and the elderly. Across Consortia, beneficiaries note that their relatives live outside the country either the entire year or part of the year and send remittances back home. This money is used to invest in livelihood activities. Women use this money as their contribution to savings groups or for productive assets for agriculture, horticulture, or small livestock. Remittances are typically sent to the more vulnerable members of the community as they may not have other sources of reliable income. In cases where remittances are not a source of income, those who may not have other safety nets may suffer the most. The lack of remittances in Mberengwa District, for instance, is a source of stress for households with older men and women who find it difficult to cope with rising food prices (ECRIMS). The research team finds, then that the reliance on remittances may not be a secure option as it is not necessarily guaranteed or stable.

Access to humanitarian assistance. Given the ongoing exposure to shocks and stresses across all programming areas, qualitative data shows that households continue to need humanitarian assistance, with some households relying on this assistance. Humanitarian assistance from the Government of Zimbabwe as well as from various NGOs through food and money is reported by beneficiaries across Consortia. According to data gathered during qualitative interviews, households rely on the government and on NGOs to provide assistance, particularly during the lean season. Beneficiaries mention receiving mealie meal, beans, cooking oil from Hope for Child in Christ, an NGO partnering with the WFP, in MELANA. In another area, a KI notes that assistance has created a "dependency syndrome," further noting that "widespread food distribution affects [the] motivation of people to contribute labor to ZVA productive infrastructure" (IKII, Kariba, ZVA). However, another KI notes that assistance to households does not affect their ability to engage in multiple livelihood options. A number of NGOs operate in the program area: WFP is mentioned as a source of food and cash





(ECRAS), food (SIZIMELE); ADRA provides maize, beans and cooking oil; Save the Children and WFP are present in ZVA; Action Aid provides assistance to select households on a monthly basis. Households who engage in livelihood activities report receiving grains and small livestock, but the elderly are specifically targeted for this type of support. In Nyanga, female-headed households, elderly women, and child-headed households receive mealie meal and cooking oil from WFP and maize from the government's Social Welfare program (CKII, Nyanga, PROGRESS). The research team finds that humanitarian assistance is providing a safety net to households who are most in need of it, and who are facing a particularly difficult circumstance.

The research team finds that ZBRF has implemented a number of activities under the crisis modifier mechanism. Qualitative data demonstrates that ZBRF's crisis modifier activities have been highly appreciated by beneficiaries. In Nkayi District, the community received stock feed distribution and livestock vaccinations as well as drilling and rehabilitation of boreholes (MELANA). In the ECRIMS area, ZBRF invested in repairing boreholes and supported in training community members to form a water point committee, whose role is to repair and maintain the borehole.

In the same area, under the crisis modifier mechanism, ZBRF provided a vehicle and fuel to be able to travel to boreholes to repair them (DFGD, Zvishavane, ECRIMS). Acaricides, provided under the crisis modifier, have provided much-needed assistance to battle tick-borne livestock disease which helped reduce livestock deaths (Umguza, MELANA). The crisis modifier activities have in turn benefited from the HFMS data – a sharp increase in cattle death, for instance became an alert on a tick infestation (Zvishavane, ECRIMS; Chiredzi, ECRAS). As these activities contribute to maintaining quality productive assets and mitigate water shortages, benefits can be expected to be lasting. In Nkayi District, ZBRF incorporated WASH activities through the crisis modifier mechanism by installing water infrastructure. These activities are monitored by the District Level Coordinator (IFGD, MELANA).

Productive assets. Table 21 shows that households in the medium intensity group reported fewer productive assets in round 2 than in round 1, scores on the productive asset index dropped from 30.3 to 28.0. These correspond to counts of assets (not included in table) showing that medium intensity households averaged 7.3 productive assets in round 1 dropping to 6.7 in round 2. However, information about sale of assets to buy food presented in Table 15 does not show a statistically significant difference between rounds in medium intensity households reporting selling productive assets in the past 30 days to buy food.

Livestock assets. Livestock asset index scores increased for high intensity households (62.1 to 63.5) and decreased for medium intensity households (55.4 to 51.0). More detailed analysis shows that 35.8 percent medium intensity household lost all of their cattle and sheep/goats between round 1 and round 2; 20.2 percent of high-intensity households reported similar losses. The decrease for medium intensity households is consistent with exposure to livestock death or disease (Table 6) and reported sale of livestock as a coping strategy in response to a shock. Table 15 shows that medium intensity households reported increases from round 1 to round 2 in sale of last female breeding livestock and sale of more animals than usual, both were used over the past 30 days as strategies to cope with food shortages. Table 13.3 provides information about use coping strategies over the past 12 months and shows an increase in livestock sales among medium intensity households in response to the top 5 shocks.

Shock preparedness and mitigation. Households in the programming area experience a number of shocks, such as sharp increases in the prices of productive assets and household goods, unpredictable climate-related events, and a number of downstream shocks, such as livestock disease and death and food insecurity. ZBRF contributes to building shock preparedness and mitigation through the combination of trainings aimed at beneficiaries, support of livestock, agriculture, and garden activities, revival of ISALs, and community asset building. Qualitative data demonstrates that KI and FGD respondents highlight the importance of DRR and CSA trainings that encourage preparedness that complement the use of drought tolerant crops which ZBRF is supporting. This integration of multiple activities that are addressing economic hardship while taking the harsh environment into account suggest that ZBRF is playing an important role in encouraging long-term shock preparedness and mitigation.



Table 21: Absorptive Capacity Index and Components, by Program Intensity and Survey Round

| Index (0-100) | Total Sample | | Programming Intensity | | | | | | |
|--------------------------------------|--------------|---------|-----------------------|---------|---------|---------|---------|------|------|
| | Round 1 | Round 2 | Sig. | High | | Medium | | | Sig. |
| | | | | Round 1 | Round 2 | Round 1 | Round 2 | | |
| Absorptive Capacity Index | 30.7 | 32.9 | *** | 36.9 | 38.0 | + | 25.7 | 25.3 | ns |
| Access to Informal Safety Nets (ISN) | 14.8 | 19.4 | *** | 28.0 | 28.4 | ns | 4.3 | 6.1 | ** |
| Bonding social capital | 47.7 | 50.1 | ** | 48.6 | 54.5 | ** | 46.8 | 43.6 | ns |
| Access to Savings | 13.3 | 17.4 | *** | 19.8 | 23.2 | + | 8.2 | 8.9 | ns |
| Access to remittances | 11.2 | 12.0 | Ns | 8.0 | 10.7 | * | 13.9 | 13.9 | ns |
| Productive Assets | 33.0 | 33.2 | ns | 36.4 | 36.7 | ns | 30.3 | 28.0 | *** |
| Livestock Assets | 58.4 | 58.5 | ns | 62.1 | 63.5 | + | 55.4 | 51.0 | *** |
| Access to humanitarian assistance | 86.7 | 91.1 | *** | 93.1 | 93.9 | ns | 81.9 | 86.9 | * |
| Shock preparedness | 18.9 | 21.7 | *** | 28.8 | 27.9 | ns | 11.3 | 12.5 | ns |
| n (weighted) | 4096 | 4184 | | 1802 | 2498 | | 2294 | 1686 | |
| n (unweighted) | 3353 | 3353 | | 1715 | 2223 | | 1638 | 1130 | |

ns = not significant, † p<0.1, * p<0.05, ** p<0.01, *** p<0.001

II. Adaptive Resilience 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. There are seven components of the adaptive capacity index computation, where “assets ownership” is common for both absorptive and adaptive capacity indices. The following are the six other components that were used to compute the adaptive capacity index:

- 1. Bridging social capital score:** This is based on responses from two questions: 1) One asking whether the HH would ask for help from people (e.g., relatives, non-relatives within the community, and non-relatives of other groups outside of their community) if they needed money or food, and 2) Asking if they would help those same people outside of their community. This score is an additive index, ranging from 1-8 based on responses to these two questions.
- 2. Linking social capital score:** Based on responses to whether any HH members knows a government official and/or any NGO member and whether they believe the acquainted person would help them, if needed. The index ranges from 1-6.
- 3. Human capital:** This binary variable is equal to “1” if any HH adult (aged 18 years or older) has completed primary school or has a higher-level education.
- 4. Livelihood diversification:** This summary variable ranges from 1-24 depending on how many livelihood activities or cash sources the households was engaged in during the past 12 months.
- 5. Access to financial services:** Ranges from 0-2. A value of “0” is given when there is no institution in the household’s community who provides either credit or savings support, and a value of “1” is given when only one of these two institutions exists within the community, and a value of “2” is given when both institutions exist within the community.
- 6. Exposure to information:** This is the total number of 16 topics about which the respondent received information in the past 12 months. Thus, the variable ranges from 1-16.



Table 22 shows the overall average adaptive capacity index and the average indices of the eight components by program intensity and survey round. Adaptive capacity increased in the overall sample and in the high-intensity category by approximately seven percent but decreased in the medium-intensity category. Components that had a significant increase were bridging and linking social capital, human capital, access to financial services, and access to information. Livelihood diversification increased in the high-intensity group but declined in the medium-intensity groups.

Bridging social capital. Qualitative data suggests that household members who receive remittances from relatives living in other communities or abroad highly value that support. That source of income becomes a start-up fund for some households, either for savings groups or livelihood activities, suggesting that it is a valuable source of support. Households which do not have relatives abroad and do not receive remittances remark on the lack of that particular support (FCFGD, Mwenezi, ECRAS).

ZRBF is also contributing to increasing bridging social capital through the capacity-building of non-beneficiaries. In the BRACK area, male FGD respondents note that they have gained sufficient knowledge from ZRBF to give them the capacity to provide support to non-beneficiaries outside the program. These FGD respondents mention that they are able to provide seeds as well as demonstrate best practices to help those farmers cope and adapt to the shocks and stresses of the area (MCFGD, Mudzi, BRACK). In another area, beneficiaries have established a group called *Ikusasa lethu*; a group which has members from multiple wards. The group is able to procure livestock medication so that group members are more proactive in treating their livestock, rather than waiting for an outside veterinarian (IFGD, Nkayi, MELANA).

Linking social capital. ZRBF strengthens the social fabric in the programming area by improving the capacity of institutional stakeholders and the relationships of those stakeholders with the community. Data from a male FGD suggests that while district-level stakeholders may not be readily accessible to households, ZRBF is working on improving these links between communities and government stakeholders (Beitbridge District, PROGRESS).

ZRBF has, for instance, contributed to improving the relationships between Government of Zimbabwe extension officers and community members where the project operates. In one area, a KI highlights that the relationship between officers from the Department of Veterinary Services and AGRITEX officers and the members of the community has improved as a result of ZRBF involvement. The community is now able to receive more technical advice as well as more services from the extension officers, citing that they now communicate directly with extension officers whenever the need arises (CKII, Nkayi, MELANA). One AGRITEX Officer highlights that her contact with farmers in the area has become more frequent thanks to the logistical support, transport, and workshops organized with ZRBF (CKII, Umguza, MELANA). ZRBF has also contributed in linking households to government stakeholders such as district administrators, councillors, and even traditional leaders. In Nyanga, a KI notes that the community has been trained on how to engage with these actors to improve their livelihood activities (CKII, PROGRESS).

ZRBF supports a number of government stakeholders through capacity-building activities aimed at government stakeholders at different levels. In one area, for instance, through ZRBF's Enhanced Community Resilience Inclusive Market Systems support, ZRBF works with stakeholders involved in the economic development and environmental sustainability of the communities, as well as those departments tasked with supporting women and youth. Qualitative data indicates that ZRBF's contribution has had a "significant impact" on the district as it has facilitated community development (DFGS, Zvishavane, ECRIMS).

A number of other stakeholders play a role in the linking capital of the communities in which ZRBF operates. The Community Resilience Champion plays a role as the "entry point to the community" and is a focal person for MELANA (CKII, Nkayi, MELANA). Ward leaders provide a link between the development activities of the community and the wider community, including with the traditional leaders, in order to enhance the wellbeing of the households in the area (CKII, Nyanga, PROGRESS). Another example of ZRBF contributing to stronger linking social capital is through the introduction of activities that bring the community closer together to the village leadership. In Nkayi, the diptank rehabilitation project encouraged the village head to bring the community together for the construction of the diptank (IFGD, MELANA). KIs in the same district note that the dipping activity has been very appreciated in the community as households have seen a decrease in livestock death. This information suggests that through the dip tank and dipping activities, ZRBF is supporting the social cohesion.



These examples highlight the importance of ZRBF in strengthening the social capital in the programming area. The research team finds that these connections are crucial, especially given that many households are located in remote regions where they may have limited access to formal services. By empowering government stakeholders at multiple levels and by facilitating support on livelihoods, ZRBF is also indirectly improving community relationships.

Human capital, measured as adult education, plays an important role in livelihood activities. In Zvishavane, qualitative data shows that differences in education affect whether certain people could understand poultry disease calendars. As women rely on poultry activities as a primary source of income, this negatively contributes to the impact on children's school fees, food purchases, and other household purchases (ECRIMS). ZRBF has supported the human capital of adults through the number of trainings, exchange visits, demonstration plots on livelihood activities and DRR, resilience and NRM related practices.

Livelihood diversification. Households often engage in multiple activities in order to face ongoing stresses and shocks, such as market volatility and climate change events. Households diversify their livelihoods mainly as a coping strategy to deal with uncertainties (MFGD, Nkayi, Melana). ZRBF activities plays a role in supporting these efforts and encourages households to use multiple livelihood activities in order to accommodate for seasonal variation and asset availability. Qualitative data shows that while diversification may be limited to the context, such as access and availability of water, ZRBF promotes livelihood approaches that take these types of constraints into account, such as through the use of drought resistant crops. ZRBF also provides improvements to the infrastructure, such as boreholes and solarization panels, which addresses the underlying challenges that households face and which limit diversification options.

Access to financial services. Formal lending institutions are not common and households face a number of constraints. While the government's Women Affairs promoted the use of banking in the PROGRESS area, when attempting to obtain loans, women in one FGD reported that they were told they needed to have a deposit in their account. As they were not able to meet this requirement, most of the women interviewed during one FGD were not able to access a loan (FCFGD, Beitbridge).

Most farmers lack collateral so are unable to access loans. Instead, some farmers access loans directly through private entities. In Umguza District, farmers some are as contract farmers with Ubuntu foods, who provide produce and seeds to farmers at a reduced cost (CKII, Umguza, Melana) A Lead Farmer in Mutoko, however, notes that there are no formal financial institutions which can offer loans in their community (BRCT). In the Mudzi District, another Lead Farmer notes that their community does not have any financial services outside the ISAL interventions (BRCT). In one area in ZVA, community members need to travel more than 200km to reach a formal banking institution; difficulty in affording transportation means access is quite limited (Kariba District). According to qualitative data, households rely on savings groups, such as ISALs, which play an important role. Membership tends to be primarily women (ZVA, ECRIMS), although in some areas FGD respondents indicate that men also participate in ISALs (BRCT). In some areas, men participate in other groups, such as burial societies and relief grazing schemes, in which they can pool money for difficult times (MELANA). Savings groups choose to keep savings in the form of assets or in foreign currencies as a way to maintain their value. However, female FGD respondents note that when both the husband and wife are involved in ISALs, the returns tend to be higher (Matobo District, SIZIMELE).

Exposure to information. Qualitative interviews conducted with KIs and FGD participants indicate that households receive early warning information from AGRITEX officers, although the radio, mobile phones, and traditional methods of weather forecasting are also cited. A power kiosk in one area is available to link farmers to information, but it is currently not receiving power (ZVA). In SIZIMELE, farmers also obtain information from AGRITEX officers on weather forecasts, facilitating their decision-making on the types of crops to plant and the timing of planting. Women in the PROGRESS area note that they obtain information in community meetings that has been passed down from AGRITEX officers. They also note that the village leader who attends district-level meetings, passes information to households in the area.

The research team finds that ZRBF strengthens information ways between households in the programming area and those experts in agriculture and livestock through trainings and by strengthening social capital. FGD respondents highlight that ECRAS participation helped them manage multiple economic activities in a way that gave them better decision-making and helped ensure their income during drought conditions and during lean seasons. FGD respondents indicated that the information they received on the combination of poultry feed/small grain, vegetable production, and livestock manure, for instance helped them have multiple



livelihood activities during difficult times (ECRAS). Decisions made, especially for what to grow and when to grow it, is based on the information relayed to beneficiaries about the weather forecast for that particular year by the AGRITEX Officers, who in turn are receiving support to reach households. Given that ZRBF makes the seeds available and guides households on best agriculture practices through demo gardens, this is an example of ZBRF contributing to improved information being relayed to communities. (SIZIMELE).

However, constraints on information exchange around electricity and internet issues are also noted. Unreliable power, such as widespread daily electricity outages, is a prevalent stress across all districts in ZVA. Youth in ECRIMS face a major stressor with the lack of internet connections in the area. In MELANA, mobile money transactions are deemed impossible, which is a burden for households engaging in certain livelihoods. One AGRITEX officer notes that the coordination meetings held with ZRBF stakeholders were appreciated as they could plan activities and share information to farmers in a coordinated effort; while these meetings are not occurring, the relationship with ZVA stakeholders has been positive (Kariba, ZVA).

Qualitative findings indicate that ISAL members are also able to meet to share information. Since women make up a large number of members, this is an important note to make, as savings groups allow women the space to exchange information with other women. (CKII, Nkayi, MELANA). o. Women attend community meetings where they receive information on weather forecast. The village head also provides information from the meetings he attends at the district level. (FCFGD, Beitbridge, PROGRESS)

According to qualitative data, High Frequency Monitoring System (HFMS) data has been useful for farmers, as extension officers have been able to provide data such as date of field days, vaccination programs, early warning of disease outbreaks. ZRBF has improved the ability of officers from the Department of Veterinary Services to understand and use the HFMS bulleting, and has allowed these officers to be able to follow climate events such as rainfall patterns across their districts. (CKII, Mudzi, BRAC). Given that BRAC has faced unstable rainfall patterns and a shortage of water, this type of support is essential for long-term sustainability. In other areas, HFMS data has empowered local government officials who now have data at the district level. ZRBF has also provided telephones to be able to facilitate communication for early detection and disaster preparedness (IFGD, Nkayi, MELANA). HFMS data has strengthened the ability of government stakeholders to detect disease as the information is now easily understood, thereby increasing the likelihood that pests can be detected earlier. However, the HFMS tool does not have as much flexibility to let the user provide richer detail. If template, for instance, does not allow input that may explain why livestock needs to be transported long distances or why boreholes are not able to be constructed in some areas. IFGD data also indicates that despite having a greater capacity to monitor district-level data, national-level approvals to act are still needed (IFGD, Nkayi, MELANA). Although in some cases, government stakeholders who are involved in VC practices are not familiar with HFMS bulletins or data (SIZIMELE). The qualitative data suggests that not all government stakeholders are aware of the HFMS reports (ECRIMS), suggesting that awareness of this data source may need to be reinforced. Overall, though, the research team finds that ZRBF contributes to improving government officers' ability to process climate information is likely to lead to longer term payoffs at the district-level across the community.



Table 22: Adaptive Capacity Index and Components, by Program Intensity and Survey Round

| Index (0-100) | Total Sample | | Sig. | Programming Intensity | | | | | |
|--------------------------------|--------------|-------------|------------|-----------------------|-------------|------------|-------------|-------------|----------|
| | | | | High | | | Medium | | |
| | Round 1 | Round 2 | | Round 1 | Round 2 | Sig. | Round 1 | Round 2 | Sig. |
| Adaptive Capacity Index | 33.7 | 36.1 | *** | 39.1 | 41.9 | *** | 29.3 | 27.6 | * |
| Productive assets | 33.0 | 33.2 | ns | 36.4 | 36.7 | ns | 30.3 | 28.0 | *** |
| Livestock assets | 58.4 | 58.5 | ns | 62.1 | 63.5 | + | 55.4 | 51.0 | *** |
| Bridging social capital | 34.3 | 37.5 | *** | 34.6 | 40.9 | *** | 33.8 | 32.6 | ns |
| Linking social capital | 27.1 | 37.1 | *** | 38.3 | 48.9 | *** | 17.8 | 19.7 | ns |
| Human capital | 92.2 | 94.6 | *** | 94.0 | 96.4 | ** | 90.8 | 91.9 | ns |
| Livelihood diversification | 25.7 | 25.1 | * | 27.2 | 28.0 | ns | 24.5 | 20.9 | *** |
| Access to financial services | 34.0 | 36.6 | † | 52.0 | 49.5 | ns | 20.0 | 17.4 | ns |
| Exposure to information | 42.8 | 50.0 | *** | 56.8 | 61.2 | ** | 31.3 | 33.4 | ns |
| <i>n (weighted)</i> | 4096 | 4184 | | 1802 | 2498 | | 2294 | 1686 | |
| <i>n (unweighted)</i> | 3353 | 3353 | | 1715 | 2223 | | 1638 | 1130 | |

ns = not significant, † p<0.1, * p<0.05, ** p<0.01, *** p<0.001

III. Transformative Resilience Capacity

Transformative capacity involves the governance mechanisms, policies/regulations, infrastructure, community networks, and formal and informal social protection mechanisms that constitute an enabling environment for systemic change. Both absorptive and adaptive capacities can be achieved within a relatively shorter term through the improvement of social capital, improved livelihood strategies and effective community-level planning to cope with shocks and stresses. Transformative capacity depends on system-level change that takes longer to achieve. The transformative capacity index was calculated using nine components, where bridging and linking social capital are common among both the adaptive and transformative capacity indices. The following are descriptions of the remaining nine components of the transformative capacity index:

- 1. Access to formal safety nets:** This binary variable is equal to "1" if respondents indicate that there are programs available in the community to help with food or income in response to shocks, and a value of "0" is given if they are not available.
- 2. Access to markets:** This variable ranges from 0 to 3. There are three types of markets selling agricultural products, purchasing agricultural inputs, and markets for livestock. Each market will get score "1" if they are located within 5 km of the community, and a score of "0" is given if they are more 5 km away.
- 3. Access to basic services:** This community-level variable is the total number of basic services available in the household's community and the variable ranges from 0-3. The value of "0" is given when there are no primary schools located within 5km, no health centers within 5km, and if there is no access to improve drinking water within the community. The score of "1" is given when one of the above-mentioned services are present in the community, and a score of "2" when any two of the three services are present in the community; and a score of "3" when all three of the services are present in the community.
- 4. Access to infrastructure:** This community-level variable is calculated for the total number of infrastructure services are available in the household's community and the range of the variable is from 0-4. A value of "0" is given when there is no electricity available, no cell phone services, no public telephones, and no tarred/paved roads available in the community. A score of "1" is given when one of the above-mentioned infrastructure services are present within the community, a score of "2" is given when any two of the four infrastructures are present, a score of "3" is given when any three of the four infrastructure services are present, and a score of "4" is given when all four infrastructure services are present.
- 5. Access to agricultural services:** This community-level variable is based on a binary variable where a score of "1" is given if a household reports that agricultural extension services are available in their community and the household has received agricultural extension services within the past 12 months and a score of "0" is given if they have not.
- 6. Gender norm:** There were 13 individual women decision-making power questions related to buying, selling, spending money and participation in groups. Each of the 13 categories was assigned a score of "1" if women indicated that they can make decisions alone or jointly with their husband/other male household members. This composite score ranges from 0-13.
- 7. Collective action:** This binary variable equals "1" if respondents indicate that people within the community had worked together for the benefit of the community in the past 12 months, and a score of "0" was given if they had not worked together to benefit the community.



Error! Reference source not found. shows the average transformative capacity index and indices for the nine components by program intensity and survey round. The overall average transformative capacity index increased by nine percent from round 1 to round 2. All components had significant increases over the rounds, except access to infrastructure and collective action, which decreased. The transformative capacity index increased by six percent for the high-intensity programming category and did not change for the medium-intensity group.

Access to agricultural services. The recurrent shocks and stresses that households face and their dependence on agricultural and livestock income generating activities means that agricultural services are in high demand. Interventions that support one livelihood activity can have an impact on multiple livelihoods such as acaricide/dipping mechanisms which lead to better draft power. Some constraints to exposure include being located in remote areas – AGRITEX officers travel long distances to reach some areas, making it difficult to cover a wide area (ECRAS). Similar constraints are found in ZVA areas where extension officers lack the necessary transportation to easily reach households; lodging in remote areas can also be an issue as officers must spend time overnight in remote areas. However, the research team finds that ZRBF has contributed greatly to bridging the gap between extension services and the communities in which ZRBF operates. The strengthened social capital suggests that household members benefit from greater interactions, information exchanges, and technical support from the institutional stakeholders who are being supported by ZRBF. This may have an impact on non-beneficiary households as the trainings and capacity building activities which support extension officers will also likely benefit households who have not directly received ZRBF support.

Access to formal safety nets. Qualitative data provides insight on various resilience capacities. For instance, formal safety nets are provided by the government's Ministry of Labour and Social Welfare to the elderly (Binga, ZVA). Governments provide assistance through food, cash, and agricultural inputs (seeds) from Social Welfare and Mwenezi Development Training Centre. School feeding programs administered by the government provide households with mealie meals (MELANA). School feeding helps families with children ensure their children are receiving sufficient meals, especially during drought (Matobo, SIZIMELE). In the same area, adults engage in Food for Work (FFW) activities to make ends meet, although the elderly are excluded from this work.

Agricultural extension officers are available and provide much-needed information to households, yet they face a number of obstacles. AGRITEX officers, for instance must travel long distances in some districts to be able to reach a community. Electricity, network, and power outages also affect the ability of extension officers to send information, as they are at times forced to look for clinics or schools to find coverage (Kariba, ZVA). The Department of Livestock and Veterinary Services also provides trainings related to livestock protection, along with ZRBF activities (Kariba, ZVA).

While households rely on these types of assistance, ZRBF does support households towards increased independence. The dipping model facilitated by ZRBF has encouraged households to more self-sufficient according to IFGD data. In Nkayi, farmers now rely less on government assistance as they have learned to contribute to the dipping sessions for their livestock based on the number of cattle they own (IFGD, MELANA).

Access to markets. According to quantitative data, ECRAS beneficiaries saw nearly a 50 percent increase in their access to markets index with a score of 31.4 in OMS1 to 45.8 in OMS2. One way in which ZRBF contributed to this improvement is by the connections to private companies, which purchase farmer's products such as meat. This enables farmers to have a more direct link to markets as well as better negotiating skills to sell their products. ZRBF has also encouraged a change in mindset that values the sale of household assets in order to improve wellbeing. IFGD data indicates that farmers were not previously accustomed to selling livestock as culturally, herders kept their animals as a status symbol for wealth (IFGD, Nkayi, MELANA).

Despite these findings, access to market continues to be a challenge for many communities. In Chiredzi District, the closest paved road is nearly 30km from a Lead Farmer who was interviewed during the qualitative component. According to the interviewee, this challenge forces some farmers to sell their grains at reduced rates as they are not readily able to access markets (ECRAS). Similar accounts are provided in other areas, as limited access to markets poses a serious challenge for many. In Lupane, livestock sales are challenging for households as they cannot easily access markets. In these cases, intermediaries are at an advantageous position as they can travel to the rural areas and transport livestock, though this leaves local households with a lowered income (SIZIMELE).



Access to basic services and infrastructure. Households in the programming area face a number of constraints in terms of access to health, education, and utility services. Communities do not always have ready access to health centres as they may be located far from some households. Drinking water shortages also affect communities and have an impact on vulnerable members of society, such as pregnant women and the elderly. The construction and the rehabilitation of boreholes that ZRBF has invested in as well as irrigation plans have helped address some of these constraints. ZRBF has also improved other sources of water. Piped water in the Umguza District, for instance, is now serving both household consumption and livestock use (CKII, MELANA)

The instability of electricity has led households to move away from certain livelihood practices. Female FGD respondents in Mutoko note that welding, which is primarily led by youth in the area, has been greatly affected by these power outages. Youth have been able to work during the night in order to adapt to this constraint (BRACT). Beneficiaries in ECRAS highlight that the lack of infrastructure and limited basic services has an impact on the community. Poor road conditions interfere with transportation and livelihood activities, for instance. In Chiredzi District where malaria is prevalent, the distance to health centres is an issue – households rely on community health workers who at times do not have the necessary medications (ECRAS).

Gender norms. According to data gathered during the qualitative interviews, decision making is being done by both men and women in terms of agricultural practices, with women even making some decisions on behalf of their husbands (SIZIMELE). In other areas, decision-making at intra-household level has improved because of gender trainings facilitated by ZRBF (ECRIMS). Gender trainings on cattle rearing and ownership, husbands and wives are discussing livelihood activities and making joint decisions which has resulted in greater success to male FGD participants (Mberengwa District, ECRIMS). These shifts are allowing women to hold leadership positions within the community as their opinions are now being heard in public spaces. In the ECRAS area, women are becoming more involved in cattle rearing as both men's and women's perceptions on gendered livestock practices changes through ZRBF gender trainings.

Women's participation in ISAL groups has also played an important role in their decision-making power. In some cases, women in ISAL's have seen improved decision-making on how they use money acquired through savings group and have noted a progressive sense of independence (PROGRESS). Since ISAL membership tends to be seen as an activity primarily for women, male members of the community are not always engaged in this activity.

Collective action. ZRBF has supported the collective actions within the communities in a number of ways. Groups supported by ZRBF have, for instance, seen a pooling of resources and allowed members to more easily purchase assets. In Nkayi District, for instance, a group of community members began pooling money when they established a ZRBF-supported ISAL. They then managed to purchase seven goats and received five more from ZRBF. Eventually they had 19 goats, and were able to sell five in order to pay for school fees. (CKII, Nkayi, MELANA).

In Mberengwa District, farmers pool their money and purchase inputs as a collective. Seeds are purchased in advance of future rainy seasons, which gives farmers a better guarantee of purchasing seeds (ECRIMS). In Chiredzi, a dip tank committee allows livestock herders to expand care to a larger number of animals; this has improved the way cattle is valued (BRACT). In the ECRIMS area, community members are organizing in order to replace old and dead trees with new indigenous trees. Livestock groups have been established in Nkayi District following ZRBF's support in providing livestock feed. (CKII, MELANA).

A number of committees and demonstration activities exist in the ZRBF areas where participants gain knowledge on health, livelihoods, and wellbeing and engage in collective actions. The demo plots, or Crop and Livestock Innovation Centre (CLICs), provide a good source of information for farmers working with crops and livestock. Participants learn about cattle breeding, goat breeding, poultry, gardening, and cash crops. However, although trainings at CLICs helped youth gain welding skills, there was not enough startup capital for them to implement their practice (Kariba, ZVA). Households obtain information on livelihoods through Ward Development Committees, which include village leaders and stakeholders from local health departments; members can learn about nutritional aspects of sorghum, for instance. Gardening committees and disaster risk reduction committees are additional sources of information for members. Youth groups in ZVA have been introduced by extension officers in order to support goat and indigenous chicken production (Kariba District).



The research team finds then that when present, collective action has positive effects on those involved, and that ZBRF facilitates these types of interactions within the community.

Table 23: Transformative Capacity Index and Components, by Program Intensity and Survey Round

| Index (0-100) | Total Sample | | | Programming Intensity | | | | | |
|--------------------------------------|--------------|-------------|------------|-----------------------|-------------|------------|-------------|-------------|-----------|
| | | | | High | | | Medium | | |
| | Round 1 | Round 2 | Sig. | Round 1 | Round 2 | Sig. | Round 1 | Round 2 | Sig. |
| Transformative Capacity Index | 50.3 | 54.9 | *** | 57.8 | 61.2 | *** | 44.4 | 45.5 | ns |
| Bridging social capital | 34.3 | 37.5 | *** | 34.6 | 40.9 | *** | 33.8 | 32.6 | ns |
| Linking Social Capital | 27.1 | 37.1 | *** | 38.3 | 48.9 | *** | 17.8 | 19.7 | ns |
| Access to agricultural services | 68.8 | 76.7 | *** | 85.4 | 90.0 | ** | 55.1 | 57.1 | ns |
| Access to formal safety nets | 69.7 | 79.5 | *** | 79.9 | 85.7 | *** | 61.6 | 70.3 | * |
| Access to markets | 30.5 | 32.1 | * | 31.3 | 33.2 | ns | 29.9 | 30.5 | ns |
| Access to basic services | 61.2 | 66.0 | *** | 65.1 | 68.4 | ** | 57.9 | 62.4 | ** |
| Access to infrastructure | 31.0 | 28.8 | *** | 32.3 | 30.9 | † | 29.8 | 25.6 | *** |
| Gender norm | 42.4 | 52.0 | *** | 47.3 | 54.2 | *** | 38.3 | 48.6 | *** |
| Collective action | 67.9 | 63.9 | *** | 78.6 | 71.5 | *** | 59.7 | 52.6 | *** |
| <i>n (weighted)</i> | 4096 | 4184 | | 1802 | 2498 | | 2294 | 1686 | |
| <i>n (unweighted)</i> | 3353 | 3353 | | 1715 | 2223 | | 1638 | 1130 | |

H. RESILIENCE: REGRESSION ANALYSIS

This section presents results from an exploratory analyses examining resilience capacities and their relationship to coping strategies, food security, expenditures and recovery from shocks. The purpose of this section is to combine the findings presented in this report and explain how capacities, shock severity and programming intensity and ZBRF indicators are all related. Equations use ZBRF indicators as outcomes to examine the effects of programming and resilience capacities on food security, expenditures and coping strategies in a shock-prone environment. Other equations look at the effects of shock exposure, resilience capacities and programming intensity on recovery from shocks, which is not a ZBRF indicator, but is an important, resilience outcome. All results in this section are summarized; complete output tables provided in Annex 10. Additionally, a deep dive analysis presented in Annex 6 looks at these relationships in more detail and in the context of resilience pathways.

Food security. Equations use three food security outcomes, two of which are ZBRF indicators. Moderate to severe FIES over the past 30 days, is equal to 1 if the probability of moderate to severe food insecurity score over the past 30 days was 0.5 or higher, and zero otherwise. Acceptable HDDS is a ZBRF indicator and corresponds to an HDDS of 4 or higher. Adequate food consumption is not a ZBRF indicator but uses information from the HDDS and provides weighted HDDS score. 'Adequate' FCS is a score of 35 or higher. All three food security outcomes worsened between OMS1 and OMS2. Food security equations are logit equations with fixed effects and include all households with valid data in OMS1 and OMS2.

Expenditures and income. These ZBRF indicators did not change significantly between survey rounds. Macroeconomic volatility due to cash shortages, high inflation, credit restrictions, multiple currencies and exchange rates make expenditure and income unstable. This means that it is difficult to know if changes, or lack thereof, in the indicators indicate changes in household well-being, or in the exchange and inflation rates used in the calculations. The estimation equations in this section converted household expenditures and income to per-capita to account for differences in household size. Per capita measures are preferable because some large





households have higher expenditures/income but when divided among all the members prove to be the least well off. The estimation equations used log-transformed values of per-capita income and expenditures to create normally distributed variables for Ordinary Least Squares regressions with fixed effects. Households with valid expenditure and income data in both survey rounds were included in these equations.

Coping strategies. The two coping strategies indices are: food-based coping strategies (CSI) using WFP calculation methods and livelihood-based coping strategy indices. Both of these worsened between OMS1 and OMS2. Tobit equations with fixed effects estimate coping strategies include all households with valid data in OMS1 and OMS2.

Recovery from shocks. Households are considered recovered and coded as 1 if they were exposed to a shock and recovered to the same or better than before, and not recovered are coded as zero if they did not recover or recovered but are worse off. Equations estimate recovery from food price shocks, drought and/or late rains, crop and/or livestock disease or livestock death. The latter two recovery variables combine information from two related shocks. Households exposed to both shocks were considered recovered if they recovered from both. Logit equations with fixed effects include all households reporting exposure to food price shocks, drought and/or late rains or crop and/or livestock shocks.

Explanatory variables. All equations use resilience capacity indices and resilience capacities as explanatory variables. The programming intensity variable is the same measure used in elsewhere in this report and is coded as 'high' for households participating in three or more programs and 'medium' for households with 0-2 programs. Mean program participation was 2.2 in OMS1 and 3.3 in OMS2.

The deep-dive analysis (**Annex 6**) looks at programming in more detail, categorizing programs into 7 types in order to compare program types and see how each type affects resilience capacities which, in turn, affect outcomes. Shock severity is computed as the sum of reported shocks (0 to 18 multiplied by each shock's impact on food and its impact on income. Impacts were scaled 1 to 3, where 1 = remained the same, 2 = slight decrease, 3 = severe decrease. This scale may not fully capture the impacts of the shocks, since most households reported the maximum value of 3 in both rounds. The shock severity variable ranged from (0 to 84). With a different scale and higher values, the shock severity variable would have a larger range. A survey round variable controls for all other effects related to time, including lean season dates.

Discussion in this section uses one example from each category of dependent variables: moderate to severe FIES, per capita monthly income and recovery from drought, CSI and/or late or variable rains. The first three outcomes were chosen because they are representative across the categories, and are illustrative because of the number of statistically significant variables. Recovery from drought and/or late or variable rains was chosen from the recovery equations because it was the most widespread shock, ZRBF programming explicitly targets drought and because recovery increased between survey rounds. Discussion includes selected results from the deep dive analysis as it relates to the effects programming on resilience capacities. For the deep dive programs were sorted into seven categories: community asset building, youth and gender, business support, value chain, crop and livestock, crisis modifier/humanitarian assistant and ISALs.

The tables summarizing result use colored arrows to indicate direction of change in the dependent variable and the statistical significance each coefficients. Green arrows and significance stars show that the change is in the desired direction; red arrows and stars show change in the opposite direction, indicating that the outcome became worse; "ns" denotes no statistical significance. Having separate equations for each resilience capacity index and then for each resilience capacity probably overestimates the contribution of each to the outcome. Variables measuring capacities are separated because they are highly correlated and if they are all included in one equation, few would be significant. Keeping in mind issues with multiple comparisons and spurious findings, discussion focuses on results that show up across multiple equations and have a relatively small p-value.

We expect that in the event of a shock, households with higher levels of resilience capacities will be better able to prepare for, respond to, and recover from shocks. As depicted in Figure 2, households with higher levels of resilience bounce back better and thus improve their well-being.

I. Program Participation and Resilience

Table 24 provides information about relationships between programming categories and resilience capacities



which useful for interpreting findings related to capacities. Results are from OLS equations and provide information about association between participation in specific programming categories and changes in capacities. All programming types are associated with increases in the overall resilience capacity index. Details in the table show that relationships vary among programming types. Crisis modifier/humanitarian assistance programming primarily affects absorptive capacity. Community asset building programs are associated with increases in components within absorptive and transformative capacities but not adaptive capacity. Gender and youth, business, value chain, crop and livestock programming and ISALs are associated with changes in all three capacity indices. ISALs are the only programming type that affects bonding social capital. All programming improves ISNs and nearly all (except crisis modifier/humanitarian assistance) improves access to information. None of the programming categories were associated with changes in human capital. This is probably because human capital, computed using formal education, did not change significantly in the one-year interval between the two rounds.

Table 24: Relationships between Programming Categories and Resilience Capacities, Summary Results

| Resilience capacities | Programming category | | | | | | |
|------------------------------|----------------------|----------------|----------|-------------|------------------|--------------------|-------|
| | Community asset | Gender & youth | Business | Value chain | Crop & livestock | Crisis modifier/HA | ISALs |
| Absorptive | ↑*** | ↑*** | ↑*** | ↑*** | ↑*** | ↑*** | ↑*** |
| ISN | ↑*** | ↑*** | ↑*** | ↑*** | ↑*** | ↑*** | ↑*** |
| Bonding social capital | ns | ns | ns | ns | ns | ns | ↑* |
| Access to savings | ns | ns | ↑*** | ns | ns | ns | ↑*** |
| Productive asset | ↑* | ns | ↑*** | ↑*** | ↑*** | ns | ↑*** |
| Humanitarian assistance | ↑*** | ns | ↑* | ns | ↑*** | ns | ns |
| Shock preparedness | ↑*** | ↑*** | ↑*** | ns | ns | ↑*** | ↑* |
| Livestock assets | ns | ns | ns | ns | ↑*** | ↑*** | ns |
| Adaptive | ns | ↑*** | ↑*** | ↑*** | ↑** | ns | ↑*** |
| Bridging social capital | ns | ns | ns | ns | ns | ns | ns |
| Linking social capital | ns | ↑*** | ↑*** | ↑*** | ns | ns | ↑* |
| Human capital | ns | ns | ns | ns | ns | ns | ns |
| Livelihood diversification | ns | ns | ↑** | ns | ns | ns | ns |
| Access to financial services | ns | ns | ↑* | ns | ns | ns | ↑*** |
| Transformative | ns | ↑* | ↑* | ↑*** | ↑*** | ns | ↑** |
| Exposure to information | ↑*** | ↑*** | ↑*** | ↑*** | ↑** | ns | ↑* |
| Agricultural extension | ↑*** | ns | ns | ↑** | ↑*** | ns | ns |
| Access to markets | ↓** | ns | ↑* | ns | ↑* | ↓* | ns |
| Access to services | ns | ↑* | ns | ↑* | ns | ns | ns |
| Access to infrastructure | ns | ns | ns | ns | ns | ns | ns |
| Gender norms | ns | ns | ns | ns | ↑* | ns | ↑*** |
| Collective action | ns | ns | ns | ns | ↑* | ns | ns |
| Resilience | ↑*** | ↑*** | ↑*** | ↑*** | ↑*** | ↑*** | ↑*** |

II. Food Security Outcomes and Resilience

Table 25 shows results from equations estimating the probability that a household experienced moderate to severe food insecurity in the past 30 days. (Note a negative coefficient is shown as green, showing that an increase in explanatory variable reduces (improves) the probability of experiencing hunger.) Each column in the table corresponds to a separate regression equation. The first column of results is for the equation with the absorptive capacity index as the main explanatory variable, the second column is for the equation with adaptive capacity as the main explanatory variable, and so forth. The bottom three rows show the effects of programming, shock intensity and survey round variable which were in all equations. Table 25 shows that higher levels of absorptive, adaptive and resilience capacity reduced the probability of moderate to severe FIES. Households that increased their program participation level between rounds had lower (improved) moderate



to severe FIES. Shock severity worked in the opposite direction. Increased shock severity increased moderate to severe food insecurity. The significance of the survey round, after accounting for shocks, programming and capacities suggests that survey timing and/or prolonged shock exposure may have impacted FIES scores.

Table 25: Resilience Capacity Indices and Moderate-to-Severe Food Insecurity, Summary Results

| | Probability of moderate to severe food insecurity (FIES) logit | | | |
|-------------------------------------|----------------------------------------------------------------|------|------|------|
| Resilience capacity indices (0-100) | | | | |
| Absorptive capacity | ↓*** | | | |
| Adaptive capacity | | ↓*** | | |
| Transformative capacity | | | ns | |
| Resilience capacity | | | | ↓*** |
| Program intensity | ↓** | ↓** | ↓*** | ↓** |
| Shock severity (0-84) | ↑*** | ↑*** | ↑*** | ↑*** |
| OMS 2 | ↑*** | ↑*** | ↑*** | ↑*** |

Table 26 shows results from equations estimating the effects of absorptive resilience capacity components on moderate to severe FIES. The results in Table 26, panel a) show that of the absorptive resilience capacities, savings, productive assets and livestock assets reduce the probability of moderate to severe FIES. Increases in ZRBF program participation also reduced moderate to severe FIES. Whereas, shock severity increased FIES. Table 26, panel b) shows that of adaptive capacities, linking social capital, livelihood diversification, access to financial services and exposure to information all reduce moderate to severe FIES. Note that linking social capital and financial services have a statistical significance of 0.05 which is low in the context of multiple comparisons. These equations also show that shifting to higher intensity programming improves FIES. They also show that shock exposure and survey round worsen FIES. Table 26, panel c) shows that of the transformative capacities, only access to basic services improves moderate to severe FIES. Shock intensity and survey round worsened FIES.

Table 26: Resilience Capacity Components and Moderate-to-Severe FIES, Summary Results

a. Absorptive capacity components and recovery, summary results

| | Moderate to severe food insecurity (FIES) logit | | | | | | |
|-------------------------------|-------------------------------------------------|------|------|------|------|------|------|
| Absorptive capacities (0-100) | | | | | | | |
| ISN | ns | | | | | | |
| Bonding social capital | | ns | | | | | |
| Access to savings | | | ↓*** | | | | |
| Humanitarian assistance | | | | ns | | | |
| Shock preparedness | | | | | ns | | |
| Productive assets | | | | | | ↓*** | |
| Livestock | | | | | | | ↓*** |
| Program intensity | ↓*** | ↓*** | ↓*** | ↓*** | ↓*** | ↓*** | ↓*** |
| Shock severity (0-84) | ↑*** | ↑*** | ↑*** | ↑*** | ↑*** | ↑*** | ↑*** |
| OMS 2 | ↑*** | ↑*** | ↑*** | ↑*** | ↑*** | ↑*** | ↑*** |



b. Adaptive capacity components and recovery (0-100)

| | Moderate to severe food insecurity (FIES) logit | | | | | |
|------------------------------|-------------------------------------------------|------|------|------|------|------|
| Adaptive capacities (0-100) | | | | | | |
| Bridging social capital | ns | | | | | |
| Linking social capital | | ↓* | | | | |
| Human capital | | | ns | | | |
| Livelihood diversity | | | | ↓*** | | |
| Access to financial services | | | | | ↓* | |
| Exposure to information | | | | | | ↓*** |
| Program intensity | ↓*** | ↓*** | ↓*** | ↓*** | ↓*** | ↓*** |
| Shock severity (0-84) | ↑*** | ↑*** | ↑*** | ↑*** | ↑*** | ↑*** |
| OMS 2 | ↑*** | ↑*** | ↑*** | ↑*** | ↑*** | ↑*** |

c. Transformative capacity components and recovery, summary results

| | Moderate to severe food insecurity (FIES) logit | | | | | | |
|-----------------------------------|-------------------------------------------------|------|------|------|------|------|------|
| Transformative capacities (0-100) | | | | | | | |
| Formal Safety Nets (FSN) | ns | | | | | | |
| Access to agriculture extension | | ns | | | | | |
| Access to markets | | | ns | | | | |
| Access to infrastructure | | | | ns | | | |
| Access to basic services | | | | | ↓** | | |
| Gender norms | | | | | | ns | |
| Collective action | | | | | | | ns |
| Program intensity | ↓*** | ↓*** | ↓*** | ↓*** | ↓*** | ↓*** | ↓*** |
| Shock severity (0-84) | ↑*** | ↑*** | ↑*** | ↑*** | ↑*** | ↑*** | ↑*** |
| OMS 2 | ↑*** | ↑*** | ↑*** | ↑*** | ↑*** | ↑*** | ↑*** |

III. Coping Strategies and Resilience

The next two tables present results from equations estimating the effects of resilience capacities on the Coping Strategies Index CSI, which increased (worsened) from 18.5 in OMS1 to 19.8 in OMS2. Table 27 shows that changes in absorptive, adaptive, transformative and the overall resilience capacity indices all improve coping strategies. Shock severity worsens (increases) CSI. Survey round affects CSI with adaptive capacity and the overall resilience capacity.

Table 27: Resilience Capacity Indices and Coping Strategies Index, Summary Results

| | Coping Strategies Index (CSI), Tobit | | | |
|-------------------------------------|--------------------------------------|------|------|------|
| Resilience capacity indices (0-100) | | | | |
| Absorptive capacity | ↓*** | | | |
| Adaptive capacity | | ↓*** | | |
| Transformative capacity | | | ↓*** | |
| Resilience capacity | | | | ↓*** |
| Program intensity | ns | ns | ns | ns |
| Shock severity (0-84) | ↑*** | ↑*** | ↑*** | ↑*** |
| OMS 2 | ns | ↑* | ns | ↑* |

Table 28 reports results from equations estimating coping strategies (CSI). Nearly all resilience capacities improve coping strategies. Gender norms, which is part of the transformative capacity index, worsened coping strategies. In nearly all equations, increasing program intensity improved coping strategies. Survey timing (round 2) did not affect coping strategies.



Table 28: Resilience Capacity Components and CSI, Summary Results

a. Absorptive capacity components and CSI, summary results

| | Coping strategies index (CSI) Tobit | | | | | | |
|-------------------------------|-------------------------------------|------|------|------|------|------|------|
| Absorptive capacities (0-100) | | | | | | | |
| ISN | ↓*** | | | | | | |
| Bonding social capital | | ns | | | | | |
| Savings | | | ↓*** | | | | |
| Humanitarian assistance | | | | ↓*** | | | |
| Shock preparedness | | | | | ↓* | | |
| Productive assets | | | | | | ↓*** | |
| Livestock | | | | | | | ↓*** |
| Program intensity | ns | ↓* | ↓* | ns | ns | ns | ns |
| Shock severity (0-84) | ↑*** | ↑*** | ↑*** | ↑*** | ↑*** | ↑*** | ↑*** |
| OMS 2 | ns | ns | ns | ns | ns | ns | ns |

b. Adaptive capacity components and CSI, summary results

| | | | | | | | |
|-----------------------------|------|------|------|------|------|------|------|
| Adaptive capacities (0-100) | | | | | | | |
| Bridging social capital | ns | | | | | | |
| Linking social capital | | ↓*** | | | | | |
| Human capital | | | ↓*** | | | | |
| Livelihood diversity | | | | ↓*** | | | |
| Financial services | | | | | ns | | |
| Exposure to information | | | | | | | ↓*** |
| Program intensity | ↓* | ns | ↓* | ns | ↓* | ns | ns |
| Shock severity (0-84) | ↑*** | ↑*** | ↑*** | ↑*** | ↑*** | ↑*** | ↑*** |
| OMS 2 | ns | ns | ns | ns | ns | ns | ns |

c. Transformative capacity components and CSI, summary results

| | Coping strategies index (CSI) Tobit | | | | | | |
|-----------------------------------|-------------------------------------|------|------|------|------|------|------|
| Transformative capacities (0-100) | | | | | | | |
| FSN | ↓*** | | | | | | |
| Agriculture extension | | ↓*** | | | | | |
| Access to markets | | | ↓* | | | | |
| Basic services | | | | ns | | | |
| Infrastructure | | | | | ns | | |
| Gender norms | | | | | | ↑* | |
| Collective action | | | | | | | ns |
| Program intensity | ns | na | ↓* | ↓* | ↓* | ↓* | ↓* |
| Shock severity (0-84) | ↑*** | ↑*** | ↑*** | ↑*** | ↑*** | ↑*** | ↑*** |
| OMS 2 | ns | ns | ns | ns | ns | ns | ns |

IV. Economic Wellbeing and Resilience

Table 29 shows that higher levels of absorptive, adaptive and the overall resilience capacity indices increased per capita monthly income. Interestingly, higher shock severity did not affect income. This may be due to the limitation of the shock severity measure described above, and the effects of increased shock severity are captured in the negative and significant coefficients on the OMS2 variable, which shows reduced income from round 1 to round 2. The somewhat mixed results from income equations may also be due to issues with income data itself, related to volatility in the macro-economic environment.



Table 29: Resilience Capacity Indices and Per Capita Monthly Income (2019 USD), Summary Results

| | (Log) Per capita monthly income, 2019 USD OLS | | | |
|-------------------------------------|-----------------------------------------------|------|------|------|
| Resilience capacity indices (0-100) | | | | |
| Absorptive capacity | ↑*** | | | |
| Adaptive capacity | | ↑*** | | |
| Transformative capacity | | | ns | |
| Resilience capacity | | | | ↑*** |
| Program intensity | ns | ns | ↑* | ns |
| Shock severity (0-84) | ns | ns | ns | ns |
| OMS 2 | ↓*** | ↓*** | ↓*** | ↓*** |

Table 30 shows results from equations estimating the effects of absorptive, adaptive and transformative capacity components on per capita monthly income, which did not change significantly from round 1 to round 2 (16.81 to 14.61). Table 30, panel a) shows that for increases in bonding social capital, savings, productive assets and livestock translated to higher income. Nearly all results show that incomes increased for households that shifted to higher program intensity. Table 30, panel b) shows that of the adaptive capacities, increases in bridging social capital and livelihood diversification translated to higher income. Table 30, panel c) shows that increased use of formal safety nets increases income. Improvements in gender norms reduced household income.

Table 30: Resilience Capacity Components and Per-Capita Monthly Income (2019 USD), Summary Results

a. Absorptive capacity components and income, summary results

| | (log) Per capita monthly income 2019USD, OLS | | | | | | |
|-------------------------------|----------------------------------------------|------|------|------|------|------|------|
| Absorptive capacities (0-100) | | | | | | | |
| Informal Safety Nets (ISN) | ns | | | | | | |
| Bonding social capital | | ↑** | | | | | |
| Access to savings | | | ↑*** | | | | |
| Humanitarian assistance | | | | ns | | | |
| Shock preparedness | | | | | ns | | |
| Productive assets | | | | | | ↑*** | |
| Livestock | | | | | | | ↑*** |
| Program intensity | ns | ↑* | ↑* | ↑* | ↑* | ns | ↑* |
| Shock severity (0-84) | ns | ns | ns | ns | ns | ns | ns |
| OMS 2 | ↓*** | ↓*** | ↓*** | ↓*** | ↓*** | ↓*** | ↓*** |

b. Adaptive capacity components and income, summary results

| | (log) Per capita monthly income 2019USD, OLS | | | | | |
|------------------------------|----------------------------------------------|------|------|------|------|------|
| Adaptive capacities (0-100) | | | | | | |
| Bridging social capital | ↑*** | | | | | |
| Linking social capital | | ns | | | | |
| Human capital | | | ns | | | |
| Livelihood diversity | | | | ↑*** | | |
| Access to financial services | | | | | ns | |
| Exposure to information | | | | | | ns |
| Program intensity | ↑* | ↑* | ↑* | ↑* | ↑* | ↑* |
| Shock severity (0-84) | ns | ns | ns | ns | ns | ns |
| OMS 2 | ↓*** | ↓*** | ↓*** | ↓*** | ↓*** | ↓*** |



c. Transformative capacity components and income, summary results

| | (log) Per capita monthly income 2019USD, OLS | | | | | | |
|---------------------------------|----------------------------------------------|------|------|------|------|------|------|
| Transformative capacities | | | | | | | |
| Formal Safety Nets (FSN) | ↑* | | | | | | |
| Access to agriculture extension | | ns | | | | | |
| Access to markets | | | ns | | | | |
| Access to basic services | | | | ns | | | |
| Access to infrastructure | | | | | ns | | |
| Gender norms | | | | | | ↓*** | |
| Collective action | | | | | | | ns |
| Program intensity | ↑* | ↑* | ↑* | ↑* | ↑* | ↑* | ↑* |
| Shock severity (0-84) | ns | ns | ns | ns | ns | ns | ns |
| OMS 2 | ↓*** | ↓*** | ↓*** | ↓*** | ↓*** | ↓*** | ↓*** |

VI. Shock Recovery and Resilience

By round 2, nearly all households (95.6 percent) reported exposure to drought or late/variable rains or both. Even though the percentage of households reporting recovery increased, it was still low at 15.1 percent. Equations exploring how resilience capacities affect recovery from drought and/or late rains show that improvements in all 4 indices increase the probability of recovery. Increasing shock severity reduces recovery.

Table 31: Resilience Capacity Indices and Recovery, Summary Results

| | Recovery from drought and/or late rains, logit | | | |
|-------------------------------------|------------------------------------------------|------|------|------|
| Resilience capacity indices (0-100) | | | | |
| Absorptive capacity | ↑*** | | | |
| Adaptive capacity | | ↑*** | | |
| Transformative capacity | | | ↑*** | |
| Resilience capacity | | | | ↑*** |
| Other explanatory variables | | | | |
| Program intensity | ns | ns | ns | ns |
| Shock severity (0-84) | ↓*** | ↓*** | ↓*** | ↓*** |
| OMS 2 | ns | ns | ns | ns |

Table 32 shows how changes in absorptive, adaptive and transformative capacity components affected recovery. Of the absorptive capacities, improvements in ISN, bonding social capital, savings, shock preparedness and productive assets all increase the probability of recovery from drought and/or late or rains. Of adaptive capacities, bridging social capital, livelihood diversification, access to financial services and exposure to information all increase recovery. Of the transformative capacities, access to agricultural extension improves recovery.



Table 32: Resilience Capacities and Recovery from Drought and/or Late Rains, Summary Results

a. Absorptive Capacity Components and Recovery, Summary Results

| | p(recover from drought and/or late rains) (logit) | | | | | | |
|-------------------------------|---------------------------------------------------|------|------|------|------|------|------|
| Absorptive capacities (0-100) | | | | | | | |
| Informal Safety Nets (ISN) | ↑* | | | | | | |
| Bonding social capital | | ↑* | | | | | |
| Access to savings | | | ↑** | | | | |
| Humanitarian assistance | | | | ns | | | |
| Shock preparedness | | | | | ↑* | | |
| Productive assets | | | | | | ↑* | |
| Livestock (2019usd) | | | | | | | ns |
| Program intensity | ns | ↑* | ↑* | ns | ns | ns | ↑* |
| Shock severity (0-84) | ↓*** | ↓*** | ↓*** | ↓*** | ↓*** | ↓*** | ↓*** |
| OMS 2 | ns | ns | ns | ns | ns | ns | ns |

b. Adaptive capacity components and recovery, summary results

| | p(recover from drought and/or late rains) (logit) | | | | | |
|------------------------------|---------------------------------------------------|------|------|------|------|------|
| Adaptive capacities (0-100) | | | | | | |
| Bridging social capital | ↑** | | | | | |
| Linking social capital | | ns | | | | |
| Human capital | | | ns | | | |
| Livelihood diversity | | | | ↑** | | |
| Access to financial services | | | | | ↑*** | |
| Exposure to information | | | | | | ↑* |
| Program intensity | ↑* | ns | ↑* | ↑* | ns | ns |
| Shock severity (0-84) | ↓*** | ↓*** | ↓*** | ↓*** | ↓*** | ↓*** |
| OMS 2 | ns | ns | ns | ns | ns | ns |

c. Transformative capacity components and recovery, summary results

| | p(recover from drought and/or late rains) (logit) | | | | | | |
|-----------------------------------|---------------------------------------------------|------|------|------|------|------|------|
| Transformative capacities (0-100) | | | | | | | |
| Formal Safety Nets (FSN) | ns | | | | | | |
| Access to agriculture extension | | ↑* | | | | | |
| Access to markets | | | ns | | | | |
| Access to basic services | | | | ns | | | |
| Access to infrastructure | | | | | ns | | |
| Gender norms | | | | | | ns | |
| Collective action | | | | | | | ns |
| Program intensity | ↑* | ns | ↑* | ↑* | ↑* | ↑* | ↑* |
| Shock severity (0-84) | ↓*** | ↓*** | ↓*** | ↓*** | ↓*** | ↓*** | ↓*** |
| OMS 2 | ns | ns | ns | ns | ns | ns | ns |

VII. Summary of Regression Analysis Findings

The analyses presented in this section provide insights into relationships among indicators, programming and shock exposure discussed in earlier report sections. Overall, the equations show that increases in resilience capacities are associated with improved outcomes. As expected, increased shock severity made outcomes worse. Results from the food security, income and expenditure regression equations also show a significant coefficient for the survey round variable, after accounting for the effects of variables change by round and affect all households similarly, such as survey timing and shock duration. At least two possible factors are



worth noting. First, because of the fixed upper limit on the shock severity indicator, this indicator may not fully measure the severity of shocks, and the round variable could be capturing increased severity of shocks from round 1 to round 2.

Second, the timing of survey data collection in survey rounds relative to the lean season may account for some of the worsening of expenditure/income and food security indicators. Round 1 data collection took place closer to the end of the lean season. If round 2 data collection was a month later, to coincide with round one, reported food security, expenditures and income may have been higher. Significant improvements in outcomes, particularly food security and recovery, due to increases in program participation demonstrate that programming was effective in improving well-being outcomes. It also demonstrates the benefits of layering. Namely the households participating in 3 or more programs and those that increased their level of participation had improved outcomes. This finding is supported by the results from the deep dive showing the importance of program layering. The qualitative data suggest that sequencing trainings with activities that center around tangible outputs, with agricultural inputs, for instance, are an important approach and highly valued by focus group participants and key informants. The layering of activities from different sectors also contributes to program success. The CLIC model exemplifies the layering of activities on livelihood activities, WASH, and health and nutrition practices. More improvements in food security and other outcomes may come from expanding participation for existing beneficiaries than from increasing the reach of programming.

Results show that outcomes, except income are worsened by increases in shock severity, for given levels of resilience capacities. Of the resilience capacity components, savings, productive and livestock assets improve all outcomes. Linking these findings back to Table 24 shows that business and ISALs all increase savings. Community assets, ISALS, value chain, business and crop and livestock programming increase productive and livestock assets. The deep dive analysis provided in (Annex 6) explores in more detail the causal links between programming, capacities and outcomes.

J. QUALITATIVE RESEARCH QUESTIONS: KEY FINDINGS

The qualitative component of OMS2 was designed to complement and support interpretation of the quantitative findings presented above, and to investigate a set of qualitative research questions that emerged from OMS1, including:

1. What strategies are households and communities using to cope with and manage financial uncertainty and price shocks?
 - How do savings groups, in particular, hold savings (both currency and assets –e.g., goats, etc.) to avoid losing value?
 - What contributes to or constrains household and community resilience to monetary uncertainty?
2. What interventions have improved the ability of households and communities to cope with or adapt to shocks and stresses, economic as well as climatic and environmental?
3. What conditions enable participants participate in ZRBF interventions?
4. How do program intensity and patterns of sequencing, layering and integrating (SLI) interventions contribute to strengthening household resilience capacities and improving wellbeing outcomes?
5. How can interventions be tailored to strengthen resilience capacities of young families and women, and female beneficiary households in particular?
6. How has ZRBF affected the capacity of institutions to implement resilience building activities in their operational areas?
 - Have ZRBF products and services improved the capacity of partner agencies and government departments to make evidence-based decisions and take effective early action to mitigate the impact of shocks? How? Why?



I. Savings Groups and Financial Resilience

a. Characteristics, roles and affects of savings groups

Data from all consortia show an increase in savings group (SG) and Internal Savings and Lending (ISAL) group participation. Group composition primarily includes young and middle-aged women. Although there are some reported cases of men participating in these groups, this is rare. Interviews found that the number of female youths participating in savings groups is increasing while the participation of elderly women is decreasing. This is because the youth are observing the positive benefits other women in the community experience as a result of their participation, while in contrast elderly women no longer have enough monthly income to keep up with the expected contributions. Generally, across consortia, the savings groups are set up so the members in each group contribute a certain agreed amount monthly, and in some instances, members borrow money they return with interest.

There were several explanations for why men do not participate in savings groups, despite the fact the ZRBF Consortia promote savings groups to all community members. Across the study areas interviews found that savings groups are perceived to be a woman's domain, and an activity for women. One male focus group discussion participant explained that if their wife is already participating, they don't need to join because they already benefit through their wife. Other reasons for the lack of male participation included gender-based stereotypes of male versus female priorities and thinking processes.

For example, male focus group discussion (FGD) participants in the MELANA project area stated that that "men take longer to understand concepts and often have trust issues whereas women believe and trust much easier. Men also treat ISALs with suspicion and find it difficult and longer to build trust that they can lend their money to someone else and wait for him to pay it back" (Male CFGD, MELANA).

Several other FGDs reported that men in the community(ies) feel that the amount of money being saved is too small and they prefer activities that lead to a more rapid and higher return on investment, whereas women are patient and appreciate smaller dividends for their efforts. The patience of women was a theme across several of the data collection sites. There are indications that male participation savings groups is on the cusp of materializing, e.g., ECRAS, BRAC. Several interviews asserted that men like to see proven results before engaging in a new activity, and communities are now observing ISALs can be a lucrative income generating activity. As well, some Consortia promote value chains that that may be perceived as the domain of men, such as pen fattening; while in other Consortia, savings groups may layer with poultry value chains, perceive as the domain of women.

Savings group funds are used to purchase kitchen utensils, household items, groceries, school fees, and farming inputs. Across consortia community members reported that ISAL cash and savings is primarily used to cover household expenses, which benefits the entire family. In some cases, loans from the group are used to start small businesses. For example, a female FGD respondent in the SIZIMELE project area mentioned she travels to the nearest urban hub to buy groceries in bulk for resale in the area and she uses her profits to cater for her household needs and also as her contribution to the ISALs. This is not uncommon for groups in that area. Some ISAL groups invest in income generating activities, including production of poultry, as well as goats or mushroom cultivation.

Beyond increasing access to petty cash and small loans, participation in savings groups is a source of decision making, independence, and social capital for women. Focus group discussions with women across the project sites found that participation in ISALs has led to an increase in household income and encouraged increase diversification of income generating activities for some female participants.

Some FGD participants indicated training on group and financial management has led to improved monetary decision-making and improved the operations of savings groups, making them more efficient while also increasing the trust of members that their money is accounted for fairly. Moreover, there is some evidence that access to autonomous savings increases a sense of independence. A FGD in the PROGRESS area noted that provision of cash boxes and record books for book-keeping also improved the functioning of ISAL groups. This suggests that the combination of access to savings, coupled with "software" (i.e., training) and "hardware" (i.e., material inputs for group operations) may have benefits for ISAL groups.



The data also indicate savings groups provide an important space for social interaction among women, and their participation contributes to women's status; as men are unlikely to participate in ISALs groups, they do not benefit from the same type of interactions found in the ISAL groups, posing a potential challenge to men's social capital. These findings suggest incentives to change the perception of ISAL groups to make them more appealing to men or finding alternatives for men to enhance their social interactions could prove beneficial.

Participation in savings groups is beneficial to interhousehold dynamics as Some female FGD respondents note that men respect women who contribute to the household through income and food.

b. Other resources and strategies people use in a volatile economic environment

To retain the value of any earned income, households report they will convert to foreign currency whenever possible, although this was illegal at the time of OMS2 data collection. Many communities reported using mobile money transactions (e.g., Ecocash) in the wake of cash shortages in the economy. Study participants also reported, however, that the terms of the transactions have become more difficult and prices tend to be higher for mobile money than when using cash, leading to a preference for cash transactions. This, in turn, has affected market purchases as most people do not have hard cash as payment.

Although many respondents were reluctant to discuss remittances they receive from family members living in South Africa, this is an important coping strategy for some households. When work across the border is not an option, some households borrow money at high interest rates to meet their household needs. There are some indications in the qualitative data that households also rely on humanitarian food assistance and adjust consumption patterns as a coping mechanism in response to both economic and environmental challenges.

Figure 21: Foodstuff prices: Cash vs. Ecocash



The economic environment has particular impacts on youth. Across the data, interviews found that youth are increasingly migrating to larger cities, across borders and regionally, to find work. Data indicate that youth may also engage in illegal mining activities, forex trading or petty theft; although these activities are not necessarily limited to young people. Interviews at the community level found that some households take their children, particularly male children, out of school to work in the fields and/or herd cattle. FGD participants also link child marriage, particularly for young girls, to economic strain. Rarely, focus groups reported that young women find employment as domestic workers. In some instances, women engage in transactional sex, primarily women whose husbands work away from home.

In the context of the volatile economic environment in Zimbabwe, interviews found that the conjunction of economic and environmental shocks has led to an increased reliance on negative coping strategies for some. However, many households are adapting their agricultural and livestock practices in response to economic shocks. Across the data farmers reported a shift to fodder production, as well as maize, for their own use, as well as for sale to generate income. Some farmers report sale of fodder to community members who are not in the ZRBF program as well as farmers in surrounding areas. Destocking of goats and large livestock was also a widely cited strategy to cope with shocks, to purchase food and pay school fees.

Notably, financial uncertainty emerged as a motivator for collaboration, as households struggle to purchase inputs for agricultural production individually. Several community FGDs report that farmers buy agricultural inputs as a collective. In the ECRIMS area, for example, farmers agreed that ZRBF interventions have brought unity and cooperation to the community. Farmers mentioned that ISALs enable them to buy assets and necessary inputs (e.g., vaccines, seeds, fertilizer) as groups that they cannot buy as individuals, cutting costs for transport as well as for inputs purchased in bulk before the farming season begins each year. Other farmers report practicing community seed banking to avoid loss of good seed germplasm when natural disasters occur.



c. How do savings groups, in particular, hold savings (both currency and assets – e.g., goats, etc.) avoid losing value?

Data across project areas show two primary ways savings are held to avoid losing value, first, to convert savings to foreign currency as soon as possible, and second, to purchase assets (usually livestock) that will retain or grow in value over time. FGD participants across all project areas highlight the importance of saving money in foreign currency to protect their investments. This strategy was reportedly done to counter the volatility of the fluctuations of the Zimbabwean currency and of currency devaluation.

FGD respondents in the ECRAS project area mentioned, for instance, that they exchange Zimbabwean currency for South African rand in the “parallel market”. Data also show that households will often transfer cash into buying small livestock (e.g., goats and chickens), household utensils (e.g., pots and pans), or other assets that retain value. FGD participants across the consortia note that livestock is considered an important type of savings, however, they are often unable to save enough money to purchase preferred, high-value livestock; rather, they must purchase lower value assets such as goats or chickens because the risk of waiting to save more funds for a high value asset is too high.

Reportedly, banks are not widely used as a way to save or hold money. In the ECRIMS project area FGDs indicated that farmers had opened accounts with Agribank, but they are no longer using them for fear that their money is not safe. Similarly, a FGD in the ZVA area noted that women had heard of financial services offered by Agribank, for example, but the requirements to qualify for a loan (e.g., a large number of cattle and goats) excluded them from such services. With the widespread loss of savings in 2008, devaluation of the Zimbabwean dollar and cash shortages, people continue to be skeptical about keeping their money in banks.

There are instances in which households use the current multi-currency system in creative ways to their advantage. For example, a community KI with a lead farmer in the MELANA project area mentioned “forex trading” as a strategy that she uses to maintain savings without losing value. The farmer “buys airtime at Econet using Ecocash, sell sit for cash, then converts bond cash to forex” (CKII, MELANA).

Many FGDs cited participation in ISAL groups as highly important as a primary source of savings or investment income. However, due to currency volatility, the ISAL groups and their members are often unable to purchase high value assets, and the value consistently decreases. Inflation has decreased the value of money ISAL groups have saved and thus some groups have dissolved, abandoning the concept of lending. A FGD in the SIZIMELE project area, for example, reported their ISAL group was particularly struggling after rapid devaluation and a decreased access to irrigation and they have not yet come up with adequate mechanisms to address financial uncertainty.

d. What contributes to or constrains household and community resilience to monetary uncertainty?

Price fluctuations, rapid inflation and market instability constrain household resilience to monetary uncertainty, impeding the capacity of households to save, make large investments or plan for the future. Inflation proves particularly challenging as prices of food, inputs, and transport increase almost daily and at an abnormal rate, with prices for basic good such as maize doubling one day to the next (e.g., ECRIMS).

Delayed payments are also a massive constraint. The longer a payment is delayed, the more the agreed payment price decreases in value. A FGD in the ECRIMS project area cited an example of this in which Grain Marketing Board (GMB) payments were delayed, and reported that by the time they were paid the money from GMB, it had lost value to such an extent that they could not afford to buy inputs for the next farming season.

Communities located in isolated areas face additional challenges that are directly and indirectly linked to their economic stability; these challenges impact the ways in which they can cope with monetary uncertainty. For instance, households face transportation issues (e.g., poor road networks leading to paved roads) and difficulties accessing markets. One KI in the ECRAS project area indicated that farmers give out grain “at a giveaway price” as they have poor access to markets (CKII, ECRAS, Model HH). Communities face challenges accessing clean water for both livestock and household consumption (e.g., few boreholes). Schools and health clinics are located far away, impacting women and youth. Internet connectivity is essential for information and communications, and especially in the most rural areas connectivity is challenging. Without network communications, access to information and mobile money transactions are impossible, making obstacle for some livelihood activities. This is particularly a challenge for youth.



VIII. Household and Community Coping and Adapting: The role of ZRBF interventions

Findings from the first OMS as well as studies in other areas suggest that the level of engagement a household has with program activities has important positive impacts on enhancing resilience capacities. ZRBF partners have implemented a range of interventions, to promote access to financial services, support livelihood diversification (e.g., off-farm activities, value chains), improve climate smart agricultural practices, build household and community assets, and strengthen social capital and informal safety nets. The qualitative component collected data to better understand which interventions are perceived to be most beneficial to strengthen the capacity of households and communities to cope with and adapt to shocks and stresses. The qualitative inquiry also explores the characteristics of interventions that may contribute to longer-term sustainability.

Across the ZRBF Consortia, qualitative study participants indicated a broad range of interventions that they perceive to have helped them to cope with shocks and stresses, and to adapt over the long run, primarily with respect to drought and weather variability, outbreaks of animal disease and crop pests, and increasing financial security.

While discussions with focus groups and key informants highlighted the importance of key interventions, such as infrastructure development (e.g., water systems, dip tanks), climate-smart agriculture, livestock and poultry production, ISALs, three key findings emerge from an analysis of the qualitative findings with respect to Research Question 2:

1. *Diversification is a key strategy to cope with and manage risk.* While some interventions do appear to have substantial positive effects across sites, it is rather the *suite of interventions* – from boreholes to production of fodder and small grains, beekeeping, mushroom cultivation, or Tsosto stoves, which facilitates diversification strategies and options for food and income generation that is most beneficial.
2. *Training, information services, and capacity strengthening.* Across consortia, study participants highlighted the importance of technical training, DRR workshops, exchange visits, improved access to information, and to some extent group formation, all of which are seen to contribute to the capacity of people to make informed decisions to manage shocks and stresses now and in the future.
3. *Enabling environment.* At several study sites, participants noted the value of specific interventions, such as nutrition gardens, fodder production, improved livestock and poultry breeds, or small grains production. Notably, the benefits are enhanced when “hardware”, or a specific tangible input, is implemented in a way that is sensitive to the conditions that may constrain uptake or linked to a broader system (i.e., small grains linked to market value chains and Grain Marketing Board; irrigation schemes linked to solarization to cope with unreliable power; dip tanks coupled with income generation for longer-term access to chemicals).

Across consortia, data collected during FGDs and KIIs indicate that a broad array of ZRBF interventions offered substantial benefits to households and communities coping with shocks and stresses – FGD participants and key informants identified, and expressed appreciation for, the range of ZRBF interventions. Overall, the findings suggest that it is in fact this suite of offerings, and the synergistic effects, that have enabled people to better cope with drought and financial insecurity. Combining, for example, access to improved water points, solar power, improved and drought resistant crops and livestock, training in climate smart practices, savings group formation and training, climate information and socialization for DRR, together leads to improved outcomes. This section will discuss some of the specific interventions participants identified as most beneficial, and characteristics that contribute to the uptake and sustainability of interventions. The discussion in Research Question 3, below, will return to the topic of sequencing, layering and integration of ZRBF interventions.

a. Critical interventions

Water infrastructure. Across the ZRBF program area, access to safe potable water and water points for livestock and agricultural production is a critical constraint. In the BRAC area, livestock keepers note that during four months of the year, they experience a water crisis that forces them to travel long distances to provide their herds with water. Water shortages due to changes in rainfall patterns are commonly cited across the qualitative data, impacting the access and availability of potable water for household consumption





as well as water sources for livelihood activities. In the MELANA area, for example, water shortages impact farmers who were unable to replant their crop during the current growing season.

The research team finds that ZRBF's investments in water infrastructure are having a significant impact on the lives of the communities in which the program operates. These improvements revolve around livestock production and horticulture, for instance, which strengthen community resilience. Discussants noted investments in water infrastructure, such as weir dams, boreholes and garden drip irrigation schemes across the ZRBF intervention area. In the ZVA area, women highlighted the importance of a new borehole which has provided them with additional time to pursue additional livelihood activities. This appears to be vital to enhancing women's economic stability, as it frees up women's time to invest in their household and community.

In some areas, the development of water infrastructure was cited as the most important intervention to address a critical need. FGD and KI respondents reported that initiatives to improve water security "will bring long-term change....as it will increase productivity" (SIZIMELE). In MELANA, KI respondents highlight that the piped water scheme has been the most significant change to the area as the infrastructure has provided potable water to the community. The integration of garden irrigation schemes with solarization was noted among ECRAS and ECRIMS participants as particularly significant, allowing for year-round crop production that is not dependent on the high and unpredictable costs of fuel.

The lack of protected water in some areas, however, continues to be a challenge – in the PROGRESS and ZVA areas, for example, the lack of access to protected potable water continues to be a systemic constraint. The research team finds that the ZRBF contributions to establishing or improving community water infrastructure will better position households to improve their economic activities, health, and also prepare the community for future shocks and stresses

Climate Smart Agriculture (CSA). Training and inputs to support CSA were cited across qualitative data as extremely beneficial for household food security. This includes the adoption of drought tolerant crops and varieties, climate-smart breeds of livestock and poultry, staggered planting seasons, and water and soil conservation practices.

As respondents in a FGD in the ECRIMS area noted, CSA training has helped farmers implement the "pfumvudza" concept, which promotes crop production on a small plot of land (39m x 16m) such that the plot can feed a family of six for an entire year. Participants recognized the benefits of CSA as proven, immediate, and tangible and attribute higher yields and improved soil fertility to CSA trainings (ECRAS). CSA practices are appreciated by beneficiaries who now use open pollinated varieties, compared to hybrid seeds, as this provides them with seeds they can retain for subsequent years (PROGRESS). These findings indicate that households perceive CSA practices as a contributing factor to an improvement in their livelihood strategies, suggesting that there will likely be a continuation of those practices beyond the operation of the activities.

ZRBF's rehabilitation of the community dip tank is also highly appreciated as it has allowed livestock herders to be able to care for animals regularly and consistently. In one area, prior to ZRBF, herders would travel 15km to dip their livestock, with four or five animals dying on the journey (MELANA). The sustainable dipping activity was also cited as an activity that has helped communities reduce animal disease. Qualitative data also indicate that clean energy options, such as the use of biogas, has been appreciated by the community (ECRIMS). In the ZVA area, improved breeding activities have led to the greatest change as improved goats provide larger offspring, which are sold at better prices at the market.

The research team notes that the uptake of, and appreciation for, these practices is due in part to the awareness of climate change events and the effect on people's livelihoods. KI and FGD data show that those practices which make use of drought-resistant activities are mentioned as important. A KI in MELANA notes that the promotion of improved poultry and the adoption of high-yield crops have most helped the community, as they are more productive, but also important to note, more resistant to shocks and stresses.

Fodder Production and preservation: Fodder production was highly praised among farmers who participated in FGDs. Study participants in the MELANA area described a rapid adoption of fodder production among ZRBF participants, which has reduced the cost of inputs and provided a critical source of livestock feed during the lean season.



In multiple FGDs, discussants noted that fodder production and silage trainings led by ZRBF have reduced death of livestock during drought. In the BRAC area, for example, FGD members indicated that fodder production is the ZRBF activity is leading to the most valued benefits to the community through the availability of supplementary feeding. This is significant as the same community reported a two-year long drought and economic shocks that have led to livestock deaths. In this same community, households report destocking to purchase food for the household, suggesting that such coping mechanisms could lead to worsening resilience trajectories as households sell productive assets for immediate needs. Fodder production in this scenario is therefore a much-needed support from ZRBF.

In other areas, beneficiaries were advised to use local materials, such as preserving hay, to create supplementary fodder to be used during the dry season (ZVA). The use of stover preservation was also adopted to address cattle feed (PROGRESS). These types of activities contribute to improved capacities and may also represent sustainable options for the long-term

Small grains production. Small grain production was promoted as a climate-resilient approach that provides households with higher yields of nutritional crops within a shorter growing cycle. In the ZVA area, for example, cultivation of small grains and legumes was described as one of *“the main strategies used to mitigate the impact of climate change and low and variable rainfall conditions, but even these strategies are not effective in the worst droughts.”* In the PROGRESS area, female FGD respondents noted that maize requires greater amounts of water, so the community prefers small grains and wheat, given the unpredictable rainfall patterns in the area. Beneficiaries acknowledge that small grains are a drought-tolerant crop that can bring about long-term change.

Small grains are incorporated into household diets to combat food insecurity and are sold, through GMBs. In the BRAC area, for example, small grains including sorghum, pearl millet, and other legumes are used to offset the unavailability of poultry feed. Small grain production was also noted as a strategy reportedly adopted by non-beneficiaries in both the ECRAS and ECRIMS program areas. In addition to access to sales through the GMB, home consumption, and animal feed, the 2019/20 Presidential Input Scheme motivated farmers to increase production of small grains.

However, constraints to small grains cultivation persist. In some areas, land availability limits the adoption of small grains. In the ECRIMS area, for instance, small grains are seen as an activity for older adults, as youth do not have ready access to their own land or to drought power for cultivation. And, as noted in the quote above from ZVA, CSA and small grains production, while important strategies, may prove insufficient to offset the challenges wrought by the worst droughts.

Livelihood diversification and improved practices. The introduction of drought and disease resistant livestock and poultry is cited as a significant contribution of the ZRBF initiative to strengthen capacities of households and communities to cope with and adapt to shocks and stresses. Across consortia, the qualitative findings demonstrate that households diversify to survive harsh and unpredictable climatic and economic volatility. Households find that reliance on a single activity is too risky and must become involved in multiple livelihood strategies. In the MELANA area, for example, widows are considered “shining stars” as they engage in multiple livelihood activities, such as petty trade, working on nutrition gardens, sewing, animal rearing, and crop production.

Diversification is dependent on the environment and contextual factors of each programming area. For instance, women and youth in the BRAC area now engage in multiple activities such as welding, sewing, and building, to obtain extra income in response to the ongoing slew of shocks. Diversification is limited in some areas to the availability of community resources, such as water. In the BRAC area, qualitative data shows that households in the area are entirely reliant on rain for their livelihood activities, so they are unable to invest in horticulture gardens. This limits the ability of households to have multiple options from which to choose. Household wellbeing is tied to rainfall patterns, limiting some communities to diversify to nutrition gardens, for instance (PROGRESS). In the SIZIMELE area, FGD respondents identified mushroom production as the most viable intervention for improving nutrition and income generation, particularly for women.

The combination of livestock and agriculture activities is one way in which diversification contributes to improved outcomes, particularly across various seasons. FGD participants in the ZVA and MELANA areas, for example, indicated goat breed improvement using Boer goats and Red Kalahari as the most effective



intervention for strengthening resilience across the broadest set of households, through increased productive assets and income. The introduction of fast-growing Boschveld chickens is noted as contributing to increased income among smallholders.

The qualitative data indicates that diversification has also enabled beneficiaries to reduce negative coping strategies, such as the sale of goats (MELANA). The research team finds that the diversification of economic activities, then is key to empower households to engage in activities as they assess their options and the changing circumstances.

ISALs. As discussed in the previous section, this intervention is perceived as extremely beneficial, particularly for women and youth. Some benefits include better financial discipline and ability to save towards long-term goals. FGDs report increased access and control of small livestock, for example, with the introduction of ISAL groups, which primarily comprise women. Some said ISALs help support cooperative activities at the community, such as purchase of agricultural inputs and funding for other enterprises.

ISALs seem to provide members a space to strengthen their financial capacity, contribute to livelihood activities, but also improve social capital. ISALs are seen as an important way to strengthen community resilience as they provide a space for members to socialize and improve critical relationships. Savings from ISALs are reportedly used to protect the most vulnerable (i.e., child-headed households, the elderly, medical aid, and people needing to cover funeral expenses). Economic stress has, however, made it difficult for ISALs to invest in social funds. One ECRAS KI noted that through participation in the ISAL, members saw an improved communication among farmers through WhatsApp and SMS messaging and through community gatherings.

Disaster Risk Reduction (DRR). ZRBF's DRR initiatives have had a notable impact on helping households and communities to anticipate and prepare for shocks, particularly drought. As FGD participants in the PROGRESS area reported, DRR committees have supported communities to be able to assess and develop mitigation strategies for disasters they are likely to face. FGD respondents in the ECRAS area noted that ZRBF programming encourages preparedness and decision-making to adapt to climate events and to economic shocks.

DRR training has also contributed to changing mindsets to encourage production of drought tolerant crops such sorghum and millet. In the PROGRESS area, DRR trainings have helped farmers understand the value in growing small grains as a drought-resistant crop. While there is some reluctance due in part to the labour-intensive process needed to grow them, the perception of the value of small grains has improved.

Qualitative data indicate that beneficiaries are better equipped to understand climate events and climate variability, such as rainfall patterns, as a result of ZRBF programming. In some cases, this has decreased community conflict – in the ECRAS area, poor rainfall was blamed on some individuals practicing witchcraft; now ZRBF has provided an explanation to climate change patterns and responses through the promotion of DRR.

CSA practices have also provided households with an improved sense of preparing for crises. In the BRACK area, for example, contour ridging is now being used by households in a way that facilitates their ability to anticipate and prepare for worsening drought conditions. The research team finds that these activities contribute to the adoption of a “DRR mindset” and are likely to continue to provide communities with improved resilience capacities.

Non-timber forest production. Across sites, study participants noted the value of NTFP activities, such as beekeeping and the collection of wild fruits and vegetables. FGD participants in the PROGRESS area indicated that a number of households have diversified into NTFP activities, which provide an important source of income and improve food security outcomes. FGD respondents in the BRACK area, where ZRBF participants are selling wild fruits to Kaza and Utano companies, noted that, “learning about processing and selling non-timber forest value chains has been life changing and improves livelihoods.” In the same area, NTFP activities are practiced by elderly women who sell products to their neighbors as well as to larger private companies. These findings suggest that NTFP activities are promoting improved outcomes for some of the more vulnerable groups in ZRBF communities. Since the elderly may not be able to easily work in labor-intensive agriculture or livestock practices, ZRBF's promotion of NTFP is an important pathway to improve the resilience capacities of elderly women. However, as with other activities that ZRBF promotes, which are dependent on natural resources, drought plays a factor in the viability of these activities.



b. Training, information services, and capacity strengthening

Across the data set, training and information services are highlighted as critical and beneficial components of enhanced absorptive and adaptive capacity. The research team finds that ZRBF activities that build the capacity of government stakeholders as well as trainings provided directly to beneficiaries are an important element of the ZRBF initiative. In particular, training in CSA and other agricultural practices have had a positive effect on households and communities across the ZRBF programming area. Similarly, the role of lead farmers, field schools, exchange visits and demonstration plots are noted as important and essential to the uptake of ZRBF interventions.

Trainings in CSA and agricultural practices cover a range of areas, including drought tolerant crop production and diversification, crop pest and disease control, pen fattening, livestock disease and training of para-vets who assist veterinarians, and post-harvest technologies (e.g., hermetic bags, metal silos), as well as to provide support for market engagement and increased access to information services. Overall, participant's knowledge of climate-smart agriculture has helped in decision-making (e.g., choosing and prioritizing certain crops). In the PROGRESS area, women suggested that decisions, especially about what to grow and when, are now based on the information relayed to them about weather forecasts by the AGRITEX Officer. In the SIZIMELE area, FGD participants stated that the weather station installed by ZRBF has helped to assist planning and decision making: "People now know what to expect, when and what to plant because of the weather station." ZRBF participants in the ECRAS area noted ZRBF improved their capacity to understand climate events, such as rainfall patterns.

In the ZVA area, one KII indicated the demonstration plots at CLICs are valuable "institutes of learning where farmers come and learn. This is where innovative methods are disseminated." Moreover, these trainings use a consistent and intensive Training of Trainers model, which the findings suggest may contribute to the increasing interest and uptake among farmers over time.

FGD respondents indicated that ZRBF activities have improved their knowledge of market linkages and value chains, which in turn have improved their knowledge on negotiation and pricing skills. For instance, FGD respondents noted that buying inputs collectively in bulk is advantageous (as described above) and selling animals that have been pen-fattened leads to better prices. FGD respondents also reported, that their record-keeping on livestock and agricultural production has better equipped them to manage losses and improve profits. As well, a Lead Farmer in the ECRAS area noted that the ZRBF package of interventions had strengthened relationships as a community, with community leaders, and other NGOs and government partners (e.g., Gonarezhou National Park) (CKII ECRAS).

In addition, ZRBF provides vocational training. In the BRACT study area, for example, participants highlighted technical skills they have received as part of the vocational training program, in welding and dressmaking, that have improved livelihoods for youth and for many have become a primary source of livelihood. Youth who have received vocational training in welding, for example, have found employment in welding due to training. According to FGD participants, this has reduced theft, violence, alcohol, and drug use among youth. However, frequent electric power cuts in the area have greatly affected the productivity of welding businesses, in particular, leading some to work at "odd hours" during the night when electricity is more available and reliable. Groups under the technical skills training program have resorted to working overtime to curb power cut challenges.

Informants also noted challenges to training, such as the process for selecting lead farmers by community leaders, and in particular farmers who may lack literacy skills, for example, which can prove challenging for training and promoting new activities and practices (ZVA).

IX. Sequencing, Layering, and Integrating (SLI) interventions

Sequencing, layering and integration (SLI) refers to program design that strategically combines interventions to have a long-term collective impact on the development goals. Interventions that are sequenced are timed sequentially to build on one another; layering refers to the incorporation of multiple interventions in the same program area or target group from various sectors; and integrating refers to "deliberately designing activities to include multiple components that often combines sectors and are implemented in an integrated fashion". SLI program design plays an important role in the implementation of ZRBF in a complex setting characterized by recurrent economic shocks, ongoing climate change events, and subsequent impacts felt at



the individual, household, and community levels. The research team finds multiple cases of SLI throughout the ZRBF Consortia programming areas. As noted in the quantitative findings as well, the combination of interventions appears to contribute to strengthening resilience capacities in ways that are likely to lead to sustainable well-being outcomes for program beneficiaries.

a. Sequencing

One of the ways in which ZRBF sequences activities to contribute to improved outcomes is through the deliberate combination of trainings aimed at beneficiaries followed by the promotion of strategic income generation activities. The research team finds that combining these activities leads to far greater results as each activity reinforces each other: trainings have provided people with the knowledge to make decisions on best practices, followed by the introduction of tangible inputs (e.g., seeds and other inputs, poultry breeds), which appears to improve the ability of households to benefit from a strategic sequencing of interventions. One example is the sequencing of Training of Trainer activities among lead farmers on topics such as appropriate animal housing, followed by the introduction and promotion of drought tolerant poultry breeds, linked to value chain activities.

b. Layering

One example of layering within ZRBF is through the use of CLICs, which provide simulation exercises and a space for beneficiaries to test best practices. These include activities on livestock keeping, agriculture, WASH practices, and nutrition. The research team finds that the demonstration plots together with Training of Trainers become an integral part of influencing behaviour change and building resilience capacities. Since multiple activities from different sectors are found within one physical location, the CLIC model promotes the adoption of multiple interventions in a way that reinforces gains across these activities.

CLICS give participating beneficiaries a place to test various livelihood strategies as well as a space to review and discuss the success of each activity with each other and with the extension officers who provide the capacity building. Since CLICs may serve multiple wards, there is the potential for this model to cover a large number of households. In one community in the ZVA area, a welder provided training to youth on creating farming tools as well as pen fattening techniques under the CLIC model. This particular example highlights the significance of the CLIC model as youth tend to leave their communities in search of employment or engage in activities which may be considered risky and unstable, such as gold panning.

Qualitative data suggest that youth are not as engaged in agriculture or livestock practices across consortia, so the research team finds that the CLIC model plays a role in influencing behaviour change and building youth capacity in livelihood activities. Since the CLIC model is used for practices that are considered climate-smart, this model can also further increase the uptake of crops that are drought-tolerant, improving the longer-term environmental health of the area.

In another example, also from the ZVA area, members of a CLIC learned best practices around gardening and ultimately adopted those practices in their gardens. KI data suggest that those households experienced an improvement in food security, as the members had a more diverse diet, as well as an increase in household income from vegetable sales. The impact of the sales led some households to invest in the education of their children.

However, some issues around the effectiveness of CLICs remain. In areas where extension officers must travel long distances to reach the plot, there may be a reduced number of demonstrations. ZRBF could also use the CLIC spaces to promote bridging social capital among members of different communities, but qualitative data suggest that this has not taken place. In one area, farmers noted that they were distrustful of having farmers from a neighbouring village share their CLIC. This suggests that ZRBF could provide additional trust-building activities for those participating in the demo plots as a way to promote interventions across communities, which may contribute to stronger bridging social capital across larger areas. One way to do this is to encourage CLIC Asset management committees, such as the one found in the ZVA area, to strengthen social cohesion.



c. Integration

ZRBF promotes the integration of multiple activities, in part, by weaving CSA into agriculture and livestock interventions. CSA techniques are used to strengthen ZRBF infrastructure in a way that ultimately promotes household and community well-being outcomes. One example is from the SIZIMELE area, where boreholes benefit from solarization efforts. The solarization of the borehole in one community has freed up the time households spend carrying water to their gardens. In the PROGRESS area, households now find they have more time for income-generating activities, such as caring for poultry, goats, and cattle, and beekeeping. In the same area, the solarization of the borehole has also contributed to the improved nutrition of the household members who now have the ability to sell more produce from their garden.

KI data collected during the fieldwork suggest households will be able to make use of more land for productive activities by increasing farming area; a local leader notes that this “will lead to long-term changes in the community” (CKII, PROGRESS). Solarization efforts are also important as they contribute to the well-being of women. In the ECRIMS area, the solarization of a borehole allowed 50 households to access water for the nutrition garden; as more than half of project participants are elderly women, the solarization efforts have benefited the more vulnerable members of the community.

Another key example of ZRBF integration is ISAL groups. As demonstrated in Research Question 1, ISALs play a crucial role both as sources of income, as well as a platform for social cohesion. These groups also play a role in offsetting the start-up costs for income generating activities. Participation in these groups has provided the members an opportunity to generate income in other ventures, such as investing in gardens, agriculture, livestock, or petty trade. In the MELANA area, women who belong to an ISAL highlight that the income they have earned from their participation is used for household expenses, such as kitchen wares and school fees, but also for purchasing productive assets like goats.

In other areas, the income earned from participating in ISALs was used to purchase productive assets and inputs, such as seeds, chemicals, and other gardening equipment. Women also report that they can purchase items for resale, such as airtime and foodstuffs. KI data from the MELANA area indicate that the ISALs have significantly benefited the community, and women in particular. It appears that across the ZRBF programming area, ISALs have played an important role in communities, in a way that integrates activities on financial literacy and financial management, and income generating activities, such as small ruminants and poultry.

X. Tailoring Interventions: Gender and age considerations

Across the project sites, study participants noted that youth and women face particular challenges, and that interventions can be tailored to the types of constraints and capacities of young families, women, and female-headed households. Some of the specific interventions noted as having significant impacts including ISALs, mushroom cultivation, irrigation gardening with solarization, and vocational training.

a. Challenges specific to youth

Shock Impacts. Youth and young families are often most affected by shocks, as they often own fewer assets including land and provide for young children. Many project areas reported that youth and young families were most affected by food shortages because of drought, especially compared with the elderly. Some elderly households are further cushioned by remittances from their working children both within Zimbabwe and abroad. Furthermore, focus group discussions in the PROGRESS area found that the youth in the area usually take responsibility for the elderly in the area. They are expected by the community culturally, and encouraged in their local churches, to care for the elderly. Thus, shocks and stresses that affect the youth, indirectly affect the elderly as well. To meet household needs some youth and young families reportedly become strongly reliant on donors and Social Welfare for their survival.

Vocational Training and Education. Across project sites the data show that as youth receive vocational training that allows them to develop an income-source, the community perceives a related reduction in youth-related



crime, such as theft, alcohol and drug use. In the BRAC project area for example, youth receive vocational training in welding and some have found employment in welding due to training. However, frequent electric power cuts in the area have greatly affected production of welding businesses. There is some evidence that vocational training youth receive through ZRBF has given youth additional skills required to successfully migrate for work, and/or kickstart new businesses activities. A primary challenge for youth is low local demand for their products and skills, as well as difficulty accessing and high cost of inputs, including micro-loans.

In the ZVA project area, targeting youth for training related to community infrastructure has met challenges because there is a mismatch between youth payment expectation and the community ability or willingness to pay. For example, in one CLIC in the ZVA project area youth were purposefully selected for incubator training in hatcheries. However, the level of payment that youth expected for running the incubator is not sustainable from incubator service charges.

Overall, youth representatives acknowledge and appreciate the trainings they have received from ZRBF on business management skills; financial management skills; vocational trainings (welding, sewing, building, *interalia*); and agriculture, nutrition, and farming production and service provision. One youth representative remarked that through his participation in ZRBF, he was able to network with stakeholders in other organizations, and he is now being paid to train others (CKII, Lupane, SIZIMELE), suggesting that youth could benefit from increased social connections. However, some additional challenges remain for youth. Some project sites, for instance, reported that school fees have increased, leading to more school dropouts. This results in “idle youth”, unable to receive an education, who are said to resort to low-return or illegal activities.

FGD participants and key informants list a number of activities which could continue to serve youth. One recommendation is to create formal certificates for youth who gain technical skills, as this would make them more competitive when searching for employment. Other requests centre around creating spaces where youth could receive training from technical specialists and interact/share ideas with other youth, such as through competitions, fairs, and exchange visits. Female youth mention additional trainings on sewing, baking, poultry production, resilience, financial capacity for petty trade would be helpful, while male youth mention activities such as carpentry, welding, dressmaking, hairdressing, and ISAL trainings would benefit their peers.

Connectivity. Lack of internet connectivity is an increasing challenge for youth, and all members of communities that lack telecommunications infrastructure. Without network communications, access to information on current affairs, Climate Information Services (CIS) as well as mobile money transactions are impossible, which is a significant obstacle for some livelihood activities, especially in the wake of cash constraints in the economy.

Migration. Many youth have responded to the lack of economic opportunity, lack of access to land, and the difficulties of agricultural work by leaving their communities. Youth are particularly vulnerable as they do not have formal jobs and tend to not actively engage in crop and livestock activities. Male youth are most likely to migrate to find casual labour jobs in neighbouring countries. Overall, petty trade, cross border trade, and casual work were mentioned as major livelihood activities among youth.

Cross border trading and mining activities are two activities that are mainly carried out by the youth as these activities are perceived to be the best options to quickly increase youth assets and provide a means to build their homesteads. Across Consortia, and particularly in areas bordering South Africa, FGDs reported that youth will often engage in cross-border trading: purchasing goods in South Africa and selling them in Zimbabwe. Youth also migrate away from their community to pursue gold panning and mining activities. While some engage in mining activities close to home (i.e., within their own districts), many youth—both male and female—move quite far away to participate in illegal mining and gold panning. The key driver for youth is reportedly quick returns from the activity. Furthermore, youth are perceived as able engage in the hard labour of digging.

Migration also poses significant risks, and potentially exposes youth to abuse and forced labour in other countries. In some project areas, migrating was also cited as a particular challenge for young families as it leads to “family disintegration” to have the male head of household away from home, although this applies to non-youth as well.



b. Challenges specific to women and female headed households

Gender Based Violence. Across project areas, community interviews reported that poverty, income, and food security is a source of conflict for households, which sometimes escalates to gender-based violence (GBV). Notably, some women are exposed to abuse when they are looking for firewood in isolated or distant places, which is a challenge for households that rely on firewood for fuel. BRAC project areas reported that since 2015, cases of divorce and GBV in community have increased due to hunger, which in turn has led to broken marriages. Similarly, FGD participants in the ECRAS area reported a need for a GBV plan, to address this issue which is seen to have become more common as economic conditions have worsened. However, a FGD participant in the ECRIMS project areas, noted that GBV has declined significantly in the community, as a result of increased economic activity and development.

Shock response. Young female-headed households are particularly vulnerable to shocks and stresses, particularly because their mobility and livelihood options are limited, with small children to attend at home. Many female FGDs reported their resilience to shocks and stresses in the future is highly dependent on the availability of rainfall in the area. They recommended construction of boreholes, as well as the solarizing of water pumps, that would pump water into JOJO tanks, for watering their nutrition gardens.

Decision making. Across consortia interviews found that women's participation in decision making has increased across project sites. Traditionally men/husbands have been decision makers for household finances and choice of livelihood activities, but increasingly women are becoming more involved and some even make decisions on behalf of their husbands. Data indicate that ISAL trainings, together with gender and entrepreneurship trainings, have improved women's decision-making and *"have put them on an equal footing with men in terms of decision making"* (FGD, ECRAS). There are indications that traditional gender roles are shifting as a result of increased male migration and increased female participation in ZRBF activities.

Migration. Most households in the area were said to be headed by women as men spend much of their time on the other side of the border. There is early evidence that the increase prevalence of de facto female headed households may be a significant driver in changing gender norms.

In some project areas young women are involved in produce trading, in which they sell horticultural products at roadside markets that services highway traffic passing to and from Malawi and the border with Mozambique or South Africa. In the ZVA project area, women reported that Mozambican authorities are more likely to allow women to enter Mozambique for trade than men because they do not want competition from Zimbabwean men for jobs. Men in the same area voiced concern that women who engage in cross border trade may be involved in prostitution. This implies that stigma may be associated with female movement and involvement in certain livelihood activities, particularly along border areas.

c. How ZRBF interventions can be tailored to encourage engagement of young families and youth

As a result of ZRBF activities, youth are more business oriented and have a sense of ownership in projects. Technical skills development through training in ECRIMS, PROGRESS and BRAC areas, for example (e.g., welding, baking, and dressmaking), has improved livelihoods for youth and many have adopted technical skills as a source of livelihood. However, recommendations from Ministry of Youth is that there should also be formal certification on all skills and vocational training so youth can be more competitive in the job market. Due to the positive results of existing vocational programs, youth could benefit from more life skill and vocational training programs.

The Ministry of Youth also suggests procurement of computers and Wi-Fi as this will help youth develop business plans and carry out market research. Technological platforms such as WhatsApp groups are seen a beneficial among youth and can be better leveraged by program and extension staff to share information and project messages.

For young families, prioritizing program activities that do not require significant assets, such as the requirement of land for fodder production, or work to build young family assets, will increase their motivation and success. For example, goat breed improvement and membership of goat keeping groups was identified as an intervention with best prospect of improving asset levels of both married and unmarried youth as goats are hardy, enterprise is not dependent on access to land, and initial investment is small.



Beneficiary targeting and selection should deliberately articulate the targeted audience, specifically for youth or women focused activities. This way, local leadership in the wards will be compelled to select youth when they mobilize and not leave youth out since they know the program wants to work with them specifically. According to the DDC, there was need to prioritize youth by targeting interventions to their areas of interest.

XI. Institutional capacity building

Overall, there is evidence of increased capacity of partner organizations as a result of ZRBF activities that have provided mechanisms for collaboration between departments, provision of resources and gadgets, and information sharing through the High Frequency Monitoring System (HFMS). These gains are in the early stages and most apparent with AGRITEX and disaster risk reduction (DRR) plans and committees.

Information on institutional capacity building come from key informant interviews (KIIs) and focus group discussions (FGDs) with ministry department heads and institutional stakeholders involved with ZRBF activities. ZRBF interventions streamline the participation of ministries to be more directly linked to interventions and the communities in which they operate. The inter-connection of interventions also makes the line ministries work together with the same group of farmers. This phenomenon was previously unknown in most if not all of the districts. Various departments had a sense of ownership of specific farmers – using the phrase, “My farmer”. Now, this has been replaced with the phrase “Our farmers”. Stakeholders in the local government offices also feel more confident to hold trainings for farmers as their own capacity has been supported by ZRBF.

Increased collaboration. ZRBF programming facilitated new direct collaboration between ministries, which has resulted in strengthened service provision and shock response. This increased collaboration is a significant benefit of the ZRBF activities to ensure the success of the interventions as these activities require stakeholders from multiple ministries and departments. For example, departments across the consortia reported increased capacity building from ZRBF through training on Disaster Risk Reduction. These trainings have influenced coordinated implementation of activities in the district by different government departments. This training on DRR at the institutional level has enhanced their ability to deliver the training at ward level. Several consortia districts reported that prior to ZRBF training, they used to have fragmented DRR committees, but now after the training they have been sensitized to have one goal and all should work towards it through joint efforts.

Through the interventions cascaded by ZRBF, it has led to the re-energized DRR Committees. KIIs with AGRITEX and Department of Veterinary Services extension officers in the ECRAS project area indicate that these government officers have implemented ZRBF programming by providing trainings and ultimately “enhancing community resilience and sustainability” (CKII, ECRAS, Department of Veterinary Services extension officer and AGRITEX extension officer).

ZRBF has also helped make veterinary departments more active and recognizable at district level through the steering committee. A steering committee was established by ECRIMS at the district level which is intended to plan ZRBF activities in the area in coordination with the stakeholders in the local government offices. Prior to ZRBF, some KIIs in the ECRIMS area reported that the vet department was considered a secretive department which did not share info or participate in district activities. Being part of the steering committee has also helped the Department of Veterinary Services do more of its work as they have opportunities to monitor activities as part of a team. This has been particularly beneficial as linkages between AGRITEX officers and veterinary officers were reported across the consortia.

One institutional FGD explained that previously, AGRITEX officers had no interest or knowledge of diptank matters while the Veterinary officers had no interest or knowledge of cropping issues. Now that departments are more aware of what the others are doing, there has been great reduction in duplication of information. It is now decided, for example in the BRAC project area, that the Vet is responsible for livestock diseases and AGRITEX is responsible for livestock production. With the intro of the ZRBF projects and integration of activities, it has become apparent that for it to be successful, departments must work together.

In addition to collaboration between ministries, there is evidence that direct and consistent collaboration with ZRBF project staff has been beneficial. For example, KIIs with the District Development Coordinator in the ECRAS project area indicate that there is ongoing and regular collaboration between government offices and ZRBF programs. ECRAS has assisted the community in developing DRM plans which the District Development



Coordinator's office has used to create a Civil Protection Committee (CPC). (IKII, ECRAS, DDC). In the Progress project area, AGRITEX reported they have "daily" interaction with the project. There is evidence that this strengthened capacity has even, in some cases, strengthened the collaboration between line ministries and local communities. For example, ZRBF-ECRIMS projects also improved Ministry of Women's Affairs' relationship with village chiefs and other local leaders like village heads and ward councillors, through the facilitation of community conversations on gender.

Provision of resources. In some areas ZRBF programming has supplied new goat and cattle breeds to community members. As mentioned in **Section F** (Agriculture Production Technologies and Value Chain Practices), the supply of productive animals, in combination with necessary material to care for the livestock, is expected to improve wellbeing outcomes for beneficiaries.

The sustainable dipping model which was initiated by ZRBF is an important contribution to the community. Institutional stakeholders from multiple Consortia highlight its usefulness. This included the rehabilitation of dip tanks and the provision of acaricides chemical to help address livestock disease. In one area, the acaricides are provided during two months by the ZVA Consortia, with contributions from the community every third month; this approach should allow the participating households to have ownership for the dipping model beyond the life of the program.

The qualitative data indicates that this model will have the "potential of significant impact" as the animals in the area are greatly affected by tick-borne diseases and Newcastle disease which can readily be controlled by the sustainable dipping model. ZRBF's contributions are important as they complement the existing acaricides supply from the government which has not been able to meet the needs of all households. In the BRAC area, stakeholders note that the economic downturn had impacted the government's supply, which suggests that ZRBF is playing a role in covering the needs of the community. As households are dependent on livestock activities, this is an important contribution.

ZRBF programming has also provided a significant support to government staff by investing in transportation costs. Given that local stakeholders have limited mobility and access to transportation, including AGRITEX and veterinary extension officers, this support has facilitated the outreach of these officers in the communities in which ZRBF operates. ZRBF programming has supplied transport to support implementing organizations when they travel to the field, and interviews with extension officers show that they will often share transportation to the project sites with consortia. The increased mobility as a result of ZRBF has increased the capacity of extension workers to visit more sites more often.

a. Have ZRBF products and services improved the capacity of partner agencies and government departments to make evidence-based decisions and take effective early action to mitigate the impact of shocks?

ZRBF trainings and information shared through the High Frequency Monitoring System (HFMS) have helped support the capacity of institutional partners to make evidence-based decisions and take effective early action to mitigate the impacts of shocks.

Training. DRR trainings that ZRBF organized proved to be crucial to the (EMA) department since they improved capacity to identify disasters, challenges and their possible solutions. Through this initiative the department managed to cascade trainings to wards and establish DRR committees at local level. DRR training helped departments to have more in-depth information about hazards affecting the communities. As the way they used to carry out DRR was not intensive, ZRBF helped the district to standardize district disaster management plans. Departments within the ward are interacting with each other more and plans and activities are carried out in consultation with each other.

AGRITEX officers have similarly had capacity strengthened. For example, a KII with an AGRITEX Officer in the SIZIMELE project area reported that they have received many trainings through ZRBF and in turn she trains lead farmers who then cascade that knowledge to their respective groups. She, for example, was trained in climate smart agriculture which includes conservation agriculture, fodder production, destocking and supplementary feeding, small grains production (sorghum, millet and cow peas) and diversification. Furthermore, mechanized technology such as tractors and shellers, which are found in the PROGRESS area,



was new for extension staff and farmers. ZRBF increased knowledge about these technologies and now farmers produce more without spending as much time in the fields.

Gadgets. Smartphones and tablets have been provided by ZRBF to institutional stakeholders; these have facilitated the use and dissemination of information. Tablets (provided by ZRBF) are used to continuously update the district database and the AGRITEX department has specified indicators that need data to be collected on a daily basis. Some challenges, though, include the limited bundles of airtime/data.

HFMS. Similarly, ZRBF has been increasing government partners' capacity to mitigate the negative effects of shocks and stresses through the High Frequency Monitoring System reports, which are shared monthly. Across consortia, stakeholders who utilize the HFMS find it useful. An institutional-level FGD in the MELANA area, for example, described the HFMS at district level as primary data used for reporting and advocating for financial resources and praised the HFMS for its *"in-depth analysis and regular monthly frequency or reporting compared with other tools"*, such as the crop and livestock assessments.

In the ZVA area, a KI noted appreciation for the consolidation of HFMS indicators in one place, as well as an added benefit of the HFMS activities through use of WhatsApp among AGRITEX officers to coordinate field days and share information on VET vaccination programs and early warning information (e.g., disease and pest outbreaks). A KI in the PROGRESS area highlighted that the HFMS tool was cascaded back to the community for information dissemination. For some ZRBF stakeholders, timely access to critical information through HFMS is a valuable change to inform planning and preparedness.

The data suggest, however, that awareness and use of the HFMS is uneven across the ZRBF program areas. In the ZVA and ECRIMS study sites, for example, some informants and FGD participants were unaware of the HFMS. In other areas, utilization of the HFMS is constrained by the type of information it collects (e.g., qualitative explanations that are not included in the template, specific to livestock water access; MELANA, ECRIMS); lack of gadgets or dedicated tablets for data collection or multiple and conflicting platforms in use to collect data (e.g., Kobo Collect, MagPi, or ODK software) that result in confusion and late submission of data (ECRIMS, ZVA); and a sense that data collection is "one way" and a lack of feedback (PROGRESS, BRAC). During an institutional level FGD in the MELANA project area one respondent explained: *"some at the district level are not really understanding that the HFMS data helps their communities more, but rather feel it is more of ZRBF benefiting from receiving information"*.

This was supported in other interviews, which found that AGRITEX and Vets in particular feel they are tasked with collecting a significant amount of data, but are unable to access that data in real time after submitting and must wait for the HFMS report to come out to learn the results—that the Consortia are the *"consumers of the bulletin and they make programming decisions based on the information"* (PROGRESS).

In some cases, stakeholders report they are not receiving or accessing reports, or if they are circulated, staff are not taking note (e.g., BRAC, ECRIMS, PROGRESS). Since HFMS data is typically submitted, synthesized, and shared monthly, there appears to be an issue of data flow and dissemination. Another stakeholder noted that the information is available, but not all users are putting the information into practice and may need additional training and support on the application of the data. Additionally, institutional FGD participants in MELANA commented that use of the HFMS data is limited, in part, because of lack of local authority to respond: *"even if we see an outbreak, we still need the approval from national level to act and declare a disaster"*.

For those who use and value the HFMS, the data indicate an appreciation for the information. If resources—namely internet—continue to be available, *"the HFMS will continue even after [ZRBF]"*. One Rural District Council CEO mentioned that his biggest fear was that the HFMS can *"die a natural death"*, like the Rural WASH Information Management System that was used to track Water, Sanitation and Hygiene indicators.

b. Recommendations to further improve institutional capacity for shock mitigation and response

This section provides information on the recommendations that institutional stakeholders highlighted in the qualitative component. Overall, institutional level interviews indicated interest in expanding ZRBF programming to more wards in their districts. For example, a KI in the ECRAS project area requested that ZRBF activities should be rolled out to other wards as *"the interventions are very critical for all farmers"* (KI, DDC, ECRAS). Similarly, in the MELANA project area a focus group reported that *"there is need to cascade*



it [ZRBF programming] to other wards” (IFGD, MELANA). These findings indicate that government level stakeholders do highly value and see the benefits of ZRBF activities. The analysis also highlighted a number of recommendations to further improve institutional capacity for shock mitigation and response, specifically related to the HFMS, transportation and mobility of extension workers, water infrastructure, and training.

HFMS

1. Given the unevenness in the use of HFMS reports, and the value placed on it among those who do use it, ZRBF may consider a more granular assessment of where access gaps exist and barriers to timely use for decision making. Multiple KIs also suggested “refresher courses” to improve collection and submission of HFMS data, and to improve understanding of the indicators, indicator selection and qualification, how these are scored, and why they are tracked (e.g., BRACK, PROGRESS).

In addition to the “software” (i.e., training, sensitization), adequate resourcing of “hardware” will be important to expand and extend the use of the HFMS, specifically in terms of internet access, accessibility of gadgets and tablets, appropriate reporting templates, and clarification and distribution of dedicated software.

Transportation

1. Many of the districts face challenges in terms of mobility, a critical gap to address going forward. The remote location of communities means that many recommendations revolve around transportation equipment to enhance the capacity of extension workers. Given the distance that extension agents must travel and the low number of extension agents, for example, the recommendations for improved mobility (transport material) and accommodations for government extension agents seems necessary. Currently, many farmers and AGRITEX officers are connected largely via WhatsApp, but in person visits are preferred. This is important as some government departments feel unequipped to monitor ZRBF activities in the field due to lack of transportation to reach farmers. Need to increase mobility to increase extension visibility. Need for vehicles and fuel allocation for monitoring activities.

Water Infrastructure

1. Key recommendations from AGRITEX centered on increasing areas under irrigation. Promotion of community irrigation schemes to scale up access to water infrastructure is important.
2. Investments in community water infrastructure that serves both household and livestock consumption is needed in the majority of project areas. Interviewees recommend boreholes, upgradeable wells (through schemes that pair ZRBF financing with villages and RDCs to purchase drilling rigs), dams for livestock and horticulture, and new dip tanks.

Rehabilitation of water sources, such as existing boreholes and dams, would also improve water availability.

Training

1. While many government institutions have participated in DRR trainings, a gap remains within the district level in terms of cascading information or training other staff.
3. Trainings directed at farmers should also involve AGRITEX officers and their supervisors. This will enable them to offer assistance and appropriate monitoring as they will be on the same level as farmers. AGRITEX officers argue that if the project trains a farmer directly, it creates conflict as the AGRITEX officer is not seen as the expert and officers fail to monitor the works of farmers. However, district leaders recommend investing in training community members to mitigate the high turnover of government civil servants. Beneficiaries agree with the district leaders perspective and note that due to the lack of visits from extension officers who must travel long distances, beneficiaries would prefer receiving additional direct trainings from the program.
4. There is a need to put more resources toward ward-level extension staff. Workshops should be attended by a ward-based officers because they are more likely to implement what they have been trained on.
5. Community level para-vets should be trained in disease diagnosis and control. This will help alleviate challenges and reduce livestock poverty deaths as there will be increased access to info on herd



management. Beneficiaries also note that this type of training would help attract youth, who many times must emigrate in search of work.

6. Recommendations also include modifying the timeline of ZRBF interventions to better coincide with agricultural seasons. In one KII, the officer indicates that they are teaching farmers about planting methods/water harvesting while the season is nearly coming to an end. In that same case, the inputs arrived too late for farmers to practice what they've learned (CKII, MELANA).





CONCLUSIONS

The findings from the ZRBF OMS2 indicate that while households and communities have faced an increase in the experience of shocks over the previous year, which in turn led to increases in food insecurity and a greater reliance of coping strategies, participation in ZRBF interventions strengthened the resilience capacities of program participants to mitigate the effects of economic, climate-related, and other shocks and stresses.

Moreover, households that participate in multiple, layered ZRBF interventions fare better than those who participate in a single intervention. This finding has important programming implications for ZRBF and its Consortia partners going forward.

- Resilience capacities increased from round 1 to round 2, and significantly more for households in the high-intensity programming category compared to those in the medium-intensity category. The percent of households that reported increases in resilience capacity was 48 percent higher for high-intensity households compared with medium-intensity. This result indicates that program participation is contributing positively to strengthening resilience capacities. In-depth analysis of the relationships between resilience programming interventions and resilience capacities presented in **Annex 6** supports this conclusion.
- Qualitative findings reveal a similar pattern – reports from beneficiaries, community key informants, and institutional stakeholders indicate that ZRBF programming is building resilience capacities and increasing household members' ability to face shocks and stresses. As a result of their participation in ZRBF programming, beneficiaries experience a more diverse suite of livelihood approaches, greater economic and financial options, and an improved ability to make decisions.
- The deep dive analysis in **Annex 6** explicitly models the links from specific resilience programming interventions to changes in practices by participants, to increases in resilience capacities, to ways that households adjust to shocks (coping strategies), ultimately to food security outcomes in the face of shocks that households experience. Two specific causal chains are modelled: i) from resilience programming to use of improved practices to improved food security outcomes and ii) from resilience programming to enhanced resilience capacities to improved outcomes. The conclusions from the deep dive analysis are several:
 - Participation in combinations of resilience programming leads to much greater increases in food security and greater likelihood of recovery from shocks than participation in any single intervention. Layering of interventions has large complementary effects.
 - Participation in resilience programming improves food security outcomes in the face of shocks, both through increased use of improved practices and through strengthening resilience.
 - Participation in all types of resilience programming are associated with improvements in resilience capacities.
 - Participation in all types of resilience interventions are associated with use of improved agricultural practices (Climate-Smart Practices).
- Food security outcomes decreased from round 1 to round 2, even as resilience capacities have increased. These seemingly contradictory results are explained by the fact that exposure to shocks was significantly higher in round 2 than round 1. The findings summarized above indicate that households with higher



levels of resilience capacities are in fact better able to recover and achieve better food security outcomes in the face of shocks. Thus, while food security outcomes did decline over the two survey rounds, the qualitative and quantitative analyses of resilience capacities indicate that if resilience capacities had not improved, in part because of ZRBF resilience programming, food security outcomes would have been even worse than what actually occurred.

- Through its capacity-building and direct support to livelihoods, ZRBF has also contributed to strengthening linking social capital between institutional stakeholders and beneficiary households in the program area. Qualitative data indicate that, overall, ZRBF participants experienced improved relationships with extension workers, government stakeholders, and community leaders as a result of ZRBF investments in resilience programming. Finding suggest this has improved the social fabric in the programming area and contributed to improved services and support to the community.



ANNEXES

(See separate attachment Annex documents)

1. Sample Size Calculation
2. Sampling Issues and Lessons for Panel Survey Design
3. Definition and Calculation of ZRBF Key Indicators
4. Resilience Capacities Analysis
5. Detail ZRBF Topline Indicators Analysis Tables
6. Deep Dive Analysis
7. Qualitative Topical Outlines
8. Quantitative Questionnaire
9. Descriptive Analysis Tables
10. Regression Output Tables



Annex 1

Sample Size Calculation

Minimum sample size formulas to detect differences across sub-samples (e.g. high/low intensity strata, survey rounds) were used to compute the required sample size for the OMS. The three indicators highlighted in bold in **Table 1** have been used to calculate the representative sample size according to these formulas. The following are two sample size calculation formulas that were used to compute sample sizes for indicators measured as proportions and indicators measured as average:

A. Indicators Measured as Proportions:

Sample size¹ per stratum, $n_t = [(z_\alpha + z_\beta)^2 \times \{p_1(1-p_1) + p_2(1-p_2)\} / (p_2 - p_1)^2] \times d$

Where,

- n_t = minimum required (target) sample size per stratum (high/low intensity)
- p_1 = the estimated percentage of HHs with the indicator measured as a proportion from the round-1
- p_2 = the *expected* percentage of HHs with the indicator at the end of the project such that certain percentage point ($P_2 - P_1$) decrease/increase is desired to be able to detect.
- Z_α = the Z-score corresponding to the 95% of confidence level with which it is desired to be able to conclude that an observed percentage point decrease/increase ($P_2 - P_1$) would not have occurred by chance (α – the level of statistical significance) [**$z_\alpha = 1.645^2$ at 95% confidence level**]
- Z_β = the z-score corresponding to the degree of confidence with which it is desired to be certain of detecting a change of size ($P_2 - P_1$) if one actually occurred (β – statistical power). Actually, this is the Z-score corresponding to the statistical power. 80% statistical power³ is considered for this sample size calculation [**$z_\beta = 0.840$ with 80% statistical power**].
- d = Design effect⁴, two-stage PPS cluster sampling procedure is proposed and in that case design effect might be close to two [**$d = 2$**]

B. Indicators Measured as Averages:

Sample size² per stratum, $n_t = [(Z_\alpha + Z_\beta)^2 \times (S_1 + S_2) / (X_2 - X_1)^2] \times d$

- n = minimum required (target) sample size per stratum (high/low intensity);
- d = Design effect⁵, two-stage PPS cluster sampling procedure is proposed and in that case design effect might be close to 2 [**$d = 2$**];
- X_1 = average food based coping strategy index in round-1 OMS;
- X_2 = the expected average of food based coping strategy index at the end of the project such that the quantity ($X_2 - X_1$) is the size of the magnitude of changes it is desired to be able to detect;
- S_1 and S_2 = expected standard deviations for the indicator for the respective survey rounds;
- Z_α = the Z-score corresponding to the 95% of confidence with which it is desired to be able to conclude that an observed average decrease/increase ($X_2 - X_1$) would not have occurred by chance (α – the level of statistical significance) [**$z_\alpha = 1.645$ at 95% confidence level**];
- Z_β = the Z-score corresponding to the degree of confidence with which it is desired to be certain of detecting a change of size ($X_2 - X_1$) if one actually occurred (β – statistical power). Actually, this is the Z-score corresponding to the statistical power. Eighty percent (80%) statistical power is considered for this sample size calculation [**$z_\beta = 0.840$ with 80% statistical power**].



Table 1: Strata Sample Sizes

| Indicator Name | Parameters | Minimum required sample size (n_1) | Target sample size considering 20% Attrition (n) |
|---------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|------------------------------------------------------|
| 1. Average Food-based Coping Strategy Index score for households in targeted communities as a result of ZRBF intervention | Average Year-1: $X_1 = 15^1$ Average Year-2: $X_2 = 12^3$ Standard deviation: $S_1 = 9.0^6$ Standard deviation: $S_2 = 9.0^6$ | 222 \approx 225 | 270 |
| 2. Percentage of households with improved Household Dietary Diversity Score (HDDS) | Proportion in Year-1: $P_1 = 55\%^1$ Proportion in Year-2: $P_2 = 70\%^4$ | 251 \approx 250 | 300 |
| 3. Percentage of households who used financial services in the past 12 months | Proportion in Year-1: $P_1 = 50\%^2$ Proportion in Year-2: $P_2 = 65\%^5$ | 245 \approx 250 | 300 |
| FINAL SAMPLE SIZE PER STRATUM | | 250 | 300 |

¹Zimbabwe Vulnerability Assessment Committee (ZimVAC), 2017 Rural Livelihoods Assessment Report

²P attains maximum sample size when it is 50%

³20% reduction over the period of time

⁴15% points (27 percent) increase over the period of time

⁵15% points (31 percent) increase over the period of time

⁶Assuming coefficient of variation of the index equals to 0.6

Using the formulas and values of the parameters given in **Table 1**, the maximum target sample size for a stratum is 250. The cluster samples will be selected randomly from the beneficiary list prior to the survey. In this case, the attrition rate is expected to be higher than the on-the-spot selection. Therefore, 20% of additional cases have been added to the minimum required sample size, so that data can be captured for the adequate number of beneficiaries. The attrition rate adjusted sample size is **300** per stratum. This the final target sample size for each of the Low and high intensity beneficiary groups are 250 (300 including 20% attrition) in one consortium, making a total target sample size of 500 (600 with attrition) per consortium.



Annex 2

Sampling Design

1. Attrition

As described in the Sampling Design section of the main report, the attrition rate is 2.5 percent. A total of 3,353 were successfully interviewed for round 2 (OMS2) of the 3,440 households interviewed in the quantitative component of the OMS1, and there were no replacement households. Enumerators were unable to contact beneficiaries in 82 households and 5 beneficiaries refused to be interviewed.

An analysis was conducted to measure the extent to which attritors (households that were not included in OMS2) differed from households remaining in the sample, which would indicate biased results in comparisons across the two rounds. To test for bias, information about non-attritors (those from OMS1 that were also interviewed in OMS2) are compared with that of attritors. **Table 1** shows results from statistical tests comparing mean values of attritors to non-attritors across a range of household characteristics, including household demographic characteristics, resilience capacities and shock exposure variables. The table shows that attritors differed only in shock exposure with fewer total shocks (3.3) than beneficiaries who remained in the sample.

Attrition rates varied across consortia and were highest in ECRAS and ZVA (**Table 2**). Separate analyses for ECRAS and ZVA did not show any systematic differences that would bias. Results are presented in **Table 3**.

Table 1: Difference of means tests (t-tests) comparing non-attritors and attritors

| | Total sample | | |
|----------------------------------------|---------------|-----------|-----|
| | Non-attritors | Attritors | |
| Household size | 5.4 | 5.0 | ns |
| Human capital index | 92.1 | 92.0 | ns |
| Bonding social capital index | 46.9 | 46.8 | ns |
| Bridging social capital index | 33.7 | 34.5 | ns |
| Linking social capital index | 29.9 | 28.9 | ns |
| Livelihood diversity index | 26.8 | 28.3 | ns |
| Livestock (2019usd) | 1565 | 1463 | ns |
| Productive assets (0-24) | 8.1 | 7.7 | ns |
| Access to savings index | 16.2 | 23.0 | ns |
| Moderate to severe FIES-30 days (%) | 51.1 | 45.1 | ns |
| HDDS (0-12) | 4.6 | 4.7 | ns |
| Food Based Coping Strategy Index (CSI) | 17.8 | 16.1 | ns |
| Food consumption score (FCS) (0-108.5) | 42.2 | 41.1 | ns |
| Total shocks (0-14) | 4.1 | 3.3 | *** |
| Observations | 3353 | 87 | |

+ p<0.1, * p<0.05, ** p<0.01, *** p<0.001

Table 2: Comparisons of Attritors to Non-attritors, By Consortium and Survey Round

| Consortium | Survey Round | | Attrition | Attrition rate (%) |
|--------------|--------------|---------|-----------|--------------------|
| | Round 1 | Round 2 | | |
| BRAC | 517 | 516 | 1 | 0.2 |
| ECRAS | 500 | 472 | 28 | 5.6 |
| ECRIMS | 500 | 494 | 6 | 1.2 |
| MELANA | 449 | 445 | 4 | 0.9 |
| PROGRESS | 483 | 474 | 9 | 1.9 |
| SIZIMELE | 506 | 503 | 3 | 0.6 |
| ZVA | 485 | 449 | 36 | 7.4 |
| Observations | 3,440 | 3,353 | 87 | 2.5 |



Table 3: Comparisons of Attritors to Non-attritors in ECRAS and ZVA

| | ECRAS | | | ZVA | | |
|--------------------------------------------------|--------------------|-----------|----|--------------------|-----------|----|
| | Non-at- tritors | Attritors | | Non-at- tritors | Attritors | |
| Household size (0-30) | 6.3 | 5.1 | ** | 4.8 | 4.8 | ns |
| Human capital index | 94.1 | 89.3 | ns | 88.0 | 94.4 | ns |
| Bonding social capital | 53.1 | 52.7 | ns | 34.6 | 36.8 | ns |
| Bridging social capital index | 44.5 | 46.4 | ns | 28.1 | 27.8 | ns |
| Linking social capital index | 54.2 | 39.9 | + | 17.7 | 25.5 | ns |
| Livelihood diversity index | 34.3 | 30.4 | ns | 25.7 | 30.2 | * |
| Livestock (2019usd) | 2,517 | 1,865 | ns | 853 | 1,622 | + |
| Productive assets (0-24) | 9.8 | 8.2 | ** | 6.7 | 7.6 | ns |
| Access to savings index | 44.5 | 39.3 | ns | 5.6 | 11.1 | ns |
| Moderate to severe FIES 30 days | 29.9 | 26.8 | ns | 54.2 | 50.3 | ns |
| HDDS (0-12) | 5.0 | 5.4 | ns | 3.4 | 3.8 | ns |
| Food-based Coping Strategy Index (CSI) (0-178.5) | 4.5 | 4.4 | ns | 25.6 | 26.8 | ns |
| Food consumption score (FCS) (0-108.5) | 48.9 | 50.6 | ns | 30.8 | 32.1 | ns |
| Total shocks (0-14) | 3.9 | 3.7 | ns | 3.0 | 2.6 | ns |
| Observations | 472 | 28 | | 449 | 36 | |

+ p<0.1, * p<0.05, ** p<0.01, *** p<0.001

II. Sampling Weights

Round 1 sample weights accounted for stratification by consortium, programming intensity and non-responses. Detailed discussion is provided in the OMS round 1 report¹. The non-response portion of the equation was adjusted in round 2 to account for attrition. The three separate sampling weights² computed using the following equations:

1. Sample weights for stratification (w_s) by consortium:

Where,

N_j = No. of beneficiaries in j^{th} stratum, n_j = Sample size of j^{th} stratum, $n = \sum n_j$ and $N = \sum N_j$

2. Sample weights for stratification (w_s) by High and Low intensity:

Where,

N_j = No. of beneficiaries in j^{th} stratum, n_j = Sample size of j^{th} stratum, $n = \sum n_j$ and $N = \sum N_j$

3. Sample weights for non-responses (w_n):

Where,

n_i = sample size for the i^{th} cluster and n_{ri} = number of non-responses in i^{th} cluster

The FINAL sample weights: $W = W_{cn} \times W_{in} \times W_n$



ZRBF ANNUAL OUTCOME MONITORING SURVEY 2019
TABULATION AND ANALYSIS PLAN FOR TOPLINE INDICATORS

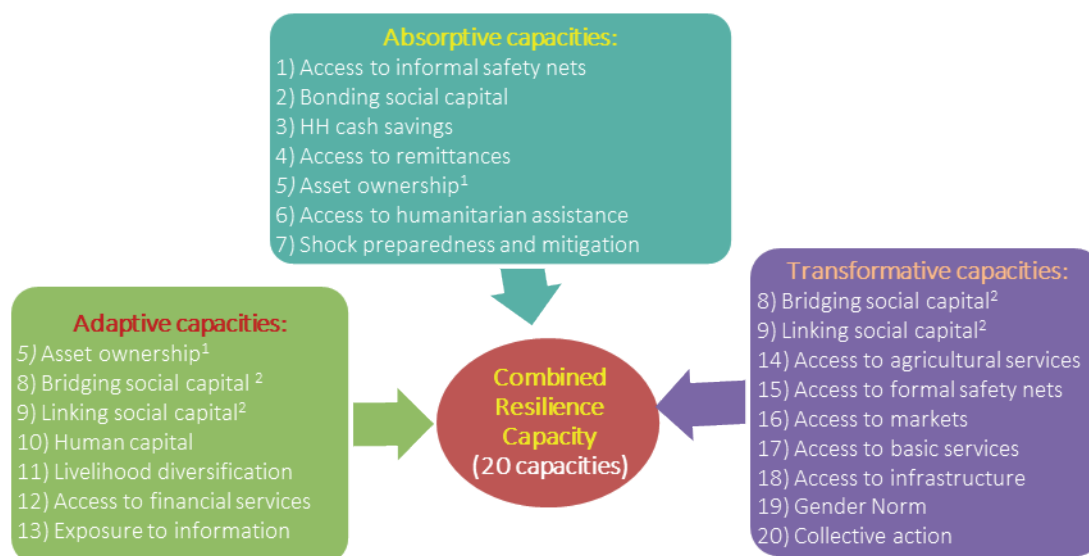
| Indicator Name | Unit of Measure | Respondent Types | Disaggregation | Method and Analysis (Q# from survey tool) | Notes/Reference |
|-----------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Prevalence of households with moderate or severe Food Insecurity Experience Score (FIES) | Percent of HHs | Female decision-maker or whoever is most knowledgeable about food preparation and/or consumption of household members from RKH sample beneficiary | Consortium partner, Sex of the household head, high/medium intensity | <ul style="list-style-type: none">8 HH hunger severity question coded as "0 for No" if the household do not have any food insecurity in last 30 days for the respective question and "1 for Yes" if the HH have that experience.The FIES is calculated using severity weights for all eight questions and a standardization process by applying the Rasch model developed by FAO. The 'RM.Weights' package in R software is used to compute the FIES using the Rasch model. This package computes parameter estimates and assessment statistics of a single-parameter Rasch model for dichotomous and polytomous (partial credit) item responses using Conditional Maximum Likelihood (CML) estimation, including the optional use of sampling weights.The thresholds of three FIES categories: no/little hunger, moderate hunger and severe hunger are obtained from the Rasch CML estimations. Households are classified for FIES using the sum of scores for 8 individual questions and thresholds that are obtained from Rasch CML procedure.To calculate the indicator value, # of HHs with FIES for moderate or severe category is considered as numerator and total #of HHs in the sample is considered as denominator. | <ul style="list-style-type: none">Introduction to item response theory applied to food security measurement; Basic Concepts, Parameters and Statistics, By Mark Nord, FAO, Rome, 2014Methods for estimating comparable prevalence rates of food insecurity experienced by adults in 147 countries and areas, Mark Nord et al 2016 J. Phys.: Conf. Ser. 772 012060 |
| 2. Number of women and men whose resilience has been improved as a result of ZRBF support | Number of male and female (estimated from percent) | Household head/ZRBF beneficiary/most knowledgeable person in the household | Consortium partner, Sex and age of the main respondents, high/medium intensity | <p>TANGO PROPOSED ALTERNATIVE METHOD:</p> <ul style="list-style-type: none">This is a composite indicator (Index) that will be derived from the average of the standardized scores of the following 20 absorptive, adaptive and transformative resilience capacity components:<ol style="list-style-type: none">Access to informal safety nets scoreBonding social capital scoreHH cash savings scoreAccess to remittancesAsset ownership scoreAccess to humanitarian assistanceShock preparedness and mitigation scoreBridging social capital scoreLinking social capital scoreHuman capital score (Adult education level)Livelihood diversification scoreAccess to financial services scoreExposure to information scoreAccess to agricultural services scoreAccess to formal safety nets scoreAccess to markets scoreAccess to basic services scoreAccess to infrastructure scoreGender Norm scoreCollective action scoreThe individual resilience capacity components will be standardized using the process Where j is the value of the standardized score of component j, i is the actual score of the same component, and min and max are the minimum and maximum values of component j, respectively. OMS Round 1An individual (HH) in the sample with the composite score at least the MEAN score was considered with improved resilience capacity with score 1; otherwise 0.To calculate percent, an individual was counted for numerator if the composite score is 1 and the denominator is the total number of individuals in the sample.Percent value was used to obtain estimated number of total male and female with improved resilience capacity from the total number beneficiaries covered by ZRBF.The threshold value for Round-1, i.e. the mean score from Round-1 will be used for the subsequent rounds to estimate changes of the indicator values over the period of time for panel data collection. OMS Round 2OMS-1 was considered as the baseline to compute percent of beneficiaries with improved resilience capacity in OMS-2An individual was considered with improved resilience capacity if OMS-2 composite resilience score is greater than the value of the upper bound of the 95% confidence interval of the OMS-1 composite resilience score.NOTE: BECAUSE THIS INDICATOR IS COMPUTED DIFFERENTLY FOR THE TWO ROUNDS, THE INDICATOR VALUES CANNOT BE DIRECTLY COMPARED FOR CHANGE. THE OMS-2 VALUE MEASURES DIRECTLY THE CHANGE FROM OMS-1 | <ul style="list-style-type: none">This method of calculating resilience capacities, based on previous experience. The measure is based on measurement of three dimensions of resilience capacities (absorptive, adaptive, transformative). For the purpose of this study, we propose to combine all the components of these three capacities into one overall capacity index. |
| 3. Average Food based Coping Strategy Index score for households in targeted communities as a result of ZRBF intervention | Average Score/ Index per HH | Female decision-maker or whoever is most knowledgeable about food preparation and/or consumption of household members from RKH sample beneficiary | Consortium partner, Sex of the household head, high/medium intensity | <ul style="list-style-type: none">CSI is calculated using information on how often a HH used a set of following five short-term food based coping strategies in situation in which they did not have enough food or money to buy food during the one-week period and standard severity weights that are recommended in WFP/USAID CSI manual 2008 (second edition). FNC used the same severity score for ZimVAC 2019 analysis, but each score is used as doubled to calculate CSI. Therefore, CSI for ZRBF is calculated using both severity weights.There are 12 food based coping strategies listed in questions B202. Each of the 12 coping strategy questions have following 5 possible responses based on the frequency of occurrences in a month/or in a week in the past 30 days:<ul style="list-style-type: none">0 = Never, 1 = Seldom (1-3 days /month), 2 = Sometimes (1-2 days/week), 3 = Often (3 days/ week), 4 = DailyOnly "skip entire day without eating" should have 4 responses (excluding daily).These 5 possible response converted into 7 days using the following response weights: Responses: 0=0 days, 1=0.5 days, 2=1.5 days, 3=3.5 days and 4=7 daysStandard severity weights for 12 coping strategies<ul style="list-style-type: none">a) Skip entire days without eating= 4 b) Limit/reduce portion size at mealtimes=1 c) Reduce number of meals eaten per day=1 d) Borrow food or rely on help from friends or relatives= 2 e) Rely on less expensive or less preferred food=1 f) Purchase/borrow food on credit= 2 g) Gather/hunt unusual types or amounts of wild food=4 h) Harvest immature crops= 4 i) Send household members to eat elsewhere=2 j) Send household members to beg=4, k) Reduce adult consumption so children can eat=1, l) Rely on casual labour for food=3The weighted score (CSI_1 to CSI_12) for individual coping strategies are obtained by multiplying individual coping strategy response score (days) by the severity weights for the respective coping strategy.Sum of the weighted scores for all 12 coping strategies will yield the CSI for a household.CSI= CSI_1 + CSI_2 + CSI_3 + CSI_4 + CSI_5 + CSI_6 + CSI_7 + CSI_8 + CSI_9 + CSI_10 + CSI_11 + CSI_12Average CSI score per sampled household will be reported for this indicatorA percentage value is also calculated for "Percentage of HHs with acceptable food-based coping strategy index score" using the threshold <10 CSI score. | <ul style="list-style-type: none">ZRBF Survey-Based Indicators Reference Guide, February 2019The Coping Strategy Index: A tool of rapid measurement of household food security and the impact of food aid programs in humanitarian emergencies" by Daniel Maxwell (Associate Professor, Feinstein International Center, Tufts University) and Richard Caldwell (Executive Director, TANGO International)FNC/ZimVAC analysis 2019 |
| 4. Average livelihoods and Assets based Coping Strategy Index for households in targeted communities | Average per HH | Household head/ZRBF beneficiary/most knowledgeable person in the household | Consortium partner, Sex of the household head, high/medium intensity | <ul style="list-style-type: none">The respondents will be asked for a set of questions [B801b1 to B801b10] for selling or making changes of assets or livelihood in the 30 days due to the lack food of or lack of money to buy food.Responses of questions B801b1 to B801b10 (Coping strategies):<ul style="list-style-type: none">A) NO, because it wasn't necessary=0B) NO, because I already sold those assets or did this activity within the last 12 months and I cannot continue to do it=1C) NO, I don't have assets/savings/access=0D) YES=1E) N/A=0Responses of questions B801c1 to B801c10 (Severity of coping strategy):<ul style="list-style-type: none">F) 1 = Neutral (HHs improved ability to cope shocks or crisis)G) 2 = Stress strategies (reduced ability to deal with future shocks)H) 3 = Crisis strategies (reduced productivity)I) 4 = Emergency strategies (selling big productive assets, accept high risk jobs, begging, strategies worse than crisis strategies)Individual livelihood coping strategy scores obtained by multiply response scores and severity scores i.e. score for number 1 strategy LCSI_1 = B801b1 x B801c1Sum of individual coping strategy scores LCSI_1 to LCSI_10 yields the Livelihood Coping Strategy Index (LCSI) for the households.Average LCSI per HH will be reported for this indicator | <ul style="list-style-type: none">ZRBF Survey-Based Indicators Reference Guide, February 2019ZRBF baseline report [page 48-49], Oxford Policy Management (OPM)FNC ZimVAC analysis |
| 5. Average monthly household income or proxy of income | Average (in USD) per HH | Household head/ZRBF beneficiary/most knowledgeable person in the household | Consortium partner, Sex of the household head, high/medium intensity | <ul style="list-style-type: none">Monthly household income was collected for last month separately for: 17 income sources, both for cash and in-kind (B205A to B205O).Used four currencies (USD, Rand, Paula and RTGS/Bond) to collect the amount of income. The official rates used for currencies to USD were: 14.15 Rand, 10.44 Paula and 03.06 RTGS/Bonds. (March 2019)Amounts in Rand, Paula and RTGS/Bonds are converted into USD.Sum of the last month income in USD for all 17 income heads yields total income for sample households for last month.Average of this last month income in USD has been reported for the indicator.As a proxy of income, expenditure information also collected for 31 regular items (B206) for last month and 15 irregular items (B207) for last 12 months.Similar to the income, expenditure information also collected using four currencies and converted into USD.The 12 months expenditure for 15 items converted into average monthly expenditure by dividing 12.Sum of the expenditure for last months and average monthly expenditures from 12 months yields monthly expenditure for an individual HH.Average monthly expenditure in USD is considered as the proxy of average monthly income. | <ul style="list-style-type: none">There is guidance on data collection and analysis process for this indicator in the "ZRBF Survey-Based Indicators Reference Guide, Feb 2019" |
| 6. Percentage of households with improved Household Dietary Diversity Score (HDDS) | Percent HHs (in three HDD categories) | Female decision-maker or whoever is most knowledgeable about food preparation and/or consumption of household members from RKH sample beneficiary | Consortium partner, Sex of the household head, high/medium intensity, HDD categories | <ul style="list-style-type: none">This indicator is measured based on seven foods/food groups: 1) cereals/tubers 2) beans/legumes 3) vegetables 4) fruits 5) meats/fish/egg 6) dairy products/milk and 7) oil/butter/fatData was collected for 12 food/food groups, that was grouped by the main 7 food groups (B101)Households consumption of foods/food groups collected for number of days consumed in last 7 days (B101a), consumed yesterday or not (B101c) and also number days for combined food groupsEach of the 7 food/food groups consumed in 7 days assigned with score 1 regardless of frequency (e.g. score 1 for cereals/tuber if b101a1=1 or b101b=1), otherwise score 0.Sum of the scores of 7 individual food/food group's score is the final score of HDDS (i.e. HDDS=food1+ food2+ food3+ food4+ food5+ food6+ food7)Final score of HDDS (ranging 0 to 7) was categorized for the following three categories:<ol style="list-style-type: none">Good dietary diversity: >= 4 scoreMedium dietary diversity: 4 – 5 scoreLow dietary diversity: <4 scoreThe indicator will be reported for percentage of households with acceptable level of HDDS. The acceptable level of HDDS is defined as medium to good diet diversity. | <ul style="list-style-type: none">Followed "ZRBF Survey-Based Indicators Reference Guide, Feb 2019"The sum of score for HDD will produce discrete scores for an individual HH ranging from 0 to 7. Therefore, the thresholds for three HDD categories (i.e. <4, 4 – 5 and >=4.5) suggested in ZRBF indicator guideline will be changed to <4, 4 – 5 and >=4.5 |
| 7. Percentage of households who used financial services in the past 12 months | Percent of HHs | Household head/ZRBF beneficiary/most knowledgeable person in the household | Consortium partner, Sex of the household head, high/medium intensity | <ul style="list-style-type: none">In the past 12 months, households who is a member of ISAL/VSAL/SACCO and/or took out loan for or saved money to a following formal/informal credit/savings groups or institution are considered for this indicator:<ul style="list-style-type: none">Micro finance institutionsBanksMobile walletISAL/VSAL/SACCOPrivate business – inputs on credit for contracted cropPrivate business – feeder finance for pen fatteningLocal trader/shopFarmers organizations)For the numerator calculation: score 1 if "yes" in D1206 and any of the above mentioned sources in D1208 for loan (L), and/or 1 if "yes" in D1210 and any of the above mentioned sources in D1211 (S); otherwise 0 for both cases.Sum of the dummy variable L and S will produce score ranges 0 to 2. A household will be counted for numerator if the combined score is 1 or 2. | <ul style="list-style-type: none">ZRBF Survey-Based Indicators Reference Guide, February 2019 |
| 8. Proportion of households adopting climate smart agricultural production technologies | Percent of HHs | Household head/ZRBF beneficiary/most knowledgeable person in the household | Consortium partner, Sex of the household head, high/medium intensity | <ul style="list-style-type: none">As suggested in ZRBF indicator guideline, the list of following 38 Climate-Smart Agriculture (CSA) practices/technologies (adapted from FAO CSA guideline) were considered for this indicator calculation (Questions C101, C102, C103 and C104):<ul style="list-style-type: none">Quality certified seeds, Community seed banks, Adapted, suitable Improved Varieties, Growing small grains, Crop rotation, Intercropping, Cover cropping, Mulching, Integrated Pest Management, Com-post/Organic fertilizer, Drip/Micro Irrigation, Plant Density, Improved livestock breeds, Improved animal shelters, Water infrastructure for livestock at homestead, Routine vaccinations by Veterinary Officer or Paravet, Home vaccinations, Castration, Deworming, Dipping, Spraying livestock at home, Use of services of community animal health worker (Paravet), Homemade animal feeds, Animal fodder production for ruminants, Animal Fodder preservation for ruminants, Survival feeding, Animal feed supplied by feed companies, Artificial insemination, Pen fattening, Improved granary at household, Store in bag with artificial chemicals at the household, Community Granaries, Temperature and humidity control, Minimum tillage, Use of contour ridges/Contour planting, Planting of fodder trees, Management or protection of the watershed from soil erosion, Sustainable harvesting of forest productsEvery 38 CSA practice/technology was assigned score 1 if the household practiced/adopted the individual practice/technology in the past 12 months, otherwise score was 0.The individual scores for all 38 CSA practices/technologies were summed to get aggregated score for an individual household.A household is considered for the numerator to calculate the percent of this indicator, if the HH practiced/adopted at least 3 CSA practices/technologies in the past 12 months.Denominator is the number of HHs in the sample. | <ul style="list-style-type: none">FAO Climate-Smart Crop/Agriculture (CSA) production system, Module 7ZRBF Survey-Based Indicators Reference Guide, February 2019The at least 3 threshold for this indicator has been decided by PMU on May 17, 2019. |
| 9. Percentage of people who practiced the value chain activities (on-farm and off farm) promoted by project in the past 12 months | Percent of beneficiary/HHs | ZRBF beneficiary/most knowledgeable person in the household | Consortium partner, Sex of the household head, high/medium intensity, Value chain types | <ul style="list-style-type: none">There are 12 value chain activities/practices (question C103) that are grouped into three broad categories: 1) marketing and distribution 2) post-harvest handling and 3) value added-processing.Each of the 12 value chain activities/practices in C103 was assigned score 1 if the project participant/HH used/practiced that individual value chain activity/practice in the past 12 months, if not the score 0.The sum of the scores for 12 activities/practices produced total score that ranges from 0 to 12 for an individual beneficiary or a HH.To compute percent, a project participant/household was counted for the numerator, if he/she from that household practiced at least one of the value chain activities/practices (i.e. the sum of score is >=1) in any value chain stages in the past 12 months. The denominator is the total number of participant HHs in the sample. This indicator was also calculated for at least 3 VC activities/practices. | <ul style="list-style-type: none">ZRBF Survey-Based Indicators Reference Guide, February 2019ZimVAC Resilience Assessment Questionnaire |
| 10. Percentage of people (household) reporting improved service delivery by duty bearers | Percent of beneficiary/HHs | ZRBF beneficiary/most knowledgeable person in the household | Consortium partner, sex of the household head, high/medium intensity | <ul style="list-style-type: none">The duty bearers are defined as the health, agriculture and veterinary service delivery providers from government, NGOs and private organizations.This indicator measures the formal supports from Government services, NGOs, private business/company and others.The respondents were asked whether they have received any services from the listed formal organizations/service providers [Questions E204, E303 and E403].If they received, the followed question were whether they were satisfied with the services that they received [Questions E205, E306 and E406] and possible responses are:<ul style="list-style-type: none">0 = Not Satisfied at all1 = Somewhat satisfied2 = satisfiedSum of the score ranges 0 to 6An individual was considered with improved service, if the sum of score is greater than or equal to 4 (median score), otherwise 0. | <ul style="list-style-type: none">ZRBF Survey-Based Indicators Reference Guide, February 2019 |

Annex 4

Resilience Capacities Analysis

1. Computing resilience capacity indices

Computation of the four resilience capacity indices – absorptive, adaptive, transformative and overall resilience capacity – follows methods developed by USAID¹ and documented in OMS¹². The index of absorptive capacity is constructed from seven indicators; the index of adaptive capacity is constructed from eight indicators; and the index of transformative capacity is constructed from nine indicators (Figure 1). Principal Components Analysis (PCA) scores provide the weight for each indicator in the index.



¹Asset ownership capacity is common for absorptive and adaptive capacities

²Bridging social capital and linking social capital capacities are common to adaptive and transformative capacities

The contribution of each component to a capacity index is a function of the indicator value and its PCA score, or weight. Livestock, productive assets, bridging and linking social capital are each part of two resilience capacities, but are only included once in the PCA. Absorptive, adaptive, transformative and resilience capacities are normalized (scaled from 0 to 100) using the following formula:

$$X_j = [(X_j - \text{Min}) / (\text{Max} - \text{Min})] \times 100,$$

where X_{sj} is the value of the capacity for person j , X_j is the predicted value from PCA for the same capacity, and Min and Max are the minimum and maximum values of the capacity. PCA scores, minimum and maximum values from round 1 were applied to variables in round 2 to estimate each capacity.

The component “access to remittances” is found to have negative factor loadings in PCA and was dropped from the absorptive capacity and the overall resilience capacity.

1 TANGO International. [2018]. Methodological Guide: A Guide for Calculating Resilience Capacity. .

2 Mercy Corps, TANGO International. 2019. Round One: ZRBF Outcome Monitoring Survey. Program learning report.



II. Multivariate analysis

Equations used fixed-effects (FE) specifications with regression models in order to estimate changes in outcomes between time periods. In fixed-effects, for each household, variables are transformed by subtracting each from their mean. So for household i in each time period, t :

Variables that do not change between rounds drop out when they are subtracted from their mean. In effect, this gives each household its own intercept term. In this way, each household serves as its own control and fixed-effects account for all confounding time invariant variables affecting outcomes. Hausman tests comparing fixed to random-effects equations showed that there is an unmeasured household characteristic, such as initiative, that is influencing outcomes. Methods other than fixed-effects would yield biased coefficients. With fixed-effects, changes in Y variables can be attributed treatment and other X variables in the equation³. Stata 15.1⁴ was used to run the fixed-effects equations. All of the resilience capacities variables are indices, scaled from 0 to 100, so their coefficients (displayed in annex tables) can be compared directly. The large number of indicators and resilience capacity elements necessitated nearly 300 regression equations. Taking the total number of equations into account dramatically increases the probability of at least one spurious finding (to higher than 0.99). Results that are least likely to be spurious are those that show up in several equations and/or have relatively small p-values.⁵

3 Wooldridge, J. 2009. *Econometric Analysis of Cross Section and Panel Data*. MIT Press.

Finkel, S. 1995. *Causal analysis with panel data*. Sage publications. http://users.cla.umn.edu/~uggen/Finkel_sage_1995_r.pdf

Allison, P. 2012 *Causal Inference with Panel Data* <https://statisticalhorizons.com/wp-content/uploads/2012/01/Causal-Inference.pdf>

4 StataCorp. 2019. *Longitudinal-data/panel-data reference manual*. Release 16. College Station, TX: StataCorp LLC. <https://www.stata.com/manuals/xt.pdf>

5 Adjustments to account for multiple comparisons involve reducing the maximum p-value for reporting results. As an example, the most intuitive (and most restrictive) of these is the Bonferroni adjustment, in which p-values are divided by the number of comparisons. Running nine equations, such as by testing the effects of three resilience capacity indices on three outcomes, would mean that reportable outcomes have a p-value of less than 0.05/9, or 0.006 instead of 0.05. Running 90 equations, such as estimating the effects of 30 coping strategies on three outcomes, would reduce reportable p-values to 0.0006.



| Indicator | Unit of Measure-ment | Respondent Types | Data analysis method | Reference/ Notes | | ALL | | | Sex of the beneficiary | | Disaggregation | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---------------------------------------------------------------------------------------------------------------------------|---------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|---------|---------|-------------------|------------------------|---------|----------------|---------|---------|-------|---------|---------|-------|---------|---------|--------|--------|---------|--------|--------|----------|--------|----------|--------|--------|--------|----------------|--------|--------|---------|------------------------|---------|--------|---------|---------|---------|---------|---------|---------|---------|---------|-----|
| | | | | | | OM51 | OM52 | Sig. ¹ | OM51 | | OM52 | | OM51 | | OM52 | | BRAC7 | | ECRAS | | ECRIMS | | MILANA | | PROGRESS | | SIZEMILE | | ZWA | | Sex of HH Head | | | | Intensity ² | | | | | | | | | | | |
| | | | | | | | | | Male | Female | Sig.2 | Male | Female | Sig.2 | 15-34 | 35+ | Sig.2 | 15-34 | 35+ | Sig.2 | OMS1 | OMS2 | OMS1 | OMS2 | OMS1 | OMS2 | OMS1 | OMS2 | OMS1 | OMS2 | OMS1 | OMS2 | Male | Female | Sig.2 | Male | Female | Sig.2 | High | Medium | Sig.2 | High | Medium | Sig.2 | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. Prevalence of households with moderate or severe Food Insecurity Experience Score (FIES) | Percent of HHs | Female decision-maker or whoever is most knowledgeable about food preparation and/or consumption of household members from ZBIF sample beneficiary | • 8 HH hunger severity question coded as "0 for No" if the household did not have any food insecurity in last 30 days for the respective question and "1 for Yes" if the HH have had that experience. • Using severity weights for all eight questions and a standardization process by applying the Rasch model developed by FAO. The "RM Weights" package in R software is used to compute the FIES using the Rasch model. This package computes parameter estimates and assessment statistics of a single-parameter Rasch model for dichotomous and polytomous (partial credit) item responses using Conditional Maximum Likelihood (CML) estimation, including the optional use of sampling weights. • The thresholds of three FIES categories: no/mild hunger, moderate hunger and severe hunger are obtained from the Rasch CML estimations. Households are classified for FIES using the sum of scores for 8 individual questions and thresholds that are obtained from Rasch CML procedure. • To calculate the indicator value, # of HHs with FIES for moderate or severe category is considered as numerator and total Rof HHs in the sample is considered as denominator. • To calculate the indicator value, # of HHs with FIES for moderate or severe category is considered as numerator and total Rof HHs in the sample is considered as denominator. | • Introduction to item response theory applied to food security measurement: Resilience Concepts, Parameters and Statistics, by Mark Nord, FAO, Rome, 2014 | 12 Months: Moderate to severe | 65.3 | 78.8 | *** | 62.1 | 67.7 | *** | 77.0 | 80.2 | *** | 65.9 | 65.2 | | 78.6 | 78.9 | | 83.9 | 82.4 | 43.0 | 64.2 | 63.7 | 68.9 | 74.8 | 88.7 | 70.2 | 77.4 | 36.6 | 81.8 | 65.0 | 77.8 | 61.9 | 70.8 | *** | 77.7 | 80.6 | ** | 61.2 | 68.6 | *** | 77.3 | 81.0 | * |
| | | | | | 12 Months: Severe | 22.6 | 32.6 | *** | 21.6 | 23.4 | ** | 30.2 | 34.4 | *** | 23.1 | 22.5 | | 32.9 | 32.5 | | 39.3 | 33.3 | 8.7 | 19.6 | 19.5 | 23.5 | 28.4 | 36.9 | 19.9 | 30.6 | 15.2 | 35.6 | 26.0 | 37.5 | 19.5 | 27.7 | *** | 31.9 | 33.7 | * | 20.7 | 24.2 | ** | 30.3 | 36.1 | *** |
| | | | | | 30 Days: Moderate to severe | 52.7 | 63.7 | *** | 50.2 | 54.5 | *** | 61.4 | 65.4 | *** | 52.5 | 52.7 | | 61.9 | 64.2 | | 59.2 | 59.2 | 30.5 | 49.3 | 48.1 | 54.3 | 67.9 | 74.2 | 54.0 | 65.3 | 46.2 | 67.0 | 54.3 | 64.2 | 48.9 | 58.6 | *** | 63.2 | 64.4 | | 48.4 | 56.1 | *** | 61.1 | 67.5 | ** |
| | | | | | 30 Days: Severe | 17.9 | 24.8 | *** | 17.0 | 18.6 | * | 22.8 | 26.2 | *** | 18.5 | 17.7 | | 24.2 | 24.9 | | 27.7 | 20.7 | 6.7 | 13.2 | 12.2 | 16.5 | 26.2 | 28.8 | 16.0 | 25.0 | 13.3 | 27.3 | 19.8 | 30.7 | 15.0 | 22.5 | *** | 24.1 | 25.8 | * | 16.5 | 19.2 | * | 21.9 | 29.0 | *** |
| 2. Number of women and men whose residence has been improved as a result of ZBIF support | Number (estimated from percent) | Household head/ZBIF beneficiary/ most knowledgeable person in the household | • This is a composite indicator (index) that has been derived from the average of the standardized scores of the following 20 absorptive, adaptive and transformative resilience capacity components: 1) Access to informal safety nets score 2) Bonding social capital score 3) HH cash savings score 4) Access to remittances 5) Asset ownership score 6) Access to humanitarian assistance 7) Shock preparedness and migration score 8) Bridging social capital score 9) Living social capital score 10) Human capital score (Adult education level) 11) Livelihood diversification score 12) Access to financial services score 13) Exposure to information score 14) Access to agricultural services score 15) Access to formal safety nets score 16) Access to markets score 17) Access to basic services score 18) Access to infrastructure score 19) Gender Norm score 20) Collective action score. • The individual resilience capacity component has been standardized using the process: $X_i = \frac{(X_i - Min_i)/(Max_i - Min_i)}{100}$ Where X_i is the value of the standardized score of component i, X_i is the actual score of the same component, and Min_i and Max_i are the minimum and maximum values of component i, respectively. • To compare "Increased" capacities: Compute the difference between individual round 1 and round 1 scores on capacity indices (round 2 score for person(i) minus round 1 score for person(i)). Using the mean and confidence intervals around the overall mean for round 1, a person was "improved" if their difference was greater than the difference between the overall mean and the upper limit on the confidence interval (upper limit-mean), "unchanged" if their difference was the same or less than the range of the CI (upper limit minus lower limit), "not improved" if their difference was the larger (negative number) than the OMS 1 lower limit minus the mean. | This method of calculating resilience capacities, based on previous experience. The measure is based on measurement of three dimensions of resilience capacities (absorptive, adaptive, transformative). For the purpose of this study, we propose to combine all the components of these three capacities into one overall capacity index. | Composite (20 resilience components) | 293,539 | | | 122,809 | 170,730 | | 50,791 | 242,714 | *** | | | | 13,652 | | 57,462 | | 70,412 | | 67,837 | | | | 32,916 | | 49,486 | | 25,309 | | 191,311 | 102,246 | *** | | 185,588 | 107,960 | *** | 272,155 | 234,539 | *** | | | |
| | | | | | Absorptive (6 resilience components) | 264,223 | | | 115,382 | 148,841 | | | | *** | 50,424 | 213,848 | *** | | | | 14,096 | | 56,085 | | 44,044 | | 43,369 | | 40,073 | | 44,219 | | 29,469 | | 173,464 | 90,733 | *** | | 183,241 | 81,014 | *** | 263,859 | 238,547 | *** | | |
| | | | | | Adaptive (12 resilience components) | 306,376 | | | 133,542 | 172,834 | | | | *** | 49,954 | 256,476 | *** | | | | 15,358 | | 58,643 | | 75,570 | | 70,924 | | 35,328 | | 52,258 | | 23,344 | | 205,871 | 100,588 | *** | | 191,534 | 114,845 | *** | 263,790 | 238,547 | *** | | |
| | | | | | Transformative (2 resilience components) | 229,177 | | | 56,752 | 132,425 | | | | *** | 42,325 | 186,727 | *** | | | | 12,135 | | 44,474 | | 57,630 | | 56,141 | | 12,744 | | 41,169 | | 23,460 | | 146,166 | 82,911 | ** | | 137,704 | 91,493 | *** | 271,941 | 264,742 | *** | | |
| | | | | | Combined** | 40.6 | | | 40.4 | 40.7 | | | | | 37.0 | 41.6 | | | | | 34.5 | | 39.5 | | 47.9 | | 40.0 | | 41.3 | | 39.0 | | 33.4 | | 41.7 | 38.8 | | | 48.2 | 34.6 | | 63.5% | 43.0% | *** | | |
| | | | | | Absorptive** | 32.7 | | | 33.2 | 32.3 | | | | | 29.8 | 33.6 | | | | | 28.2 | | 50.1 | | 34.8 | | 29.7 | | 37.2 | | 30.9 | | 28.5 | | 33.8 | 31.1 | | | 40.5 | 26.6 | | 61.6% | 43.7% | *** | | |
| | | | | | Adaptive | 37.0 | | | 37.6 | 36.6 | | | | | 32.7 | 38.3 | | | | | 31.0 | | 55.9 | | 46.5 | | 36.4 | | 37.1 | | 35.8 | | 28.6 | | 39.0 | 33.8 | | | 44.3 | 31.3 | | 61.6% | 43.7% | *** | | |
| | | | | | Transformative | 33.8 | | | 33.5 | 34.1 | | | | | 28.8 | 35.3 | | | | | 28.0 | | 57.9 | | 48.3 | | 37.0 | | 22.9 | | 32.0 | | 24.5 | | 34.8 | 32.2 | | | 43.9 | 25.9 | | 63.5% | 48.5% | *** | | |
| | | | | | REVISED ANALYSIS (D3June2019) for All direct measure of indirect | 464,569 | 529,686 | *** | 194,627 | 269,938 | | 234,809 | 303,151 | ** | 83,585 | 381,083 | *** | 133,611 | 404,563 | *** | 51,437 | 123,371 | 95,058 | 52,454 | 92,601 | 92,190 | 86,451 | 78,214 | 55,097 | 36,717 | 66,024 | 85,593 | 36,921 | 82,467 | 307,209 | 157,393 | *** | 320,594 | 217,531 | | 305,725 | 158,910 | *** | 272,155 | 234,539 | *** |
| | | | | | There was mis-calculation for bonding and coping indices. So there is little change for OMS-1 | 411,099 | 529,593 | *** | 178,733 | 232,370 | | 227,738 | 301,909 | * | 75,771 | 335,159 | *** | 132,157 | 397,662 | ** | 49,809 | 119,420 | 90,336 | 51,959 | 65,330 | 91,952 | 62,593 | 78,709 | 52,614 | 34,405 | 56,784 | 83,881 | 44,636 | 80,972 | 268,924 | 141,949 | *** | 320,674 | 209,047 | * | 281,431 | 129,680 | *** | 263,859 | 238,547 | *** |
| | | | | | Adaptive (12 resilience components) | 449,021 | 558,503 | *** | 183,930 | 255,096 | | 227,738 | 301,815 | *** | 73,369 | 375,517 | *** | 132,157 | 397,568 | *** | 52,739 | 119,420 | 92,854 | 51,959 | 100,393 | 91,952 | 84,533 | 78,709 | 44,480 | 34,330 | 62,764 | 83,881 | 36,903 | 80,972 | 100,712 | 148,212 | *** | 320,580 | 209,047 | ** | 279,575 | 168,509 | *** | 263,790 | 238,547 | *** |
| | | | | | Transformative (2 resilience components) | 512,249 | 538,046 | *** | 210,302 | 301,941 | ** | 245,650 | 313,745 | | 103,429 | 408,791 | *** | 126,430 | 433,072 | * | 70,444 | 99,844 | 89,077 | 71,841 | 104,069 | 83,503 | 105,691 | 91,715 | 50,704 | 47,201 | 68,376 | 87,027 | 48,494 | 85,091 | 321,151 | 191,122 | ** | 340,319 | 219,206 | | 307,184 | 205,075 | *** | 271,941 | 264,742 | *** |
| 3. Average Food based Coping Strategy Index score for households in targeted communities as a result of ZBIF intervention | Average Score per HH | Female decision-maker or whoever is most knowledgeable about food preparation and/or consumption of household members from ZBIF sample beneficiary | • CSI is calculated using information on how often a HH used a set of following free short-term food based coping strategies in situation in which they did not have enough food or money to buy food during the one week period and standard severity weights that are recommended in WFP/USAID/CI manual 2008 (second edition). FNC used the same severity score for ZimVAC 2019 analysis, but each score is used as double to calculate CSI. Therefore, CSI for ZBIF is calculated using both severity weights. • There are 12 food based coping strategies listed in questions D202. Each of the 12 coping strategy questions have following 5 possible responses based on the frequency of occurrences in a month or in a week in the past 30 days: DNever, 1-Seldom (1-3 days/month), 2-sometimes (1-2 days/week), 3-often (1-3 days/ week), 4-daily Only, 5-always every day without eating. (Should have 4 responses including daily). • These 5 possible responses converted into 7 days using the following response weights: Responses: D=0 days, 1=1.5 days, 2=1.5 days, 3=1.5 days, and 4=7 days. • Standard severity weights for 12 coping strategies: A) Skip entire days without eating: 4-3) (omit/Reduce portion size at mealtime)-1) (Reduce number of meals eaten per day;-1) (Borrow food or rely on help from friends or relatives;- 2) (Rely on less expensive or less preferred foods;-1) (1) Purchase/borrow food on credit;-2) Gather/Hunt/ Hunt unusual types or amounts of wild food;-4) (Harvest immature crops;- 4) (Send household members to eat elsewhere;-2) (Send household members to beg;-4) (Reduce adult consumption as children can eat;-1) (Rely on casual labour for food;-3) • The weighted score CSI_1 to CSI_12 for individual coping strategies are obtained by multiplying individual coping strategy response score (given by the severity weights for the respective coping strategy). • Sum of the weighted scores for all 12 coping strategies will yield the CSI for a household. CSI = CSI_1 + CSI_2 + CSI_3 + CSI_4 + CSI_5 + CSI_6 + CSI_7 + CSI_8 + CSI_9 + CSI_10 + CSI_11 + CSI_12. • Average CSI score per sampled household will be reported for this indicator. | • ZBIF Survey-based Indicators Reference Guide, February 2019 • The Coping Strategy Index: A tool of rapid measurement of household food security and the impact of food aid programs • "Humanitarian emergencies" by Daniel Maxwell (Associate Professor, Feinstein International Center, Tufts University) and Richard Colwell (Executive Director, FANCI International) • FNC/ZimVAC analysis 2019 | WFP/USAID Manual 2008 | 18.5 | 19.8 | *** | 18.6 | 18.4 | | 19.0 | 20.4 | ** | 19.5 | 18.2 | | 19.7 | 19.8 | | 27.3 | 22.1 | 4.6 | 9.1 | 15.5 | 18.7 | 23.1 | 23.6 | 18.9 | 19.2 | 10.4 | 17.9 | 26.2 | 22.7 | 16.3 | 21.9 | *** | 19.4 | 20.4 | * | 17.1 | 19.6 | *** | 18.8 | 21.2 | * |
| | | | | | Percentage of HHs with acceptable food-based coping strategy index score | 51.9% | 37.1% | *** | 53.1% | 51.0% | | 39.2% | 35.5% | ** | 49.5% | 52.6% | * | 39.3% | 36.6% | | 36.2% | 31.9% | 84.3% | 73.6% | 50.8% | 38.8% | 41.6% | 18.5% | 46.3% | 38.0% | 67.1% | 43.9% | 42.8% | 31.4% | 53.8% | 45.8% | *** | 37.7% | 36.3% | | 54.4% | 50.0% | *** | 38.3 | 35.4 | ns |

²2 or less is low intensity, calculated from the exposed to intervention information in the dataset
³Statistical Significance (* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$, comparisons are between categories within each round.
⁴Access to remittances is found with negative loading factor. Therefore, excluded from the analysis.

Annex 6

Zimbabwe Resilience Building Fund (ZRBF) Deep Dive Analysis

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INTRODUCTION

This report presents the results of an in-depth analysis using survey data from two rounds of the ZRBF Outcome Monitoring Survey (OMS). The surveys were conducted by the Resilience Knowledge Hub (RKH) in 2019 and 2020 and obtained a large base of quantitative data about household resilience capacities, income levels, food security outcomes, shock exposure and participation in resilience programming activities supported by ZRBF. The outcome monitoring reports provide extensive descriptive results from the survey, as well as results from qualitative research, and provide the basis for this analysis. Data were collected from the same households in both rounds, providing a panel dataset which allows for more precise estimates of program effects than cross sectional data.

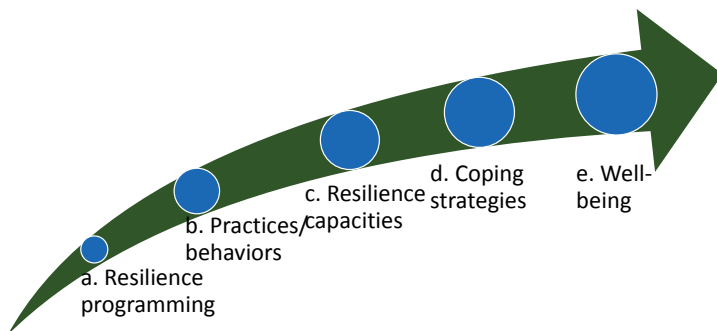
The purpose of this analysis is to determine how ZRBF support and training interventions affected different aspects of resilience capacities and outcomes. The research questions are:

1. *How did the resilience programming supported by ZRBF change behavior and resilience capacities? and how did these, in turn affect coping strategies and outcomes?*
2. *Are there particular combinations of interventions that have larger impacts on resilience capacities and outcomes? Do combinations of interventions have complementary effects, that is do combinations of interventions have greater impacts than each particularly intervention individually?*

The first set of questions addresses and measures the underlying assumptions of the ZRBF resilience model, namely that the interventions supported by ZRBF lead to enhanced resilience capacities and better outcomes in the face of shocks. The second set of questions looks more closely at the impacts of particular interventions, and what combinations of interventions most strongly affect different aspects of resilience capacities and outcomes. Related to the second set of questions, this analysis provides an estimate of a counterfactual: estimates of how households would have fared in the absence of programming. **Figure 1** shows the logical relationships or pathways from ZRBF program interventions through practices and behaviors and resilience capacities to improved coping strategies and outcomes.

This analysis empirically estimates three resilience pathways. All pathways start with ZRBF program participation. The first, traces the effects of *program participation* through changes in *practices and behavior* to *well-being outcomes*, in terms of the diagram: a \rightarrow b \rightarrow e. The second pathway also looks at well-being outcomes, following program participation through *resilience capacities* to well-being outcomes: a \rightarrow c \rightarrow e. The third pathway follows program participation through resilience capacities to *coping strategies*: a \rightarrow c \rightarrow d.

Figure 1: Resilience Pathways Concept Diagram



METHODS

The OMS round 1 and round 2 surveys provided data to compute variables corresponding each part of the conceptual model. This section describes those methods, referring back to parts a through e of the diagram in Figure 1. To measure resilience programming (labeled 'a' in the diagram) the analysis grouped the 33 ZRBF support and training programs into seven categories. **Table 1** shows the percentage of households in each program and how the programs were grouped into categories for analysis. Sample sizes (n's) differ because not all programs were offered by all consortia. The table shows that participation in all programs and categories increased between OMS rounds. In round 1 households participated in 2.2 categories on average,



3.3 categories in round 2. Even though this was a beneficiary-based survey, 28.9 percent of respondents in round 1 and 18.7 percent in round 2 reported no program participation.

Table 1: Percentage of households participating by program and program category, round 1 and round 2

| Program | Round 1 | Round 2 | n | Sig. |
|------------------------------------------------------------|---------|---------|-------|------|
| Community asset building | 38.3 | 56.8 | 3,353 | *** |
| Natural Resource Management (NRM) | 20.3 | 34.7 | 3,353 | *** |
| Water infrastructure | 22.5 | 44.7 | 2,879 | *** |
| Community infrastructure | 8.3 | 23.2 | 1,420 | *** |
| DRM/DRR training | 23.4 | 37.2 | 2,908 | *** |
| Community Action Adaption Planning | 31.4 | 43.5 | 966 | *** |
| Resilience Planning | 22.5 | 39.1 | 445 | *** |
| Training for Transformation | 12.8 | 29.7 | 516 | *** |
| Participatory Scenario Planning | 34.7 | 59.2 | 966 | *** |
| Gender & youth | 4.4 | 7.0 | 3,353 | ** |
| Gender dialogues/Gender Action Learning | 13.7 | 22.5 | 445 | * |
| Gender Youth Action Groups | 14.1 | 28.5 | 966 | *** |
| Business training and support | 17.2 | 27.5 | 3,353 | *** |
| Business training | 20.5 | 34.7 | 3,353 | *** |
| Vocational skills/enterprise groups | 10.1 | 19.0 | 1,938 | *** |
| Value chain | 34.7 | 48.9 | 3,353 | *** |
| Value chains for crops | 21.7 | 31.6 | 3,353 | *** |
| Value chain for poultry | 26.0 | 36.1 | 2,837 | *** |
| Value chain for goats | 13.3 | 24.6 | 1,426 | *** |
| Value chain for cattle | 16.2 | 26.0 | 2,837 | *** |
| Fish farming | 7.1 | 15.3 | 975 | *** |
| Crop & livestock technical support and training | 57.6 | 73.5 | 3,353 | *** |
| Pre-harvest service provision | 5.7 | 18.1 | 1,422 | *** |
| Post-harvest agri-business | 10.2 | 22.6 | 1,422 | *** |
| Non-Timber Forest Products | 18.2 | 29.1 | 2,378 | *** |
| Small grains & legumes | 52.8 | 70.0 | 3,353 | *** |
| Small livestock production | 37.6 | 55.7 | 3,353 | *** |
| Fodder production | 28.0 | 45.8 | 3,353 | *** |
| Fodder preservation | 27.5 | 44.3 | 3,353 | *** |
| Training & seeds: gardens or horticulture | 28.6 | 46.8 | 2,388 | *** |
| Plot on new irrigation scheme | 5.0 | 16.9 | 919 | *** |
| Artificial insemination | 5.2 | 10.7 | 923 | *** |
| Goat breed improvement | 10.5 | 18.0 | 2,363 | *** |
| Improved livestock housing | 25.6 | 44.1 | 2,879 | *** |
| Crisis modifier/humanitarian assistance | 23.5 | 41.1 | 3,353 | *** |
| Nutrition training | 31.3 | 50.5 | 1,936 | *** |
| Cash for community assets/infrastructure | 12.5 | 24.5 | 1,985 | *** |
| Crisis Modifier assistance | 25.0 | 45.8 | 3,353 | *** |
| ISALs | 27.8 | 37.4 | 3,353 | *** |
| VSAL/ISAL/savings groups | 34.5 | 47.7 | 3,353 | *** |

+ p<0.1, * p<0.05, ** p<0.01, *** p<0.001



Practices and behavior. Information from the survey questions about climate-smart agricultural practices provided data to compute practices and behaviors variables (labeled 'b' in the diagram). These are the same data as were used to estimate top-line indicators 8 and 9. Table 2 shows the mean number of practices per household for each climate-smart category and the total number of practices per household. The table shows that all types of practices and total practices increased between survey rounds.

Table 2: Climate-Smart Practices, round 1 and Round 2

| Program category | Round 1 | Round 2 | n | Sig. |
|------------------------------|---------|---------|------|------|
| Crop practices (0-12) | 4.1 | 5.1 | 3353 | *** |
| Livestock practices (0-17) | 3.8 | 4.9 | 3353 | *** |
| Value chain practices (0-12) | 1.7 | 2.3 | 3353 | *** |
| NRM practices (0-5) | 1.0 | 1.4 | 3353 | *** |
| Total practices | 10.7 | 13.7 | 3353 | *** |

+ p<0.1, * p<0.05, ** p<0.01, *** p<0.001

Computation of resilience capacities (labeled 'c' in the diagram) follows methods developed by USAID¹ and documented in OMS1². The index of absorptive capacity is constructed from seven indicators; the index of adaptive capacity is constructed from eight indicators; and the index of transformative capacity is constructed from nine indicators (**Figure 2**).

Figure 2: Resilience Capacity Indices and Their Components

| Absorptive Capacity | Adaptive Capacity | Transformative Capacity |
|-----------------------------------|-------------------------------|---------------------------------|
| Informal safety nets | Bridging social capital* | Linking social capital* |
| Bonding social capital | Linking social capital* | Bridging social capital* |
| Access to cash savings | Productive assets | Access to agricultural services |
| Productive assets* | Livestock* | Formal safety nets |
| Livestock* | Human capital | Availability of markets |
| Access to humanitarian aid | Livelihood diversification | Access to basic services |
| Shock preparedness and mitigation | Access to financial resources | Access to infrastructure |
| | Exposure to information | Gender norms |
| | | Collective action |

* Indicators that are components of more than one capacity index.

Table 3 shows changes in resilience capacity indices and resilience capacities between rounds. All indices and indicators presented in the table are scaled from 0 to 100. The table presents mean scores for each household and comparisons between survey rounds. The two final columns in the table show Principal Components Analysis (PCA) scores, which are the weights or relative importance of each indicator in the index. The first PCA score is for the absorptive, adaptive, or transformative capacity index; the final column is for the overall resilience capacity. The contribution of each component to a capacity index is a function of the indicator value and its PCA score, or weight. Livestock, productive assets, bridging and linking social capital are each part of two resilience capacities, but are only included once in the PCA estimation of overall resilience capacity. The table shows that the absorptive, adaptive, transformative and overall resilience capacities all increased between rounds.

1 TANGO International. (2018). Methodological Guide: A Guide for Calculating Resilience Capacity.

2 Mercy Corps, TANGO International. 2019. Round One: ZRBF Outcome Monitoring Survey. Program learning report.



Table 3: Resilience Capacities and Resilience Capacity Indices (0-100), Round 1 and Round 2

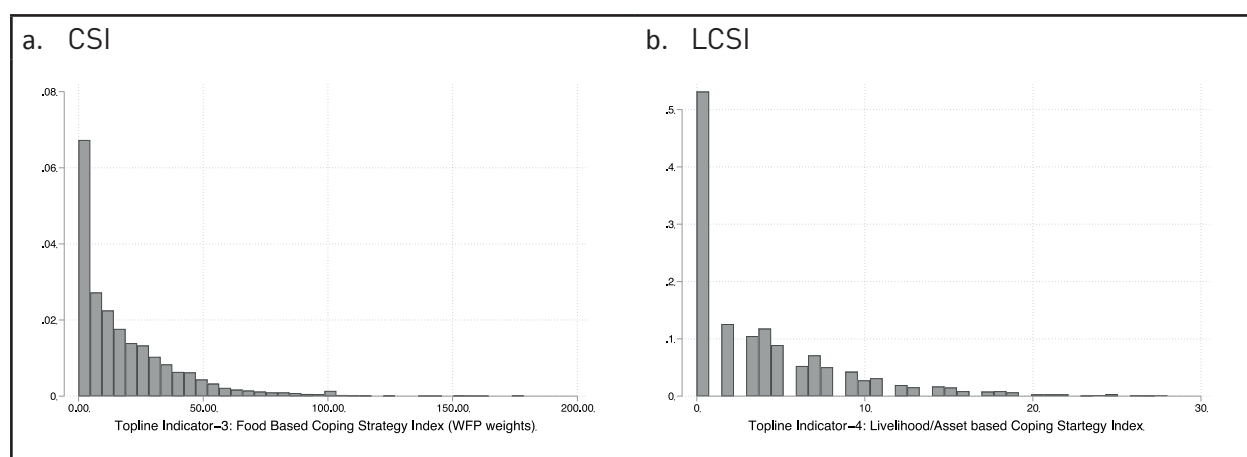
| Resilience capacity indices and resilience capacities | Round 1 | Round 2 | Sig. | Score | Overall Score |
|-------------------------------------------------------|---------|---------|------|-------|---------------|
| Informal Safety Nets (ISN) | 14.7 | 19.4 | *** | 0.42 | 0.30 |
| Bonding social capital | 47.6 | 50.1 | ns | 0.23 | 0.18 |
| Savings | 13.1 | 17.4 | *** | 0.39 | 0.28 |
| Productive assets | 33.0 | 33.2 | ns | 0.48 | 0.31 |
| Livestock | 58.4 | 58.5 | ns | 0.37 | 0.19 |
| Humanitarian assistance | 86.9 | 91.1 | ** | 0.28 | 0.22 |
| Shock Preparedness | 18.8 | 21.7 | * | 0.41 | 0.26 |
| Adaptive capacity | 33.6 | 36.1 | ns | | |
| Bridging social capital | 34.2 | 37.5 | * | 0.26 | 0.15 |
| Linking social capital | 26.8 | 37.1 | *** | 0.39 | 0.30 |
| Productive assets | 33.0 | 33.2 | ns | 0.48 | |
| Livestock | 58.4 | 58.5 | ns | 0.35 | |
| Human capital | 92.2 | 94.6 | *** | 0.15 | 0.08 |
| Livelihood diversification | 25.7 | 25.1 | ns | 0.35 | 0.23 |
| Access to financial services | 6.8 | 8.6 | ** | 0.33 | 0.27 |
| Exposure to information | 42.7 | 50.0 | *** | 0.43 | 0.35 |
| Transformative capacity | 50.3 | 54.9 | * | | |
| Bridging social capital | 34.2 | 37.5 | * | 0.28 | |
| Linking social capital | 26.8 | 37.1 | *** | 0.47 | |
| Formal Safety Nets | 69.8 | 79.5 | *** | 0.34 | 0.23 |
| Access to basic services | 61.2 | 66.0 | *** | 0.33 | 0.11 |
| Access to agriculture extension | 68.6 | 76.7 | *** | 0.47 | 0.26 |
| Access to markets | 30.5 | 32.1 | ns | 0.20 | 0.04 |
| Access to infrastructure | 31.0 | 28.8 | *** | 0.25 | 0.05 |
| Gender norms | 42.2 | 52.0 | *** | 0.16 | 0.10 |
| Collective action | 68.1 | 63.9 | ** | 0.35 | 0.20 |
| Resilience capacity² | 38.4 | 42.2 | *** | | |
| n | 3353 | 3353 | | | |

+ p<0.1, * p<0.05, ** p<0.01, *** p<0.001

Coping strategies (part 'd' in the diagram) are the food- and livelihood-based coping strategies (LCSI) indices which are ZRBF indicators 3 and 4. Both worsened between survey rounds. The food-based CSI increased from 18.5 in round 1 to 19.8 in round 2. The LCSI increased from 3.8 to 4.2. Tobit equations with fixed effects estimating coping strategies include all households with valid data in OMS1 and OMS2. Tobit equations are appropriate to use when data are censored, in other words when values are concentrated one end of the distribution or both³. In cases of CSI and LCSI, values are concentrate at zero (**Figure 3**). In these equations, fitting a straight line, as in an OLS regression would lead to predicted values of less than zero, or outside of the bounds.

3 McDonald, J. F. and Robert Moffitt. 1980. "The uses of Tobit analysis" The review of economics and statistics 62:318-321.

Figure 3: Distribution of CSI and LCS



Households with greater levels of resilience capacities are hypothesized to adopt coping strategies that impose fewer negative short-term and long-term consequences on the household, controlling for the level of household shock exposure and other household characteristics. For example, households with greater levels of social capital will be able to draw on that social capital to borrow food and other necessities in times of need, and will thus avoid negative impacts on their food security in the face of shocks.

This analysis also included several well-being measures (labeled 'e' in the diagram) to see if programming effects varied across outcomes. The well-being measures are: moderate to severe food insecurity using the FIES and three recovery measures: recovery from drought and/or late rains, food price increases and crop and/or livestock disease.

The estimation models are simplifications of a system of interconnected pathways. This analysis has two key features: instrumental variables and fixed effects⁴. They are both ways to estimate causal effects with quasi-experimental data. Fixed effects methods transform variables in the equation so that for each person i , and time period t , X and Y values are subtracted from the mean for that person.

All variables that do not vary over time drop out of the equation when subtracted from the mean. This controls for characteristics that do not vary over time, but may influence outcomes, including unmeasured characteristics such as initiative. By controlling for confounding elements, fixed-effects equations allow for each household to act as its own control, providing before- and after-treatment estimates of outcomes. As such it provides a more accurate estimate of programming effects than can be estimated using cross-sectional datasets. Instrumental variables (IV) refers to the structure of equation. IV equations are two-stage equations that, in these models, Ordinary Least Squares (OLS) to estimate intermediate or instrumented variable-- practices and behaviors in model 1 and resilience capacities in models 2 and 3--then use results from the first stage in a probit or Tobit equation to explain the final outcome. Probit equations estimate binary outcomes, moderate to severe FIES and recovery from shocks. Tobit equations estimate the Coping Strategies Index (CSI).

Findings

Use of instrumental variables equations is key to this analysis because equations estimating well-being outcomes directly from variables for each program type show few statistically significant coefficients. Initial analysis of the seven categories program participation and well-being outcomes (a & e in Figure 1) showed few statistically significant relationships. Initial analysis of program participation categories and coping strategies (a & d in Figure 1) yielded no statistically significant results (appendix A). These results provided

⁴ An excellent description, and example in practice, of using instrumental variable techniques to establish the existence of a mediating variable is available in Acemoglu, Johnson and Robinson's seminal article: Reversal of Fortune (Acemoglu 2002). Statistical properties of instrumental variables, fixed-effects and other panel estimators are described in Wooldridge, J. (2009) Econometric Analysis of Cross Section and Panel Data. MIT Press.



information to structure the instrumental variables equations.

This section describes results from models 1-3 based on the conceptual diagram. Each model has multiple IV equations: one for each outcome variable and each of the resilience capacity indices and each of the 20 resilience capacities. Discussion in this section focuses on a subset of the results, selected to be representative as well as illustrative. Complete results are presented in Appendix A.

The hypotheses associated with the conceptual model are that program participation works indirectly to change coping strategies and well-being outcomes. Climate-smart practices and resilience capacities intervene in the process. If this is true, then we expect to see few statistically significant coefficients in equations estimating coping strategies and well-being outcomes as functions of program participation.

In the first model, which follows the pathway ($a \Rightarrow b \Rightarrow e$), we tested the hypothesis that increased program participation leads to increases in climate-smart practices which reduce the probability of moderate to severe FIES. The model was replicated using recovery from shocks as the outcomes.

Table 4 confirms this hypothesis and shows that all seven ZRBF program categories increase climate-smart practices, climate-smart practices in turn, improve well-being outcomes. The coefficients from the first stage (OLS estimator) show changes of between around 1.4 to 3.6 in climate-smart practices for each category of programming. Even though all first stage equations are estimating climate smart practices and use the same set of explanatory variables, coefficients are different because the sample size different for each equation. Coefficients from the second stage (probit) estimator are not directly interpretable but confirm that increasing climate-smart practices translates to better outcomes.

Table 4: IV Probit Estimation of Well-being Outcomes (Climate-smart Practices as IV), Wummary Results

| ZRBF Program categories | First stage | Climate-smart practices | | |
|-------------------------|--------------------------|----------------------------|------------------------------------|---------------------------------------|
| | Community asset building | 2.28*** | 1.79*** | 1.44*** |
| | Gender and youth | 1.77*** | 2.78*** | 2.01*** |
| | Business | 2.73*** | 3.53*** | 3.00*** |
| | Value Chain | 3.58*** | 2.60*** | 2.65*** |
| | Crop and livestock | 2.74*** | 2.22*** | 2.83*** |
| | Crisis Modifier | 2.29*** | 1.83*** | 1.57*** |
| | ISALS | 1.93*** | 2.31*** | 2.63*** |
| Second Stage | | p(moderate to severe FIES) | p(recover from drought/late rains) | p(recover from crop/livestock shocks) |
| | Climate-smart practices | -0.03*** | 0.07*** | 0.06*** |
| | Shock severity | 0.03*** | -0.03*** | -0.02*** |
| | <i>n</i> | 6706 | 6281 | 3701 |

ns = not significant, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Figures translate coefficients from **Table 4** into probabilities allowing visual comparison across types of programming and combinations of programming. The combinations used for predictions were selected to be representative of the 90 program combinations seen in the dataset, but only comprise 30 percent of the mixes.

Table 5 shows the combinations from round 2 of the OMS. The six-program combination in the table includes community assets building, business, value chain, crop and livestock, crisis modifier/humanitarian assistance and ISAL programming--all program types except gender and youth. Where there were different components of four program types, such as community asset building, value chain, crop and livestock and ISALS, the analysis used the combination with the largest share of households.

All figures in this report use the same program combinations to show that effects vary across outcomes. Circles on the graphs show the probability of each outcome. The outcomes for households reporting no program participation approximate a counterfactual condition in which ZRBF was not doing any implementations. The vertical line corresponds to no programming and provides a point of comparison for programming combinations.



Table 5: Programming Combinations, Round 2

Programming combinations (% of households)

| | |
|---------------------------------------------------------------|------|
| No programming | 12.5 |
| Crisis modifier alone | 2.2 |
| Crop & livestock alone | 6.6 |
| ISAL programming alone | 1.3 |
| Community asset building, value chain, crop & livestock | 3.8 |
| Community asset building, value chain, crop & livestock, ISAL | 3.5 |
| Six programs (all except gender and youth) | 10.9 |
| Other combinations | 70.0 |
| <i>n</i> | 3353 |

Figure 3 shows results from the equation estimating moderate to severe FIES resulting from program participation. Without ZRBF programming the probability of moderate to severe FIES was 0.67. Participation in ISAL programming, by itself increased climate-smart practices which reduced the probability of moderate to severe FIES to 0.58. Participation in ISALs had a larger effect than combined livestock and value chain programming. The figure shows the benefits of layering, especially if ISALs are part of the mix. For the 10 percent of households that engaged in 6 types of programming (all except gender and youth) the probability of hunger lowered by 20 percentage points, to 0.46.

Figure 3. Probability of Moderate-to-Severe FIES due to the Effects of Program Participation on Climate-Smart Practices

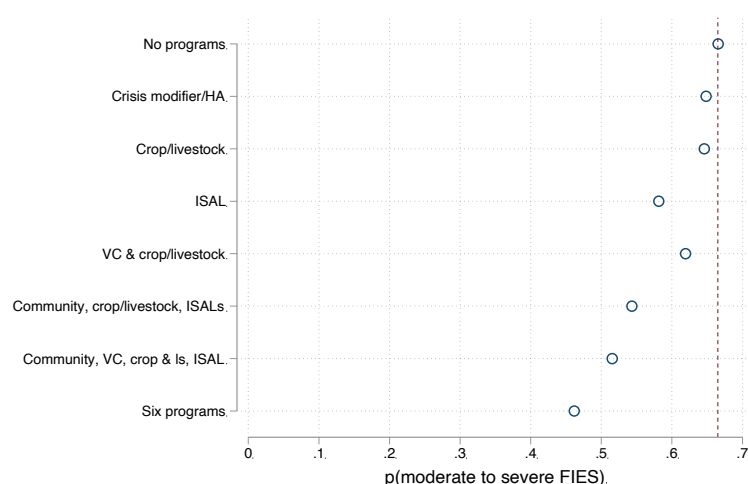


Figure 4 shows the probability of recovery from drought and/or late or variable rains for the same programming combinations as in Figure 3. The figure shows that without ZRBF programming, the probability of recovery would have been 0.08, fewer than one in ten households would have recovered. Compared to crisis modifier/humanitarian assistance programming, ISAL programming had a larger effect and increased the probability to 0.12. But unlike the FIES outcome, combined value chain and crop and livestock programming had a similar effect to ISALs. Participation in three programs (community asset building, crop and livestock and ISALS) raises the probability to 0.18. Households participating in six programs (all except gender and youth) had a 0.3 probability of recovery from drought and/or late rains.



Figure 4: Probability of Recovery from Drought and/or Late Rains due to the Effects of Program Participation on Climate-Smart Practices

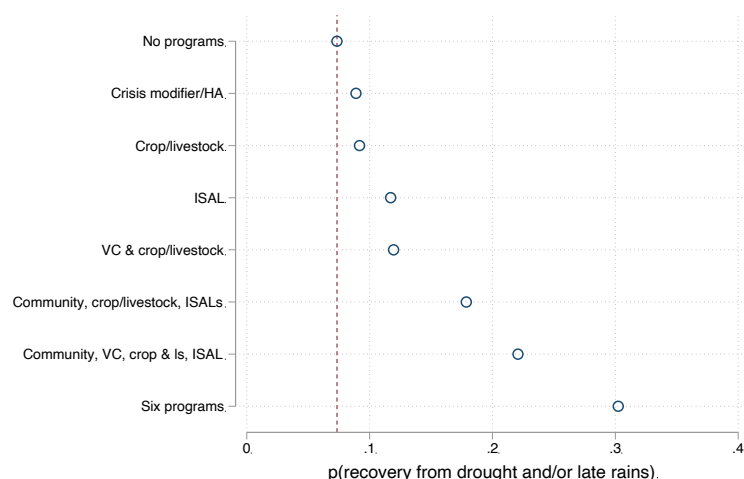
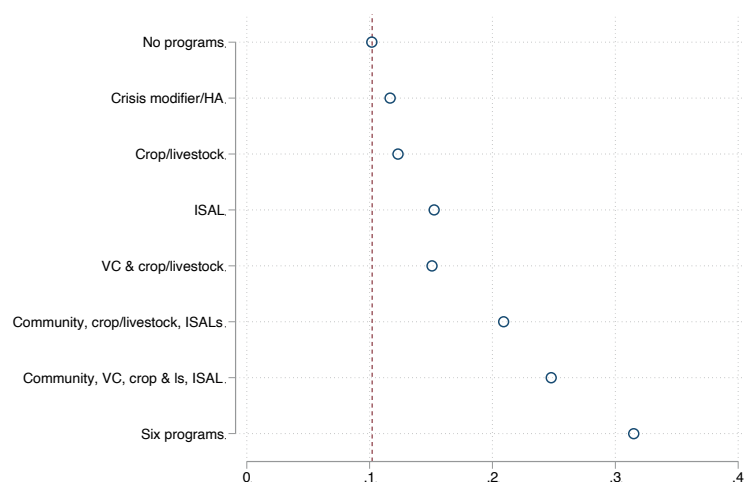


Figure 5 shows the probability of recovery from crop and/or livestock shocks. Without ZRBF programming, one in ten households can expect to recover. Participation in crop and livestock programming by itself raises the probability to 0.12. ISAL programming by itself has about the same effect as combined crop and livestock programming and raises the probability of recovery to 0.15. Combinations of programming show that broad program participation improves the probability of recover from crop and/or livestock shocks. Combining community asset building, crop and livestock and ISALS increases the probability of recovery to 0.21. Participation in six types of programs raises the probability of recovery to 0.32.

Figure 5. Probability of Recovery from Crop and/or Livestock Shocks due to the Effects of Program Participation on Climate-Smart Practices



The next set of models examines the second pathway: Program participation, by increasing resilience capacities reduces moderate to severe FIES and increases recovery from shocks ($a \Rightarrow c \Rightarrow e$). **Table 6** shows relationships between programming types and resilience capacities and represents results from the first part of the IV equations. All programming types are associated with increased resilience capacity. Details in the table show that relationships vary among programming types. Crisis modifier/humanitarian assistance programming primarily affects absorptive capacity. Community asset building programs are associated with increases in absorptive and transformative capacities but not adaptive capacity. Gender and youth, business, value chain, crop and livestock programming and ISALs are associated with changes in all three capacity indices. ISALs are the only programming type related to all three types of social capital and the



only programming that affects bonding social capital. All programming improves ISNs and nearly all (except crisis modifier/humanitarian assistance) improves access to information.

Table 6: Programming Types and Resilience Capacities

| Resilience capacities | Programming category | | | | | | |
|------------------------------|----------------------|----------------|----------|-------------|------------------|--------------------|-------|
| | Community asset | Gender & youth | Business | Value chain | Crop & livestock | Crisis modifier/HA | ISALs |
| Absorptive | ↑*** | ↑*** | ↑*** | ↑*** | ↑*** | ↑*** | ↑*** |
| ISN | ↑*** | ↑*** | ↑*** | ↑*** | ↑*** | ↑*** | ↑*** |
| Bonding social capital | ns | ns | ns | ns | ns | ns | ↑* |
| Access to savings | ns | ns | ↑*** | ns | ns | ns | ↑*** |
| Productive asset | ↑* | ns | ↑*** | ↑*** | ↑*** | ns | ↑*** |
| Humanitarian assistance | ↑*** | ns | ↑* | ns | ↑*** | ns | ns |
| Shock preparedness | ↑*** | ↑*** | ↑*** | ns | ns | ↑*** | ↑* |
| Livestock assets | ns | ns | ns | ns | ↑*** | ↑*** | ns |
| Adaptive | ns | ↑*** | ↑*** | ↑*** | ↑** | ns | ↑*** |
| Bridging social capital | ns | ns | ns | ns | ns | ns | ns |
| Linking social capital | ns | ↑*** | ↑*** | ↑*** | ns | ns | ↑* |
| Human capital | ns | ns | ns | ns | ns | ns | ns |
| Livelihood diversification | ns | ns | ↑** | ns | ns | ns | ns |
| Access to financial services | ns | ns | ↑* | ns | ns | ns | ↑*** |
| Transformative | ns | ↑* | ↑* | ↑*** | ↑*** | ns | ↑** |
| Exposure to information | ↑*** | ↑*** | ↑*** | ↑*** | ↑** | ns | ↑* |
| Agricultural extension | ↑*** | ns | ns | ↑** | ↑*** | ns | ns |
| Access to markets | ↓** | ns | ↑* | ns | ↑* | ↓* | ns |
| Access to services | ns | ↑* | ns | ↑* | ns | ns | ns |
| Access to infrastructure | ns | ns | ns | ns | ns | ns | ns |
| Gender norms | ns | ns | ns | ns | ↑* | ns | ↑*** |
| Collective action | ns | ns | ns | ns | ↑* | ns | ns |
| Resilience | ↑*** | ↑*** | ↑*** | ↑*** | ↑*** | ↑*** | ↑*** |

The examples presented in the next table and figures use resilience capacity as the mechanism for change--the instrumented variable. The results from the first stage of the are additive, so for example, participation in value chain, crop and livestock and ISAL programming adds 20.8 points to a household's resilience capacity index as it relates to FIES (**Table 7**).



Table 7: IV probit Estimation of Well-Being Outcomes due to the Effects of Program Participation on Resilience Capacity, Summary Results

| ZRBF Program categories | First Stage | Resilience capacity index | | |
|---------------------------|--------------------------|----------------------------|--------------------------------|-----------------------------------|
| | | | | |
| ZRBF Program categories | Community asset building | 2.99*** | 3.03*** | 2.28*** |
| | Gender and youth | 6.44*** | 6.68*** | 7.17*** |
| | Business | 3.97*** | 3.90*** | 3.95*** |
| | Value Chain | 3.15*** | 2.99*** | 3.42*** |
| | Crop and livestock | 4.87*** | 4.69*** | 4.37*** |
| | Crisis Modifier | 3.22*** | 3.02*** | 2.35*** |
| | ISALS | 5.87*** | 5.73*** | 5.88*** |
| Second Stage | | p(moderate to severe FIES) | p(recover drought/ late rains) | p(recover crop/live-stock shocks) |
| Resilience capacity index | | -0.02*** | 0.04*** | 0.03*** |
| Shock severity | | 0.03*** | -0.03*** | -0.02*** |
| <i>n</i> | | 6706 | 6281 | 3701 |

ns = not significant, * p<0.05, ** p<0.01, *** p<0.001

The next set of figures shows how program participation, by improving resilience capacity, improves well-being outcomes. **Figure 6** shows results from equations estimating the probability of moderate to severe food insecurity. Households that did not participate in any programming had lower resilience capacity and thus a higher probability of moderate to severe food insecurity (0.65). Crisis modifier programming, by itself reduced the probability of moderate to severe FIES by 0.01, crop and livestock programming by itself by 0.2 and ISAL programming by itself by 0.25. This seems small, but for households participating in more than one program type the effects are close to additive. Participation in three types of programming (community, crop and livestock and ISALS) reduced the probability of moderate to severe FIES by 0.08 to 0.57. Participation in six types of programming (all program types except gender and youth) reduced the probability of moderate to severe FIES by 0.14 to 0.51.

Figure 6. Probability of Moderate-to-Severe FIES, due to the Effects of Program Participation on Resilience Capacity

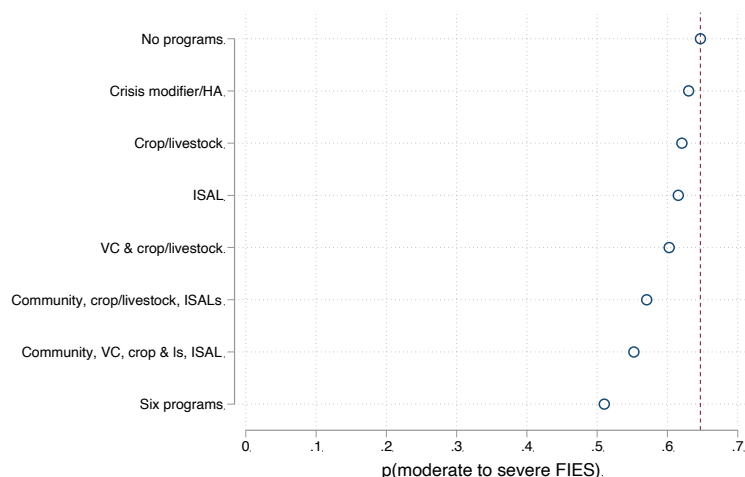


Figure 7 shows results from replicating the equation with probability of recovery from drought and/or late rains as the outcome variable. The figure shows that increases the probability of recovery increases with program participation. Without programming a household had a 0.07 probability of recovering from a drought. Crisis modifier/humanitarian assistance, crop and livestock and ISALS all had similar effects on resilience capacity, which that increases the probability of recovery about 0.02 to between 0.09 and 0.1.



Households participating in four programs: community, value chain, crop, and livestock and ISAL programs had 0.2 probability of recovery from drought and/or late rains.

Figure 7. Probability of Recovery from Drought and/or Late Rains due to the Effects of Program Participation on Resilience Capacity

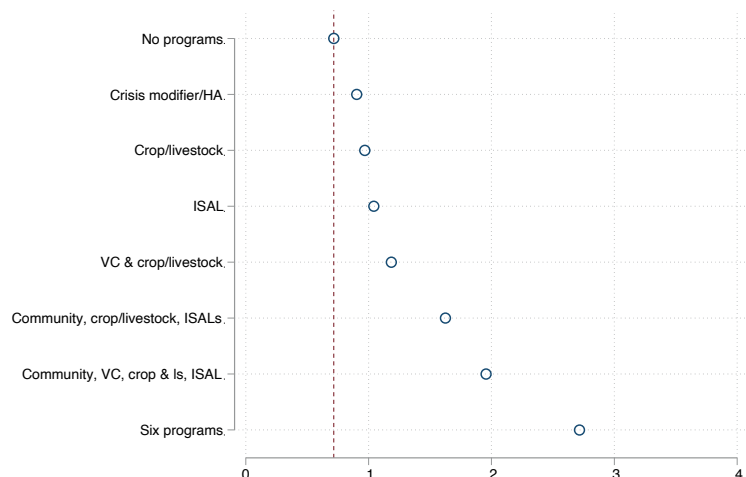


Figure 8 shows estimates from the equation estimating the probability of recovery from a crop and/or livestock shock. By increasing resilience capacity, program participation increased the probability of recovery. Without ZRBF programming the probability of recovery from a crop and/or livestock shock would be 0.1. Compared to crisis modifier/humanitarian assistance and crop and livestock programming, ISAL programming has a larger effect on resilience capacity and thus on recovery from crop and/or livestock shocks, increasing it to 0.14. A household participating in three types of programming: community asset buildings, crop, and livestock and ISALs improves their probability of recovery from a crop and/or livestock shock by 0.1, to 0.19.

Figure 8. Probability of Recovery from Crop and Livestock Shocks due to the Effects of Program Participation on Resilience Capacity

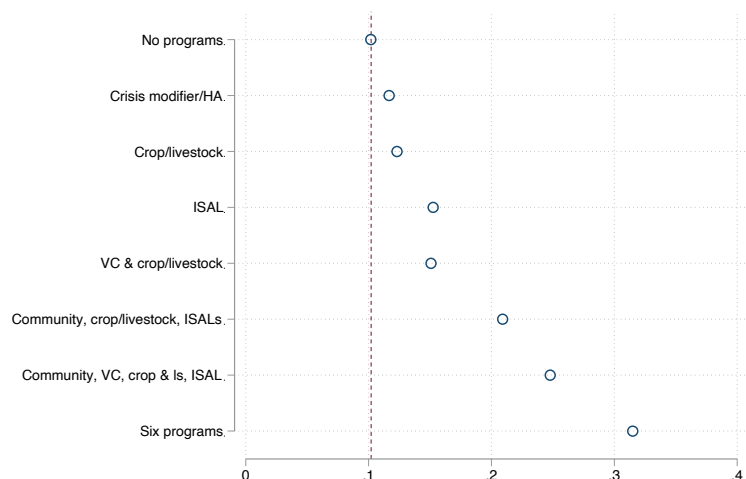


Table 8 and **Figure 9** present results from analysis of the third pathway which follows program participation through resilience capacities to coping strategies: $a \Rightarrow c \Rightarrow d$ (**Figure 1**). The first stage of the equation is the same as in the previous section and estimates the effects of program participation on resilience capacity. The second stage estimates the how the changes in resilience capacities, due to program participation affects CSI.



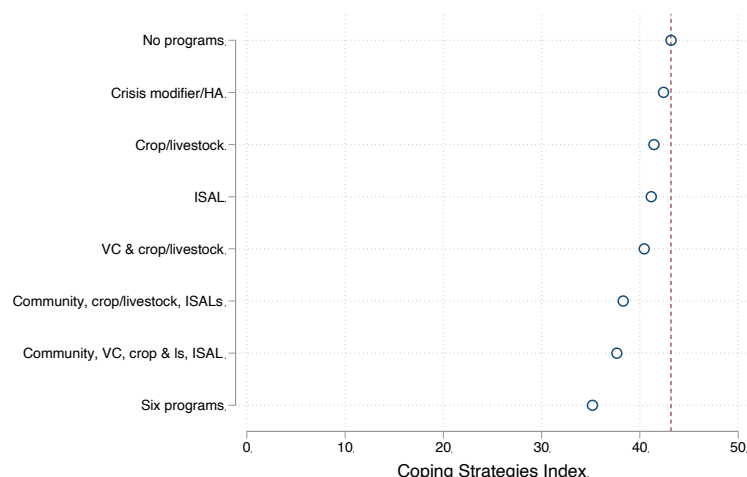
Table 8: IV Tobit Estimation of Coping Strategies Index due to the Effects of Program Participation on Resilience Capacity, Summary Results

| ZRBF Program categories | First Stage | | Resilience capacity index | |
|-------------------------|---------------------------|--|---------------------------|--|
| | Community asset building | | 2.97*** | |
| | Gender and youth | | 6.56*** | |
| | Business | | 3.93*** | |
| | Value Chain | | 3.23*** | |
| | Crop and livestock | | 4.88*** | |
| | Crisis Modifier | | 3.21*** | |
| | ISALS | | 5.79*** | |
| | Second Stage | | CSI | |
| | Resilience capacity index | | -0.69*** | |
| | Shock severity | | 0.12*** | |
| <i>n</i> | | | 6706 | |

ns = not significant, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Figure 9 shows changes in CSI due to different combinations of program layering. The figure shows CSI of 43.2 for households with no program participation. Participation in crisis modifier/humanitarian assistance, crop and livestock or ISAL programming lowers CSI by between 1-2 points. Combining program types lowers CSI further, by about 1-2 points for each additional type of programming. For households engaged in 6 types of programming (all types except gender and youth) CSI was reduced by 8 points to 35.2

Figure 9: Coping Strategies due to the Effects of Program Participation on Resilience Capacity



Summary and Conclusions

The results from this deep dive analysis provide empirical evidence for three resilience pathways and demonstrate how participation in ZRBF programming translates to improved outcomes. The results provide an estimate of how households would fare in the absence of ZRBF programming (not well) and provides compelling evidence for layering program types. The models looked at two instrumented variables, climate-smart practices and resilience capacity, across three models. Working through climate-smart practices, of the three programs (crisis modifier/humanitarian assistance, crop and livestock and ISALS) shown in the examples, ISALS improved well-being outcomes more than either crisis modifier/humanitarian assistance or crop and livestock programming, or than combined value chain and livestock and crop programming. Working through resilience capacities, the effects of each of the three was roughly the same. All models showed benefits of layering, with both climate-smart practices and resilience capacity as instrumented variables, as layering increases program participation has larger effects on outcomes.



Appendix a: Results from Estimation Equations

Model 1: Probit IV equations estimating well-being outcomes (climate-smart practices)

| | Recovery from sharp food price increase | p[Moderate to severe FIES] | Recovery from drought or variable rains | Recovery from crop/ livestock shocks |
|-------------------------|--------------------------------------------|-------------------------------|--------------------------------------------|-----------------------------------------|
| Second stage | | | | |
| Climate-smart practices | 0.06*** | -0.03*** | 0.07*** | 0.06*** |
| Shock severity | -0.04*** | 0.03*** | -0.03*** | -0.02*** |
| Livestock (2019usd) | 0.00 | -0.00*** | -0.00* | 0.00 |
| OMS1 | 0.00 | 0.00 | 0.00 | 0.00 |
| OMS2 | -0.15** | 0.33*** | -0.07 | -0.18*** |
| ISALs | 0.23*** | -0.18*** | | |
| Constant | -1.18*** | 0.06 | -1.24*** | -1.08*** |
| First stage | | | | |
| Shock severity | 0.09*** | 0.11*** | 0.11*** | 0.07*** |
| Livestock (2019usd) | 0.00*** | 0.00*** | 0.00*** | 0.00*** |
| OMS1 | 0.00 | 0.00 | 0.00 | 0.00 |
| OMS2 | 0.70*** | 0.57*** | 0.63*** | 1.23*** |
| Community asset | 1.70*** | 2.28*** | 1.79*** | 1.44*** |
| Gender & youth | 2.55*** | 1.77*** | 2.78*** | 2.01*** |
| Business | 3.59*** | 2.73*** | 3.53*** | 3.00*** |
| Value chain | 2.70*** | 3.58*** | 2.60*** | 2.65*** |
| Crop & livestock | 2.25*** | 2.74*** | 2.22*** | 2.83*** |
| Crisis modifier/HA | 1.81*** | 2.29*** | 1.83*** | 1.57*** |
| ISALs | 2.31*** | 1.93*** | 2.31*** | 2.63*** |
| Constant | 3.39*** | 2.77*** | 2.71*** | 4.07*** |
| Observations | 5205 | 6706 | 6281 | 3701 |

* p<0.05, ** p<0.01, *** p<0.001



Model 2: IV probit equations estimating well-being outcomes (resilience capacity indices)

| | Recovery from sharp food price increase | | | | p(Moderate to severe FIES) | | | |
|-------------------------------|-----------------------------------------|----------|----------|----------|----------------------------|----------|----------|----------|
| Second stage | | | | | | | | |
| Absorptive capacity index | 0.05*** | | | | -0.02*** | | | |
| Adaptive capacity index | | 0.06*** | | | | -0.03*** | | |
| Transformative capacity index | | | 0.04*** | | | | -0.02*** | |
| Resilience capacity index | | | | 0.04*** | | | | -0.02*** |
| Shock severity | -0.03*** | -0.03*** | -0.03*** | -0.03*** | 0.02*** | 0.03*** | 0.02*** | 0.03*** |
| Livestock (2019usd) | -0.00*** | -0.00*** | 0.00 | -0.00* | -0.00* | -0.00 | -0.00*** | -0.00*** |
| OMS1 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| OMS2 | -0.07 | -0.09 | -0.14** | -0.10* | 0.29*** | 0.30*** | 0.32*** | 0.30*** |
| ISALs | 0.14* | 0.06 | 0.17** | 0.11 | -0.15** | -0.11* | -0.20*** | -0.15** |
| Constant | -1.96*** | -2.22*** | -2.70*** | -2.12*** | 0.43*** | 0.56*** | 0.61*** | 0.43*** |
| First stage | | | | | | | | |
| Shock severity | 0.02 | 0.08*** | 0.06** | 0.06*** | 0.05*** | 0.12*** | 0.11*** | 0.12*** |
| Livestock (2019usd) | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** |
| OMS1 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| OMS2 | -0.72** | -0.34 | 0.69 | -0.27 | -0.89*** | -0.28 | 1.03** | -0.27 |
| Community asset | 3.40*** | 1.40*** | 1.74*** | 2.85*** | 3.26*** | 1.32*** | 1.98*** | 2.99*** |
| Gender & youth | 3.41*** | 4.29*** | 6.81*** | 5.65*** | 3.85*** | 5.05*** | 6.62*** | 6.44*** |
| Business | 3.64*** | 3.69*** | 2.04*** | 4.33*** | 3.51*** | 3.49*** | 1.99*** | 3.97*** |
| Value chain | 2.39*** | 1.95*** | 3.36*** | 3.10*** | 2.49*** | 2.05*** | 3.54*** | 3.15*** |
| Crop & livestock | 2.10*** | 2.94*** | 5.49*** | 4.28*** | 2.50*** | 3.17*** | 6.58*** | 4.87*** |
| Crisis modifier/HA | 2.74*** | 1.79*** | 2.69*** | 3.20*** | 2.82*** | 1.70*** | 2.88*** | 3.22*** |
| ISALs | 4.01*** | 4.98*** | 3.97*** | 5.75*** | 4.02*** | 5.22*** | 4.09*** | 5.87*** |
| Constant | 20.71*** | 23.26*** | 42.26*** | 27.97*** | 19.25*** | 21.22*** | 39.12*** | 25.00*** |
| Observations | 5205 | 5205 | 5205 | 5205 | 6706 | 6706 | 6706 | 6706 |

* p<0.05, ** p<0.01, *** p<0.001



Model 2 (continued): IV probit equations estimating well-being outcomes (resilience capacity indices)

| | Recovery from drought or variable rains | | | | Recovery from crop/livestock shocks | | | |
|-------------------------------|-----------------------------------------|----------|----------|----------|-------------------------------------|----------|----------|----------|
| First stage | | | | | | | | |
| Absorptive capacity index | 0.05*** | | | | 0.04*** | | | |
| Adaptive capacity index | | 0.05*** | | | | 0.05*** | | |
| Transformative capacity index | | | 0.04*** | | | | 0.04*** | |
| Resilience capacity index | | | | 0.04*** | | | | 0.03*** |
| Shock severity | -0.02*** | -0.03*** | -0.02*** | -0.03*** | -0.02*** | -0.02*** | -0.02*** | -0.02*** |
| Livestock (2019usd) | -0.00*** | -0.00*** | -0.00 | -0.00*** | -0.00*** | -0.00*** | 0.00 | -0.00 |
| OMS1 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| OMS2 | 0.02 | -0.01 | -0.08* | -0.01 | -0.09 | -0.11* | -0.15*** | -0.11* |
| ISALs | | | | | | | | |
| Constant | -2.05*** | -2.20*** | -2.68*** | -2.14*** | -1.68*** | -1.93*** | -2.53*** | -1.86*** |
| First stage | | | | | | | | |
| Shock severity | 0.05*** | 0.12*** | 0.09*** | 0.11*** | 0.01 | 0.04* | 0.01 | 0.02 |
| Livestock (2019usd) | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** |
| OMS1 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| OMS2 | -0.81*** | -0.05 | 1.13** | -0.09 | -0.52 | 0.37 | 1.22** | 0.29 |
| Community asset | 3.27*** | 1.52*** | 2.18*** | 3.03*** | 2.94*** | 0.68 | 1.42* | 2.28*** |
| Gender & youth | 4.13*** | 5.22*** | 6.80*** | 6.68*** | 4.64*** | 5.06*** | 5.95*** | 7.17*** |
| Business | 3.34*** | 3.30*** | 2.00*** | 3.90*** | 3.35*** | 3.31*** | 2.23*** | 3.95*** |
| Value chain | 2.30*** | 1.91*** | 3.27*** | 2.99*** | 2.89*** | 2.05*** | 3.27*** | 3.42*** |
| Crop & livestock | 2.46*** | 3.02*** | 6.13*** | 4.69*** | 2.32*** | 3.16*** | 5.26*** | 4.37*** |
| Crisis modifier/HA | 2.59*** | 1.56*** | 2.78*** | 3.02*** | 2.55*** | 1.08** | 1.92*** | 2.35*** |
| ISALs | 4.01*** | 5.04*** | 4.21*** | 5.73*** | 4.25*** | 5.50*** | 4.16*** | 5.88*** |
| Constant | 19.40*** | 21.21*** | 39.86*** | 25.35*** | 20.65*** | 24.71*** | 44.73*** | 29.31*** |
| Observations | 6281 | 6281 | 6281 | 6281 | 3701 | 3701 | 3701 | 3701 |

* p<0.05, ** p<0.01, *** p<0.001



Model 3: IV equations estimating coping strategies outcomes (resilience capacity indices)

| | Coping strategies index (FSN) | | | | Livelihood-based coping strategies | | | |
|-------------------------------|-------------------------------|----------|----------|----------|------------------------------------|----------|----------|----------|
| Second stage | | | | | | | | |
| Absorptive capacity index | -0.92*** | | | | -0.07*** | | | |
| Adaptive capacity index | | -0.98*** | | | | -0.07*** | | |
| Transformative capacity index | | | -0.72*** | | | | -0.05*** | |
| Resilience capacity index | | | | -0.69*** | | | | -0.05*** |
| Shock severity | 1.06*** | 1.13*** | 1.08*** | 1.09*** | 0.20*** | 0.21*** | 0.20*** | 0.20*** |
| Livestock 2019usd | -0.00*** | -0.00*** | -0.00*** | -0.00*** | -0.00*** | -0.00*** | -0.00*** | -0.00*** |
| OMS1 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| OMS2 | 2.74** | 3.09** | 4.08*** | 3.28** | -0.16 | -0.14 | -0.09 | -0.12 |
| Constant | 42.60*** | 45.60*** | 53.58*** | 42.54*** | 0.57 | 0.68 | 1.17* | 0.50 |
| First stage | | | | | | | | |
| Shock severity | 0.05*** | 0.12*** | 0.11*** | 0.12*** | 0.05*** | 0.12*** | 0.11*** | 0.12*** |
| Livestock 2019usd | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** |
| OMS1 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| OMS2 | -0.89*** | -0.28 | 1.03** | -0.27 | -0.89*** | -0.28 | 1.03** | -0.27 |
| Community asset | 3.27*** | 1.30*** | 1.98*** | 2.97*** | 3.27*** | 1.32*** | 1.97*** | 2.99*** |
| Gender & youth | 3.91*** | 5.17*** | 6.56*** | 6.56*** | 3.87*** | 5.10*** | 6.77*** | 6.45*** |
| Business | 3.46*** | 3.44*** | 1.82*** | 3.93*** | 3.47*** | 3.44*** | 1.74*** | 3.94*** |
| Value chain | 2.54*** | 2.11*** | 3.51*** | 3.23*** | 2.51*** | 2.07*** | 3.63*** | 3.16*** |
| Crop & livestock | 2.49*** | 3.18*** | 6.54*** | 4.88*** | 2.49*** | 3.16*** | 6.54*** | 4.86*** |
| Crisis modifier/ha | 2.83*** | 1.68*** | 2.90*** | 3.21*** | 2.83*** | 1.71*** | 2.93*** | 3.23*** |
| ISILs | 3.99*** | 5.18*** | 4.31*** | 5.79*** | 4.02*** | 5.22*** | 4.16*** | 5.87*** |
| Constant | 19.25*** | 21.21*** | 39.11*** | 24.99*** | 19.25*** | 21.22*** | 39.11*** | 25.00*** |
| Observations | 6706 | 6706 | 6706 | 6706 | 6706 | 6706 | 6706 | 6706 |

* p<0.05, ** p<0.01, *** p<0.001



Annex 7
QUESTIONNAIRE

Outcome Monitoring Survey Questionnaire for Round-2

(Questionnaire for the Randomly Selected Sample Households)

Zimbabwe Resilience Building Fund



Department of
Development
Policy

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INTRODUCTION AND CONSENT

Guidance for introducing yourself and the purpose of the interview:

Greetings! My name is _____ and I am currently working for/with [Consortium partner name] for the Outcome Monitoring Survey of Zimbabwe Resilience Building Fund.

- We have selected your household **by chance (randomly)** in this village for the interview. The purpose of this interview is to learn about livelihoods, assets ownership, agricultural/livestock practices, resilience capacities, access to basic services and social safety nets, household income and household hunger.
- The survey is **voluntary and confidential**. We will not disclose your household's information to any other entity not directly related to this project. Any information that is obtained in connection with this survey that can be identified with you will remain confidential and will only be shared with the Consortium Partners, Donor and TANGO International. We will be recording the location of your household so we may interview you again if you are randomly selected for subsequent survey rounds. This information will be password protected and accessible only to the key persons of the survey team.
- We cannot and do not guarantee or promise that you will receive any additional benefits from this survey. No compensation, monetary or otherwise, can be offered for your participation as this may be seen as coercing your participation.
- Participation in this survey is **voluntary**. If you decide not to participate in this study, your decision will not affect your future relations with the ZRBF project or its personnel. If you decide not to participate, you are free to withdraw your consent and to discontinue participation at any time without penalty.
- These questions in total will take approximately 2 hours to complete and your participation is voluntary. Could you please spare some time for the interview?
- If you have any questions or complaints after the survey, you may contact XXXXX, XXXX, by email at XXXXXX.org or by phone at +XXXXXX.

At this time, do you want to ask me anything about the survey?

May I begin the interview now?

Agreed1
Disagreed2
Beneficiary/HH not available3
Another person interviewed from same HH.....4

→START INTERVIEW

FILL-UP IDENTIFICATION PART AND SELECT REASON

Cannot locate sample household 1
Sample beneficiary deceased..... 2
Sample beneficiary temporarily absent..... 3
Sample beneficiary migrated to another part of Zimbabwe 4
Sample beneficiary migrated outside of Zimbabwe..... 5
HH located, but no adult respondent available 6
Postponed 7
Refused 8
Dwelling vacant 9
Dwelling destroyed10
Others (Specify)11

INTERVIEWER:

Name: _____

Signature: _____

Date: --

dd mm yyyy

SAMPLE IDENTIFICATION:

A. Sample Household Code :

[SEE CODE IN SAMPLE LIST]

B. Beneficiary ID : -

C. Consortium Partner Code :

D. District Code :

E. Ward Code :

F. Team Code :

G. Interviewer Code :



MODULE A: HOUSEHOLD DEMOGRAPHICS

[INSTRUCTION: PLEASE ASK THIS QUESTION FOR THE HOUSEHOLD MEMBERS WHO LIVES IN THE SAME HOUSE UNDER THE SAME ROOF AND TAKE MEAL TOGETHER BY COOKING IN THE SAME POT. HOUSEHOLD MEMBERS LIVE OUTSIDE FOR MORE THAN 3 MONTHS SHOULD BE EXCLUDED FROM NUMBER OF HOUSEHOLD MEMBER COUNTING].

INTRODUCTION: Now I would like to ask you about the household, members living in this household and the livelihood of your household

[INSTRUCTION: START WITH THE HH HEAD]

| ID | Write the NAME of the HH Member [CHRISTIAN NAME AND SURNAME] | [NAME]'s Age [COMPLETE YEAR] 0 = age < 1 year 888 = DNK 999 = Refused | [NAME]'s Sex 1 = Male, 2 = Female 3 = Other | What is [NAME]'s relationship to HH Head [ENTER CODE] | IF AGE IS 4+ YEARS | | IF AGE IS 10+ YEARS | | |
|------|---------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------|----------------------------------------------------------|-----------------------------------------------------------|---------------------------------------------------------------------|-----------------------------------------------------------|----------------------------------------------|---------------------------------------------------------------------------|
| | | | | | Has [NAME] ever attended School? YES=1 NO=2→108 | What is the highest grade [NAME] has completed? [ENTER CODE] | What is the marital status of [NAME]? [ENTER CODE] | Is [NAME] Prime respondent? YES=1 NO=2 | Is [NAME] participate in any activities of ZRBF Project? YES=1 NO=2 |
| A101 | A102 | A103 | A104 | A105 | A106 | A107 | A108 | A109 | A110 |
| 01 | | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| 02 | | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| 03 | | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| 04 | | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| 05 | | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| 06 | | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| 07 | | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| 08 | | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| 09 | | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| 10 | | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |

| CODE LIST | | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CODE FOR A105 01=Household Head 02=Husband 03=Wife 04=Son 05=Daughter 06=Daughter-in-law 07=Son-in-law 08=Father 09=Mother | 10=Mother-in-law 11=Father-in-law 12=Brother/Brother-in-law 13=Sister/Sister-in-law 14=Grandson 15=Granddaughter 16=Adopted/step son 17=Adopted/step daughter 18=Other (Specify) 99=Don't know | CODE FOR A107 01=None 02=ECD/Nursery/Primary School 03=Primary level completed 04=ZJC level 05='O' level 06='A' level 07=Diploma/ certificate after primary 08=Diploma/ certificate after secondary 09=Graduate/post-graduate 10=Others (specify) 99=Don't know | CODE FOR A108: 1=Married living together (more than 3 months a year) in this village 2=Married, spouse living elsewhere (more than 3 months a year) in Zimbabwe 3=Married, spouse living elsewhere (more than 3 months a year) outside of Zimbabwe 4=Divorced/separated 5=Widowed 6=Never Married |



MODULE B1: HOUSEHOLD DIET DIVERSITY, FOOD INSECURITY AND HUNGER

[INSTRUCTION: Ask this module to the female decision-maker or whoever is most knowledgeable about food preparation and/or consumption of household members]

[INTRODUCTION: Now I would like to discuss about household food consumption for last 7 days and household hunger for food crisis for last 30 days and 12 months]

| NO. | QUESTIONS AND FILTERS | CODING CATEGORIES | | | SKIP | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|-------------------------------------------------|---------------------------------------|-------------------------------------------------|---------------------------------------|---------------------------------|-----------------------------|--|--|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------|--------------------------------------------|--------------------------|---------------------------------------------------------------------------------------|--------------------------|--------------------------|--------------------------|-------------------------|--------------------------|--------------------------|--------------------------------------------|--------------------------|--------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------|----------------------------------------------|--------------------------|----------------------------------------------------------------------------------------------------------|--------------------------|--------------------------|--------------------------|----------------------------------------------------------------------------------|--------------------------|--------------------------|--------------------------|---------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------|--------------------------------------------|--------------------------|---------------------------------------------------------------------------|--------------------------|--------------------------|--------------------------|------------------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|----------------------------------------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-----------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--|--|--|--|
| | FOOD CONSUMPTION IN THE PAST 7 DAYS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| B101 | <p>Over the past seven days, how many days did your household consume the following food items?</p> <p>[INTERVIEWER: I will ask each food items one by one. Please remember that this for 7 days food consumption in your household. Count if anyone in your household consumed in last 7 days]</p> <table border="1"> <thead> <tr> <th>FOOD/FOOD GROUPS</th><th>Did your household consume in past 7 days?</th><th>How many days consumed in Past 7 days</th><th>How many days consumed in past 7 days combined?</th><th>Did your household consume yesterday?</th></tr> <tr> <th>[Ask each food item one by one]</th><th>1= Yes 2= No → Next Item</th><th></th><th></th><th>1= Yes 2= No</th></tr> </thead> <tbody> <tr> <td>1 A. Cereals and grain: rice, pasta, bread, cake, doughnuts, sorghum, millet, maize, maize meal, corn-soya blend, super cereal etc.</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td rowspan="2">(A+B combined) <input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr> <td>B. Roots and Tubers: potato, yam, cassava, sweet potatoes, and/or other tubers</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr> <td>2 C. Sugar beans</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td rowspan="2">(C+D combined) <input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr> <td>D. Other legumes and Nuts: cowpeas, groundnuts, lentils, soybeans, pigeon peas and/or other nuts etc.</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr> <td>3 E. Orange Fleshed Vegetables (Vitamin-A rich vegetables): carrot, red-pepper, pumpkin, butternut, orange sweet potatoes etc.</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td rowspan="3">(E+F+G combined) <input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr> <td>F. Green Leafy Vegetables: spinach, broccoli, and/or other dark green leaves, cassava leaves etc.</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr> <td>G. Other Vegetables: onion, tomatoes, cucumber, green beans, lettuce etc.</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr> <td>4 H. Orange Fleshed Fruits (Vitamin-A rich fruits): mango, apricot, peach, paw-paw (excluding citrus fruits)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td rowspan="2">(H+I Combined) <input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr> <td>I. 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Oils, butter and fats</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> </tbody> </table> | FOOD/FOOD GROUPS | Did your household consume in past 7 days? | How many days consumed in Past 7 days | How many days consumed in past 7 days combined? | Did your household consume yesterday? | [Ask each food item one by one] | 1= Yes 2= No → Next Item | | | 1= Yes 2= No | 1 A. Cereals and grain: rice, pasta, bread, cake, doughnuts, sorghum, millet, maize, maize meal, corn-soya blend, super cereal etc. | <input type="checkbox"/> | <input type="checkbox"/> | (A+B combined) <input type="checkbox"/> | <input type="checkbox"/> | B. Roots and Tubers: potato, yam, cassava, sweet potatoes, and/or other tubers | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 2 C. Sugar beans | <input type="checkbox"/> | <input type="checkbox"/> | (C+D combined) <input type="checkbox"/> | <input type="checkbox"/> | D. Other legumes and Nuts: cowpeas, groundnuts, lentils, soybeans, pigeon peas and/or other nuts etc. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 3 E. Orange Fleshed Vegetables (Vitamin-A rich vegetables): carrot, red-pepper, pumpkin, butternut, orange sweet potatoes etc. | <input type="checkbox"/> | <input type="checkbox"/> | (E+F+G combined) <input type="checkbox"/> | <input type="checkbox"/> | F. Green Leafy Vegetables: spinach, broccoli, and/or other dark green leaves, cassava leaves etc. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | G. Other Vegetables: onion, tomatoes, cucumber, green beans, lettuce etc. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 4 H. 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| FOOD/FOOD GROUPS | Did your household consume in past 7 days? | How many days consumed in Past 7 days | How many days consumed in past 7 days combined? | Did your household consume yesterday? | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| [Ask each food item one by one] | 1= Yes 2= No → Next Item | | | 1= Yes 2= No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| B. Roots and Tubers: potato, yam, cassava, sweet potatoes, and/or other tubers | <input type="checkbox"/> | <input type="checkbox"/> | | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 C. Sugar beans | <input type="checkbox"/> | <input type="checkbox"/> | (C+D combined) <input type="checkbox"/> | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D. Other legumes and Nuts: cowpeas, groundnuts, lentils, soybeans, pigeon peas and/or other nuts etc. | <input type="checkbox"/> | <input type="checkbox"/> | | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| F. Green Leafy Vegetables: spinach, broccoli, and/or other dark green leaves, cassava leaves etc. | <input type="checkbox"/> | <input type="checkbox"/> | | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| G. Other Vegetables: onion, tomatoes, cucumber, green beans, lettuce etc. | <input type="checkbox"/> | <input type="checkbox"/> | | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 5 J. Meats/beef, fish, seafood and eggs | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 K. Dairy Products: milk, yoghurts, cheese and milk products | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 L. Oils, butter and fats | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |



| NO. | QUESTIONS AND FILTERS | | CODING CATEGORIES | SKIP |
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| | <p>HOUSEHOLD FOOD INSECURITY EXPERIENCE SCALE (FIES) AND HOUSEHOLD HUNGER SCALE (HHS)</p> <p>[INSTRUCTION: Ask these questions to the female decision-maker or whoever is most knowledgeable about the food preparation and/or consumption of household members. Remember that the answers of the questions are from last 12 months and last 30 days. Please ask these questions to the respondent in a non-crowded place so that he/she]</p> <p>[Now I would like to ask you some questions about your food consumption in the <u>past 12 MONTHS</u> or <u>LAST 30 DAYS</u>]</p> | | | |
| | HOUSEHOLD FOOD INSECURITY EXPERIENCE [12 MONTHS OR LAST 30 DAYS RECALL] | | | |
| B102Y | During the past <u>12 MONTHS</u> , you or others in your HH were worried you would not have enough food to eat due to the lack of money or resources? [WORRIED] | Yes 1 No..... 2 | 2→B103Y | |
| B102D | Has this happened during the past <u>30 DAYS</u> too? | Yes 1 No..... 2 | | |
| B103Y | During the past <u>12 MONTHS</u> , you or others in your HH were unable to eat healthy and nutritious food due to the lack of money or resources? [HEALTHY/NUTRITIOUS FOOD] | Yes 1 No..... 2 | 2→B104Y | |
| B103D | Has this happened during the past <u>30 DAYS</u> too? | Yes 1 No..... 2 | | |
| B104Y | During the past <u>12 MONTHS</u> , you or others in your HH ate only a few kinds of foods due to the lack of money or resources? | Yes 1 No..... 2 | 2→B105Y | |
| B104D | Has s this happened during the past <u>30 DAYS</u> too? | Yes 1 No..... 2 | | |
| B105Y | During the past <u>12 MONTHS</u> , was there a time when you or others in your household had to skip a meal because of a lack of money or other resources to get food? | Yes 1 No..... 2 | 2→B106Y | |
| B105D | Was this happened during the past <u>30 DAYS</u> too? | Yes 1 No..... 2 | | |
| B106Y | During the past <u>12 MONTHS</u> , was there a time when you or others in your household ate less than you thought you should because of a lack of money or other resources? | Yes 1 No..... 2 | 2→B107Y | |



| NO. | | QUESTIONS AND FILTERS | CODING CATEGORIES | SKIP |
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| B106D | Was this happened during the past <u>30 DAYS</u> too? | Yes 1 No..... 2 | | |
| B107Y | During the past <u>12 MONTHS</u> , was there a time when your household did not have food because of a lack of money or other resources? | Yes 1 No..... 2 | 2→B108Y | |
| B107D | Was this happened during the past <u>30 DAYS</u> too? | Yes 1 No..... 2 | | |
| B108Y | During the past <u>12 MONTHS</u> , was there a time when you or others in your household were hungry but did not eat because there was not enough money or other resources for food? | Yes 1 No..... 2 | 2→B109Y | |
| B108D | Was this happened during the past <u>30 DAYS</u> too? | Yes 1 No..... 2 | | |
| B109Y | During the past <u>12 MONTHS</u> , was there a time when you or others in your household went without eating for a whole day because of a lack of money or other resources? | Yes 1 No..... 2 | 2→B110 | |
| B109D | Was this happened during the past <u>30 DAYS</u> too? | Yes 1 No..... 2 | | |

MODULE B2: LIVELIHOOD, ASSETS AND FOOD BASED COPING STRATEGIES

[INSTRUCTION: Ask this module to the female decision-maker or whoever is most knowledgeable about food preparation and/or consumption of household members]

[INTRODUCTION: Now I would like to discuss about coping strategies on food crisis that you did in the past 30 days]

| NO. | QUESTIONS AND FILTERS | CODING CATEGORIES | | SKIP |
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| | LIVELIHOOD AND ASSET BASED COPING STRATEGIES | | | |
| B201 | During the past 30 days did anyone in your household have to do the following activities to buy food? | 1=Yes→b 2=No→next (a) | If YES, What was the main reason of this activity to buy food? [SEE CODES BELOW] (b) | |
| | 1. Sold household Assets/goods (radio, furniture, mobile phone, television, etc.) to buy food? | <input type="checkbox"/> | <input type="checkbox"/> | |
| | 2. Reduced non-food expenses e.g. spending on clothes, pots and pans, travel, medicines, education etc. to buy food? | <input type="checkbox"/> | <input type="checkbox"/> | |
| | 3. Sold productive assets or means of transport (scotch cart, plough, sewing machine, wheelbarrow, bicycle, motor cycle, car etc.) to buy food? | <input type="checkbox"/> | <input type="checkbox"/> | |
| | 4. Spent savings on buy food? | <input type="checkbox"/> | <input type="checkbox"/> | |



| NO. | QUESTIONS AND FILTERS | CODING CATEGORIES | | SKIP |
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| | 5. Borrowed money from a formal lender/bank (e.g. from savings group, friends or relatives, local money lender, micro finance institution or took food on credit etc.) to buy food? | <input type="checkbox"/> | <input type="checkbox"/> | |
| | 6. Leased out land to buy food | <input type="checkbox"/> | <input type="checkbox"/> | |
| | 7. Withdraw children from school because of hunger or to help work for food? | <input type="checkbox"/> | <input type="checkbox"/> | |
| | 8. Sold last female breeding livestock to buy food? | <input type="checkbox"/> | <input type="checkbox"/> | |
| | 9. Begging to get food | <input type="checkbox"/> | <input type="checkbox"/> | |
| | 10. Sold more animals (non-productive) than usual to buy food? | <input type="checkbox"/> | <input type="checkbox"/> | |
| | CODES FOR B801b: 1= No reason (Neutral) , 2= Because of regular food scarcity (Stress), 3= Because of bad situation/no other ways to buy food (Crisis), 4= Emergency need to buy food (Emergency) | | | |

| NO. | | QUESTIONS AND FILTERS | CODING CATEGORIES | | | | SKIP |
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| | FOOD BASED COPING STRATEGIES | | | | | | |
| B202 | Were there any days in the past 30 days that your household faced difficulties in accessing enough food to eat and how often did your household resort to using one or more of the following strategies in order to deal with the food access difficulties? | | | | | | |
| | COPING STRATEGIES (Circle one answer per strategy) | NEVER | SELDOM (1 day/week or 1-3 days 30 days) | SOME- TIMES (1-2 days per week) | OFTEN (3 or more days/ week) | DAILY | |
| | a. Skip entire days without eating? | 0 | 1 | 2 | 3 | | |
| | b. Limit/reduce portion size at meal-times? | 0 | 1 | 2 | 3 | 4 | |
| | c. Reduce number of meals eaten per day? | 0 | 1 | 2 | 3 | 4 | |
| | d. Borrow food or rely on help from friends or relatives? | 0 | 1 | 2 | 3 | 4 | |
| | e. Rely on less expensive or less preferred foods? | 0 | 1 | 2 | 3 | 4 | |
| | f. Purchase/borrow food on credit ? | 0 | 1 | 2 | 3 | 4 | |
| | g. Gather/hunt unusual types or amounts of wild food? | 0 | 1 | 2 | 3 | 4 | |
| | h. Harvest immature crops ? | 0 | 1 | 2 | 3 | 4 | |
| | i. Send household members to eat elsewhere? | 0 | 1 | 2 | 3 | 4 | |
| | j. Send household members to beg ? | 0 | 1 | 2 | 3 | 4 | |
| | k. Reduce adult consumption so children can eat? | 0 | 1 | 2 | 3 | 4 | |
| | l. Rely on casual labour for food? | 0 | 1 | 2 | 3 | 4 | |



| NO. | QUESTIONS AND FILTERS | CODING CATEGORIES | | | | SKIP |
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| | CEREALS FROM CASUAL LABOUR AND REMITTANCES/GIFTS IN THE CONSUMPTION YEAR: MARCH 2019 TO FEBRUARY 2020 | | | | | |
| B202a | Did your household access any cereals from casual labour and/or remittances and gifts during March 2019 to February 2020 ? [EXCLUDING FOOD ASSISTANCE BETWEEN 01 MARCH 2019 TO 29 FEBRUARY 2020] [MULTIPLE RESPONSE] | A. Casual labor 1 B. Remittances/gifts 2 C. None 3 | | | | 3→B202c |
| B202b | How much did you have access to cereals from casual labor exchange and remittances/gifts during March 2019 to February 2020 ? | B202b1. Quantity from Casual Labour exchange | | B202b2. Quantity from Remittances and gifts | | |
| | | QUANTITY | UNIT CODE | QUANTITY | UNIT CODE | |
| | UNIT CODE: 1=Kg 2=5 Liter Tin 3=20 Liter Tin 4=50kg bag 5=90kg bag 6=Bale 7=Tones 9=n/a | a. Maize (grain or mealie meal) | <input type="text"/> | <input type="text"/> | <input type="text"/> | |
| | | b. Sorghum | <input type="text"/> | <input type="text"/> | <input type="text"/> | |
| | | c. Millets (Rapoko, pearl millets) | <input type="text"/> | <input type="text"/> | <input type="text"/> | |
| | | d. Wheat | <input type="text"/> | <input type="text"/> | <input type="text"/> | |
| | | e. Rice | <input type="text"/> | <input type="text"/> | <input type="text"/> | |
| | FOOD STOCKS (CEREALS AND PULSES) AS AT 01 MARCH 2020 | | | | | |
| B202c | How much food, <u>from all sources</u> , did your household have in stock on 1 March 2020 ? | B202c1. Quantity | | B202c2. Main Sources | | |
| | QUANTITY | UNIT CODE | UNIT CODE | [ENTER CODES] | | |
| | 000 ⇒Next food | | | | | |
| | FOOD TYPE [Include FLOUR and GRAIN] | | | | | |
| | a. Maize | <input type="text"/> | <input type="text"/> | <input type="text"/> | | |
| | b. Sorghum (Mapfunde/Amabele) | <input type="text"/> | <input type="text"/> | <input type="text"/> | | |
| | c. Millets (rapoko/rukweza/uphoko/mhunga/ unyawuthi) | <input type="text"/> | <input type="text"/> | <input type="text"/> | | |
| | d. Wheat | <input type="text"/> | <input type="text"/> | <input type="text"/> | | |
| | e. Rice | <input type="text"/> | <input type="text"/> | <input type="text"/> | | |
| | f. Groundnuts (shelled/musvo/ezicacadiweyo) | <input type="text"/> | <input type="text"/> | <input type="text"/> | | |
| | g. Groundnuts (unshelled/dzinemakanda/ezingacacadwanga) | <input type="text"/> | <input type="text"/> | <input type="text"/> | | |
| | h. Round nuts (shelled/musvo/ezicacadiweyo) | <input type="text"/> | <input type="text"/> | <input type="text"/> | | |
| | i. Round nuts (unshelled/dzinemakanda/ezingacacadwanga) | <input type="text"/> | <input type="text"/> | <input type="text"/> | | |
| | j. Cowpeas | <input type="text"/> | <input type="text"/> | <input type="text"/> | | |
| | k. Beans | <input type="text"/> | <input type="text"/> | <input type="text"/> | | |
| | l. Other (specify) | <input type="text"/> | <input type="text"/> | <input type="text"/> | | |
| | CODES: MAIN SOURCES 1 = Own production 2 = Domestic Purchases (cash and barter) 3 = Imports (cash and barter), 4 = Remittance from Outside Zimbabwe 5 = Remittances from Within Zimbabwe 6 = GVT Food Assistance(all forms of Assistance) 7 = Non-GVT Food Assistance(all forms Assistance) 8 = Gifts (from non-relative well-wishers) 9 = Labor exchange 10 = Borrowed 11 = Gleaning 12 = Other 99 = n/a | | UNIT CODE: 1=Kg 2=5 Liter Tin 3=20 Liter Tin 4=50kg bag 5=90k bag 6=Bale 7=Tones 9=n/a | | | |

| NO. | QUESTIONS AND FILTERS | CODING CATEGORIES | SKIP |
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| | <i>HOUSEHOLD CASH SOURCES IN THE PAST 12 MONTHS [FROM MARCH 2019 TO FEBRUARY 2020]</i> | | |
| B203a | <p>During the past 12 months (from March 2019 – February 2020), what was your household's most important source of CASH?</p> <p>[SINGLE RESPONSE]</p> | Remittance from outside 1 Remittances from within 2 Food crop production/sales 3 Cash crop production 4 Casual labour 5 Begging 6 Livestock production/sales 7 Skilled trade/artisan 8 Own business 9 Petty trade 10 Pension 11 Salary/wages 12 Fishing 13 Gifts 14 Vegetable production/sales 15 Small scale mining/ mineral sales 16 Beer brewing 17 Food assistance 18 Cross border trade 19 Currency trade 20 Gathering natural products for sale e.g. firewood 21 Collecting scrap/ waste material for re-sale 22 Rentals 23 Others (specify) 24 Not applicable (no other source) 99 | 99→203c |
| B203b | <p>Who is the main contributor of this most important CASH source?</p> <p>[SINGLE RESPONSE]</p> | Father 1 Mother 2 Both Father and Mother 3 Daughter 4 Son 5 Other relatives 6 | |
| B203c | <p>During the past 12 months (from March 2019 – February 2020), what were your household's other sources of CASH?</p> <p>[MULTIPLE RESPONSE] [SELECT ALL THAT APPLY]</p> | Remittance from outside 1 Remittances from within 2 Food crop production/sales 3 Cash crop production 4 Casual labour 5 Begging 6 Livestock production/sales 7 Skilled trade/artisan 8 Own business 9 Petty trade 10 Pension 11 Salary/wages 12 Fishing 13 Gifts 14 Vegetable production/sales 15 Small scale mining/ mineral sales 16 Beer brewing 17 Food assistance 18 Cross border trade 19 Currency trade 20 Gathering natural products for sale e.g. firewood 21 Collecting scrap/ waste material for re-sale 22 Rentals 23 Others (specify) 24 Not applicable (no other source) 99 | |



| NO. | QUESTIONS AND FILTERS | CODING CATEGORIES | SKIP |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| | <i>HOUSEHOLD FOOD SOURCES IN THE PAST 12 MONTHS [FROM MARCH 2019 TO FEBRUARY 2020]</i> | | |
| B204a | During the past 12 months (from March 2019 – February 2020), what was your household's most important source of FOOD ? [SINGLE RESPONSE] | Own production 1 Cash purchases from household income 2 Purchases from cash transfers (humanitarian assistance) 3 Food aid (humanitarian assistance) 4 Casual labour for food 5 Remittances..... 6 Other (specify)..... 7 Not applicable (no other source)..... 9 | |
| B204b | During the past 12 months (from March 2019 – February 2020), what were your household's other sources of FOOD ? [MULTIPLE RESPONSE] [SELECT ALL THAT APPLY] | Own production 1 Cash purchases from household income 2 Purchases from cash transfers (humanitarian assistance) 3 Food aid (humanitarian assistance) 4 Casual labour for food 5 Remittances..... 6 Other (specify)..... 7 Not applicable (no other source)..... 9 | |
| | <i>HOUSEHOLD INCOME AND EXPENDITURE</i> <i>[Ask this module to the Household Head/knowledgeable family members in the household]</i> | | |
| | <i>INCOME [LAST CALENDAR MONTH] [FEBRUARY 2020]</i> | | |



| NO. | QUESTIONS AND FILTERS | CODING CATEGORIES | | | | SKIP |
|--------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|
| B205 | What was the estimated total amount of income earned by your household from each of the following activities in the <u>last</u> calendar month (February 2020)? | Cash | | In-kind | | |
| | | 1.Amount | 2.Currency 1 = USD 2 = Rand 3 = RTGS /bond 99=N/a | 3.Equivalent Amount | 4.Currency 1 = USD 2 = Rand 3 = RTGS/ Bond 99=N/a | |
| | | A. Remittance outside/ Remittance within country | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> |
| | | B. Crops (food crop, cash crop) /vegetables sales | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> |
| | | C. Casual labour | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> |
| | | D. Livestock sales | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> |
| | | E. Sale of livestock products/ draught power hiring | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> |
| | | F. Skilled trade/artisan | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> |
| | | G. Own Business/beer brewing | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> |
| | | H. Petty Trade (including vending)/cross board-er trade | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> |
| | | I. Pensions | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> |
| | | J. Salary/wages/earnings | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> |
| | | K. Fishing , gathering of natural products e.g. firewood, fruits | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> |
| | | L. Small scale mining/ mineral sales | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> |
| | | M. Social Transfers (incl. cash and in-kind) from government or NGOs | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> |
| | | N. Receipt of money owed | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> |
| | | O. Loan received | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> |
| P. Rental income | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> | | |
| Q. Other Specify | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> | | |
| EXPENDITURE IN LAST CALENDAR MONTH February 2020 | | | | | | |



| NO. | QUESTIONS AND FILTERS | CODING CATEGORIES | | SKIP |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|------|
| B206 | How much did your household spend on the following items in the <u>LAST</u> calendar MONTH (February 2020), in cash or in-kind? | 1. Amount/ Equivalent | 2. Currency 1 = USD, 2=Rand 3 = RTGS/Bond 99=N/a | |
| | A. Maize flour | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | |
| | B. Maize grain | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | |
| | C. Wheat flour/ grain | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | |
| | D. Bread, buns and other confectionery | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | |
| | E. Millet(pearl millets/finger millet) | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | |
| | F. Rice and pastas | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | |
| | G. Sorghum(grain, flour) | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | |
| | H. Sweet potatoes | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | |
| | I. Irish potatoes | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | |
| | J. Other tubers(cassava, yams) | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | |
| | K. Milling costs | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | |
| | L. Sugar and other sugar products/honey | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | |
| | M. Salt/soups | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | |
| | N. Milk (including powdered and formula) | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | |
| | O. Tea leaves and coffee | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | |
| | P. Dovi, Butter, jam and margarine | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | |
| | Q. Cooking oil and fats | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | |
| | R. Meat (Beef, pork, chicken including live chicken and other meats) | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | |
| | S. Fish/Kapenta | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | |
| | T. Soya mince/Soya Chunks | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | |
| | U. Vegetables (leaf, tomatoes, onions etc.) | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | |
| | V. Cooking fuel (paraffin, gel, gas, fire wood, electricity etc.) | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | |
| | W. Matches/candles | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | |
| | X. Washing and bathing Soap and other detergents | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | |
| | Y. Vaseline, tooth paste and other lotion | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | |
| | Z. Alcohol and Cigarettes (including snuff) | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | |
| | AA.Transport(include bus fare, vehicle fuel and services costs) | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | |
| | AB.Domestic worker (including maid, herd boy) | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | |
| | AC.Communication (Air time/Telephone Bills / internet) | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | |
| | AD.Sanitary ware (including Pampers and tissue paper) | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | |
| | AE. Others (specify) | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | |



| NO. | QUESTIONS AND FILTERS | CODING CATEGORIES | | SKIP |
|-------------|------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|------|
| | <i>EXPENDITURE IN LAST 12 MONTHS [March 2019 – February 2020]</i> | | | |
| B207 | How much did your household spend on the following items in the LAST 12 calendar MONTHS (March 2019 – February 2020)? | 1. Amount/ Equivalent | 2. Currency 1 = USD 2 = Rand 3 = RTGS/bond 99=N/a | |
| | A. Education expenses (School fees and levies, uniforms, stationaries and others) | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> | |
| | B. Agricultural inputs (Seed, fertilizers, chemicals, fuel) | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> | |
| | C. Agricultural services (Labour, tillage) | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> | |
| | D. Veterinary chemicals and drugs | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> | |
| | E. Agricultural tools(include spare parts and maintenance) | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> | |
| | F. Business costs (running and investment costs) | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> | |
| | G. Health/medical | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> | |
| | H. Clothes/shoes/ excluding school uniforms) | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> | |
| | I. Social occasions(weddings, parties) | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> | |
| | J. Funeral expense | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> | |
| | K. Loan Repayment | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> | |
| | L. Constructions expenses(including maintenance) | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> | |
| | M. Remittances out | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> | |
| | N. Taxes(livestock, household, Government and council taxes and any other taxes) | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> | |
| | O. Other items – specify | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> | |



MODULE C: AGRICULTURAL PRODUCTION TECHNOLOGIES AND VALUE CHAIN PRACTICES

[INTRODUCTION: Now I would like to discuss about household's current use of agriculture and livestock production technologies and improved management practices.]

[Ask this module to the Agriculture/Livestock beneficiary/Household Head/knowledgeable family members in the household]

| NO. | QUESTIONS AND FILTERS | | | | SKIP |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|------|
| | Practices [Ask each item one by one] | Are you familiar with this Practice? 1= Yes 2= No → Next practice (a) | Did you use this practice in the past 12 months? 1=Yes 2=No (b) | Have you or others in your HH received any training/ orientation on this practice? 1=Yes 2=No→ Next (c) | |
| C101 | CLIMATE-SMART AGRICULTURE PRACTICES | | | | |
| 1. | Quality certified seeds <i>[Package seeds with germination rate 80% or more, collected from a trusted sources]</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 2. | Community seed banks | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 3. | Adapted, suitable Improved Varieties (e.g. Maize, g'nuts, beans) <i>[High yield varieties, disease/drought tolerant varieties;</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 4. | <i>Growing small grains (sorghum, millet, rapoko etc.)]</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 5. | Crop rotation <i>[Cultivate cereals (maize, sorghum, millet, rice, wheat etc.) this season and legumes (cowpeas, ground nuts etc.) in next season, by turn]</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 6. | Intercropping <i>[Cereals in one row and cowpeas/groundnuts/pumpkins in another row]</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 7. | Cover cropping (e.g. star grasses, vertiva legumes, <i>[A cover crop is planted to manage soil erosion, soil fertility, soil quality, water, weeds, pests, diseases, biodiversity and wildlife in an agro-ecosystem. Cover crops may be an off-season crop planted after harvesting the cash crop. The cover crop may grow over winter.]</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 8. | Mulching <i>[This improved technology is used to retain soil fertility and conservation. It is also used for maintain soil moisture. Mulching technology involves deliberate efforts to cover the soil surface of a piece of land prepared for purposes of cropping using organic materials. Organic material may be crop residues left from the previous crop, crop residue imported from another field, grasses, leaf litter or a combination of any of these in any proportion]</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 9. | Integrated Pest Management <i>[process of scouting, identification, monitoring, action appropriate pest/disease control method on monitoring (action) and evaluation after the action]</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |



| NO. | QUESTIONS AND FILTERS | | | | SKIP |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|------|
| | Practices [Ask each item one by one] | Are you familiar with this Practice? 1= Yes 2= No → Next practice (a) | Did you use this practice in the past 12 months? 1=Yes 2=No (b) | Have you or others in your HH received any training/ orientation on this practice? 1=Yes 2=No→ Next (c) | |
| C101 | CLIMATE-SMART AGRICULTURE PRACTICES | | | | |
| | 1. Quality certified seeds <i>[Package seeds with germination rate 80% or more, collected from a trusted sources]</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| | 2. Community seed banks | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| | 3. Adapted, suitable Improved Varieties (e.g. Maize, g'nuts, beans) <i>[High yield varieties, disease/drought tolerant varieties;</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| | 10. Compost/Organic fertilizer <i>[Compost is not only cattle or animal manure; it is prepared through a process with manure, soil, crops residue etc.]</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| | 11. Drip/Micro Irrigation <i>[Micro-irrigation is potential to save water and nutrients by allowing water to drip slowly to the roots of plants, either from above the soil surface or buried below the surface. The goal is to place water directly into the root zone and minimize evaporation.]</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| | 12. Plant Density (including mixing small grain seed with sand or fertilizer before planting) <i>[Use of appropriate amount of seeds planting/appropriate number of plants/appropriate plant distance in a particular piece of land]</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| NO. | QUESTIONS AND FILTERS | | | | SKIP |
| | Practices [Ask each item one by one] | Are you familiar with this Practice? 1= Yes 2= No → Next practice (a) | Did you use this practice in the past 12 months? 1=Yes 2=No (b) | Have you or others in your HH received any training/ orientation on this practice? 1=Yes 2=No→ Next (c) | |
| C102 | IMPROVED LIVESTOCK PRACTICES | | | | |
| | 1. Improved livestock breeds | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| | 2. Improved animal shelters (goats, poultry or cattle) <i>[Enough space, well ventilation, protected from afternoon sun, dry floor]</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| | 3. Water infrastructure for livestock at homestead (e.g. water trough) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| | 4. Routine vaccinations by Veterinary Officer or Paravet | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |



| NO. | QUESTIONS AND FILTERS | | | | SKIP |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|------|
| | Practices [Ask each item one by one] | Are you familiar with this Practice? 1= Yes 2= No → Next practice (a) | Did you use this practice in the past 12 months? 1=Yes 2=No (b) | Have you or others in your HH received any training/ orientation on this practice? 1=Yes 2=No→ Next (c) | |
| C101 | CLIMATE-SMART AGRICULTURE PRACTICES | | | | |
| | 1. Quality certified seeds <i>[Package seeds with germination rate 80% or more, collected from a trusted sources]</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| | 2. Community seed banks | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| | 3. Adapted, suitable Improved Varieties (e.g. Maize, g'nuts, beans) <i>[High yield varieties, disease/drought tolerant varieties;</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| | 5. Home vaccinations (farmer administered vaccinations | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| | 6. Castration | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| | 7. Deworming | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| | 8. Dipping | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| | 9. Spraying livestock at home or other practice to control ticks | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| | 10. Use of services of community animal health worker (Paravet) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| | 11. Homemade animal feeds made with locally available ingredients including legumes (e.g. homemade feed formulation for poultry) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| | 12. Animal fodder production for ruminants (e.g. velvet bean, lablab, forage sorghum, bana grass, mucuna, Brachairia and desmodium/ silver leaf.) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| | 13. Animal Fodder preservation for ruminants (e.g. Silage making)) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| | 14. Survival feeding (feeding of productive livestock in lean season) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| | 15. Animal feed supplied by feed companies | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| | 16. Artificial insemination | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| | 17. Pen fattening (feeding) <i>[Pen fattening] involves the feeding of cattle with a protein balanced, high-energy diet for a period 45 -70 days under confinement to increase live weights and improve degree of finish and thus obtain better grades at the abattoir]</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| C103 | VALUE CHAIN PRACTICES | | | | |
| | 1. Marketing and distribution | | | | |
| | a. Access Agriculture inputs through agro-dealers and/or agriculture cooperatives , contract farming, government input schemes, loans in kind) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |



| NO. | QUESTIONS AND FILTERS | | | | SKIP |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|------|
| | <p>Practices</p> <p>[Ask each item one by one]</p> | <p>Are you familiar with this Practice?</p> <p>1= Yes</p> <p>2= No → Next practice</p> <p>(a)</p> | <p>Did you use this practice in the past 12 months?</p> <p>1=Yes</p> <p>2=No</p> <p>(b)</p> | <p>Have you or others in your HH received any training/ orientation on this practice?</p> <p>1=Yes</p> <p>2=No→ Next</p> <p>(c)</p> | |
| C101 | CLIMATE-SMART AGRICULTURE PRACTICES | | | | |
| | <p>1. Quality certified seeds</p> <p><i>[Package seeds with germination rate 80% or more, collected from a trusted sources]</i></p> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| | 2. Community seed banks | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| | <p>3. Adapted, suitable Improved Varieties (e.g. Maize, g'nuts, beans)</p> <p><i>[High yield varieties, disease/drought tolerant varieties;</i></p> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| | <p>b. Receiving market information on prices, demand or product quality requirements through collection centers, traders , Pvt sector, extension officers , E platforms (e.g. Ecofarmer, Kulima mali, Agrishare, emkambo, Enduna) or other market actors</p> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| | <p>c. Use of formal organised marketing systems for crops/livestock and/ vegetables /fruits etc.</p> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| | <p>d. Marketing produce through commodity associations/producer groups/ cooperatives/ farmer organisation</p> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| | 2. Post-harvest handling and storage | | | | |
| NO. | QUESTIONS AND FILTERS | | | | SKIP |
| | <p>Practices</p> <p>[Ask each item one by one]</p> | <p>Are you familiar with this Practice?</p> <p>1= Yes</p> <p>2= No → Next practice</p> <p>(a)</p> | <p>Did you use this practice in the past 12 months?</p> <p>1=Yes</p> <p>2=No</p> <p>(b)</p> | <p>Have you or others in your HH received any training/ orientation on this practice?</p> <p>1=Yes</p> <p>2=No→ Next</p> <p>(c)</p> | |
| | a. Improved granary at household | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| | b. Store in bag with artificial chemicals at the household | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| | c. Community Granaries | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| | d. Temperature and humidity control (hermetic bag, air-tight box, metal silo) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| | 3. Value added-processing | | | | |
| | a. Improved quality control technologies (sorting, grading) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| | b. Drying, packaging, storage | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |



| NO. | QUESTIONS AND FILTERS | | | | SKIP |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|------|
| | <p>Practices</p> <p>[Ask each item one by one]</p> | <p>Are you familiar with this Practice?</p> <p>1= Yes 2= No → Next practice</p> <p>(a)</p> | <p>Did you use this practice in the past 12 months?</p> <p>1=Yes 2=No</p> <p>(b)</p> | <p>Have you or others in your HH received any training/ orientation on this practice?</p> <p>1=Yes 2=No→ Next</p> <p>(c)</p> | |
| C101 | CLIMATE-SMART AGRICULTURE PRACTICES | | | | |
| | <p>1. Quality certified seeds</p> <p><i>[Package seeds with germination rate 80% or more, collected from a trusted sources]</i></p> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| | <p>2. Community seed banks</p> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| | <p>3. Adapted, suitable Improved Varieties (e.g. Maize, g'nuts, beans)</p> <p><i>[High yield varieties, disease/drought tolerant varieties;</i></p> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| | <p>c. Food processing (peanut butter, oils, amarula jam, honey)</p> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| | <p>d. Branding and labeling (e.g. of honey, peanut butter)</p> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| C104 | WATER AND SOIL CONSERVATION TECHNIQUES AND NATURAL RESOURCES MANGEMENT | | | | |
| | <p>1. Minimum tillage (e.g. planting basins, ripper , 2 wheel tractor)</p> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| | <p>2. Use of contour ridges/Contour planting</p> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| | <p>3. Planting of fodder trees (e.g. Moringa, Leucaena)</p> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| | <p>4. Management or protection of the watershed (e.g. vertiva, sisals, star grasses, gulley reclamation, fodder trees)</p> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| | <p>5. Sustainable harvesting of forest products (e.g. NTFPS, marula, baobab, mopane worms, honey, etc.)</p> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |



| NO. | QUESTIONS AND FILTERS | CODING CATEGORIES | | | | | | | | SKIP |
|------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|--------------------------------------------------|-----------|-----------------------------------------------------------------|-----------|-------------------------------------------------------------------------------|-----------|---|--------|
| C105 | <p>In 2019 /2020 cropping season did you plant any of the following crops? If yes, how much did your HH harvested or how much does your HH expect to harvest?</p> <p>[MULTIPLE RESPONSE] [READ RESPONSES]</p> | 2019/2020 CROPPING SEASON | | | | | | | | |
| | | [UNIT CODE: 1=Kg, 2=5 Liter Tin, 3=20 Liter Tin, 4=50kg bag, 5=90kg bag, 6=Bale, 7=Tones] | | | | | | | | |
| | | a. Did your HH grow this crop? | b. How much has your household harvested? | | c. How much does your household still expect to harvest? | | d. How much of the current harvest does your household expect to sell? | | | |
| | | 1=YES 2=NO →Next | QUANTITY | UNIT CODE | QUANTITY | UNIT CODE | QUANTITY | UNIT CODE | | |
| | | A. Maize | <input type="checkbox"/> | □□□□ | □ | □□□□ | □ | □□□□ | □ | |
| | | B. Sorghum | <input type="checkbox"/> | □□□□ | □ | □□□□ | □ | □□□□ | □ | |
| | | C. Pearl millet (Mhunga/ Nyawuti) | <input type="checkbox"/> | □□□□ | □ | □□□□ | □ | □□□□ | □ | |
| | | D. Finger millet (rapoko/rukweza) | <input type="checkbox"/> | □□□□ | □ | □□□□ | □ | □□□□ | □ | |
| | | E. Ground-nuts (un-shelled) | <input type="checkbox"/> | □□□□ | □ | □□□□ | □ | □□□□ | □ | |
| | | F. Round-nuts (un-shelled) | <input type="checkbox"/> | □□□□ | □ | □□□□ | □ | □□□□ | □ | |
| | | G. Cowpeas | <input type="checkbox"/> | □□□□ | □ | □□□□ | □ | □□□□ | □ | |
| | | H. Sugar beans | <input type="checkbox"/> | □□□□ | □ | □□□□ | □ | □□□□ | □ | |
| | | I. Soya beans | <input type="checkbox"/> | □□□□ | □ | □□□□ | □ | □□□□ | □ | |
| | | J. Tubers (sweet potatoes, potatoes, cassava, yams) | <input type="checkbox"/> | □□□□ | □ | □□□□ | □ | □□□□ | □ | |
| | | K. Cotton | <input type="checkbox"/> | □□□□ | □ | □□□□ | □ | □□□□ | □ | |
| | | L. Paprika or chilies | <input type="checkbox"/> | □□□□ | □ | □□□□ | □ | □□□□ | □ | |
| | | M. Tobacco | <input type="checkbox"/> | □□□□ | □ | □□□□ | □ | □□□□ | □ | |
| N. Wheat | <input type="checkbox"/> | □□□□ | □ | □□□□ | □ | □□□□ | □ | | | |
| O. Sunflowers | <input type="checkbox"/> | □□□□ | □ | □□□□ | □ | □□□□ | □ | | | |
| P. Other field crops (sesame, amaranth, flower seeds etc.) | <input type="checkbox"/> | □□□□ | □ | □□□□ | □ | □□□□ | □ | | | |
| C106 | How many months do you expect to have stocks from the current harvest of your grains (enter number of months)? | [SKIP if none "YES" for A to O in question 105 (1)] | | | | | | | | |
| C107 | Did you plant any fodder or forage crops under dry land conditions in 2019/2020 season (velvet bean, lablab, forage sorghum, bana grass, mucuna, Brachairia and desmodium/silver leaf etc)? | Yes 1 No 2 | | | | | | | | 2→C112 |



| NO. | QUESTIONS AND FILTERS | CODING CATEGORIES | SKIP |
|-------------|----------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| C108 | <p>If yes, what crops did you plant under dryland?</p> <p>[MULTIPLE RESPONSE][READ RESPONSES]</p> | <p>A. Velvet beans (Mucuna) 1</p> <p>B. Lablab 2</p> <p>C. Forage sorghum 3</p> <p>D. Bana grass 4</p> <p>E. Lucerne 5</p> <p>F. Brachairia 6</p> <p>G. Desmodium/silver leaf 7</p> <p>H. Others-1 (Specify) 8</p> <p>I. Others-2 (Specify) 9</p> | |
| C109 | <p>What is your MAIN reason for planting fodder or forage crops?</p> <p>[SINGLE RESPONSE][DO NOT READ RESPONSES]</p> | <p>A. To provide survival feed for own livestock during the dry winter months to reduce possible poverty deaths 1</p> <p>B. To provide supplementary feed to improve the condition and productivity of own breeding animals (cattle or goats) 2</p> <p>C. To provide livestock feed to increase productivity linked to value chains e.g. pen fattening cattle or goats 3</p> <p>D. To provide feed to increase productivity linked to poultry value chains (e.g. Boschveld chickens, broilers, layers etc.) 4</p> <p>E. To multiply seed for sale (under contract or to pass on to others) 5</p> <p>F. To sell fodder locally to other livestock owners 6</p> <p>G. As a demonstration for other farmers in the community 7</p> <p>H. Others (Specify) 8</p> | |
| C110 | <p>What are your other reasons for planting fodder or forage crops?</p> <p>[MULTIPLE RESPONSE][DO NOT READ RESPONSES]</p> | <p>A. To provide survival feed for own livestock during the dry winter months to reduce possible poverty deaths 1</p> <p>B. To provide supplementary feed to improve the condition and productivity of own breeding animals (cattle or goats) 2</p> <p>C. To provide livestock feed to increase productivity linked to value chains e.g. pen fattening cattle or goats 3</p> <p>D. To provide feed to increase productivity linked to poultry value chains (e.g. Boschveld chickens, broilers, layers etc.) 4</p> <p>E. To multiply seed for sale (under contract or to pass on to others) 5</p> <p>F. To sell fodder locally to other livestock owners 6</p> <p>G. As a demonstration for other farmers in the community 7</p> <p>H. Others (Specify) 8</p> <p>I. No other reason 9</p> | |
| C111 | <p>How long have you been growing fodder crops?</p> <p>[SINGLE RESPONSE]</p> | <p>This is my first season growing fodder crops 1</p> <p>2-3 years 2</p> <p>4-5 years 3</p> <p>More than 5 years 4</p> | |
| C112 | <p>If No, what are your main reasons for not growing fodder?</p> <p>[SELECT UP TO 3 REASONS]</p> | <p>A. Don't own cattle or goats 1</p> <p>B. Not enough land 2</p> <p>C. Too much work/not enough household labour 3</p> <p>D. Seed not locally available 4</p> <p>E. Fodder crops don't do well in this area 5</p> <p>F. Insufficient knowledge of fodder production 6</p> <p>G. Not needed as my livestock get sufficient feed from grazing 7</p> <p>H. Not interested in growing fodder 8</p> <p>I. Prefer to purchase feed if needed 9</p> <p>J. Others (Specify) 10</p> | |



MODULE D: SHOCKS, STRESS AND RESILIENCE

[**INSTRUCTION:** This module is to be asked to ALL SAMPLE BENEFICIARY HOUSEHOLDS. This is household level information. The household head should be the prime respondent of this module. He/she can get help from other household members to respond to this module.]

| D1. SHOCKS/STRESS | D101 | D102 | D103 | D104 | D105 | D106 | D107 |
|--------------------------------------------|-------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | In last 12 months, did your household experience [insert shock]? 1=Yes 2=No →NEXT 8=DK →NEXT | Was there any impact of [SHOCK] on your household? Yes=1, No=2→NEXT Don't know=9→NEXT | READ RESPONSE OPTIONS | | How did you cope with the income or food consumption impacts of this shock? [SEE CODES BELOW] [MULTIPLE RESPONSE] | To what extent were you and your household able to recover? [SEE CODES BELOW] | If Not recovered or partially recovered (1,2) in D108: What is your expectation to recover from this shock within next 12 months? [SEE CODES BELOW] |
| | | | In the months following the shock, how severe was the impact on household <u>Income</u> ? 1=Remained same 2=Slight decrease 3=Severe decrease | In the months following the shock, how severe was the impact on household <u>Food Consumption</u> ? 1=Remained same 2=Slight decrease 3=Severe decrease | | | |
| Climatic/Environmental | | | | | | | |
| a. Excessive rains | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Flood/Flash Flood | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Variable/infrequent rainfall | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Drought | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e. Crop diseases or pests | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| f. Reduced soil productivity | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| g. Deforestation (less firewood available) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| h. Frost | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Destructive shocks | | | | | | | |
| i. Crop damage/destruction by wildlife | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| j. Theft of livestock (raids) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Economic shocks | | | | | | | |



| D1. SHOCKS/STRESS | D101 | D102 | D103 | D104 | D105 | D106 | D107 |
|--------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | In last 12 months, did your household experience [insert shock]? 1=Yes 2=No →NEXT 8=DK →NEXT | Was there any impact of [SHOCK] on your household? Yes=1, No=2→NEXT Don't know=9→NEXT | READ RESPONSE OPTIONS | | How did you cope with the income or food consumption impacts of this shock? [SEE CODES BELOW] [MULTIPLE RESPONSE] | To what extent were you and your household able to recover? [SEE CODES BELOW] | If Not recovered or partially recovered (1,2) in D108: What is your expectation to recover from this shock within next 12 months? [SEE CODES BELOW] |
| | | | In the months following the shock, how severe was the impact on household Income? 1=Remained same 2=Slight decrease 3=Severe decrease | In the months following the shock, how severe was the impact on household Food Consumption? 1=Remained same 2=Slight decrease 3=Severe decrease | | | |
| k. Sharp food price increase | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| l. Increase price of agric/livestock input | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| m. Drop in price of agricultural (including cash crop) or livestock products | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| n. Death of household member | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| o. Death of livestock (cattle , donkeys or goats) due to disease or lack of food or water (poverty deaths) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| p. Serious/chronically ill HH member (s) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| q. Large/unusual expense on Medical Treatment of Family Member(s) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Man-made shocks | | | | | | | |
| r. Veld fire | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |



| | | |
|------------------------------------------------------|--------------------------------------------------------------------------------------|-----------------------------------------------------|
| CODES FOR D105 | | CODES FOR D106 |
| 1=Send livestock in search of pasture | 20=Take out a loan from a money lender | 1=Did not recover |
| 2=Sell livestock | 21=Take out a loan from friends or relatives | 2=Recovered some, but worse off than before [event] |
| 3=Slaughter livestock | 22=Send children to work for money (e.g. domestic service) | 3=Recovered to same level as before [event] |
| 4=Lease out land | 23=Receive money or food from family members within community | 4=Recovered and better off |
| 5=Temporary Migration (only some family members) | 24=Receive food aid or assistance from the government (including food/cash-for-work) | 5=Not affected by [event] |
| 6=Temporary Migrate (the whole family) | 25=Receive food aid or assistance from an NGO (including food/cash-for-work) | 8=Don't Know |
| 7=Permanent migration of some family member(s) | 26=Use money from savings | 9=Refused |
| 8=Send boys to stay with relatives or other HH | 27=Receive money from a relative from outside of village (remittance) | CODES FOR D107 |
| 9=Send girls to stay with relatives or other HH | 28=Receive help from local organizations/companies | 1=Will not recover |
| 10=Take children out of school | 29=Other (specify) | 2=Will partially recover |
| 11=Move to less expensive housing | 30=No coping strategies | 3=Will recover same as before |
| 12=Reduce food consumption | 88=Don't Know | 4=Will recover better than before |
| 13=Take up new wage labor | 99=Refused | 8=Don't know |
| 14=Charcoal production | | 9=Refused |
| 15=Firewood sales | | |
| 16=Sell household items (e.g., radio, bed) | | |
| 17=Sell productive assets (e.g., plough, water pump) | | |
| 18=Take out a loan from an NGO or savings groups | | |
| 19=Take out a loan from a bank | | |

| NO. | QUESTIONS AND FILTERS | CODING CATEGORIES | SKIP |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|------|
| | SOCIAL CAPITAL (INFORMAL, LINKING, BONDING, BRIDGING AND FORMAL SOCIAL SUPPORT) | | |
| | D2. INFORMAL SOCIAL CAPITAL | | |
| D201 | If your household had a problem and needed help urgently (e.g., food, money, labor, transport, etc.), who IN THIS COMMUNITY could you turn to for help? [MULTIPLE RESPONSE][READ RESPONSES] | A. Relative..... 1 B. Non-relatives..... 2 C. No one 3 D. Don't know..... 8 E. Refused..... 9 | |
| D202 | If your household had a problem and needed help urgently (e.g., food, money, labor, transport, etc.), who OUTSIDE THIS COMMUNITY could you turn to for help? [MULTIPLE RESPONSE][READ RESPONSES] | A. Relatives 1 B. Non-relatives..... 2 C. No one 3 D. Don't know..... 8 E. Refused..... 9 | |
| D203 | Compared to one year ago, has your ability to get help from anyone within or outside of your community: [READ RESPONSES] | Increased 1 Stayed the same 2 Decreased 3 Don't know 8 Refused 9 | |



| NO. | QUESTIONS AND FILTERS | CODING CATEGORIES | SKIP |
|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| D204 | Who INSIDE THIS COMMUNITY would you help if they needed help urgently (e.g., food, money, labor, transport, etc.)? [MULTIPLE RESPONSE] [READ RESPONSES] | A. Relatives 1 B. Non-relatives..... 2 C. No one 3 D. Don't know..... 8 E. Refused..... 9 | |
| D205 | Who OUTSIDE THIS COMMUNITY would you help if they needed help urgently (e.g., food, money, labor, transport, etc.)? [MULTIPLE RESPONSE] [READ RESPONSES] | A. Relatives 1 B. Non-relatives..... 2 C. No one 3 D. Don't know..... 8 E. Refused..... 9 | |
| D3. LINKING SOCIAL CAPITAL | | | |
| D301 | Do you or does anyone else in your household has contact with any government officials? | Yes 1 No 2 Don't know 8 Refused 9 | 2,8,9→ D304 |
| D302 | How do you (or another household member) start the link with the government officials? Through: [MULTIPLE RESPONSE] | A. Myself 1 B. Family members or relatives 2 C. Friend 3 D. Neighbor 4 E. By chance 5 F. Other (specify) 8 G. Don't know..... 9 H. Refused..... 9 | |
| D303 | Could you ask the government officials to help your family or community if help was needed? | Yes 1 No 2 Don't know 8 Refused 9 | |
| D304 | Do you or does anyone else in your household have a contact with an NGO? | Yes 1 No 2 Don't know 3 Refused 9 | 2,8,9→ D401 |
| D305 | How do you (or another household member) start contact with the NGO? Through: [MULTIPLE RESPONSE] | A. Family members or relatives 1 B. Friend 2 C. Neighbor 3 D. By chance 4 E. Other (specify) 5 F. Don't know..... 8 G. Refused..... 9 | |
| D306 | Could you ask the NGO to help your family or community if help was needed? | Yes 1 No 2 Don't know 8 Refused 9 | |
| D4. BONDING SOCIAL CAPITAL | | | |
| D401 | Has your household <i>given</i> assistance to anyone WITHIN THIS COMMUNITY in the last 12 months? | A. Relatives 1 B. Non-relatives..... 2 C. No one 3 D. Don't know..... 8 E. Refused..... 9 | |



| NO. | QUESTIONS AND FILTERS | CODING CATEGORIES | SKIP |
|------|---------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| D402 | Within the last 12 months, has your household <i>received</i> assistance from anyone WITHIN THIS COMMUNITY ? | A. Relatives 1 B. Non-relatives..... 2 C. No one 3 D. Don't know..... 8 E. Refused..... 9 | |
| | D5. BRIDGING SOCIAL CAPITAL | | |
| D501 | Within the last 12 months, has your household <i>given</i> assistance to anyone OUTSIDE THIS COMMUNITY ? | A. Relatives 1 B. Non-relatives..... 2 C. No one 3 D. Don't know..... 8 E. Refused..... 9 | |
| D502 | Within the last 12 months, has your household <i>received</i> assistance from anyone OUTSIDE THIS COMMUNITY ? | A. Relatives 1 B. Non-relatives..... 2 C. No one 3 D. Don't know..... 8 E. Refused..... 9 | |
| | D6. FORMAL SOCIAL SUPPORT | | |
| D601 | Are there any organizations (government, NGO religious) that provide social support the community? | Yes 1 No 2 Don't know 8 | 2,8→D603 |
| D602 | In the last 12 months, did you or your household receive any government or NGO support? | Yes 1 No 2 Don't know 8 | 2,8→D603 |
| D603 | What type of social support did this household benefit from in the last 12 months? [READ LIST] [MULTIPLE RESPONSE] | A. Emergency food/cash assistance 01 B. Lean Season Assistance (Food or cash transfer 02 C. Household materials and non-food items 03 D. Educational assistance 04 E. Emergency distribution of agricultural inputs (seeds, fertilizer, etc)..... 05 F. Emergency distribution of livestock inputs (feed, fodder, medicine, etc)..... 06 G. WASH (installation/repair of WASH facility) 07 H. Disaster planning/response..... 08 I. Safety net (FFW/CFW) 09 J. Child malnutrition/infant feeding 10 K. Other (specify) 11 L. Don't know..... 88 | |
| D604 | Do you have an active Disaster Risk response/management or civil protection committee in your community? | Yes 1 No 2 Don't know 8 | |
| D605 | Does this community have a community Action adaption planning or resilience planning committee | Yes 1 No 2 Don't know 8 | 2,8→D701 |

| NO. | QUESTIONS AND FILTERS | CODING CATEGORIES | SKIP |
|-----|----------------------------------|----------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| | D7. ACCESS TO INFORMATION | | |
| | TYPE INFORMATION | D701: Did you receive any information on [TOPIC] within the last 12 months? 1=Yes, 2=No, 8=Don't know | IF "YES" IN D701 D702: What were the sources of information about [TOPIC]? [SEE CODE LIST] |



| NO. | QUESTIONS AND FILTERS | CODING CATEGORIES | | SKIP |
|-----|---------------------------------------------------------------------------------------|--------------------------|---------------------------------------------------|------|
| | A. Early warning for natural hazards (Drought, flooding, heavy rain, hailstorm etc.) | <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | |
| | B. Threats to crop health (e.g. pest, disease) | <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | |
| | C. Threats to animal health (e.g., disease, epidemic) | <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | |
| | D. Rainfall / weather prospects for the coming growing season | <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | |
| | E. Long-term changes in weather patterns | <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | |
| | F. Disease prevention | <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | |
| | G. Methods to improve crop production | <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | |
| | H. Methods for improved animal health/husbandry | <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | |
| | I. Business and investment opportunities | <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | |
| | J. Opportunities for borrowing money | <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | |
| | K. Information on crop prices | <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | |
| | L. Current market prices of live animals and animal products | <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | |
| | M. Grazing conditions in nearby area | <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | |
| | N. Market prices of the food that you buy | <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | |
| | O. Child nutrition and health information | <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | |
| | P. Natural resources (water, pasture land, forest etc.) management for this community | <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | |

CODE LIST FOR D802:

- 1= Relatives, friends, neighbors
- 2= Community/religious/ leaders
- 3= School teachers
- 4= Group in community (e.g., savings, farmers, water users, WhatsApp groups)
- 5= Local market
- 6= Gov't: rural development agents, health/agriculture extensionists, other gov't staff/officials
- 7= NGOs staff
- 8= Newspaper /Radio / TV
- 9= Internet /Email/Web-Site
- 10= SMS, Kurima Mari, Eco farmer
- 11= School Student
- 12= Health facility
- 13= Disaster Risk Reduction Committee (DRR) member
- 14= Private sector (input supplier, veterinarian, etc.)
- 15= Civil protection unit
- 16= Meteorological Services Department
- 17= Department information
- 18= Others (specify)



| NO. | QUESTIONS AND FILTERS | CODING CATEGORIES | SKIP |
|--------------|----------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| | D8. ACCESS TO INFRASTRUCTURE SERVICES | | |
| D901 | Please tell me whether these services are available in your community: | 1=Yes, 2=No, 8=Don't know A. Institutions where people can borrow money <input type="checkbox"/> B. Institutions where people can save money..... <input type="checkbox"/> C. Primary school within 5 kilometers..... <input type="checkbox"/> D. Electricity <input type="checkbox"/> E. Cell phone service..... <input type="checkbox"/> F. Public telephone <input type="checkbox"/> | |
| D902 | Is your village /community connected by a tarred road? | Yes.....1 No.....2 Don't know8 | |
| D903 | How far away from this community is the nearest market for selling agricultural products? | Less than 5km1 5 to 10km2 11 to 50km.....3 51 to 100km.....4 More than 100km5 Don't know9 | |
| D904 | How far away from this community is the nearest market for purchasing agricultural inputs? | Less than 5km1 5 to 10km2 11 to 50km.....3 51 to 100km.....4 More than 100km5 Don't know9 | |
| D905 | How far away from this community is the nearest livestock market? | Less than 5km1 5 to 10km2 11 to 50km.....3 51 to 100km.....4 More than 100km5 Don't know9 | |
| | D9. COLLECTIVE ACTION | | |
| D1001 | In the past 12 months, have you worked (voluntarily/ unpaid) with others in your community to do something for the benefit of the community? | Yes1 No.....2 Don't know3 | 2,3→D1101 |



| NO. | QUESTIONS AND FILTERS | CODING CATEGORIES | SKIP |
|-------|------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| D1002 | <p>What activities did you participate in collectively to benefit the community?</p> <p>[SELECT ALL THAT APPLY]</p> <p>[PROBE]</p> | <p>A. Management or protection of watershed01</p> <p>B. Building/repairing structures (school, health facility, markets, dip tank, animal health facilities),</p> <p>C. Repairing/improving roads/bridges.....03</p> <p>D. Tree planting/protection of forests04</p> <p>E. Fire protection guards/break</p> <p>F. Management or protecting wildlife areas</p> <p>G. Community conflict resolution05</p> <p>H. Others (Specify)06</p> | |
| | D10. GROUP PARTICIPATION | | |



| NO. | QUESTIONS AND FILTERS | CODING CATEGORIES | | SKIP |
|-----|----------------------------------------------------------------|------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|------|
| | | D1103. Is [Group] , supported by ZRBF active in this community? | D1104. Who are the household members participating in this group? | |
| | a. Lead Farmer or Model farmer ' group | Yes 1 No 2 Don't know 8 | 2,8→b A. Adult male(s) 1 B. Adult female(s) 2 C. Male youth 3 D. Female youth 4 | |
| | b. Farmer Field School (FFS) | Yes 1 No 2 Don't know 8 | 2,8→c A. Adult male(s) 1 B. Adult female(s) 2 C. Male youth 3 D. Female youth 4 | |
| | c. Demo Plots or Crop and Livestock Innovation Centre (CLICs) | Yes 1 No 2 Don't know 8 | 2,8→d A. Adult male(s) 1 B. Adult female(s) 2 C. Male youth 3 D. Female youth 4 | |
| | d. Cattle keeping group | Yes 1 No 2 Don't know 8 | 2,8→e A. Adult male(s) 1 B. Adult female(s) 2 C. Male youth 3 D. Female youth 4 | |
| | e. Goat keeping group | Yes 1 No 2 Don't know 8 | 2,8→f A. Adult male(s) 1 B. Adult female(s) 2 C. Male youth 3 D. Female youth 4 | |
| | f. Poultry keeping group | Yes 1 No 2 Don't know 8 | 2,8→g A. Adult male(s) 1 B. Adult female(s) 2 C. Male youth 3 D. Female youth 4 | |
| | g. Health clubs/LAN groups | Yes 1 No 2 Don't know 8 | 2,8→h A. Adult male(s) 1 B. Adult female(s) 2 C. Male youth 3 D. Female youth 4 | |
| | h. Natural Resource Management Group | Yes 1 No 2 Don't know 8 | 2,8→j A. Adult male(s) 1 B. Adult female(s) 2 C. Male youth 3 E. Female youth 4 | |
| | i. Producer Group /Commodity association | Yes 1 No 2 Don't know 8 | 2,8→i A. Adult male(s) 1 B. Adult female(s) 2 C. Male youth 3 D. Female youth 4 | |
| | j. Vocational Skills/Enterprise group | Yes 1 No 2 Don't know 8 | 2,8→k A. Adult male(s) 1 B. Adult female(s) 2 C. Male youth 3 D. Female youth 4 | |
| | k. Youth Forum | Yes 1 No 2 Don't know 8 | 2,8→l A. Adult male(s) 1 B. Adult female(s) 2 C. Male youth 3 D. Female youth 4 | |



| NO. | QUESTIONS AND FILTERS | CODING CATEGORIES | | | SKIP |
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| | l. Asset Management Group (water points, dip tanks, weirs) | Yes 1 No 2 Don't know 8 | 2,8→m | A. Adult male(s) 1 B. Adult female(s) 2 C. Male youth 3 D. Female youth 4 | |
| | m. Disaster Response and Management group | Yes 1 No 2 Don't know 8 | 2,8→D1201 | A. Adult male(s) 1 B. Adult female(s) 2 C. Male youth 3 D. Female youth 4 | |
| | n. Agri-processing group (e.g. threshing, peanut butter processing, bush meal production etc.) | Yes 1 No 2 Don't know 8 | 2,8→D1201 | A. Adult male(s) 1 B. Adult female(s) 2 C. Male youth 3 D. Female youth 4 | |
| | D1105. Are you or anyone in your household a committee member for any management group (DRR, DRM, ISAL/VSLA, Asset management (e.g borehole, dip tank, community garden, irrigation scheme) , natural resource management) formed or promoted by ZRBF project? | Yes 1 No 2 Don't know 3 | | | |
| | D1106. Are you or anyone in your household a LEAD or MODEL farmer or hosting a demo plot supported by ZRBF? | Yes 1 No 2 Don't know 3 | | | |
| | D11. ACCESS TO FINANCIAL SERVICES | | | | |
| D1201 | Is any member of this household part of a savings group (ISAL/VSAL/Mukando group)? | Yes 1 No 2 | | | 2→ D1204 |
| D1202 | If yes, who of this HH is a part of ISAL/VSAL/Mukando group? [MULTIPLE RESPONSE] | A. Adult males 1 B. Adult females 2 C. Male youth 3 D. Female youth 4 | | | |
| D1203a | What is the MAIN objective of the principle savings group you or a member of this household belongs to? [SINGLE RESPONSE] [DO NOT READ RESPONSE] | A. Contributing savings to a social fund to assist members to cope with or recover from a shock (e.g death or illness , repair damage or replace lost asset) 1 B. Saving for basic/essential household items (e.g. pots and pans, food, clothes, school fees etc 2 C. Savings for agricultural inputs (e.g. fertilizer) 3 D. Saving to invest in productive assets such as livestock or small business as an individual 4 E. Savings to invest in productive assets or agri business as a group (e.g. poultry business, prn fattening, threshing, agri processing, bush meal production, butchery, uniform making etc.) 5 F. Saving to maintain community infrastructure (e.g. community garden, dip tank, bore hole etc.) 6 G. Saving to invest in home improvements (building construction , latrines etc.) 7 H. Other [specify] 8 | | | |



| NO. | QUESTIONS AND FILTERS | CODING CATEGORIES | | SKIP |
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| D1203b | What are the other objectives of the savings group? [MULTIPLE RESPONSE] [DO NOT READ RESPONSE] | A. Contributing savings to a social fund to assist members to cope with or recover from a shock (e.g death or illness , repair damage or replace lost asset) 1 B. Saving for basic/essential household items (e.g. pots and pans, food, clothes, school fees etc 2 C. Savings for agricultural inputs (e.g. fertilizer) 3 D. Saving to invest in productive assets such as livestock or small business as an individual..... 4 E. Savings to invest in productive assets or agri business as a group (e.g. poultry business, prn fattening, threshing, agri processing, bush meal production, butchery, uniform making etc.) 5 F. Saving to maintain community infrastructure (e.g. community garden, dip tank, bore hole etc.) 6 G. Saving to invest in home improvements (building construction , latrines etc.) 7 H. Other [specify] 8 I. No other objectives 9 | | |
| D1203c | Are members currently making monthly contributions? | YES 1 NO, because the group is not operating at the moment? 2 NO, other (specify) 3 | | 2,3→ D1203f |
| D1203d | How do members pay their monthly contributions? [MULTIPLE RESPONSE] | A. In local currency which is kept in local currency 1 B. in local currency which is converted into foreign currency to lock in the value 2 C. in local currency which is used to purchase assets, inputs or other goods to lock in the value 3 D. In foreign currency (USD, RAND or Pula) 4 E. in assets (e.g. Goats or poultry) 5 F. Other (specify) 6 | | |
| D1203e | What is the monetary value of monthly contributions | 1. AMOUNT: <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | 2. SELECT CURRENCY TYPES: USD 1 Rand 2 RTGS/ Bond 3 | |
| D1203f | Is your savings group giving loans? [SINGLE RESPONSE] | NO, because the group is not operating at the moment 1 NO, the groups is operational but not making loans to anyone. 2 YES, but only to members 3 YES, to members and outsiders 4 | | |
| D1204 | What have you or a member of this house in ISAL used your savings for in the last 6 months? [MULTIPLE RESPONSE] | A. Buying construction materials 01 B. Education 02 C. Livestock purchase 03 D. Purchase Food for home consumption 06 E. Household utensils 07 F. Agricultural inputs and equipment 08 G. Financing Income generating projects 09 H. Don't know/NA 99 | | |
| D1205 | Have any household members borrowed non-cash/ commodity items or received crop or livestock inputs on credit in the last 12 months? | Yes 1 No 2 Don't know 8 Refused 9 | | |



| NO. | QUESTIONS AND FILTERS | CODING CATEGORIES | SKIP |
|-------|-------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| D1206 | Have any household members borrowed money or taken out a cash loan (from any source) during the last 12 months? | Yes 1 No.....2 Don't know 8 Refused 9 | 2,8,9→ D1210 |
| D1207 | Which household members have borrowed money or taken out a cash loan during the last 12 months? [MULTIPLE RESPONSE] | A. Adult males 1 B. Adult females 2 C. Male youth 3 D. Female youth 4 | |
| D1208 | What was the source(s) of the loan(s)? [MULTIPLE RESPONSE] | A. Money lender 01 B. Relative/Friend/neighbor 02 C. Micro finance institutions 03 D. Banks 04 E. ISAL/VSAL/SACCO 10 F. Private business – inputs on credit for contracted crop 11 G. Private business – feeder finance for pen fattening 12 H. Local trader/shop 13 I. Farmers organizations 16 J. Others (specify) 18 K. Don't know 99 L. Refused 88 | |
| D1209 | How were the loan(s) used? [MULTIPLE RESPONSE] | A. Basic/essential household items (food, soap, cooking fuel, etc.) 01 B. Luxury and non-essential items (electronics, jewellery, cigarettes, alcohol) 02 C. To recover from shock (replace assets, health costs, repairing damage) 03 D. Investments (education, improvements to housing, agriculture, small business etc.) 04 E. Social and religious ceremonies (weddings, funerals) 05 F. Loan repayment (including interest) 06 G. To fund for migration 07 H. Others (specify) 08 I. Don't know 88 J. Refused 99 | |
| D1210 | Do you or any other household member currently have cash savings? | Yes 1 No.....2 Don't know 8 Refused 9 | 2,8,9 →E101 |
| D1211 | Where are the savings held? [MULTIPLE RESPONSE] | A. At home in a safe place 01 B. Relative/Friend/neighbour 02 C. Micro finance institutions 03 D. Banks 04 E. Mobile Wallet 05 F. ISAL/VSAL/SACCO 06 G. Farmers organizations 07 H. Others (specify) 08 I. Don't know 99 J. Refused 88 | |

MODULE E: ACCESS TO WATER, SANITATION, ESSENTIAL SERVICES AND HOUSEHOLD ASSETS

[INTRODUCTION: Now I would like to ask you about the household access in essential services for water, sanitation, health, agriculture extension, veterinary services and market information and HH assets. I will ask you one by one for each of the services]



| NO. | QUESTIONS AND FILTERS | CODING CATEGORIES | SKIP |
|-----------------------------------|----------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| 1. ACCESS TO WATER AND SANITATION | | | |
| E101 | <p>What is the main source of drinking water for your household?</p> <p>[SINGLE RESPONSE]</p> | <p>Piped into dwelling 1</p> <p>Piped into yard/plot..... 2</p> <p>Piped to neighbour..... 3</p> <p>Public taps/standpipe 4</p> <p>Tube well/borehole 5</p> <p>Protected well..... 6</p> <p>Unprotected well..... 7</p> <p>Protected spring 8</p> <p>Unprotected spring 9</p> <p>Rain water harvesting 10</p> <p>Tanker truck..... 11</p> <p>Cart with small tank 12</p> <p>Surface water (river/dam/lake/pond/stream/ canal/irrigation channel) 13</p> <p>Bottled water 14</p> <p>Sand abstraction..... 15</p> <p>Other (SPECIFY) 16</p> | |
| E102 | <p>What distance do you travel to access water for cooking and drinking from your main source</p> | <p>less than 500m..... 1</p> <p>more than 500m but less than 1 km..... 2</p> <p>1km and above 3</p> <p>Don't know 9</p> | |
| E103 | <p>How much time do you take to walk to the water source?</p> | <p>less than 15min..... 1</p> <p>15-30min 2</p> <p>30min to 1 hour 3</p> <p>More than 1 hour 3</p> <p>Don't know 9</p> | |
| E104 | <p>How much time do you spend queuing at the water source?</p> | <p>less than 5min 1</p> <p>5-15min 2</p> <p>15-30min 3</p> <p>30min or more 3</p> <p>Don't know 9</p> | |
| E105 | <p>Do you think the water source that you are using for household consumption for drinking is safe?</p> | <p>Yes 1</p> <p>No 2</p> | |



| NO. | QUESTIONS AND FILTERS | CODING CATEGORIES | SKIP |
|-------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| E106 | How do you treat your drinking water? [MULTIPLE RESPONSE POSSIBLE] [INSTRUCTION: DO NOT READ THE ANSWERS BUT PROBE] | A. Do nothing 1 B. Boil..... 2 C. Add bleach/chlorine (Jik/water guard) 3 D. Strain it through a cloth 4 E. Use a water filter (ceramic, sand, composite etc.) 5 F. Solar disinfection..... 6 G. Let it sand and settle 7 H. Add water treatment tablet 8 I. Others (Specify) 9 | |
| E107 | How do you store the water? [OBSERVE] | Keep water COVERED in the container 1 Keep water UNCOVERED in the container 2 | |
| E108 | What type of toilet do most members of your household usually use? [SINGLE RESPONSE] [OBSERVE IF POSSIBLE] | Flush toilet 01 Blair latrine (VIP) 03 Pit latrine with slab 02 Pit latrine without slab 04 Upgradable Blair latrine 05 Composting toilet..... 06 Others (specify) 08 No toilet facility/Bush/Field 99 | 99→E110 |
| E109 | Do you share this facility with other households? | Yes 1 No 2 | |
| E110 | Has anyone from your household received training on water, sanitation or hygiene practices in the past 12 months?? | Yes 1 No 2 | |
| 2. ACCESS TO HEALTH SERVICES | | | |
| E201 | Is there a functioning health center/health service provider where you can get health services in this area? | Yes 1 No 2 | 2→E301 |
| E202 | How far is the health center/health service from your home? | less than 5km..... 1 5km to 9km 2 10km and above 3 Don't know 9 | |



| NO. | QUESTIONS AND FILTERS | CODING CATEGORIES | SKIP |
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| E203 | Who provides services at that health center? [MULTIPLE RESPONSE] | A. Government 1 B. Private sector/business organization 3 C. Community Health Worker (CHW)..... 4 D. Other (SPECIFY) 5 | |
| E204 | Does your household have access to the health center or health service provider? | Yes 1 No 2 | 2→E301 |
| E205 | What is the quality of service you receive from Health center or health service provider that you normally use (Clinics and Hospital) | Not satisfied at all..... 1 Somewhat satisfied 2 Satisfied 3 | |
| 3. ACCESS TO AGRICULTURAL EXTENSION SERVICES FOR CROPS | | | |
| E301 | Are there agricultural extension services available in this area? | Yes 1 No 2 Don't know 3 | 2,3→E307 |
| E302 | Who is providing these services? [MULTIPLE RESPONSE] | A. Government 1 B. NGOs 2 C. Private sector/business organization (agro dealer, pesticide seller, seed company etc.) 3 D. Mobile phone based extension services (SMS messaging, Eco-farmer, Kurima Mari, EMKambo, Mubatsin etc.) 4 E. Other (SPECIFY) 5 F. Don't know 9 | |
| E303 | Did your household receive any agricultural extension support from March 2019 to till now? | Yes 1 No 2 Don't know 3 | 2,3→E307 |
| E304 | If yes, from where did you receive agricultural extension services? [MULTIPLE RESPONSE] | A. Government 1 B. NGOs 2 C. Private sector/business organization (agro dealer, pesticide seller, seed company etc.)..... 3 D. Mobile phone based extension services (SMS messaging, Eco-farmer, Kurima Mari, EMKambo, Mubatsin etc.) 4 E. Other (SPECIFY) 5 F. Don't know..... 9 | |
| E305 | What form of supports did your household received? [MULTIPLE RESPONSE] | A. Training 1 B. Extension visits 2 C. Cropping advice 3 D. Livestock advice..... 4 E. Don't know 9 | |
| E306 | Were you satisfied with the service you received? | Not satisfied at all..... 1 Somewhat satisfied 2 Satisfied 3 Refused 8 Don't know 9 | |
| 4. ACCESS TO VETERINARY SERVICES | | | |



| NO. | QUESTIONS AND FILTERS | CODING CATEGORIES | SKIP |
|------|----------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| E401 | Are there veterinary services available in this area? | Yes 1 No 2 Don't know 3 | 2,3→E501 |
| E402 | Who is providing the veterinary services? [MULTIPLE RESPONSE] | A. Government 1 B. NGOs 2 C. Community Animal Health Workers (CAHWs) 3 D. Private sector/business organization (agro dealer, pesticide seller, seed company etc.) 4 E. Mobile phone based extension services (SMS messaging, Eco-farmer, Kurima Mari etc.) 5 F. Other (SPECIFY) 6 G. Don't know 9 | |
| E403 | Did your household receive any technical support related to livestock from March 2019 to till now? | Yes 1 No 2 Don't know 3 | 2,3→E501 |
| E404 | If yes, from where did you receive livestock technical supports? [MULTIPLE RESPONSE] | A. Government 1 B. NGOs 2 C. Community Animal Health Workers (CAHWs) 3 D. Private sector/business organization (agro dealer, pesticide seller, seed company etc.) 4 E. Mobile phone based extension services (SMS messaging, Eco-farmer, Kurima Mari etc.) 5 F. Other (SPECIFY) 6 G. Don't know 9 | |
| E405 | What form of support did your household received? [MULTIPLE RESPONSE] | A. Training 1 B. Extension visits 2 C. Livestock advice 3 D. Don't know 9 | |
| E406 | Were you satisfied with the service you received? | Not satisfied at all 1 Somewhat satisfied 2 Satisfied 3 Refused 8 Don't know 9 | |
| E407 | Did you or any member of your family receive any training or advice on tick control in cattle? | Yes 1 No 2 | |
| E408 | Are there operating cattle dipping or spraying services available in this community? | Yes 1 No 2 | 2→E410 |
| E409 | If yes, How far do your cattle have to trek to this dipping or spraying service? | less than 5km 1 5km to 9km 2 10km and above 3 Don't know 9 | |



| NO. | QUESTIONS AND FILTERS | CODING CATEGORIES | | SKIP |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|------------|
| E410 | Did you recently dip or spray your cattle to control for ticks? | Yes 1 Haven't dipped or sprayed my cattle to control ticks in the last two months 2 Don't know 3 Not applicable (don't own cattle) 4 | | 2,3,4→E412 |
| E411 | When did you most recently dip or spray your cattle to control for ticks? | Month: _____ [January, February, March] Week: _____ [1 st , 2 nd , 3 rd , 4 th] | | |
| E412 | If you don't use dip tank, why not? | No functioning dip tank in this community 1 No acaracites for dip tank 2 | | |
| 5. ACCESS TO LAND AND IRRIGATION | | | | |
| E601 | How many Acre s of arable land do all members of this HH have access? | A. Own land: <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> B. Lease land: <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> | A1. Land unit: <input type="checkbox"/> 1=Acre, 2=Hectares B1. Land unit: <input type="checkbox"/> 1=Acre, 2=Hectares | |
| E602 | Do you have access to irrigation for crop or vegetable production? | Yes 1 No 2 Not Applicable 3 | | 2,3→E702 |
| E603 | What are the types of irrigation systems that your household has access now? [MULTIPLE RESPONSE] | A. Small holder irrigation scheme 1 B. Own field crop irrigation system 2 C. Community Nutrition garden 3 D. Own vegetable garden irrigation system 4 E. Other (specify) 4 | | |
| 6. ASSETS | | | | |
| [INTRODUCTION: Now I would like to ask you about some assets that your household currently own or not. I will go one by one and please let me know if your HH currently have the asset or not] | | | | |
| | ASSETS | Does your HH currently own this asset? | | |
| | | 1= Yes, 2=No | | |



| NO. | QUESTIONS AND FILTERS | CODING CATEGORIES | SKIP |
|------|------------------------------------|--------------------------|------|
| E701 | HOUSEHOLD PRODUCTIVE ASSETS | | |
| | a. Plough (oxen-pulled) | <input type="checkbox"/> | |
| | b. Scotch cart | <input type="checkbox"/> | |
| | c. Tractor (Mechanical plough) | <input type="checkbox"/> | |
| | d. Sickle | <input type="checkbox"/> | |
| | e. Pick axe | <input type="checkbox"/> | |
| | f. Axe | <input type="checkbox"/> | |
| | g. Pruning/cutting shears | <input type="checkbox"/> | |
| | h. Hoe | <input type="checkbox"/> | |
| | i. Spade or shovel | <input type="checkbox"/> | |
| | j. Traditional beehive | <input type="checkbox"/> | |
| | k. Modern beehive | <input type="checkbox"/> | |
| | l. Knapsack sprayer | <input type="checkbox"/> | |
| | m. Mechanical water pump | <input type="checkbox"/> | |
| | n. Motorized water pump | <input type="checkbox"/> | |
| | o. Stone grain mill | <input type="checkbox"/> | |
| | p. Motorized grain mill | <input type="checkbox"/> | |
| | q. Walking motorized tiller | <input type="checkbox"/> | |
| | r. Cultivator/ridger/planter | <input type="checkbox"/> | |
| | s. Sewing machine | <input type="checkbox"/> | |
| | t. Wheel barrow | <input type="checkbox"/> | |
| | u. Borehole | <input type="checkbox"/> | |
| | v. bicycle | <input type="checkbox"/> | |
| | w. motorcycle | <input type="checkbox"/> | |
| | x. Vehicle | <input type="checkbox"/> | |
| | y. Mobile phone | <input type="checkbox"/> | |



LIVESTOCK ASSETS

| E702. LIVESTOCK ASSETS [01 MARCH 2019 TO 29 FEBRUARY 2020] | | | | | | | | | | | | | | | | |
|------------------------------------------------------------|---------------------------------------|-------------------------------------------------|-------------------------------------------|-------------------------------------------|-----------------------------|----------------------|----------------------|-------------------------------------------------|----------------------|----------------------|----------------------|-----------------------|----------------------|-----------------------|---------------------------------|----------------------|
| ASSETS | E702A. How many kept/owned currently? | | | E702B. How many increased for what? | | | | E702C. How many decreased (attrition) for what? | | | | | | | | |
| | Total kept | Total owned [including those kept elsewhere] | Who owns? 1=Male 2=Female 3=Both | Birth | Purchase (own resources) | External assistance | Others | Sold/Bartered | | | Deaths | | Slaughter | | Theft/ Stolen/ Lost [NUMBER] | |
| | | | | | | | | How many | [SEE CODES BELOW] | | How many | Main Reason [CODE] | How many | Main Reason [CODE] | | |
| | | | | | | | | | To whom | Where | | | | | | Main Reason |
| | 1 | 2 | 3 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| a. Cattle | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| b. Draught cattle | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| c. Donkeys/ mule | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| d. Sheep | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| e. Goats | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| f. Pigs | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| g. Poultry* | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| h. Rabbits | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| *Including chickens, turkey, guinea fowl etc. | | | | | | | | | | | | | | | | |
| CODE FOR E702C_2: | | CODE FOR E702C_3: | | CODE FOR E702C_4: | | | | CODE FOR E702C_6: | | | | CODE FOR E702C_8: | | | | |
| 1=Other households in the area | | 1=Within ward | | 1=No longer needed | | | | 1=drought related deaths | | | | 1=Own consumption | | | | |
| 2=Private Traders | | 2=Outside ward | | 2=Pay for transport expenses | | | | 2=Disease | | | | 2=Rituals | | | | |
| 3 = CSC | | 3=Outside District | | 3=Purchase food | | | | 3=Predators | | | | 3=Sale | | | | |
| 4 = Other abattoirs | | 9=N/a | | 4=Pay debt | | | | 4=Lack of Water | | | | 4=Social events | | | | |
| 5 = Distant Markets | | | | 5=Pay medical expenses | | | | 5=Slaughter for own consumption | | | | 5=Other | | | | |
| 6= Contracting Companies | | | | 6=Pay/donate to social event | | | | 6=Road carnage | | | | 9=N/A | | | | |
| 9 = N/a | | | | 7=Pay/donate for funeral related expenses | | | | 7=Drowning/floods | | | | | | | | |
| | | | | 8=Pay education expenses | | | | 8=Lightning | | | | | | | | |
| | | | | 9=Business of selling livestock | | | | 9=Other | | | | | | | | |
| | | | | 10=Business Investment | | | | 99=N/A | | | | | | | | |
| | | | | 11=Gift | | | | | | | | | | | | |
| | | | | 12=Lobola | | | | | | | | | | | | |
| | | | | 13=Paying Fines | | | | | | | | | | | | |
| | | | | 14=Traditional Ritual | | | | | | | | | | | | |
| | | | | 15=Pass on gift (livestock assistance) | | | | | | | | | | | | |
| | | | | 16=Grinding mill costs | | | | | | | | | | | | |
| | | | | 17=Other household costs | | | | | | | | | | | | |
| | | | | 18=Other | | | | | | | | | | | | |
| | | | | 99=N/A | | | | | | | | | | | | |



| NO. | QUESTIONS AND FILTERS | CODING CATEGORIES | SKIP |
|-------------|-----------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| | 7. HOUSEHOLD FUEL FOR COOKING AND LIGHTING | | |
| E801 | What type of fuel does your household mainly used for cooking? <div>[SINGLE RESPONSE]</div> | No food cooked in this household..... 01 Electricity 02 LP Gas 03 Paraffin/Kerosene..... 04 Charcoal..... 05 Wood..... 06 Straw/shrubs/grass..... 07 Dried cattle dung 08 Others (specify) 09 | |
| E802 | What do you mainly use for your household lighting? | None 01 Candles 02 Paraffin lamps 03 Solar lamp/bulbs 04 Cell phone 05 Torch..... 06 Electricity from central power lines 07 Diesel or petrol generator 08 Others (specify) 09 | |



| NO. | QUESTIONS AND FILTERS | CODING CATEGORIES | SKIP |
|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| | ZRBF PROGRAM ACTIVITY ENGAGEMENT | | |
| | ACTIVITIES | E803: Could please let me know the activities that you or any of your HH members benefited from/participated in with under ZRBF projects? 1=Yes 2=No 3=Not sure | |
| | 1.Agricultural production training - drought tolerant small grains and legumes | <input type="checkbox"/> | |
| | 2.Small Livestock Production , management and Health (Poultry and Goats | <input type="checkbox"/> | |
| | 3.Value chains for crops (contract farming, non-contracted crops non-traditional crops (e.g sesame, chillies, flower seed, mushrooms, quinoa, amaranth) | <input type="checkbox"/> | |
| | 4.Value chain for poultry (Boschveld chickens, indigenous chickens, broilers) | <input type="checkbox"/> | |
| | 5.Value chain for goats | <input type="checkbox"/> | |
| | 6.Value chain for cattle (e.g. pen fattening) | <input type="checkbox"/> | |
| | 7.Fodder production (e.g. velvet bean, lab lab) training | <input type="checkbox"/> | |
| | 8.Fodder preservation (e.g. silage, hay) training | <input type="checkbox"/> | |
| | 9.Fish Farming | <input type="checkbox"/> | |
| | 10.Pre harvest service provision (2 wheel tractor, agro dealer (‘Farm Shop”) | <input type="checkbox"/> | |
| | 11.Post-Harvest Agri Business (thresher, peanut butter processing. Bush meal production) | <input type="checkbox"/> | |
| | 12.Training and seed provision for nutrition gardens/ horticulture/vege production | <input type="checkbox"/> | |
| | 13.Plot on new irrigation scheme | <input type="checkbox"/> | |
| | 14.Non-Timber Forest Product (NTFP) harvesting, processing, organic certification (including honey) | <input type="checkbox"/> | |
| | 15.Benefitted from Artificial Insemination | <input type="checkbox"/> | |
| | 16.Benefitted from goat breed improvement | <input type="checkbox"/> | |
| | 17.Improved Livestock Housing (cattle, goats, poultry) | <input type="checkbox"/> | |
| | 18.Natural Resource Management Training (e.g.) | <input type="checkbox"/> | |
| | 19.Business training (e.g. Farming as a business) | <input type="checkbox"/> | |
| | 20.Nutrition Training | <input type="checkbox"/> | |
| | 21.Vocational skills/Enterprise groups (youth) | <input type="checkbox"/> | |
| | 22.Water infrastructures (dip tank, solar borehole, borehole repair, small weir, water harvesting structures) | <input type="checkbox"/> | |
| | 23.Community infrastructure (e.g. animal health center, sales pen, finishing posts) | <input type="checkbox"/> | |
| | 24.Cash for work on Community Assets /infrastructure | <input type="checkbox"/> | |
| | 25.Received Crisis Modifier assistance (seed/livestock feed/ input voucher under crisis modifier) | <input type="checkbox"/> | |
| | 26.Gender dialogues/Gender Action Learning (GALS) | <input type="checkbox"/> | |
| | 27.Gender Youth Action Groups (GYAGS) | <input type="checkbox"/> | |
| | 28.Disaster Risk Management and preparedness /Disaster Risk Response Training | <input type="checkbox"/> | |
| | 29.VSAL/ISAL/Savings groups training | <input type="checkbox"/> | |
| | 30.Community Action Adaption Planning | <input type="checkbox"/> | |



| NO. | QUESTIONS AND FILTERS | CODING CATEGORIES | SKIP |
|-----|-----------------------------------------------------------------------------------------------------------------------------------------|--------------------------|------|
| | 31. Resilience Planning | <input type="checkbox"/> | |
| | 32. Training for Transformation | <input type="checkbox"/> | |
| | 33. Participatory Scenario Planning (Uses indigenous and Scientific information on climate to predict season performance) | <input type="checkbox"/> | |
| | 34. Registered on bulk SMS platform to receive extension advice and other information such as weather information and price information | <input type="checkbox"/> | |
| | 35. Received training in bush meal production | <input type="checkbox"/> | |

| NO. | QUESTIONS AND FILTERS | CODING CATEGORIES | SKIP |
|-----|-----------------------|-------------------|------|
| | | | |

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|---------------------------------------------------|--------------------------|---------------------------------------------------|--------------------------|-------------------------------------------------|--------------------------|-------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------------------------|-------------|--------------------------|---------|--------------------------|--------------------------|--------------------------|----------------------------|--------------------------|-------------------------------------------|--------------------------|------------------------------------------|--------------------------|---------------------------------------------------|--------------------------|--------------------------------------------|--------------------------|--------------------------|--------------------------|--|
| | <i>MODULE F: GENDER NORM</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | [INSTRUCTION: This module should be asked to any senior adult woman (16+ years age) in the household. The woman should be interviewed without the presence of men.] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | <p align="center">HOUSEHOLD LEVEL DECISION MAKING</p> <p>[INSTRUCTION: Read the possible responses given in the code list below, so that the respondent can understand how to respond. Ask the questions one-by-one and record code number of responses.]</p> <p>CODE LIST:</p> <p>1 = Can decide alone, 2 = Can decide with husband or other adult male family member, 3 = Husband makes decision after discussion with wife, 4 = Not involved in decision, 5 = Not applicable</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| F102 | <p>I would like to ask you some questions on household decision making. I will go one by one. Could you please let me know who in your households take decisions for the followings:</p> <table border="1"> <tr> <td>a. Buying small food items, groceries, toiletries</td> <td><input type="checkbox"/></td> </tr> <tr> <td>b. Buying clothing for yourself and your children</td> <td><input type="checkbox"/></td> </tr> <tr> <td>c. Spending money that you yourself have earned</td> <td><input type="checkbox"/></td> </tr> <tr> <td>d. Selling major household assets and products:</td> <td> <table border="1"> <tr> <td>Cattle</td> <td><input type="checkbox"/></td> </tr> <tr> <td>Goats/sheep</td> <td><input type="checkbox"/></td> </tr> <tr> <td>Poultry</td> <td><input type="checkbox"/></td> </tr> <tr> <td>Crops/vegetables produce</td> <td><input type="checkbox"/></td> </tr> </table> </td> </tr> <tr> <td>e. Use of loans or savings</td> <td><input type="checkbox"/></td> </tr> <tr> <td>f. Expenses for your children's education</td> <td><input type="checkbox"/></td> </tr> <tr> <td>g. Expenses for your children's marriage</td> <td><input type="checkbox"/></td> </tr> <tr> <td>h. Medical expenses for yourself or your children</td> <td><input type="checkbox"/></td> </tr> <tr> <td>i. Coping strategy due to shock experience</td> <td><input type="checkbox"/></td> </tr> <tr> <td>j. Participate in groups</td> <td><input type="checkbox"/></td> </tr> </table> | | a. Buying small food items, groceries, toiletries | <input type="checkbox"/> | b. Buying clothing for yourself and your children | <input type="checkbox"/> | c. Spending money that you yourself have earned | <input type="checkbox"/> | d. Selling major household assets and products: | <table border="1"> <tr> <td>Cattle</td> <td><input type="checkbox"/></td> </tr> <tr> <td>Goats/sheep</td> <td><input type="checkbox"/></td> </tr> <tr> <td>Poultry</td> <td><input type="checkbox"/></td> </tr> <tr> <td>Crops/vegetables produce</td> <td><input type="checkbox"/></td> </tr> </table> | Cattle | <input type="checkbox"/> | Goats/sheep | <input type="checkbox"/> | Poultry | <input type="checkbox"/> | Crops/vegetables produce | <input type="checkbox"/> | e. Use of loans or savings | <input type="checkbox"/> | f. Expenses for your children's education | <input type="checkbox"/> | g. Expenses for your children's marriage | <input type="checkbox"/> | h. Medical expenses for yourself or your children | <input type="checkbox"/> | i. Coping strategy due to shock experience | <input type="checkbox"/> | j. Participate in groups | <input type="checkbox"/> | |
| a. Buying small food items, groceries, toiletries | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| b. Buying clothing for yourself and your children | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| c. Spending money that you yourself have earned | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| d. Selling major household assets and products: | <table border="1"> <tr> <td>Cattle</td> <td><input type="checkbox"/></td> </tr> <tr> <td>Goats/sheep</td> <td><input type="checkbox"/></td> </tr> <tr> <td>Poultry</td> <td><input type="checkbox"/></td> </tr> <tr> <td>Crops/vegetables produce</td> <td><input type="checkbox"/></td> </tr> </table> | Cattle | <input type="checkbox"/> | Goats/sheep | <input type="checkbox"/> | Poultry | <input type="checkbox"/> | Crops/vegetables produce | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | |
| Cattle | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Goats/sheep | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poultry | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Crops/vegetables produce | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| e. Use of loans or savings | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| f. Expenses for your children's education | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| g. Expenses for your children's marriage | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| h. Medical expenses for yourself or your children | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| i. Coping strategy due to shock experience | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| j. Participate in groups | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| | |
|------------|-----------------------------------------------------------------------------------------|
| END | Thank you very much for your participation and valuable information that you gave!!!!!! |
|------------|-----------------------------------------------------------------------------------------|



Annex 8

Qualitative Topical Outline

I. Institutional Stakeholder Topical Outline, KII/FGD – District Level FINAL

This Topical Outline serves as a general guide for both District level multi-sectoral stakeholder FGDs and KIIs with institutional stakeholders. The outline will need to be adapted for the specific informant/ audience. A focus on the interview is on ZRBF's capacity strengthening activities related to early warning and information systems for decision making, response, and mitigation.

Objectives of the FGD/Interview and background

Research Question: How has ZRBF affected the capacity of institutions to implement resilience building activities in their operational areas? Have ZRBF products and services improved the capacity government departments to make evidence-based decisions and take effective early action to mitigate the impact of shocks?

Background: ZRBF has developed several products and services intended to inform decision-making and improve the capacity of institutions to mitigate the negative effects of shocks and stresses, e.g., monthly High Frequency Monitoring bulletin, data analysis training, development or upgrading of agricultural data bases, provision of hardware (e.g., GPS, gadgets, Ph meters, moisture probes, veterinary kits and computer equipment). FGDs/KIIs with key institutional and government stakeholders will collect feedback on the use and application of these products and services, benefits, challenges and recommendations to further institutional capacity for shock mitigation and response.

Introductions and relation to ZRBF programming

- What is your institutional role? [Brief scan of who is in group/ types of stakeholders]
- What is your connection with ZRBF? In what sector/ types of activities?
 - Probes may include: length of time, extent/ frequency of collaboration
 - What types of activities do you implement to strengthen resilience?
 - Were you doing these types of activities before working with ZRBF, or are these new initiatives? Describe.

Participation in ZRBF capacity strengthening activities

- Have you (or someone from your department/agency) participated in a ZRBF training? If so, describe.
- How useful has this been in your work? For your department? In what ways?
- Are you familiar with the High Frequency Monitoring Report?
 - Do you (or someone from your department/agency) read the monthly High Frequency Monitoring reports [bulletins]? Who? When?
 - What shocks/stresses have you found the HFMS to be most useful?
 - If yes, do you find the reports easy to understand and relevant to your work?
- How do you use the reports?
 - To inform your work or make policy decisions? How often?
 - Have you used the HFMS data to help you to take early action in response to early warning of potential crises, i.e., before a crisis affected lives or livelihoods?
 - Was the HFMS data the primary source of information that you used to inform your response to potential crises?
- Have you and/or your department received ZRBF hardware (gadgets, Ph monitors, computer equipment, etc.) provided by ZRBF?
 - How have they been utilized? What is the impact? What challenges?
 - What has changed as a result?
 - What work processes have changed/improved?



- What recommendations do you have to improve *these* services and products? [*Facilitator note: give respondent a recap of the services that have been discussed above*]
 - o How can we make the services/products that exist sustainable?

Influence of ZRBF at District Level

- What shocks/ stresses have you/ your department/ communities you serve experienced over the past 3-5 years?
- In this context, has working with ZRBF changed the way you / your department does its work? **[Provide examples.]**
 - o Improve delivery of services to support response? Recovery?
 - o Changed collaboration with other departments?
 - o Changed coordination with other development partners in the district?
 - o Changed investment priorities /allocation of resources?
 - o Improve accountability?
 - o Increase resilience thinking / use of resilience concepts in planning?
- Have you seen changes in the way households and communities in your district respond to shocks or stresses?
 - o If so, what are households doing differently to prepare of the next shock(s)?
 - o If not, why do you think this is the case?
 - o Are different households making different types of changes (youth, women/female headed households)? If so, why?
 - o Are some households coping / managing better? Why (e.g., assets, social networks, livelihood activities)?
- What recommendations do you have to improve the role of ZRBF (e.g., to support effective collaboration, coordination, resource allocation, information services, service delivery to strengthen household and community ability to manage shocks/stress)?
- Is there any kind of support that your department/ households/communities need, which is not available?
 - o Probes may include: their specific collaboration under ZRBF, what gaps may exist

Thank you!



II. Community FGD Topical Outline

This outline guides community-level focus group discussions (FGD). Separate discussions will be held with men and women and include around 6-8 people. FGD participants should be community members who can reflect on and speak about the general and differential experiences of community members. FGDs should be held for about 90 minutes, led by two researchers—one facilitator and a dedicated notetaker.

Livelihoods

- General characteristics of primary and current livelihoods in this community
 - o Diversity of activities (primary, secondary activities)
 - o On-farm activities
 - o Value chains (e.g., livestock, poultry, staple crops, vegetables)
 - o Off-farm activities (e.g., informal mining, day labor, trade, skilled labor [sewing, welding])
 - o Remittances, outmigration
- Are households relying on one livelihood or diversifying in this community?
 - o How do they decide who and what to diversify? E.g., who migrates?
- Do different kinds of households in this community participate in different livelihoods? Why?
 - o Probe: Youth, women, female headed households, older household heads

Shocks

- Main shocks/stresses experienced in the last 3-5 years
 - o Probes may include: *climate change*, heavy rain, drought, price increases/decreases, devaluation of assets, crop failure/pests, human/animal disease
- Impact of the main shock(s)/stresses
 - o Probes can include: crop losses, loss of household assets, increase in prices, health problems
 - o Dynamic of shock(s) [duration, frequency]
- How are livelihoods impacted by shocks/stresses?
- Different impacts of shock(s)/stresses on different groups: youth, women/female headed households
 - o What are specific challenges these groups face?

Coping: What strategies are people using to respond to shocks/ stresses?

- How are households dealing with the shocks/ stresses?
- What are households doing as a result of the shock(s)/stresses? **Probe why, how, for how long?**
 - o Probes might include: diversifying livelihoods, migration, reduced food consumption, borrowing money/using savings, selling assets, increased reliance on external assistance including reliance on food or cash (NGO, Government, UN Agency), , reliance on friends/family (remittances),
 - o Are different types of households using different types of strategies? (youth, women/female headed households?) If so, why? Are some households coping / managing better? Why (e.g., assets, social networks, livelihood activities)?

Adapting: What strategies are people using to manage or prevent shocks/ stresses/ changes in environment?

- What are people doing to manage the shocks (e.g., new strategies, longer term)?

Probes may include participation in ZRBF activities.

- o Climate smart agricultural practices (e.g., drought tolerant crops/varieties; cultivation practices for water capture)
- o Off-farm activities (e.g., among youth: welding, construction, etc.)
- o Value chains (e.g., livestock – boschveld chickens, goat pen fattening; crops – sorghum, groundnut, sesame, etc.)
- o Agro-processing: small grain thresher, peanut butter
- o Fodder production/preservation
- o Non-timber forest products collection/ sale (marula, honey, wild foods)
- o Other livelihood diversification (e.g., 2 wheel tractor business, etc.)
- o Changes in social networks (within or outside of community; e.g., farmer groups, neighbors, friends, family)



- Community assets (namely water infrastructure for livestock, farming)
- Messaging platforms for extension, early warning, other information (disaster risk management planning)
- Savings groups (including currency and assets)
 - Who participates and why
 - Who doesn't participate and why
 - Benefits of participation
 - Utilization of savings
- Strategies to maintain savings (assets) without losing value
- Access to financial services?
 - Probe: microfinance groups, contract farming, burial societies, loan sharks, mobile money, mobile insurance, feeder finance (credit line)
- Other strategies to cope with financial uncertainty? [challenges and barriers]

Regarding all strategies:

- If these are new strategies, where did the household/community learn about / get the idea for these changes and strategies?
 - Probe: ZRBF activity, weather information, livestock disease information, early warning system, social media, historical/cultural knowledge "old strategies", price information
- What information do households/communities use to make decisions about what changes to make?
 - Probes may include: ZRBF activity, Early warning system, Government, extension agent, watching what others in the community do, messaging platforms/social media
- If relying on food/cash assistance, does this change the strategies people use?
- What constraints do people face to try new strategies? Why not use new strategies (e.g., money, assets, labor, information, perceptions/mindset)?

Impact: ZRBF programming [refer to consortia name], other activities

- What activities have led to the most change? Why? How? [positive or negative, unintended consequences]
- What activities will lead to long term change, even when the project ends?
- How has participating in multiple activities impacted your households/community? Which activities work together? How? At different times?
 - [ZRBF and non-ZRBF activities]
- Different impacts of strategies among different groups: youth, women/female headed households
 - What are specific challenges these groups face?
 - Does participation in activities impact them more/less? Why?
 - Do these groups need different activities/support? What, why?
 - Are there differences between the group in the community who have participated in ZRBF activities [refer to consortia] versus those that have not participated?
- Is there any kind of support/ resources that households/communities need and is not available?
 - Gap(s) in activities/support [infrastructure, lack of ideas, motivation, lack of teachers, nurses]

Moving forward....

- Do households/communities feel better prepared for the next shock? How? Why or why not?
 - Probe: differences between groups, those who participated in activities versus those who have not, incentives, motivations, confidence to adapt
- What are households/communities doing differently to prepare for the next shock?
 - Are there specific shocks/stresses they are or are not more prepared for?

Thank you!



III. Community Key Informant Topical Outline

This Topical Outline is to guide interviews with community leaders (e.g., youth leaders, women, elders, traditional leaders, government extension workers: youth, women, health, agriculture, etc.) and “positive deviants”. It should be adapted to the expertise and/or activities of the key informant.

Livelihoods

- Briefly describe your role / activities in the community
- Are households relying on one livelihood or diversifying?
 - o How do they decide who and what to diversify? E.g., who migrates?
- Do different kinds of households participate in different livelihoods? Why?
 - o Probe: Youth, women, female headed households, older household heads,

ZRBF programming [Key section of FGD]

- Community participation in ZRBF activities? Describe the type/nature of engagement.
 - o Which activities have you participated in? Can you describe your participation?
 - o What mix of activities?

Prompts [Facilitator: note in notebook to refer to in discussion of impacts]:

- o Climate smart agricultural practices (e.g., drought tolerant crops/varieties; cultivation practices for water capture)
- o Off-farm activities (e.g., among youth: welding, construction, etc.)
- o Value chains (e.g., livestock – boschveld chickens, goat pen fattening; crops – sorghum, groundnut, sesame, etc.)
- o Agro-processing: small grain thresher, peanut butter
- o Fodder production/preservation
- o Non-timber forest products collection/ sale (marula, honey)
- o Other livelihood diversification (e.g., 2 wheel tractor business, etc.)
- o Other social networks (within or outside of community; e.g., farmer groups)
- o Building community assets (namely water infrastructure for livestock, farming)
 - Access to a new infrastructure [dip tank, borehole]
- o Messaging platforms for extension, early warning, other information
- o Participated in community trainings, planning

Finance and Savings (as relevant)

- Savings groups (including currency and assets)
 - o Who participates and why
 - o Who doesn't participate and why
 - o Benefits of participation
 - o Utilization of savings
- Strategies to maintain these without losing value
- Access to financial services
- Strategies to cope with financial uncertainty

Impacts of ZRBF Programming: Coping and Adapting

- What activities have helped you/ people cope with / manage shocks and stresses? Which shocks/stresses (e.g., drought, economic crisis)?
 - o What has helped the most? How/why?
- What are households/communities doing differently to prepare for the next shock?
- Do households/communities feel better prepared for the next shock? Why or why not?
- What activities will lead to long term change, even when the project ends? [Facilitator: refer to notes on activities/ participation discussion]
- How has participating in multiple activities impacted your household/community?
- Different impacts of shocks/participation among different groups: youth, women/female headed households
 - o What are specific challenges these groups face?
 - o Does participation in activities impact them more/less? Why?



- Do these groups need different activities/support from other groups? What, why?
 - Has ZRBF helped your community connect with other government departments, NGOs, other organizations, resources?
- Is there any kind of support that households/communities need and is not available?

Thank you!



Annex 9

9a. Descriptive Analysis Tables by Beneficiary Sex

Table 4a: Household Demographics, By Beneficiary Sex

| Household Demographics | Total Sample | Beneficiary sex | |
|---------------------------------------------|--------------|-----------------|--------|
| | | Male | Female |
| Average household size | 5.9 | 5.9 | 5.9 |
| Age categories (%) | | | |
| Below 15 (%) | 41.5 | 40.1 | 42.5 |
| 15-34 (%) | 30.1 | 31.0 | 29.5 |
| 35+ (%) | 28.4 | 28.9 | 28.0 |
| Age (mean) | 24.5 | 24.7 | 24.3 |
| Sex (%) | | | |
| Males | 49.1 | 52.0 | 46.9 |
| Females | 50.9 | 47.9 | 53.1 |
| Marital status, ages 10 and older %) | | | |
| Married (living together) | 41.2 | 47.9 | 36.0 |
| Married (living apart) | 3.7 | 2.9 | 4.3 |
| Divorced or separated | 3.8 | 2.9 | 4.6 |
| Widowed | 7.3 | 4.3 | 9.6 |
| Never married | 44 | 41.9 | 45.6 |
| Total households | 3353 | 2223 | 1130 |



Table 5a: Exposure to Shocks in the Past 12 Months, by Beneficiary Sex and Survey Round

| Shock Exposure in Past 12 Months | Total Sample | | | Beneficiary Sex | | | | | |
|---------------------------------------|--------------|------------|------|-----------------|------------|------|------------|------------|------|
| | Round 1 | Round 2 | Sig. | Male | | | Female | | |
| | | | | Round 1 | Round 2 | Sig. | Round 1 | Round 2 | Sig. |
| HHs exposed to type of shock (%) | | | | | | | | | |
| Sharp food price increase | 77.6 | 82.2 | *** | 77.0 | 82.6 | *** | 78.1 | 82 | *** |
| Drought | 70.6 | 81.3 | *** | 68.5 | 80.0 | *** | 72.2 | 82.3 | *** |
| Variable rains | 67.2 | 74.4 | *** | 67.9 | 73.9 | *** | 66.7 | 74.8 | *** |
| Crop diseases or pests | 44.4 | 53.1 | *** | 43.5 | 53.3 | *** | 45.1 | 53 | *** |
| Increase price of inputs | 28.6 | 49.6 | *** | 29.7 | 50.2 | *** | 27.7 | 49.2 | *** |
| Reduced soil productivity | 15.0 | 17.6 | *** | 16.1 | 18.5 | * | 14.1 | 17 | ** |
| Crop damage by wildlife | 14.3 | 14.6 | ns | 15.2 | 14.4 | ns | 13.6 | 14.8 | ns |
| Death or disease of livestock | 13.9 | 26.8 | *** | 13.9 | 27.0 | *** | 13.8 | 26.6 | *** |
| Illness of HH member | 11.3 | 11.3 | ns | 9.2 | 11.4 | * | 12.9 | 11.3 | † |
| Large medical expense | 9.7 | 10.5 | ns | 9.4 | 9.9 | ns | 9.8 | 11 | ns |
| Low price crop or livestock products | 7.8 | 13.4 | *** | 7.6 | 13.4 | *** | 7.9 | 13.3 | *** |
| Death of household member | 6.6 | 6.2 | ns | 5.8 | 6.7 | ns | 7.2 | 5.9 | † |
| Livestock theft | 6.1 | 8.1 | *** | 6.2 | 8.7 | ** | 6.1 | 7.6 | * |
| Deforestation | 6.1 | 7.2 | * | 6.5 | 7.3 | ns | 5.8 | 7.2 | † |
| Excessive rains | 4.9 | 5.3 | ns | 5.0 | 6.3 | † | 4.9 | 4.6 | ns |
| Veld fire | 1.8 | 2.2 | ns | 1.8 | 2.2 | ns | 1.8 | 2.3 | ns |
| Floods | 0.8 | 1.5 | ** | 0.8 | 1.6 | * | 0.7 | 1.4 | * |
| HHs exposed to category of shocks (%) | | | | | | | | | |
| Climate shocks | 93.8 | 97.2 | *** | 93.0 | 97.0 | *** | 94.5 | 97.4 | *** |
| Destructive shocks | 18.8 | 20.6 | ** | 19.0 | 21.0 | † | 18.6 | 20.2 | ns |
| Economic shocks | 82.3 | 87.5 | *** | 81.6 | 87.7 | *** | 82.9 | 87.3 | *** |
| Manmade shocks | 1.8 | 2.2 | ns | 1.8 | 2.2 | ns | 1.8 | 2.3 | ns |
| Number of shocks (mean) | 3.8 | 4.7 | *** | 3.8 | 4.7 | *** | 3.9 | 4.7 | *** |
| HHs with any shocks (%) | 97.1 | 98.7 | *** | 96.4 | 98.6 | *** | 97.6 | 98.8 | ** |
| HHs exposed to at least 5 shocks (%) | 34.0 | 50.6 | *** | 34.0 | 50.4 | *** | 33.9 | 50.7 | *** |
| n (weighted) | 4096 | 4184 | | 1787 | 1787 | | 2397 | 2397 | |
| n (unweighted) | 3353 | 3353 | | 1408 | 1408 | | 1945 | 1945 | |

ns = not significant, † p<0.1, * p<0.05, ** p<0.01, *** p<0.001



Table 6a: Top Coping Strategies by the Top 5 Shocks Exposed in the Past 12 Months, By Survey Round and Sex of Beneficiary (Male)

| Coping Strategies | Top 5 Shocks Exposed in the Past 12 Months | | | | | | | | | | | | | | | | | |
|-----------------------------------------------------------------------------------|--------------------------------------------|------|------|---------------------------|------|------|--------------|------|------|-------------------------------|------|------|---------------------|------|------|--------------------------|------|------|
| | All Five Shocks Combined | | | Sharp Food Price Increase | | | Drought | | | Variable/ Infrequent Rainfall | | | Crop Disease/ Pests | | | Increase Price of Inputs | | |
| | Survey Round | | | Survey Round | | | Survey Round | | | Survey Round | | | Survey Round | | | Survey Round | | |
| | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. |
| Top 10 Coping Strategies (%) | | | | | | | | | | | | | | | | | | |
| Sell livestock | 26.9 | 30.5 | * | 16.6 | 18.7 | ns | 21.4 | 25.2 | * | 21.8 | 19.9 | ns | 14.0 | 14.8 | ns | 12.6 | 14.6 | *** |
| Reduced food consumption | 39.2 | 46.6 | *** | 28.1 | 33.9 | ** | 31.4 | 36.1 | * | 12.7 | 16.0 | * | 14.1 | 28.5 | *** | 11.6 | 27.9 | *** |
| Take up new wage labor | 14.5 | 17.2 | * | 10.1 | 9.9 | ns | 8.0 | 12.1 | ** | 0.0 | 0.4 | + | 6.9 | 10.3 | + | 7.2 | 11.3 | + |
| Received money or food from family members within community | 5.0 | 6.7 | * | 2.7 | 4.0 | + | 2.6 | 4.0 | + | 18.7 | 22.3 | + | 2.8 | 3.1 | ns | 2.5 | 3.6 | ns |
| Receive food aid or assistance from the government (including food/cash-for-work) | 29.2 | 35.7 | *** | 17.1 | 21.8 | ** | 27.8 | 31.2 | + | 8.0 | 22.7 | *** | 12.4 | 17.7 | * | 9.5 | 20.1 | *** |
| Receive food aid or assistance from an NGO (including food/cash-for-work) | 12.5 | 33.4 | *** | 5.8 | 22.7 | *** | 10.3 | 26.5 | *** | 3.0 | 12.1 | *** | 4.3 | 16.4 | *** | 4.4 | 12.6 | *** |
| Use money from savings | 9.3 | 14.3 | *** | 7.0 | 10.6 | ** | 3.3 | 7.7 | *** | 4.6 | 4.7 | ns | 6.5 | 9.4 | + | 7.6 | 10.4 | ns |
| Receive money from a relative from outside of village (remittances) | 7.7 | 7.2 | ns | 4.3 | 4.1 | ns | 6.1 | 5.7 | ns | 0.2 | 0.0 | ns | 1.4 | 1.7 | ns | 2.3 | 2.7 | ns |
| Other | 6.9 | 6.3 | ns | 2.7 | 2.4 | ns | 3.5 | 1.0 | *** | 4.3 | 2.9 | ns | 2.0 | 0.6 | + | 4.1 | 4.1 | ns |
| No coping strategies | 0.9 | 0.3 | * | 28.8 | 15.9 | *** | 17.1 | 6.6 | *** | 21.1 | 7.0 | *** | 31.5 | 14.9 | *** | 37.1 | 18.4 | *** |
| <i>n (weighted)</i> | 1678 | 1678 | | 1144 | 1144 | | 1006 | 1006 | | 893 | 893 | | 476 | 476 | | 323 | 323 | |
| <i>n (unweighted)</i> | 1351 | 1351 | | 943 | 943 | | 774 | 774 | | 750 | 750 | | 439 | 439 | | 295 | 295 | |

ns = not significant, † p<0.1, * p<0.05, ** p<0.01, *** p<0.001



Table 6a: Top Coping Strategies by the Top 5 Shocks Exposed in the Past 12 Months, By Survey Round and Sex of Beneficiary (Female)

| Coping Strategies | Top 5 Shocks Exposed in the Past 12 Months | | | | | | | | | | | | | | | | | |
|-----------------------------------------------------------------------------------|--------------------------------------------|-------------|------|---------------------------|-------------|------|--------------|-------------|------|-------------------------------|-------------|------|---------------------|------------|------|--------------------------|------------|------|
| | All Five Shocks Combined | | | Sharp Food Price Increase | | | Drought | | | Variable/ Infrequent Rainfall | | | Crop Disease/ Pests | | | Increase Price of Inputs | | |
| | Survey Round | | | Survey Round | | | Survey Round | | | Survey Round | | | Survey Round | | | Survey Round | | |
| | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. |
| Top 10 Coping Strategies (%) | | | | | | | | | | | | | | | | | | |
| Sell livestock | 23.2 | 28.0 | *** | 13.7 | 17.5 | ** | 19.9 | 21.5 | ns | 15.7 | 20.3 | ** | 10.9 | 12.5 | ns | 11.3 | 15.2 | + |
| Reduced food consumption | 43.9 | 47.7 | ** | 33.1 | 37.6 | ** | 35.1 | 37.3 | ns | 10.3 | 16.3 | *** | 17.6 | 29.6 | *** | 12.0 | 30.8 | *** |
| Take up new wage labor | 12.6 | 20.1 | *** | 8.3 | 11.1 | ** | 7.9 | 15.2 | *** | 0.0 | 0.2 | ns | 5.9 | 11.1 | *** | 6.1 | 9.7 | + |
| Received money or food from family members within community | 5.1 | 6.3 | + | 2.5 | 3.2 | ns | 4.0 | 3.2 | ns | 25.1 | 28.6 | * | 2.5 | 2.4 | ns | 1.4 | 2.7 | ns |
| Receive food aid or assistance from the government (including food/cash-for-work) | 34.7 | 40.4 | *** | 16.5 | 26.3 | *** | 31.4 | 31.8 | ns | 8.7 | 23.7 | *** | 17.3 | 20.8 | + | 17.2 | 20.7 | ns |
| Receive food aid or assistance from an NGO (including food/cash-for-work) | 14.3 | 35.1 | *** | 6.8 | 22.8 | *** | 11.7 | 26.3 | *** | 4.2 | 11.6 | *** | 7.1 | 13.6 | *** | 4.5 | 11.0 | *** |
| Use money from savings | 8.1 | 15.9 | *** | 5.9 | 12.4 | *** | 3.8 | 10.2 | *** | 7.9 | 5.4 | ** | 5.4 | 12.2 | *** | 3.8 | 15.8 | *** |
| Receive money from a relative from outside of village (remittances) | 13.0 | 9.4 | *** | 9.2 | 5.8 | *** | 10.4 | 7.0 | *** | 0.5 | 0.1 | ns | 4.9 | 2.8 | * | 5.2 | 2.2 | * |
| Other | 6.2 | 7.1 | ns | 2.1 | 2.4 | ns | 2.2 | 2.2 | ns | 4.6 | 3.4 | ns | 1.4 | 1.0 | ns | 6.6 | 3.4 | * |
| No coping strategies | 1.0 | 0.1 | *** | 30.4 | 16.0 | *** | 14.8 | 5.3 | *** | 20.9 | 6.2 | *** | 30.4 | 19.6 | *** | 37.0 | 19.9 | *** |
| <i>n (weighted)</i> | 2283 | 2283 | | 1545 | 1545 | | 1451 | 1451 | | 1221 | 1221 | | 660 | 660 | | 420 | 420 | |
| <i>n (unweighted)</i> | 1865 | 1865 | | 1310 | 1310 | | 1123 | 1123 | | 1035 | 1035 | | 632 | 632 | | 397 | 397 | |

ns = not significant, † p<0.1, * p<0.05, ** p<0.01, *** p<0.001



Table 7a: Diet Diversity, by Beneficiary Sex and Survey Round

| Diet Diversity | Total Sample | | | Beneficiary Sex | | | | | |
|--------------------------------------------------------|--------------|---------|------|-----------------|---------|------|---------|---------|------|
| | | | Sig. | Male | | | Female | | |
| | Round 1 | Round 2 | | Round 1 | Round 2 | Sig. | Round 1 | Round 2 | Sig. |
| HHs with acceptable level of Diet Diversity (%) | 73.6 | 74.7 | ns | 72.3 | 75.0 | * | 74.5 | 74.5 | ns |
| HH Diet Diversity (%): | | | | | | | | | |
| Low (<4 score) | 26.4 | 25.3 | ns | 27.7 | 25.0 | * | 27.7 | 25.0 | * |
| Moderate (4-5 score) | 47.1 | 53.2 | *** | 45.2 | 52.9 | *** | 45.2 | 52.9 | *** |
| High (6+ score) | 26.5 | 21.5 | *** | 27.1 | 22.1 | *** | 27.1 | 22.1 | *** |
| HHs consumed food groups in 7 days (%) | | | | | | | | | |
| Cereals/tubers | 99.8 | 99.7 | ns | 99.7 | 99.8 | ns | 99.9 | 99.6 | † |
| Beans/legumes | 60.0 | 61.4 | ns | 56.9 | 61.0 | * | 62.4 | 61.7 | ns |
| Vegetables | 89.0 | 95.1 | *** | 88.3 | 95.6 | *** | 89.6 | 94.7 | *** |
| Fruits | 22.5 | 19.6 | *** | 21.8 | 21.3 | ns | 23.0 | 18.3 | *** |
| Meats/fish/eggs | 50.6 | 47.2 | *** | 51.8 | 47.6 | ** | 49.6 | 46.9 | * |
| Dairy product/milk | 40.8 | 31.3 | *** | 40.5 | 31.8 | *** | 41.0 | 31.0 | *** |
| Oil/butter/fat | 84.4 | 83.9 | ns | 83.8 | 84.2 | ns | 84.8 | 83.6 | ns |
| HDDS (mean) | 4.5 | 4.4 | *** | 4.4 | 4.4 | ns | 4.5 | 4.4 | *** |
| <i>n (weighted)</i> | 4096 | 4,184 | | 1787 | 1787 | | 2397 | 2397 | |
| <i>n (unweighted)</i> | 3353 | 3353 | | 1408 | 1408 | | 1945 | 1945 | |

ns = not significant, † p<0.1, * p<0.05, ** p<0.01, *** p<0.001

Table 8a: Food Consumption, by Beneficiary Sex and Survey Round

| Food Consumption Score | Total Sample | | | Beneficiary Sex | | | | | |
|----------------------------------------|--------------|---------|------|-----------------|---------|------|---------|---------|------|
| | | | Sig. | Male | | | Female | | |
| | Round 1 | Round 2 | | Round 1 | Round 2 | Sig. | Round 1 | Round 2 | Sig. |
| Food consumption categories (%) | | | | | | | | | |
| Poor | 13.7 | 12.3 | ns | 15.0 | 11.9 | ns | 12.7 | 12.6 | *** |
| Borderline | 32.6 | 38.3 | *** | 31.0 | 36.6 | ns | 33.7 | 39.5 | *** |
| Adequate | 53.8 | 49.4 | ** | 54.0 | 51.0 | ns | 54.0 | 48.0 | *** |
| Food consumption score (FCS) | 41.1 | 38.3 | *** | 41.0 | 38.8 | *** | 41.1 | 37.9 | *** |
| <i>n (weighted)</i> | 4096 | 4184 | | 1787 | 1787 | | 2397 | 2397 | |
| <i>n (unweighted)</i> | 3353 | 3353 | | 1408 | 1408 | | 1945 | 1945 | |

ns = not significant, † p<0.1, * p<0.05, ** p<0.01, *** p<0.001



Table 9a: Households Income by source, by Beneficiary Sex and Survey Round

| Cash Sources (2019 USD) | Total Sample | | | Beneficiary Sex | | | | | |
|------------------------------|--------------|---------|------|-----------------|---------|------|---------|---------|------|
| | | | Sig. | Male | | | Female | | |
| | Round 1 | Round 2 | | Round 1 | Round 2 | Sig. | Round 1 | Round 2 | Sig. |
| Casual labour | 27.18 | 26.06 | ns | 29.48 | 27.52 | ns | 25.47 | 24.97 | ns |
| Food crop production | 10.66 | 8.03 | *** | 11.95 | 9.12 | ** | 9.70 | 7.22 | ** |
| Livestock/livestock products | 11.18 | 12.58 | * | 11.41 | 12.05 | ns | 11.00 | 12.98 | * |
| Vegetable production/sales | 8.29 | 8.39 | ns | 7.82 | 8.53 | ns | 8.64 | 8.29 | ns |
| Remittances outside country | 6.25 | 5.90 | ns | 3.38 | 4.67 | * | 8.39 | 6.82 | * |
| Remittances within country | 4.90 | 6.12 | ** | 3.52 | 4.80 | * | 5.93 | 7.10 | † |
| Salary/wages | 4.94 | 3.82 | ** | 5.29 | 3.92 | * | 4.67 | 3.74 | † |
| Cash crop production | 4.85 | 3.95 | * | 6.33 | 4.46 | ** | 3.75 | 3.58 | ns |
| Mining/mineral sales | 3.44 | 4.62 | ** | 3.90 | 5.46 | * | 3.11 | 3.99 | † |
| Skilled trade/artisan | 3.32 | 3.55 | ns | 3.55 | 4.43 | ns | 3.15 | 2.89 | ns |
| Petty trade | 3.18 | 3.38 | ns | 1.48 | 2.19 | ns | 4.44 | 4.27 | ns |
| Pension | 2.49 | 1.82 | * | 3.29 | 2.51 | † | 1.89 | 1.30 | † |
| Own business | 1.79 | 1.45 | ns | 1.82 | 1.23 | ns | 1.76 | 1.62 | ns |
| Gathering natural products | 1.61 | 0.68 | *** | 1.09 | 0.49 | * | 2.00 | 0.83 | *** |
| Food assistance | 1.00 | 2.15 | *** | 1.12 | 1.71 | ns | 0.91 | 2.47 | *** |
| Beer brewing | 0.43 | 0.55 | ns | 0.62 | 0.58 | ns | 0.29 | 0.52 | ns |
| Cross border trade | 0.42 | 0.12 | ** | 0.35 | 0.04 | * | 0.48 | 0.17 | * |
| Rentals | 0.33 | 0.14 | † | 0.36 | 0.21 | ns | 0.32 | 0.09 | † |
| Fishing | 0.31 | 0.35 | ns | 0.16 | 0.49 | † | 0.42 | 0.24 | ns |
| Begging | 0.27 | 0.08 | * | 0.54 | 0.12 | * | 0.06 | 0.05 | ns |
| Gifts | 0.24 | 0.34 | ns | 0.15 | 0.07 | ns | 0.31 | 0.55 | ns |
| Resale scrap/waste | 0.04 | 0.01 | ns | 0.04 | - | ns | 0.05 | 0.02 | ns |
| Others (specify) | 2.32 | 2.02 | ns | 2.19 | 2.05 | ns | 2.42 | 2.01 | ns |
| <i>n (weighted)</i> | 4096 | 4184 | | 1787 | 1787 | | 2397 | 2397 | |
| <i>n (unweighted)</i> | 3353 | 3353 | | 1408 | 1408 | | 1945 | 1945 | |

ns = not significant, † p<0.1, * p<0.05, ** p<0.01, *** p<0.001



Table 10a: Most Important Reported Food Source in the Past 12 Months, by Beneficiary Sex and Survey Round

| Food Sources | Total Sample | | | Beneficiary Sex | | | | | | |
|-------------------------------------------------|--------------|---------|------|-----------------|---------|------|---------|---------|------|--|
| | | | | Male | | | Female | | | |
| | Round 1 | Round 2 | Sig. | Round 1 | Round 2 | Sig. | Round 1 | Round 2 | Sig. | |
| HHs with most important food sources (%) | | | | | | | | | | |
| Own production | 55.9 | 33.6 | *** | 57.1 | 37.6 | *** | 55.0 | 30.6 | *** | |
| Cash purchases from HH Income | 15.2 | 20.6 | *** | 16.0 | 19.5 | ** | 14.7 | 21.4 | *** | |
| Purchases from cash transfers | 1.3 | 1.0 | ns | 1.1 | 1.2 | ns | 1.4 | 0.9 | ns | |
| Food aid (humanitarian assistance) | 13.0 | 24.7 | *** | 11.7 | 22.4 | *** | 14.0 | 26.5 | *** | |
| Casual labour for food | 10.3 | 12.3 | ** | 10.9 | 12.4 | ns | 9.8 | 12.3 | ** | |
| Remittances | 3.5 | 3.5 | ns | 2.4 | 2.6 | ns | 4.4 | 4.2 | ns | |
| Number of HH food sources, main + others (mean) | 2.1 | 2.1 | ns | 2.1 | 2.1 | ns | 2.1 | 2.1 | ns | |
| <i>n (weighted)</i> | 4096 | 4184 | | 1787 | 1787 | | 2397 | 2397 | | |
| <i>n (unweighted)</i> | 3353 | 3353 | | 1408 | 1408 | | 1945 | 1945 | | |

ns = not significant, † p<0.1, * p<0.05, ** p<0.01, *** p<0.001

Table 11a: Food-Based Coping Strategy Index (CSI), by Beneficiary Sex and Survey Round

| Coping Strategies | Total Sample | | | Beneficiary Sex | | | | | |
|-------------------------------------------------------------|--------------|---------|------|-----------------|---------|------|---------|---------|------|
| | | | | Male | | | Female | | |
| | Round 1 | Round 2 | Sig. | Round 1 | Round 2 | Sig. | Round 1 | Round 2 | Sig. |
| HHs utilizing coping strategies (%) | | | | | | | | | |
| Rely on less expensive food | 67.8 | 77.6 | *** | 66.7 | 76.1 | *** | 68.6 | 78.7 | *** |
| Reduce number of meals | 67.3 | 78.7 | *** | 66.0 | 75.9 | *** | 68.3 | 80.7 | *** |
| Limit portion size | 65.5 | 77 | *** | 63.1 | 74.8 | *** | 67.3 | 78.6 | *** |
| Borrow food | 55.3 | 59.3 | *** | 53.2 | 57.2 | * | 56.8 | 60.9 | ** |
| Reduce adult consumption | 47.4 | 59.6 | *** | 45.7 | 57.9 | *** | 48.6 | 60.8 | *** |
| Rely on casual labour | 47.2 | 50.9 | *** | 49.3 | 50.7 | ns | 45.6 | 51.0 | *** |
| Harvest immature crops | 31.1 | 29.3 | † | 32.5 | 29.1 | * | 30.0 | 29.4 | ns |
| Purchase food on credit | 30.8 | 33.3 | * | 32.6 | 33.5 | ns | 29.4 | 33.2 | ** |
| Gather/hunt unusual wild food | 24.3 | 24.3 | ns | 27.3 | 25.5 | ns | 22.1 | 23.4 | ns |
| Skip days | 20.5 | 31 | *** | 21.1 | 27.0 | *** | 20.1 | 34.0 | *** |
| Send members elsewhere | 15.3 | 13.8 | * | 16.1 | 12.8 | ** | 14.6 | 14.6 | ns |
| Send household members to beg | 15.2 | 14.9 | ns | 16.3 | 14.1 | † | 14.4 | 15.5 | ns |
| Food-Based CSI (mean) | 18.5 | 19.8 | ** | 18.9 | 19 | ns | 18.3 | 20.4 | *** |
| HHs with acceptable food-based CSI score, CSI score <10 (%) | 51.8 | 37.1 | *** | 52.7 | 39.2 | *** | 51.2 | 35.5 | *** |
| n (weighted) | 4096 | 4184 | | 1787 | 1787 | | 2397 | 2397 | |
| n (unweighted) | 3353 | 3353 | | 1408 | 1408 | | 1945 | 1945 | |

ns = not significant, † p<0.1, * p<0.05, ** p<0.01, *** p<0.001



Table 12a: Livelihood-Asset Based Coping Strategy Index (LACS), by Beneficiary Sex and Survey Round

| Livelihood Coping Strategies | Total Sample | | | Beneficiary Sex | | | | | |
|-------------------------------------------------|--------------|---------|------|-----------------|---------|------|---------|---------|------|
| | | | | Male | | | Female | | |
| | Round 1 | Round 2 | Sig. | Round 1 | Round 2 | Sig. | Round 1 | Round 2 | Sig. |
| HHs utilizing livelihood coping strategies (%): | | | | | | | | | |
| Sold household assets/goods | 8.8 | 8.2 | ns | 10.3 | 7.9 | * | 7.7 | 8.4 | ns |
| Reduced non-food expenses | 29.5 | 33.9 | *** | 30.3 | 34.1 | * | 28.9 | 33.9 | *** |
| Sold productive assets or means of transport | 4.6 | 3.5 | ** | 5.5 | 3.7 | ** | 4.0 | 3.5 | ns |
| Spent savings | 23.8 | 30.5 | *** | 25.0 | 28.4 | * | 22.9 | 32.0 | *** |
| Borrowed money from a formal lender/bank | 19.7 | 20.5 | ns | 19.6 | 19.0 | ns | 19.8 | 21.6 | ns |
| Leased out land | 0.9 | 0.6 | † | 1.0 | 0.8 | ns | 0.9 | 0.4 | * |
| Withdrew children from school | 9.1 | 8.4 | ns | 10.0 | 7.8 | * | 8.4 | 8.9 | ns |
| Sold last female breeding livestock | 9.5 | 10.6 | † | 10.1 | 10.6 | ns | 9.0 | 10.6 | † |
| Begging | 14.1 | 12.2 | ** | 14.5 | 11.0 | ** | 13.8 | 13.1 | ns |
| Sold more animals (non-productive) than usual | 12.1 | 16.5 | *** | 13.3 | 16.0 | * | 11.1 | 16.8 | *** |
| Livelihood-Based CSI (mean) | 3.9 | 4.2 | *** | 4.1 | 4.1 | ns | 3.7 | 4.3 | *** |
| <i>n (weighted)</i> | 4096 | 4184 | | 1787 | 1787 | | 2397 | 2397 | |
| <i>n (unweighted)</i> | 3353 | 3353 | | 1408 | 1408 | | 1945 | 1945 | |

ns = not significant, † p<0.1, * p<0.05, ** p<0.01, *** p<0.001

Table 13a: Average Monthly Income and Expenditure (2019 USD), by Beneficiary Sex and Survey Round

| Monthly Income/Expenditures (2019 USD) | Total Sample | | | Beneficiary Sex | | | | | |
|-------------------------------------------|--------------|---------|------|-----------------|---------|------|---------|---------|------|
| | | | | Male | | | Female | | |
| | Round 1 | Round 2 | Sig. | Round 1 | Round 2 | Sig. | Round 1 | Round 2 | Sig. |
| Monthly household income ¹ | | | | | | | | | |
| Total | 76.01 | 82.75 | ns | 78.35 | 94.43 | † | 74.20 | 73.69 | ns |
| Cash | 67.69 | 69.34 | ns | 70.39 | 81.05 | ns | 65.59 | 60.27 | ns |
| In-kind | 8.32 | 13.40 | *** | 7.95 | 13.38 | *** | 8.60 | 13.42 | *** |
| <i>n (weighted)</i> | 3498 | 3498 | | 1527 | 1527 | | 1971 | 1971 | |
| <i>n (unweighted)</i> | 2885 | 2885 | | 1232 | 1232 | | 1653 | 1653 | |
| Monthly household expenditures | | | | | | | | | |
| Total | 46.60 | 44.47 | ns | 48.09 | 47.46 | ns | 45.50 | 42.46 | * |
| <i>n (weighted)</i> | 4071 | 4128 | | 1745 | 1745 | | 2361 | 2361 | |
| <i>n (unweighted)</i> | 3336 | 3315 | | 1378 | 1378 | | 1921 | 1921 | |

ns = not significant, † p<0.1, * p<0.05, ** p<0.01, *** p<0.001

¹ Households reporting no income of any kind were excluded from the analysis.



Table 14a: Income Sources Based on Income from Last Month, Program Intensity and Survey Round

| Cash Sources (2019 USD) | Total Sample | | | Beneficiary Sex | | | | | |
|----------------------------------|--------------|-------------|------|-----------------|-------------|------|-------------|-------------|------|
| | | | Sig. | Male | | | Female | | |
| | Round 1 | Round 2 | | Round 1 | Round 2 | Sig. | Round 1 | Round 2 | Sig. |
| Remittances | 9.52 | 7.96 | * | 8.32 | 6.61 | ns | 10.42 | 9.29 | ns |
| Crop sales | 5.64 | 3.72 | ** | 5.85 | 5.17 | ns | 5.48 | 2.78 | ** |
| Casual labour | 8.14 | 7.62 | ns | 9.20 | 8.31 | ns | 7.34 | 7.41 | ns |
| Livestock sales | 13.23 | 22.37 | ** | 14.96 | 31.84 | * | 11.95 | 16.22 | ** |
| Sale of livestock products | 0.42 | 0.71 | * | 0.64 | 0.69 | ns | 0.26 | 0.75 | ** |
| Skilled trade/artisan | 1.78 | 2.81 | ns | 2.38 | 3.43 | ns | 1.33 | 2.45 | ns |
| Own Business/beer brewing | 3.25 | 2.51 | ns | 3.42 | 2.83 | ns | 3.13 | 2.37 | ns |
| Petty trade | 3.10 | 2.04 | * | 2.61 | 2.33 | ns | 3.46 | 1.90 | ** |
| Pensions | 2.33 | 1.31 | * | 3.41 | 1.90 | † | 1.53 | 0.93 | * |
| Salary/wages/earnings | 6.47 | 5.84 | ns | 7.12 | 5.62 | ns | 5.99 | 6.24 | ns |
| Wild products, fishing | 0.53 | 0.59 | ns | 0.43 | 0.63 | ns | 0.61 | 0.58 | ns |
| Small scale mining/mineral sales | 4.68 | 2.59 | ns | 2.30 | 2.99 | ns | 6.46 | 2.40 | † |
| Social Transfers | 6.23 | 8.80 | *** | 6.77 | 9.22 | ** | 5.83 | 8.84 | *** |
| Receipt of money owed | 1.00 | 1.54 | † | 1.05 | 1.64 | ns | 0.97 | 1.54 | ns |
| Loan received | 0.98 | 0.96 | * | 0.99 | 1.53 | ns | 0.59 | 0.56 | ns |
| Rental incomes | 0.65 | 0.76 | ns | 0.90 | 0.71 | ns | 0.46 | 0.83 | ns |
| Other Specify | 0.70 | 0.79 | ns | 1.20 | 0.82 | ns | 0.33 | 0.80 | * |
| <i>n (weighted)</i> | 4096 | 4184 | | 1787 | 1787 | | 2397 | 2397 | |
| <i>n (unweighted)</i> | 3353 | 3353 | | 1408 | 1408 | | 1945 | 1945 | |

ns = not significant, † p<0.1, * p<0.05, ** p<0.01, *** p<0.001



Table 15a: Climate-Smart Agricultural Practices, by Beneficiary Sex and Survey Round

| Agricultural Practices | Total Sample | | Sig. | Beneficiary Sex | | | | | |
|------------------------------------------------------------------|--------------|---------|------|-----------------|---------|------|---------|---------|------|
| | | | | Male | | | Female | | |
| | Round 1 | Round 2 | | Round 1 | Round 2 | Sig. | Round 1 | Round 2 | Sig. |
| HHs with <u>at least</u> 3 trainings/orientation (%) | | | | | | | | | |
| Crop practices | 57.9 | 73.8 | *** | 56.3 | 75.0 | *** | 59.1 | 72.8 | *** |
| Livestock practices | 51.3 | 67.6 | *** | 53.1 | 68.9 | *** | 50.0 | 66.7 | *** |
| Value chain practices | 27.1 | 45.5 | *** | 27.4 | 46.7 | *** | 26.9 | 44.7 | *** |
| Water and soil conservation | 20.8 | 34.1 | *** | 22.1 | 35.7 | *** | 19.8 | 32.9 | *** |
| HHs using <u>at least</u> 3 practices (%) | | | | | | | | | |
| Crop practices | 66.0 | 75.0 | *** | 65.5 | 77.3 | *** | 66.4 | 73.3 | *** |
| Livestock practices | 52.8 | 63.8 | *** | 56.0 | 67.6 | *** | 50.5 | 61.0 | *** |
| Value chain practices | 26.6 | 38.9 | *** | 28.1 | 39.2 | *** | 25.5 | 38.7 | *** |
| Water and soil conservation | 12.7 | 18.6 | *** | 13.2 | 20.4 | *** | 12.4 | 17.2 | *** |
| HHs practicing <u>at least</u> 3 CSA production technologies (%) | | | | | | | | | |
| CSA practices/ technologies (mean) | 10.7 | 13.7 | *** | 11.1 | 14.4 | *** | 10.3 | 13.3 | *** |
| HHs practicing <u>at least</u> 1 VC practice (%) | | | | | | | | | |
| VC practices (mean) | 1.7 | 2.3 | *** | 1.8 | 2.4 | *** | 1.6 | 2.3 | *** |
| <i>n (weighted)</i> | 4096 | 4184 | | 1787 | 1787 | | 2397 | 2397 | |
| <i>n (unweighted)</i> | 3353 | 3353 | | 1408 | 1408 | | 1945 | 1945 | |

ns = not significant, † p<0.1, * p<0.05, ** p<0.01, *** p<0.001

Table 18a: Absorptive Capacity Index and Components, by Beneficiary Sex and Survey Round

| Index (0-100) | Total Sample | | Sig. | Beneficiary Sex | | | | | |
|--------------------------------------|--------------|-------------|------------|-----------------|-------------|------------|-------------|-------------|------------|
| | | | | Male | | | Female | | |
| | Round 1 | Round 2 | | Round 1 | Round 2 | Sig. | Round 1 | Round 2 | Sig. |
| Absorptive capacity index | 30.7 | 32.9 | *** | 31.3 | 33.7 | *** | 30.2 | 32.3 | *** |
| Access to Informal Safety Nets (ISN) | 14.8 | 19.4 | *** | 15.5 | 20.0 | *** | 14.3 | 19.0 | *** |
| Bonding social capital | 47.7 | 50.1 | ** | 45.7 | 50.5 | *** | 49.1 | 49.8 | ns |
| Access to savings | 13.3 | 17.4 | *** | 13.1 | 16.6 | ** | 13.4 | 18.0 | *** |
| Access to remittances | 11.2 | 12.0 | ns | 6.9 | 9.5 | ** | 14.3 | 13.9 | ns |
| Productive assets | 33.0 | 33.2 | ns | 34.1 | 34.4 | ns | 32.2 | 32.4 | ns |
| Livestock assets | 58.4 | 58.5 | ns | 59.3 | 59.7 | ns | 57.7 | 57.5 | ns |
| Access to humanitarian assistance | 86.7 | 91.1 | *** | 85.5 | 91.1 | *** | 87.5 | 91.1 | *** |
| Shock preparedness | 18.9 | 21.7 | *** | 19.5 | 22.2 | ** | 18.4 | 21.3 | *** |
| <i>n (weighted)</i> | 4096 | 4184 | | 1787 | 1787 | | 2397 | 2397 | |
| <i>n (unweighted)</i> | 3353 | 3353 | | 1408 | 1408 | | 1945 | 1945 | |

ns = not significant, † p<0.1, * p<0.05, ** p<0.01, *** p<0.001



Table 19a: Adaptive Capacity Index and Components, by Beneficiary Sex and Survey Round

| Index (0-100) | Total Sample | | | Beneficiary Sex | | | | | |
|--------------------------------|--------------|-------------|------------|-----------------|-------------|------------|-------------|-------------|------------|
| | | | | Male | | | Female | | |
| | Round 1 | Round 2 | Sig. | Round 1 | Round 2 | Sig. | Round 1 | Round 2 | Sig. |
| Adaptive Capacity Index | 33.7 | 36.1 | *** | 34.3 | 37.1 | *** | 33.2 | 35.4 | *** |
| Productive assets | 33.0 | 33.2 | ns | 34.1 | 34.4 | ns | 32.2 | 32.4 | ns |
| Livestock assets | 58.4 | 58.5 | ns | 59.3 | 59.7 | ns | 57.7 | 57.5 | ns |
| Bridging social capital | 34.3 | 37.5 | *** | 32.0 | 38.6 | *** | 36.0 | 36.8 | ns |
| Linking social capital | 27.1 | 37.1 | *** | 27.0 | 37.8 | *** | 27.2 | 36.7 | *** |
| Human capital | 92.2 | 94.6 | *** | 93.5 | 95.5 | ** | 91.2 | 93.8 | *** |
| Livelihood diversification | 25.7 | 25.1 | * | 26.0 | 25.2 | * | 25.5 | 25.0 | ns |
| Access to financial services | 34.0 | 36.6 | † | 28.3 | 29.7 | ns | 33.5 | 35.5 | ns |
| Exposure to information | 42.8 | 50.0 | *** | 42.8 | 50.8 | *** | 42.7 | 49.5 | *** |
| <i>n (weighted)</i> | 4096 | 4184 | | 1787 | 1787 | | 2397 | 2397 | |
| <i>n (unweighted)</i> | 3353 | 3353 | | 1408 | 1408 | | 1945 | 1945 | |

ns = not significant, † p<0.1, * p<0.05, ** p<0.01, *** p<0.001

Table 20a: Transformative Capacity Index and Components, by Beneficiary Sex and Survey Round

| Index (0-100) | Total Sample | | | Beneficiary Sex | | | | | |
|--------------------------------------|--------------|-------------|------------|-----------------|-------------|------------|-------------|-------------|------------|
| | | | | Male | | | Female | | |
| | Round 1 | Round 2 | Sig. | Round 1 | Round 2 | Sig. | Round 1 | Round 2 | Sig. |
| Transformative Capacity Index | 50.3 | 54.9 | *** | 49.1 | 54.7 | *** | 51.3 | 55.0 | *** |
| Bridging social capital | 34.3 | 37.5 | *** | 32.0 | 38.6 | *** | 36.0 | 36.8 | ns |
| Linking Social Capital | 27.1 | 37.1 | *** | 27.0 | 37.8 | *** | 27.2 | 36.7 | *** |
| Access to agricultural services | 68.8 | 76.7 | *** | 67.2 | 78.1 | *** | 70.1 | 75.6 | *** |
| Access to formal safety nets | 69.7 | 79.5 | *** | 66.2 | 78.9 | *** | 72.2 | 79.9 | *** |
| Access to markets | 30.5 | 32.1 | * | 29.3 | 32.3 | * | 31.4 | 31.9 | ns |
| Access to basic services | 61.2 | 66.0 | *** | 61.0 | 65.6 | *** | 61.4 | 66.3 | *** |
| Access to infrastructure | 31.0 | 28.8 | *** | 31.0 | 28.8 | *** | 31.1 | 28.8 | *** |
| Gender norm | 42.4 | 52.0 | *** | 34.4 | 40.0 | *** | 48.3 | 60.9 | *** |
| Collective action | 67.9 | 63.9 | *** | 69.1 | 65.0 | ** | 67.1 | 63.0 | ** |
| <i>n (weighted)</i> | 4096 | 4184 | | 1787 | 1787 | | 2397 | 2397 | |
| <i>n (unweighted)</i> | 3353 | 3353 | | 1408 | 1408 | | 1945 | 1945 | |

ns = not significant, † p<0.1, * p<0.05, ** p<0.01, *** p<0.001



9b. Descriptive Analysis Tables by Consortium

Table 4b: Household Demographics, By Consortium

| Household Demographics | Total Sample | Consortium | | | | | | |
|-------------------------------------|--------------|------------|-------|--------|--------|----------|----------|------|
| | | BRACT | ECRAS | ECRIMS | MELANA | PROGRESS | SIZIMELE | ZVA |
| Respondents by HH member (%) | 52.4 | 62.0 | 58.1 | 44.1 | 50.8 | 52.1 | 43.9 | 55.7 |
| Household head | 37.2 | 27.9 | 37.9 | 44.9 | 37.8 | 37.8 | 41.9 | 31.8 |
| Spouse | 6.1 | 5.0 | 2.1 | 6.7 | 9.4 | 5.1 | 8.3 | 6.0 |
| Son/daughter | 2.4 | 2.7 | 1.7 | 3.0 | 1.1 | 3.4 | 2.4 | 2.7 |
| Other household member | 1.6 | 2.3 | 0.2 | 1.2 | 0.9 | 1.7 | 3.4 | 1.6 |
| Other relative | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.2 |
| Not related | 35.1 | 48.4 | 39.6 | 22.9 | 33.7 | 34.0 | 24.3 | 43.2 |
| Respondents by age (mean) | 64.9 | 51.6 | 60.4 | 77.1 | 66.3 | 66.0 | 75.7 | 56.8 |
| Total households | 3353 | 516 | 472 | 494 | 445 | 474 | 503 | 449 |

ns = not significant, † p<0.1, * p<0.05, ** p<0.01, *** p<0.001



Table 5b: Exposure to Shocks in the Past 12 Months, by Consortium and Survey Round

| Shock Exposure in Past 12 Months | Total Sample | | | Consortium | | | | | | | | | | | | | | | | | | | | |
|---------------------------------------|--------------|------|------|--------------|-------|------|--------------|------|------|--------------|------|------|--------------|------|------|--------------|------|------|--------------|------|------|--------------|------|------|
| | | | | BRACT | | | ECRAS | | | ECRIMS | | | MELANA | | | PROGRESS | | | SIZIMELE | | | ZVA | | |
| | Survey round | | | Survey round | | | Survey round | | | Survey round | | | Survey round | | | Survey round | | | Survey round | | | Survey round | | |
| | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. |
| HHs exposed to type of shock (%) | | | | | | | | | | | | | | | | | | | | | | | | |
| Sharp food price increase | 77.6 | 82.2 | *** | 68.7 | 99.9 | *** | 82.4 | 85.8 | ns | 93.6 | 97.8 | *** | 91.4 | 68.2 | *** | 88.8 | 76.4 | *** | 66.5 | 81.6 | *** | 64.9 | 77.5 | *** |
| Drought | 70.6 | 81.3 | *** | 95.8 | 79.5 | *** | 25.2 | 70.8 | *** | 47.8 | 79.1 | *** | 73.9 | 87.6 | *** | 84.3 | 82.0 | ns | 80.4 | 95.6 | *** | 66.3 | 66.0 | ns |
| Variable rains | 67.2 | 74.4 | *** | 58.4 | 89.6 | *** | 85.1 | 75.2 | ** | 81.1 | 89.4 | *** | 79.0 | 58.4 | *** | 71.2 | 78.4 | ** | 61.1 | 71.3 | *** | 50.3 | 71.1 | *** |
| Crop diseases or pests | 44.4 | 53.1 | *** | 65.7 | 80.4 | *** | 66.6 | 64.2 | ns | 81.1 | 74.8 | * | 26.7 | 31.2 | † | 59.3 | 32.6 | *** | 24.9 | 36.9 | *** | 28.4 | 69.7 | *** |
| Increase price of inputs | 28.6 | 49.6 | *** | 50.4 | 85.6 | *** | 36.0 | 50.7 | *** | 46.5 | 71.7 | *** | 24.5 | 33.3 | *** | 37.9 | 54.5 | *** | 12.8 | 31.5 | *** | 17.1 | 46.4 | *** |
| Reduced soil productivity | 15.0 | 17.6 | *** | 39.8 | 39.4 | ns | 6.9 | 14.6 | *** | 24.0 | 31.5 | * | 12.9 | 8.8 | * | 20.3 | 15.4 | * | 2.9 | 10.2 | *** | 10.4 | 15.2 | * |
| Crop damage by wildlife | 14.3 | 14.6 | ns | 20.4 | 22.2 | ns | 7.3 | 13.4 | ** | 20.7 | 18.3 | ns | 10.7 | 6.4 | ** | 16.9 | 7.6 | *** | 7.6 | 12.8 | *** | 18.8 | 22.2 | * |
| Death or disease of livestock | 13.9 | 26.8 | *** | 17.3 | 31.7 | *** | 20.0 | 27.6 | * | 34.3 | 36.8 | ns | 8.2 | 23.8 | *** | 11.4 | 23.6 | *** | 8.0 | 25.1 | *** | 10.0 | 24.1 | *** |
| Illness of HH member | 11.3 | 11.3 | ns | 8.4 | 17.7 | *** | 8.2 | 12.7 | * | 27.5 | 21.6 | * | 10.9 | 6.9 | * | 10.8 | 10.4 | ns | 9.5 | 9.4 | ns | 7.5 | 7.3 | ns |
| Large medical expense | 9.7 | 10.5 | ns | 11.3 | 15.0 | † | 8.2 | 10.2 | ns | 23.9 | 19.1 | * | 7.1 | 5.0 | † | 14.4 | 9.4 | ** | 4.9 | 9.6 | *** | 5.5 | 9.5 | *** |
| Low price crop or livestock products | 7.8 | 13.4 | *** | 12.9 | 18.5 | * | 14.0 | 16.7 | ns | 15.9 | 8.7 | *** | 1.9 | 10.2 | *** | 9.3 | 7.8 | ns | 2.9 | 16.1 | *** | 7.0 | 14.8 | *** |
| Death of household member | 6.6 | 6.2 | ns | 8.9 | 5.8 | † | 5.3 | 4.3 | ns | 9.5 | 8.6 | ns | 4.2 | 6.5 | † | 5.3 | 4.3 | ns | 7.7 | 7.8 | ns | 5.7 | 5.2 | ns |
| Livestock theft | 6.1 | 8.1 | *** | 4.3 | 8.9 | ** | 9.5 | 10.1 | ns | 16.9 | 8.4 | *** | 4.2 | 4.2 | ns | 8.3 | 10.6 | ns | 2.8 | 5.5 | ** | 3.4 | 11.7 | *** |
| Deforestation | 6.1 | 7.2 | * | 8.9 | 10.2 | ns | 1.2 | 3.3 | † | 14.3 | 10.9 | ns | 4.4 | 1.7 | ** | 12.0 | 10.4 | ns | 2.6 | 6.2 | *** | 3.4 | 9.1 | *** |
| Excessive rains | 4.9 | 5.3 | ns | 2.9 | 4.3 | ns | 5.5 | 4.7 | ns | 7.4 | 2.1 | *** | 0.6 | 3.6 | *** | 19.1 | 6.7 | *** | 1.2 | 5.2 | *** | 3.4 | 9.0 | *** |
| Veld fire | 1.8 | 2.2 | ns | 1.2 | 4.1 | ** | 0.5 | 0.7 | ns | 4.3 | 1.0 | ** | 2.0 | 0.5 | * | 0.1 | 0.9 | † | 2.4 | 2.9 | ns | 1.5 | 4.1 | * |
| Floods | 0.8 | 1.5 | ** | 0.3 | 0.5 | ns | 3.4 | 1.2 | † | 1.2 | 0.1 | * | 0.0 | 0.6 | * | 0.3 | 1.3 | † | 0.5 | 0.8 | ns | 1.0 | 4.7 | *** |
| HHs exposed to category of shocks (%) | | | | | | | | | | | | | | | | | | | | | | | | |
| Climate shocks | 93.8 | 97.2 | *** | 98.5 | 99.4 | ns | 96.3 | 98.4 | † | 98.0 | 98.8 | ns | 93.9 | 97.7 | *** | 99.0 | 97.8 | ns | 91.4 | 97.9 | *** | 87.0 | 93.0 | *** |
| Destructive shocks | 18.8 | 20.6 | ** | 22.3 | 28.4 | * | 15.5 | 20.7 | † | 32.1 | 25.3 | * | 13.9 | 9.2 | ** | 23.9 | 17.0 | ** | 10.0 | 17.0 | *** | 21.0 | 29.3 | *** |
| Economic shocks | 82.3 | 87.5 | *** | 72.8 | 100.0 | *** | 88.9 | 90.0 | ns | 96.1 | 99.0 | ** | 92.2 | 76.1 | *** | 93.6 | 84.3 | *** | 75.1 | 86.9 | *** | 69.3 | 84.5 | *** |
| Manmade shocks | 1.8 | 2.2 | ns | 1.2 | 4.1 | ** | 0.5 | 0.7 | ns | 4.3 | 1.0 | ** | 2.0 | 0.5 | * | 0.1 | 0.9 | † | 2.4 | 2.9 | ns | 1.5 | 4.1 | * |
| Number of shocks (mean) | 3.8 | 4.7 | *** | 4.7 | 6.1 | *** | 3.8 | 4.7 | *** | 5.5 | 5.8 | ** | 3.6 | 3.6 | ns | 4.7 | 4.3 | ** | 3 | 4.3 | *** | 3 | 4.7 | *** |
| HHs with any shocks (%) | 97.1 | 98.7 | *** | 99.3 | 100.0 | † | 98.9 | 99.5 | ns | 99.4 | 99.7 | ns | 100.0 | 99.0 | ** | 99.6 | 98.6 | † | 95.5 | 99.6 | *** | 91.4 | 95.7 | *** |
| HHs exposed to at least 5 shocks (%) | 34.0 | 50.6 | *** | 50.4 | 76.8 | *** | 34.2 | 54.0 | *** | 61.1 | 79.0 | *** | 26.7 | 32.7 | * | 48.7 | 45.5 | ns | 18.3 | 38.8 | *** | 22.6 | 48.9 | *** |
| n (weighted) | 4096 | | 4184 | 475 | 475 | | 345 | 345 | | 476 | 476 | | 697 | 697 | | 497 | 497 | | 906 | 906 | | 789 | 789 | |
| n (unweighted) | 3353 | | 3353 | 516 | 516 | | 472 | 472 | | 494 | 494 | | 445 | 445 | | 474 | 474 | | 503 | 503 | | 449 | 449 | |

ns = not significant, † p<0.1, * p<0.05, ** p<0.01, *** p<0.001



Table 6b: Top Coping Strategies by the Top 5 Shocks Exposed in the Past 12 Months, By Survey Round and Consortium (BRAC)T

| Coping Strategies (BRAC)T | All Five Shocks Combined | | | Top 5 Shocks Exposed in the Past 12 Months | | | | | | | | | | | | | | |
|-----------------------------------------------------------------------------------|--------------------------------|------|------|--------------------------------------------|------|------|--------------|------|------|-------------------------------------|------|------|------------------------|------|------|--------------------------------|------|------|
| | | | | Sharp Food Price Increase | | | Drought | | | Variable/ Infrequent Rainfall | | | Crop Disease/ Pests | | | Increase Price of Inputs | | |
| | Survey Round | | | Survey Round | | | Survey Round | | | Survey Round | | | Survey Round | | | Survey Round | | |
| | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. |
| Top 10 Coping Strategies (%) | | | | | | | | | | | | | | | | | | |
| Sell livestock | 32.1 | 32.4 | ns | 13.3 | 22.3 | ** | 28.0 | 26.0 | ns | 27.3 | 21.8 | ns | 21.3 | 19.0 | ns | 19.5 | 20.6 | ns |
| Reduced food consumption | 48.4 | 72.0 | *** | 26.6 | 53.7 | *** | 36.6 | 51.2 | *** | 42.1 | 55.3 | ** | 29.1 | 52.2 | *** | 18.6 | 39.7 | *** |
| Take up new wage labor | 18.0 | 38.7 | *** | 17.2 | 24.3 | * | 10.1 | 28.1 | *** | 15.9 | 28.6 | *** | 12.5 | 25.4 | *** | 13.7 | 19.5 | ns |
| Received money or food from family members within community | 4.1 | 11.4 | *** | 2.2 | 5.9 | * | 1.0 | 7.8 | *** | 3.0 | 5.9 | ns | 0.6 | 3.7 | * | 1.6 | 7.0 | ** |
| Receive food aid or assistance from the government (including food/cash-for-work) | 20.2 | 35.1 | *** | 11.4 | 22.9 | *** | 15.5 | 25.8 | *** | 12.2 | 24.5 | *** | 9.5 | 17.4 | ** | 10.1 | 18.0 | * |
| Receive food aid or assistance from an NGO (including food/cash-for-work) | 13.8 | 21.6 | *** | 6.9 | 12.9 | ** | 10.0 | 16.9 | ** | 8.1 | 17.4 | ** | 4.1 | 14.1 | *** | 4.4 | 12.4 | ** |
| Use money from savings | 10.8 | 24.6 | *** | 6.6 | 15.9 | *** | 2.7 | 18.4 | *** | 2.1 | 18.7 | *** | 3.4 | 15.3 | *** | 7.3 | 16.1 | ** |
| Receive money from a relative from outside of village (remittances) | 7.4 | 13.0 | ** | 3.9 | 6.4 | + | 3.9 | 8.2 | ** | 5.2 | 7.6 | ns | 4.4 | 6.2 | ns | 3.0 | 3.7 | ns |
| Other | 5.9 | 7.2 | ns | 1.6 | 1.8 | ns | 3.6 | 1.8 | ns | 3.3 | 4.0 | ns | 1.1 | 1.3 | ns | 4.9 | 3.9 | ns |
| No coping strategies | 0.4 | 0.2 | ns | 32.7 | 9.2 | *** | 15.2 | 3.5 | *** | 8.0 | 3.2 | * | 26.6 | 11.4 | *** | 30.0 | 17.3 | ** |
| <i>n (weighted)</i> | 471 | 471 | | 325 | 325 | | 362 | 362 | | 250 | 250 | | 254 | 254 | | 204 | 204 | |
| <i>n (unweighted)</i> | 512 | 512 | | 355 | 355 | | 399 | 399 | | 266 | 266 | | 270 | 270 | | 222 | 222 | |

ns = not significant, † p<0.1, * p<0.05, ** p<0.01, *** p<0.001



Table 6b: Top Coping Strategies by the Top 5 Shocks Exposed in the Past 12 Months, By Survey Round and Consortium (ECRAS)

| Coping Strategies (ECRAS) | All Five Shocks Combined | | | Top 5 Shocks Exposed in the Past 12 Months | | | | | | | | | | | | | | |
|----------------------------------------------------------------------------------------|-----------------------------|------|------|--------------------------------------------|------|------|--------------|------|------|------------------------------------|------|------|------------------------|------|------|-----------------------------|------|------|
| | | | | Sharp Food Price Increase | | | Drought | | | Variable/ Infre- quent Rainfall | | | Crop Disease/ Pests | | | Increase Price of Inputs | | |
| | Survey Round | | | Survey Round | | | Survey Round | | | Survey Round | | | Survey Round | | | Survey Round | | |
| | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. |
| Top 10 Coping Strategies (%) | | | | | | | | | | | | | | | | | | |
| Sell livestock | 39.9 | 51.3 | *** | 27.4 | 31.3 | ns | 27.8 | 47.2 | * | 26.0 | 33.8 | * | 13.2 | 22.4 | * | 15.7 | 27.6 | + |
| Reduced food consumption | 29.1 | 41.2 | *** | 22.9 | 28.5 | ns | 18.5 | 22.0 | ns | 14.1 | 28.4 | *** | 6.6 | 19.9 | *** | 5.5 | 17.7 | * |
| Take up new wage labor | 20.0 | 18.6 | ns | 14.7 | 11.1 | ns | 7.0 | 8.2 | ns | 17.0 | 9.8 | * | 4.5 | 6.5 | ns | 0.0 | 3.2 | ns |
| Received money or food from family members within community | 1.4 | 8.9 | *** | 0.5 | 4.7 | ** | 0.0 | 0.8 | ns | 0.0 | 4.3 | ** | 0.4 | 2.0 | ns | 0.0 | 1.0 | ns |
| Receive food aid or assistance from the govern- ment (including food/cash-for-work) | 27.8 | 39.4 | *** | 7.5 | 14.8 | ** | 20.8 | 24.2 | ns | 20.2 | 20.2 | ns | 15.1 | 16.1 | ns | 7.8 | 18.9 | * |
| Receive food aid or assistance from an NGO (including food/cash-for-work) | 15.8 | 45.5 | *** | 7.9 | 23.4 | *** | 9.2 | 28.5 | ** | 10.7 | 31.0 | *** | 6.9 | 15.4 | * | 4.1 | 3.0 | ns |
| Use money from savings | 28.1 | 24.2 | ns | 16.4 | 14.9 | ns | 15.6 | 6.3 | + | 8.3 | 11.1 | ns | 14.3 | 10.3 | ns | 14.3 | 5.6 | + |
| Receive money from a relative from outside of village (remittances) | 5.1 | 8.4 | + | 5.0 | 6.2 | ns | 0.0 | 4.1 | ns | 2.0 | 1.1 | ns | 1.2 | 0.4 | ns | 0.0 | 1.9 | ns |
| Other | 21.7 | 15.0 | * | 11.5 | 3.7 | ** | 0.8 | 4.3 | ns | 12.5 | 6.0 | * | 4.8 | 2.1 | ns | 12.3 | 11.3 | ns |
| No coping strategies | 0.3 | 0.3 | ns | 19.9 | 7.3 | *** | 9.2 | 2.3 | + | 12.3 | 4.5 | ** | 23.9 | 11.3 | ** | 26.3 | 8.9 | * |
| <i>n (weighted)</i> | 335 | 335 | | 245 | 245 | | 64 | 64 | | 220 | 220 | | 149 | 149 | | 71 | 71 | |
| <i>n (unweighted)</i> | 457 | 457 | | 332 | 332 | | 86 | 86 | | 303 | 303 | | 207 | 207 | | 95 | 95 | |

ns = not significant, + p<0.1, * p<0.05, ** p<0.01, *** p<0.001



Table 6b: Top Coping Strategies by the Top 5 Shocks Exposed in the Past 12 Months, By Survey Round and Consortium (ECRIMS)

| Coping Strategies (ECRIMS) | All Five Shocks Combined | | | Top 5 Shocks Exposed in the Past 12 Months | | | | | | | | | | | | | | |
|-----------------------------------------------------------------------------------|-----------------------------|------|------|--------------------------------------------|------|------|--------------|------|------|------------------------------------|------|------|------------------------|------|------|-----------------------------|------|------|
| | | | | Sharp Food Price Increase | | | Drought | | | Variable/ Infre- quent Rainfall | | | Crop Disease/ Pests | | | Increase Price of Inputs | | |
| | Survey Round | | | Survey Round | | | Survey Round | | | Survey Round | | | Survey Round | | | Survey Round | | |
| | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. |
| Top 10 Coping Strategies (%) | | | | | | | | | | | | | | | | | | |
| Sell livestock | 14.1 | 13.9 | ns | 8.8 | 7.4 | ns | 11.4 | 8.2 | ns | 11.0 | 6.2 | * | 9.1 | 6.0 | ns | 6.3 | 3.5 | ns |
| Reduced food consumption | 17.3 | 39.2 | *** | 10.5 | 29.1 | *** | 18.4 | 30.0 | ** | 11.3 | 30.8 | *** | 10.2 | 16.3 | * | 9.9 | 11.7 | ns |
| Take up new wage labor | 12.5 | 26.0 | *** | 6.4 | 12.4 | ** | 8.1 | 19.4 | ** | 12.7 | 23.0 | *** | 7.5 | 5.7 | ns | 7.2 | 10.6 | ns |
| Received money or food from family members within community | 7.0 | 3.3 | ** | 3.7 | 1.8 | + | 4.6 | 0.7 | * | 2.2 | 0.3 | * | 5.2 | 1.9 | * | 6.3 | 1.6 | * |
| Receive food aid or assistance from the government (including food/cash-for-work) | 29.2 | 58.6 | *** | 17.3 | 35.7 | *** | 20.6 | 45.1 | *** | 23.5 | 42.9 | *** | 13.8 | 25.0 | *** | 17.0 | 31.9 | ** |
| Receive food aid or assistance from an NGO (including food/cash-for-work) | 11.6 | 42.0 | *** | 7.3 | 25.3 | *** | 7.4 | 35.5 | *** | 7.6 | 27.2 | *** | 4.6 | 13.7 | *** | 7.0 | 16.6 | ** |
| Use money from savings | 13.8 | 13.0 | ns | 11.6 | 8.0 | + | 8.2 | 7.2 | ns | 6.8 | 4.7 | ns | 10.4 | 6.9 | ns | 7.9 | 7.3 | ns |
| Receive money from a relative from outside of village (remittances) | 11.9 | 9.4 | ns | 9.9 | 6.8 | + | 7.8 | 8.7 | ns | 4.7 | 5.8 | ns | 4.1 | 2.5 | ns | 7.2 | 4.0 | ns |
| Other | 5.7 | 9.0 | + | 1.8 | 3.7 | + | 0.8 | 2.8 | ns | 3.6 | 4.9 | ns | 2.3 | 0.6 | + | 1.1 | 1.6 | ns |
| No coping strategies | 4.3 | 0.0 | *** | 43.6 | 22.0 | *** | 26.4 | 4.0 | *** | 30.0 | 2.4 | *** | 36.0 | 24.8 | ** | 38.6 | 20.3 | *** |
| <i>n (weighted)</i> | 472 | 472 | | 438 | 438 | | 184 | 184 | | 347 | 347 | | 295 | 295 | | 164 | 164 | |
| <i>n (unweighted)</i> | 491 | 491 | | 461 | 461 | | 187 | 187 | | 366 | 366 | | 309 | 309 | | 172 | 172 | |

ns = not significant, † p<0.1, * p<0.05, ** p<0.01, *** p<0.001



Table 6b: Top Coping Strategies by the Top 5 Shocks Exposed in the Past 12 Months, By Survey Round and Consortium (MELANA)

| Coping Strategies (MELANA) | All Five Shocks Combined | | | Top 5 Shocks Exposed in the Past 12 Months | | | | | | | | | | | | | | |
|-----------------------------------------------------------------------------------|-----------------------------|------|------|--------------------------------------------|------|------|--------------|------|------|------------------------------------|------|------|------------------------|------|------|-----------------------------|------|------|
| | | | | Sharp Food Price Increase | | | Drought | | | Variable/ Infre- quent Rainfall | | | Crop Disease/ Pests | | | Increase Price of Inputs | | |
| | Survey Round | | | Survey Round | | | Survey Round | | | Survey Round | | | Survey Round | | | Survey Round | | |
| | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. |
| Top 10 Coping Strategies (%) | | | | | | | | | | | | | | | | | | |
| Sell livestock | 14.6 | 18.5 | * | 8.4 | 13.7 | * | 12.4 | 14.1 | ns | 10.1 | 13.0 | ns | 0.0 | 0.0 | | 9.2 | 3.7 | ns |
| Reduced food consumption | 60.3 | 49.3 | *** | 48.2 | 36.2 | *** | 47.5 | 45.4 | ns | 39.4 | 42.6 | ns | 17.2 | 28.9 | ns | 7.2 | 10.3 | ns |
| Take up new wage labor | 6.5 | 7.1 | ns | 1.9 | 2.4 | ns | 2.5 | 3.1 | ns | 5.6 | 8.8 | ns | 4.0 | 0.0 | ns | 3.7 | 2.8 | ns |
| Received money or food from family members within community | 3.6 | 4.0 | ns | 2.5 | 2.6 | ns | 2.0 | 2.6 | ns | 2.5 | 1.6 | ns | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Receive food aid or assistance from the government (including food/cash-for-work) | 30.5 | 31.5 | ns | 12.1 | 19.9 | ** | 28.4 | 27.7 | ns | 18.7 | 16.0 | ns | 7.4 | 20.8 | * | 10.2 | 23.8 | * |
| Receive food aid or assistance from an NGO (including food/cash-for-work) | 13.1 | 30.9 | *** | 5.7 | 17.1 | *** | 11.7 | 24.3 | *** | 9.4 | 15.3 | * | 2.7 | 14.0 | * | 0.0 | 4.9 | + |
| Use money from savings | 1.5 | 0.4 | * | 1.7 | 0.0 | ** | 0.6 | 0.5 | ns | 0.7 | 0.0 | ns | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Receive money from a relative from outside of village (remittances) | 9.5 | 5.7 | ** | 4.5 | 2.1 | * | 7.5 | 3.8 | * | 9.2 | 3.4 | ** | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Other | 1.4 | 1.5 | ns | 0.2 | 0.3 | ns | 1.0 | 0.3 | ns | 0.7 | 1.0 | ns | 0.0 | 0.0 | | 3.2 | 3.0 | ns |
| No coping strategies | 0.0 | 0.6 | * | 35.1 | 28.4 | * | 18.5 | 7.6 | *** | 27.6 | 13.7 | *** | 50.1 | 18.8 | *** | 54.8 | 43.4 | ns |
| <i>n (weighted)</i> | 687 | 687 | | 428 | 428 | | 453 | 453 | | 318 | 318 | | 62 | 62 | | 67 | 67 | |
| <i>n (unweighted)</i> | 438 | 438 | | 267 | 267 | | 288 | 288 | | 199 | 199 | | 43 | 43 | | 36 | 36 | |

ns = not significant, † p<0.1, * p<0.05, ** p<0.01, *** p<0.001



Table 6b: Top Coping Strategies by the Top 5 Shocks Exposed in the Past 12 Months, By Survey Round and Consortium (PROGRESS)

| Coping Strategies (PROGRESS) | All Five Shocks Combined | | | Top 5 Shocks Exposed in the Past 12 Months | | | | | | | | | | | | | | |
|-----------------------------------------------------------------------------------|-----------------------------|------|------|--------------------------------------------|------|------|--------------|------|------|-------------------------------------|------|------|------------------------|------|------|-----------------------------|------|------|
| | | | | Sharp Food Price Increase | | | Drought | | | Variable/ Infrequent Rainfall | | | Crop Disease/ Pests | | | Increase Price of Inputs | | |
| | Survey Round | | | Survey Round | | | Survey Round | | | Survey Round | | | Survey Round | | | Survey Round | | |
| | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. |
| Top 10 Coping Strategies (%) | | | | | | | | | | | | | | | | | | |
| Sell livestock | 39.0 | 40.2 | ns | 21.7 | 30.8 | ** | 38.4 | 29.0 | ** | 20.8 | 26.4 | + | 4.3 | 8.3 | ns | 5.6 | 20.6 | *** |
| Reduced food consumption | 51.6 | 48.8 | ns | 42.0 | 45.5 | ns | 26.2 | 38.8 | *** | 23.8 | 52.2 | *** | 13.8 | 49.0 | *** | 10.6 | 56.4 | *** |
| Take up new wage labor | 15.2 | 20.3 | * | 8.7 | 8.0 | ns | 8.8 | 16.8 | ** | 11.1 | 19.1 | ** | 3.2 | 10.6 | * | 5.0 | 3.3 | ns |
| Received money or food from family members within community | 10.4 | 5.0 | ** | 4.0 | 3.6 | ns | 7.7 | 2.1 | *** | 3.5 | 1.6 | ns | 6.3 | 5.2 | ns | 0.3 | 2.4 | ns |
| Receive food aid or assistance from the government (including food/cash-for-work) | 46.5 | 27.5 | *** | 27.2 | 14.9 | *** | 45.6 | 23.8 | *** | 27.6 | 16.0 | *** | 22.9 | 8.5 | ** | 20.5 | 10.8 | * |
| Receive food aid or assistance from an NGO (including food/cash-for-work) | 16.5 | 24.5 | ** | 7.5 | 16.3 | *** | 16.5 | 15.6 | ns | 8.3 | 16.0 | ** | 3.3 | 6.6 | ns | 0.6 | 11.7 | *** |
| Use money from savings | 11.7 | 28.9 | *** | 6.4 | 27.6 | *** | 9.5 | 14.6 | * | 6.2 | 27.9 | *** | 2.0 | 35.8 | *** | 0.0 | 34.1 | *** |
| Receive money from a relative from outside of village (remittances) | 15.1 | 10.7 | * | 8.4 | 7.5 | ns | 11.8 | 8.4 | ns | 8.7 | 6.5 | ns | 5.0 | 0.0 | * | 9.0 | 1.7 | ** |
| Other | 11.5 | 8.6 | ns | 3.3 | 5.1 | ns | 2.2 | 3.1 | ns | 4.7 | 2.9 | ns | 1.8 | 0.7 | ns | 14.0 | 1.9 | *** |
| No coping strategies | 1.4 | 0.0 | ** | 19.7 | 8.7 | *** | 9.0 | 8.9 | ns | 28.7 | 3.6 | *** | 32.9 | 17.4 | ** | 38.9 | 14.7 | *** |
| <i>n (weighted)</i> | 481 | 481 | | 350 | 350 | | 348 | 348 | | 284 | 284 | | 122 | 122 | | 131 | 131 | |
| <i>n (unweighted)</i> | 460 | 460 | | 320 | 320 | | 346 | 346 | | 262 | 262 | | 102 | 102 | | 109 | 109 | |

ns = not significant, † p<0.1, * p<0.05, ** p<0.01, *** p<0.001



Table 6b: Top Coping Strategies by the Top 5 Shocks Exposed in the Past 12 Months, By Survey Round and Consortium (SIZIMELE)

| Coping Strategies (SIZIMELE) | All Five Shocks Combined | | | Top 5 Shocks Exposed in the Past 12 Months | | | | | | | | | | | | | | |
|-----------------------------------------------------------------------------------|--------------------------------|------|------|--------------------------------------------|------|------|--------------|------|------|-------------------------------------|------|------|------------------------|------|------|-----------------------------|------|------|
| | | | | Sharp Food Price Increase | | | Drought | | | Variable/ Infrequent Rainfall | | | Crop Disease/ Pests | | | Increase Price of Inputs | | |
| | Survey Round | | | Survey Round | | | Survey Round | | | Survey Round | | | Survey Round | | | Survey Round | | |
| | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. |
| Top 10 Coping Strategies (%) | | | | | | | | | | | | | | | | | | |
| Sell livestock | 18.0 | 20.7 | ns | 14.0 | 8.9 | * | 13.4 | 16.7 | + | 15.2 | 20.2 | + | 7.1 | 15.1 | + | 5.4 | 8.2 | ns |
| Reduced food consumption | 47.7 | 42.2 | * | 38.5 | 36.7 | ns | 37.7 | 29.7 | ** | 41.6 | 34.7 | * | 17.0 | 27.4 | ns | 8.2 | 41.7 | *** |
| Take up new wage labor | 14.3 | 11.7 | + | 9.7 | 6.1 | * | 11.7 | 9.7 | ns | 10.4 | 8.8 | ns | 1.1 | 5.4 | + | 0.0 | 2.5 | ns |
| Received money or food from family members within community | 3.8 | 8.3 | *** | 1.8 | 4.4 | * | 3.1 | 3.7 | ns | 0.3 | 4.0 | *** | 0.0 | 2.6 | ns | 0.0 | 5.4 | ns |
| Receive food aid or assistance from the government (including food/cash-for-work) | 36.9 | 46.1 | *** | 15.7 | 32.0 | *** | 35.6 | 41.6 | * | 29.5 | 29.5 | ns | 5.8 | 19.2 | ** | 8.1 | 22.9 | + |
| Receive food aid or assistance from an NGO (including food/cash-for-work) | 9.1 | 44.8 | *** | 2.5 | 36.2 | *** | 8.8 | 36.2 | *** | 6.2 | 29.7 | *** | 8.0 | 27.1 | ** | 5.4 | 19.5 | * |
| Use money from savings | 3.6 | 21.4 | *** | 2.7 | 18.1 | *** | 1.8 | 12.7 | *** | 1.1 | 18.8 | *** | 0.0 | 4.9 | * | 0.0 | 7.4 | + |
| Receive money from a relative from outside of village (remittances) | 19.7 | 12.5 | *** | 14.0 | 6.6 | *** | 14.7 | 9.2 | ** | 11.0 | 9.2 | ns | 9.6 | 3.9 | ns | 0.0 | 0.0 | |
| Other | 6.1 | 3.4 | ** | 1.5 | 1.2 | ns | 4.9 | 1.8 | ** | 5.6 | 1.7 | ** | 0.0 | 0.0 | | 0.0 | 0.0 | |
| No coping strategies | 0.7 | 0.0 | * | 23.0 | 13.8 | *** | 9.3 | 5.6 | ** | 11.2 | 5.6 | ** | 49.0 | 20.3 | *** | 52.5 | 11.8 | *** |
| <i>n (weighted)</i> | 827 | 827 | | 487 | 487 | | 693 | 693 | | 406 | 406 | | 83 | 83 | | 40 | 40 | |
| <i>n (unweighted)</i> | 465 | 465 | | 277 | 277 | | 386 | 386 | | 235 | 235 | | 52 | 52 | | 25 | 25 | |

ns = not significant, † p<0.1, * p<0.05, ** p<0.01, *** p<0.001



Table 6b: Top Coping Strategies by the Top 5 Shocks Exposed in the Past 12 Months, By Survey Round and Consortium (ZVA)

| Coping Strategies (ZVA) | All Five Shocks Combined | | | Top 5 Shocks Exposed in the Past 12 Months | | | | | | | | | | | | | | |
|-----------------------------------------------------------------------------------|--------------------------------|------|------|--------------------------------------------|------|------|--------------|------|------|-------------------------------------|------|------|------------------------|------|------|-----------------------------|------|------|
| | | | | Sharp Food Price Increase | | | Drought | | | Variable/ Infrequent Rainfall | | | Crop Disease/ Pests | | | Increase Price of Inputs | | |
| | Survey Round | | | Survey Round | | | Survey Round | | | Survey Round | | | Survey Round | | | Survey Round | | |
| | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. |
| Top 10 Coping Strategies (%) | | | | | | | | | | | | | | | | | | |
| Sell livestock | 28.2 | 39.2 | *** | 17.5 | 22.4 | * | 22.9 | 41.4 | *** | 24.1 | 26.3 | ns | 15.7 | 18.2 | ns | 17.3 | 16.3 | ns |
| Reduced food consumption | 28.5 | 41.5 | *** | 24.9 | 24.7 | ns | 22.5 | 29.3 | * | 20.0 | 27.7 | * | 16.6 | 11.5 | ns | 11.3 | 14.2 | ns |
| Take up new wage labor | 12.2 | 20.0 | *** | 9.2 | 13.5 | + | 4.9 | 16.9 | *** | 9.0 | 17.6 | ** | 2.4 | 8.1 | * | 0.0 | 16.3 | *** |
| Received money or food from family members within community | 5.4 | 5.6 | ns | 2.8 | 2.9 | ns | 4.0 | 3.3 | ns | 0.9 | 3.9 | * | 2.7 | 2.5 | ns | 0.0 | 0.0 | |
| Receive food aid or assistance from the government (including food/cash-for-work) | 31.5 | 31.7 | ns | 23.0 | 22.9 | ns | 26.7 | 24.6 | ns | 20.6 | 26.9 | * | 28.2 | 23.9 | ns | 17.9 | 14.9 | ns |
| Receive food aid or assistance from an NGO (including food/cash-for-work) | 17.3 | 30.4 | *** | 8.4 | 22.9 | *** | 13.0 | 25.1 | *** | 10.1 | 24.7 | *** | 11.9 | 17.2 | ns | 10.9 | 9.0 | ns |
| Use money from savings | 5.1 | 3.8 | ns | 3.9 | 1.1 | ** | 1.8 | 0.0 | * | 2.3 | 2.4 | ns | 2.1 | 1.8 | ns | 4.1 | 5.3 | ns |
| Receive money from a relative from outside of village (remittances) | 2.5 | 1.3 | + | 1.3 | 0.7 | ns | 2.1 | 0.0 | ** | 1.8 | 0.0 | * | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Other | 2.3 | 8.8 | *** | 0.4 | 2.2 | * | 1.8 | 0.9 | ns | 2.8 | 3.2 | ns | 0.0 | 0.0 | | 0.0 | 6.5 | * |
| No coping strategies | 0.5 | 0.2 | ns | 29.3 | 15.9 | *** | 27.6 | 5.2 | *** | 27.0 | 12.4 | *** | 17.1 | 18.5 | ns | 35.2 | 23.1 | ns |
| <i>n (weighted)</i> | 688 | 688 | | 416 | 416 | | 354 | 354 | | 290 | 290 | | 170 | 170 | | 65 | 65 | |
| <i>n (unweighted)</i> | 393 | 393 | | 232 | 232 | | 205 | 205 | | 154 | 154 | | 88 | 88 | | 33 | 33 | |

ns = not significant, † p<0.1, * p<0.05, ** p<0.01, *** p<0.001



Table 7b: Diet Diversity, by Consortium and Survey Round

| Diet Diversity | Total Sample | | | Consortium | | | | | | | | | | | | | | | | | | | | |
|--------------------------------------------------------|--------------|------|------|--------------|-------|------|--------------|------|------|--------------|-------|------|--------------|------|------|--------------|------|------|--------------|------|------|--------------|------|------|
| | | | | BRACT | | | ECRAS | | | ECRIMS | | | MELANA | | | PROGRESS | | | SIZIMELE | | | ZVA | | |
| | Survey round | | Sig. | Survey round | | Sig. | Survey round | | Sig. | Survey round | | Sig. | Survey round | | Sig. | Survey round | | Sig. | Survey round | | Sig. | Survey round | | Sig. |
| | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| HHs with acceptable level of Diet Diversity (%) | 73.6 | 74.7 | ns | 84.9 | 87.0 | ns | 84.1 | 87.8 | ns | 84.1 | 89.4 | * | 72.3 | 71.5 | ns | 84.6 | 78.3 | * | 76.8 | 75.5 | ** | 46.1 | 52.5 | ** |
| HH Diet Diversity (%) | | | | | | | | | | | | | | | | | | | | | | | | |
| Low (<4 score) | 26.4 | 25.3 | ns | 15.1 | 13 | ns | 15.9 | 12.2 | ns | 15.9 | 10.6 | * | 27.7 | 28.5 | ns | 15.4 | 21.7 | ** | 23.2 | 24.5 | ns | 53.9 | 47.5 | ** |
| Medium (4-5 score) | 47.1 | 53.2 | *** | 45.0 | 54.1 | ** | 44.0 | 54.0 | ** | 44.9 | 55.6 | *** | 52.6 | 56.0 | ns | 52.2 | 55.1 | ns | 51.2 | 56.1 | * | 38.0 | 43.8 | * |
| Good 6+ score) | 26.5 | 21.5 | *** | 39.9 | 32.9 | * | 40.2 | 33.8 | † | 39.2 | 33.8 | * | 19.6 | 15.5 | * | 32.5 | 23.2 | *** | 25.6 | 19.4 | *** | 8.2 | 8.7 | ns |
| HHs consumed food groups in 7 days (%) | | | | | | | | | | | | | | | | | | | | | | | | |
| Cereals/tubers | 99.8 | 99.7 | ns | 99.7 | 100.0 | ns | 99.8 | 99.8 | ns | 99.4 | 100.0 | † | 100a | 100a | | 100.0 | 99.8 | ns | 99.7 | 98.8 | * | 99.8 | 99.8 | ns |
| Beans/legumes | 60.0 | 61.4 | ns | 83.7 | 77.4 | * | 64.5 | 63.8 | ns | 56.1 | 64.7 | ** | 49.7 | 57.6 | ** | 66.0 | 61.9 | ns | 59.5 | 64.5 | * | 52.2 | 48.3 | ns |
| Vegetables | 89.0 | 95.1 | *** | 96.6 | 99.3 | ** | 96.1 | 99.4 | ** | 98.3 | 98.7 | ns | 90.6 | 96.9 | *** | 93.1 | 91.2 | ns | 83.6 | 90.5 | *** | 78.1 | 94.7 | *** |
| Fruits | 22.5 | 19.6 | *** | 40.8 | 39.3 | ns | 23.1 | 25.3 | ns | 38.7 | 29.2 | *** | 14.8 | 9.4 | ** | 28.3 | 29.6 | ns | 22.4 | 16.0 | *** | 4.8 | 6.2 | ns |
| Meats/fish/eggs | 50.6 | 47.2 | *** | 50.4 | 47.4 | ns | 69.2 | 73.7 | ns | 68.9 | 67.1 | ns | 40.9 | 33.0 | ** | 60.5 | 52.4 | ** | 52.8 | 49.2 | † | 31.1 | 30.4 | ns |
| Dairy product/milk | 40.8 | 31.3 | *** | 40.3 | 34.9 | † | 55.2 | 38.2 | *** | 47.0 | 38.5 | ** | 49.3 | 35.5 | *** | 44.9 | 20.7 | *** | 45.8 | 37.2 | *** | 15.3 | 18.2 | † |
| Oil/butter/fat | 84.4 | 83.9 | ns | 86.7 | 89.8 | ns | 92.9 | 97.4 | ** | 95.8 | 97.8 | † | 87.8 | 83.3 | * | 89.2 | 92.7 | † | 87.6 | 80.4 | *** | 62.5 | 64.9 | ns |
| HHDS (mean) | 4.5 | 4.4 | *** | 5.0 | 4.9 | ns | 5.0 | 5.0 | ns | 5.0 | 5.0 | ns | 4.3 | 4.2 | ** | 4.8 | 4.5 | *** | 4.5 | 4.4 | ns | 3.4 | 3.6 | *** |
| n (weighted) | 4096 | 4184 | | 475 | 475 | | 345 | 345 | | 476 | 476 | | 697 | 697 | | 497 | 497 | | 906 | 906 | | 789 | 789 | |
| n (unweighted) | 3353 | 3353 | | 516 | 516 | | 472 | 472 | | 494 | 494 | | 445 | 445 | | 474 | 474 | | 503 | 503 | | 449 | 449 | |

ns = not significant, † p<0.1, * p<0.05, ** p<0.01, *** p<0.001



Table 8b: Food Consumption, by Consortium and Survey Round

| Food Consumption Score | Total Sample | | | Consortium | | | | | | | | | | | | | | | | | | | | | | | |
|---------------------------------|--------------|------|------|--------------|------|------|--------------|------|------|--------------|------|------|--------------|------|------|--------------|------|------|--------------|------|------|--------------|------|------|--|--|--|
| | | | | BRACT | | | ECRAS | | | ECRIMS | | | MELANA | | | PROGRESS | | | SIZIMELE | | | ZVA | | | | | |
| | Survey round | | | Survey round | | | Survey round | | | Survey round | | | Survey round | | | Survey round | | | Survey round | | | Survey round | | | | | |
| | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | | | |
| Food consumption categories (%) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poor | 13.7 | 12.3 | ns | 8.0 | 6.4 | ns | 4.3 | 2.3 | ns | 5.1 | 2.5 | ns | 12.0 | 13.4 | ns | 6.3 | 9.0 | ns | 13.0 | 11.9 | ns | 34.7 | 27.9 | *** | | | |
| Borderline | 32.6 | 38.3 | *** | 31.4 | 34.2 | ns | 31.1 | 35.5 | ns | 32.6 | 35.7 | ns | 34.8 | 42.1 | ns | 31.5 | 45.2 | ns | 31.9 | 35.3 | ns | 33.4 | 39.2 | *** | | | |
| Adequate | 53.8 | 49.4 | ** | 60.6 | 59.5 | ns | 64.6 | 62.3 | ns | 62.3 | 61.9 | ns | 53.2 | 44.5 | ns | 62.2 | 45.8 | ns | 55.1 | 52.8 | ns | 31.9 | 32.9 | *** | | | |
| Food consumption score (FCS) | 41.1 | 38.3 | *** | 43.7 | 40.5 | ns | 48.8 | 43.9 | ns | 46.7 | 43.1 | ns | 41.2 | 36.9 | ns | 43.5 | 37.3 | ns | 40.8 | 39.6 | ns | 30.7 | 32.1 | *** | | | |
| n (weighted) | 4096 | 4184 | | 475 | 475 | | 345 | 345 | | 476 | 476 | | 697 | 697 | | 497 | 497 | | 906 | 906 | | 789 | 789 | | | | |
| n (unweighted) | 3353 | 3353 | | 516 | 516 | | 472 | 472 | | 494 | 494 | | 445 | 445 | | 474 | 474 | | 503 | 503 | | 449 | 449 | | | | |

ns = not significant, † p<0.1, * p<0.05, ** p<0.01, *** p<0.001



Table 9b: Percentage of Households Reporting Specified Cash Sources, by Consortium and Survey Round

| Cash Sources (2019 USD) | Total Sample | | | Consortium | | | | | | | | | | | | | | | | | | | | | | | |
|------------------------------|--------------|-------|------|--------------|-------|------|--------------|-------|------|--------------|-------|------|--------------|-------|------|--------------|-------|------|--------------|-------|------|-------|-------|------|--|--|--|
| | | | | BRACT | | | ECRAS | | | ECRIMS | | | MELANA | | | PROGRESS | | | SIZIMELE | | | ZVA | | | | | |
| | Survey round | | | Survey round | | | Survey round | | | Survey round | | | Survey round | | | Survey round | | | Survey round | | | | | | | | |
| | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | | | |
| Casual labour | 27.18 | 26.06 | ns | 35.00 | 24.51 | *** | 25.61 | 22.92 | ns | 24.04 | 24.49 | ns | 27.85 | 29.69 | ns | 33.30 | 28.54 | † | 17.69 | 23.04 | ** | 31.51 | 28.01 | † | | | |
| Food crop production | 10.66 | 8.03 | *** | 13.08 | 11.74 | ns | 23.35 | 12.47 | *** | 8.53 | 12.19 | * | 12.46 | 6.86 | *** | 10.57 | 5.15 | *** | 6.00 | 6.71 | ns | 8.77 | 5.69 | * | | | |
| Livestock/livestock products | 11.18 | 12.58 | * | 6.09 | 7.10 | ns | 13.74 | 17.89 | ns | 10.56 | 9.56 | ns | 7.75 | 11.76 | ** | 9.85 | 13.93 | * | 11.55 | 9.11 | † | 16.91 | 19.23 | ns | | | |
| Vegetable production/sales | 8.29 | 8.39 | ns | 17.86 | 20.94 | * | 5.16 | 6.95 | ns | 11.10 | 11.08 | ns | 6.53 | 5.65 | ns | 4.84 | 3.78 | ns | 10.14 | 11.40 | ns | 3.82 | 1.72 | * | | | |
| Remittances outside country | 6.25 | 5.90 | ns | 2.04 | 2.59 | ns | 2.60 | 5.76 | * | 5.48 | 6.33 | ns | 6.19 | 8.45 | † | 7.59 | 5.82 | ns | 13.35 | 8.39 | *** | 1.88 | 2.64 | ns | | | |
| Remittances within country | 4.90 | 6.12 | ** | 2.48 | 3.43 | ns | 1.19 | 1.63 | ns | 4.97 | 6.65 | ns | 7.75 | 5.52 | † | 6.41 | 10.75 | ** | 7.01 | 8.67 | ns | 2.07 | 4.05 | * | | | |
| Salary/wages | 4.94 | 3.82 | ** | 2.40 | 4.27 | † | 7.35 | 6.50 | ns | 3.46 | 2.94 | ns | 3.79 | 3.51 | ns | 4.07 | 4.33 | ns | 5.81 | 4.04 | † | 6.87 | 2.60 | *** | | | |
| Cash crop production | 4.85 | 3.95 | * | 5.01 | 2.40 | * | 3.93 | 4.08 | ns | 2.96 | 0.92 | * | 1.67 | 2.16 | ns | 2.62 | 4.51 | ns | - | 3.43 | *** | 16.09 | 8.52 | *** | | | |
| Mining/mineral sales | 3.44 | 4.62 | ** | 5.33 | 7.97 | ns | - | 0.72 | ns | 9.42 | 7.37 | ns | 2.22 | 1.97 | ns | 1.99 | 4.61 | ** | 5.00 | 4.65 | ns | 0.43 | 4.95 | *** | | | |
| Skilled trade/artisan | 3.32 | 3.55 | ns | 2.28 | 4.53 | * | 1.52 | 4.83 | * | 4.04 | 3.95 | ns | 5.54 | 4.47 | ns | 3.79 | 4.44 | ns | 3.20 | 2.88 | ns | 2.21 | 1.52 | ns | | | |
| Petty trade | 3.18 | 3.38 | ns | 2.02 | 1.99 | ns | 4.61 | 2.75 | ns | 2.89 | 3.80 | ns | 2.46 | 4.30 | † | 4.37 | 4.60 | ns | 4.94 | 3.15 | * | 1.28 | 2.91 | * | | | |
| Pension | 2.49 | 1.82 | * | 0.33 | 2.10 | * | 1.57 | 1.23 | ns | 2.14 | 1.07 | ns | 3.13 | 2.94 | ns | 2.33 | 1.72 | ns | 5.56 | 1.98 | *** | 0.41 | 1.23 | * | | | |
| Own business | 1.79 | 1.45 | ns | 1.12 | 1.93 | ns | 2.05 | 2.46 | ns | 2.58 | 1.65 | ns | 2.70 | 2.24 | ns | 2.02 | 2.09 | ns | 1.34 | 0.35 | * | 1.14 | 0.79 | ns | | | |
| Gathering natural products | 1.61 | 0.68 | *** | 0.33 | 1.55 | † | 0.96 | 0.93 | ns | 1.15 | 0.45 | ns | 3.25 | 0.29 | *** | 0.81 | 0.99 | ns | 1.89 | 0.47 | ** | 1.68 | 0.60 | * | | | |
| Food assistance | 1.00 | 2.15 | *** | 0.43 | 1.10 | ns | 0.22 | 1.10 | ns | 0.56 | 2.63 | * | 1.60 | 0.90 | ns | 2.66 | 0.43 | ** | - | 3.36 | *** | 1.52 | 3.73 | ** | | | |
| Beer brewing | 0.43 | 0.55 | ns | - | - | | 1.33 | 2.08 | ns | 0.34 | 0.82 | ns | 0.54 | - | † | - | 0.31 | ns | 0.12 | - | ns | 0.87 | 1.30 | ns | | | |
| Cross border trade | 0.42 | 0.12 | ** | - | 0.22 | ns | 0.23 | 0.23 | ns | 1.36 | 0.18 | * | 0.12 | - | ns | - | - | | 0.89 | 0.26 | * | 0.20 | - | ns | | | |
| Rentals | 0.33 | 0.14 | † | 0.13 | - | ns | 0.46 | 0.21 | ns | 0.55 | - | ns | 1.15 | 0.42 | ns | 0.24 | 0.24 | ns | - | 0.12 | ns | - | - | | | | |
| Fishing | 0.31 | 0.35 | ns | - | - | ns | 0.18 | 0.36 | ns | 1.52 | 1.52 | ns | 0.12 | - | ns | - | - | | 0.48 | 0.24 | ns | - | 0.48 | † | | | |
| Begging | 0.27 | 0.08 | * | 0.68 | - | † | - | - | | - | - | | 0.70 | 0.31 | ns | - | - | | - | - | | 0.39 | 0.15 | ns | | | |
| Gifts | 0.24 | 0.34 | ns | 0.24 | 0.24 | ns | 0.16 | 0.41 | ns | - | 0.53 | ns | 0.90 | 0.37 | ns | 0.10 | - | ns | - | - | | 0.20 | 0.85 | † | | | |
| Resale scrap/waste | 0.04 | 0.01 | ns | - | - | | 0.20 | - | ns | - | 0.09 | ns | - | - | | - | - | | 0.12 | - | ns | - | - | | | | |
| Others (specify) | 2.32 | 2.02 | ns | 1.89 | 1.26 | ns | 3.58 | 4.33 | ns | 1.68 | 1.77 | ns | 1.07 | 1.58 | ns | 2.28 | 1.28 | ns | 4.20 | 3.31 | ns | 1.37 | 1.02 | ns | | | |
| <i>n (weighted)</i> | 4096 | 4184 | | 475 | 475 | | 345 | 345 | | 476 | 476 | | 697 | 697 | | 497 | 497 | | 906 | 906 | | 789 | 789 | | | | |
| <i>n (unweighted)</i> | 3353 | 3353 | | 516 | 516 | | 472 | 472 | | 494 | 494 | | 445 | 445 | | 474 | 474 | | 503 | 503 | | 449 | 449 | | | | |

ns = not significant, † p<0.1, * p<0.05, ** p<0.01, *** p<0.001



Table 10b: Most Important Reported Food Source in the Past 12 Months, by Consortium and Survey Round

| Food Sources | Total Sample | | | Consortium | | | | | | | | | | | | | | | | | | | | | | | |
|-------------------------------------------------|--------------|------|-----|--------------|------|-----|--------------|------|-----|--------------|------|-----|--------------|------|-----|--------------|------|-----|--------------|------|-----|------|------|-----|--|--|--|
| | | | | BRACT | | | ECRAS | | | ECRIMS | | | MELANA | | | PROGRESS | | | SIZIMELE | | | ZVA | | | | | |
| | Survey round | | | Survey round | | | Survey round | | | Survey round | | | Survey round | | | Survey round | | | Survey round | | | | | | | | |
| 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | | | | |
| HHs with most important food sources (%) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Own production | 55.9 | 33.6 | *** | 48.4 | 57.2 | ** | 73.1 | 62.9 | ** | 65.3 | 38.9 | *** | 58.5 | 20.5 | *** | 49.5 | 34.6 | *** | 51.5 | 26.1 | *** | 53.8 | 23.0 | *** | | | |
| Cash purchases from HH Income | 15.2 | 20.6 | *** | 22.0 | 15.7 | ** | 8.5 | 8.9 | ns | 15.3 | 12.8 | ns | 10.1 | 33.7 | *** | 21.0 | 19.6 | ns | 19.2 | 26.5 | *** | 10.4 | 15.5 | ** | | | |
| Purchases from cash transfers | 1.3 | 1.0 | ns | 1.4 | 0.7 | ns | 1.1 | 1.3 | ns | 1.1 | 0.1 | * | 1.1 | 0.1 | * | 2.8 | 2.0 | ns | 1.2 | 1.1 | ns | 0.6 | 1.9 | * | | | |
| Food aid (humanitarian assistance) | 13.0 | 24.7 | *** | 6.6 | 12.5 | ** | 10.3 | 20.5 | *** | 8.2 | 30.2 | *** | 12.6 | 23.2 | *** | 11.6 | 23.8 | *** | 13.4 | 25 | *** | 21.7 | 32.3 | *** | | | |
| Casual labour for food | 10.3 | 12.3 | ** | 16.9 | 12.3 | * | 6.4 | 5.1 | ns | 7.6 | 13.4 | ** | 11.8 | 11.7 | ns | 10.1 | 15.1 | * | 7.5 | 7.3 | ns | 11.5 | 19.6 | *** | | | |
| Remittances | 3.5 | 3.5 | ns | 2.6 | 1.6 | ns | 0.2 | 1.0 | ns | 2.1 | 3.9 | ns | 5.0 | 7.1 | † | 4.4 | 4.2 | ns | 6.0 | 3.3 | ** | 1.6 | 2.1 | ns | | | |
| Number of HH food sources, main + others (mean) | 2.1 | 2.1 | ns | 1.6 | 2.6 | *** | 2.5 | 2.6 | ** | 2.6 | 2.3 | *** | 2.0 | 2.0 | ns | 2.3 | 2.1 | *** | 2.1 | 1.9 | *** | 2.0 | 2.0 | ns | | | |
| n (weighted) | 4096 | 4184 | | 475 | 475 | | 345 | 345 | | 476 | 476 | | 697 | 697 | | 497 | 497 | | 906 | 906 | | 789 | 789 | | | | |
| n (unweighted) | 3353 | 3353 | | 516 | 516 | | 472 | 472 | | 494 | 494 | | 445 | 445 | | 474 | 474 | | 503 | 503 | | 449 | 449 | | | | |

ns = not significant, † p<0.1, * p<0.05, ** p<0.01, *** p<0.001



Table 11b: Food-Based Coping Strategy Index (CSI), by Consortium and Survey Round

| Coping Strategies | Total Sample | | | Consortium | | | | | | | | | | | | | | | | | | | | |
|-----------------------------------------------------------------------|--------------|------|------|--------------|------|------|--------------|------|------|--------------|------|------|--------------|------|------|--------------|------|------|--------------|------|------|--------------|------|------|
| | | | | BRACT | | | ECRAS | | | ECRIMS | | | MELANA | | | PROGRESS | | | SIZIMELE | | | ZVA | | |
| | Survey round | | | Survey round | | | Survey round | | | Survey round | | | Survey round | | | Survey round | | | Survey round | | | Survey round | | |
| | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. |
| HHs utilizing coping strategies (%): | | | | | | | | | | | | | | | | | | | | | | | | |
| Rely on less expensive food | 67.8 | 77.6 | *** | 80.4 | 75.2 | * | 56.2 | 67.7 | *** | 68.2 | 77.2 | *** | 77.8 | 85.2 | *** | 80.2 | 79.1 | ns | 52.4 | 78.8 | *** | 66.0 | 74.5 | *** |
| Reduce number of meals | 67.3 | 78.7 | *** | 80.1 | 79.5 | ns | 53.7 | 61.5 | * | 56.7 | 72.9 | *** | 75.9 | 87.5 | *** | 75.0 | 77.1 | ns | 58.8 | 79.9 | *** | 69.3 | 80.9 | *** |
| Limit portion size | 65.5 | 77.0 | *** | 76.9 | 80.2 | ns | 55.5 | 61.8 | † | 59.4 | 68.7 | ** | 76.1 | 88.6 | *** | 65.7 | 69.0 | ns | 55.1 | 79.0 | *** | 69.0 | 79.2 | *** |
| Borrow food | 55.3 | 59.3 | *** | 66.8 | 54.6 | *** | 36.5 | 47.3 | *** | 42.4 | 56.0 | *** | 68.5 | 65.3 | ns | 62.4 | 64.5 | ns | 49.2 | 61.7 | *** | 55.4 | 58.3 | ns |
| Reduce adult consumption | 47.4 | 59.6 | *** | 63.7 | 65.6 | ns | 38.6 | 47.4 | * | 45.5 | 42.5 | ns | 50.4 | 69.0 | *** | 45.6 | 54.0 | ** | 33.7 | 60.5 | *** | 56.8 | 65.6 | *** |
| Rely on casual labour | 47.2 | 50.9 | *** | 65.4 | 63.0 | ns | 34.7 | 37.2 | ns | 46.2 | 52.6 | * | 48.4 | 51.4 | ns | 59.2 | 48.0 | *** | 30.0 | 46.4 | *** | 53.3 | 55.1 | ns |
| Harvest immature crops | 31.1 | 29.3 | † | 58.0 | 42.5 | *** | 7.5 | 3.6 | * | 22.4 | 22.1 | ns | 23.8 | 27.6 | ns | 38.8 | 26.5 | *** | 14.9 | 23.3 | *** | 50.5 | 47.1 | ns |
| Purchase food on credit | 30.8 | 33.3 | * | 59.8 | 40.1 | *** | 15.8 | 22.4 | * | 31.9 | 29.4 | ns | 16.6 | 25.2 | *** | 38.2 | 42.6 | ns | 20.4 | 37.3 | *** | 39.2 | 33.1 | * |
| Gather/hunt unusual wild food | 24.3 | 24.3 | ns | 39.3 | 26.7 | *** | 9.0 | 18.4 | *** | 23.4 | 20.0 | ns | 21.5 | 12.0 | *** | 18.6 | 28.5 | *** | 7.0 | 16.2 | *** | 48.4 | 45.6 | ns |
| Skip days | 20.5 | 31.0 | *** | 43.6 | 28.6 | *** | 4.7 | 12.8 | *** | 15.1 | 22.4 | ** | 18.8 | 31.3 | *** | 21.4 | 31.0 | *** | 5.8 | 36.3 | *** | 34.8 | 39.1 | † |
| Send members elsewhere | 15.3 | 13.8 | * | 33.0 | 13.0 | *** | 3.2 | 3.9 | ns | 9.7 | 10.3 | ns | 11.9 | 9.6 | ns | 16.4 | 16.1 | ns | 6.5 | 13.9 | *** | 25.7 | 23.2 | ns |
| Send household members to beg | 15.2 | 14.9 | ns | 32.8 | 13.3 | *** | 1.9 | 4.2 | † | 12.5 | 7.2 | ** | 19.7 | 17.0 | ns | 11.2 | 20.4 | *** | 5.2 | 12.7 | *** | 22.0 | 22.6 | ns |
| Food-Based CSI (mean) | 18.5 | 19.8 | ** | 27.4 | 22.1 | ** | 4.6 | 9.1 | *** | 15.3 | 18.7 | ** | 23.1 | 23.6 | ns | 19.2 | 19.2 | ns | 10.3 | 17.9 | *** | 26.1 | 22.7 | ** |
| HHs with acceptable food-based CSI score, CSI score <10 (%) | 51.8 | 37.1 | *** | 36.3 | 31.9 | ns | 84.5 | 73.5 | *** | 51.2 | 38.8 | *** | 41.9 | 18.5 | *** | 45.8 | 38.0 | ** | 66.5 | 44.0 | *** | 42.9 | 31.4 | *** |
| <i>n (weighted)</i> | 4096 | 4184 | | 475 | 475 | | 345 | 345 | | 476 | 476 | | 697 | 697 | | 497 | 497 | | 906 | 906 | | 789 | 789 | |
| <i>n (unweighted)</i> | 3353 | 3353 | | 516 | 516 | | 470 | 472 | | 494 | 494 | | 445 | 445 | | 474 | 474 | | 503 | 503 | | 449 | 449 | |

ns = not significant, † p<0.1, * p<0.05, ** p<0.01, *** p<0.001



Table 12b: Livelihood-Based Coping Strategy Index (LACS), by Consortium and Survey Round

| Coping Strategies | | | | Total Sample | | Consortium | | | | | | | | | | | | | | | | | | | | | |
|-------------------------------------------------|--|------|------|--------------|------|------------|--------------|------|-------|--------------|------|--------|--------------|------------------|------------------|--------------|------|----------|--------------|------|----------|--------------|------|------|--------------|--|--|
| | | | | | | BRACT | | | ECRAS | | | ECRIMS | | | MELANA | | | PROGRESS | | | SIZIMELE | | | ZVA | | | |
| | | | | Survey round | | | Survey round | | | Survey round | | | Survey round | | | Survey round | | | Survey round | | | Survey round | | | Survey round | | |
| 1 | | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | | | |
| HHs utilizing livelihood coping strategies (%): | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sold household assets/goods | | 8.8 | 8.2 | ns | 13.3 | 15.1 | ns | 7.1 | 8.7 | ns | 13.2 | 8.5 | ** | 5.4 | 4.7 | ns | 11.4 | 10.4 | ns | 5.0 | 6.2 | ns | 9.9 | 7.5 | † | | |
| Reduced non-food expenses | | 29.5 | 33.9 | *** | 31.9 | 53.1 | *** | 11.5 | 21.4 | *** | 32.2 | 33.4 | ns | 32.2 | 31.9 | ns | 38.5 | 31.1 | ** | 18.3 | 35.9 | *** | 39.1 | 29.5 | *** | | |
| Sold productive assets or means of transport | | 4.6 | 3.5 | ** | 7.5 | 4.5 | * | 2.2 | 3.9 | ns | 7.0 | 3.0 | ** | 1.7 | 1.6 | ns | 7.1 | 5.1 | ns | 2.7 | 3.7 | ns | 5.8 | 3.6 | * | | |
| Spent savings | | 23.8 | 30.5 | *** | 35.2 | 41.4 | * | 13.6 | 31.0 | *** | 28.2 | 27.4 | ns | 23.3 | 19.4 | † | 42.2 | 43.6 | ns | 12.8 | 37.7 | *** | 20.2 | 18.6 | ns | | |
| Borrowed money from a formal lender/bank | | 19.7 | 20.5 | ns | 23.3 | 36.1 | *** | 11.0 | 18.0 | * | 30.9 | 29.9 | ns | 16.5 | 14.8 | ns | 37.5 | 32.3 | † | 12.4 | 14.2 | ns | 14.5 | 11.2 | * | | |
| Leased out land | | 0.9 | 0.6 | † | 1.4 | 0.8 | ns | 0.6 | 1.4 | ns | 0.7 | 0.0 | † | .00 ^a | .00 ^a | ns | 2.2 | 0.2 | ** | 0.4 | 0.0 | † | 1.6 | 2.0 | ns | | |
| Withdrew children from school | | 9.1 | 8.4 | ns | 11.5 | 15.3 | † | 2.4 | 4.5 | ns | 10.8 | 7.2 | * | 5.1 | 5.1 | ns | 6.8 | 7.7 | ns | 4.8 | 5.4 | ns | 19.3 | 13.6 | ** | | |
| Sold last female breeding livestock | | 9.5 | 10.6 | † | 27.2 | 7.7 | *** | 8.1 | 5.8 | ns | 14.0 | 10.5 | † | 5.8 | 8.0 | *** | 3.9 | 7.7 | ** | 2.2 | 9.6 | *** | 11.8 | 19.8 | *** | | |
| Begging | | 14.1 | 12.2 | ** | 23.9 | 19.6 | † | 2.0 | 3.8 | ns | 18.3 | 5.8 | *** | 19.2 | 11.6 | *** | 15.2 | 17.8 | ns | 2.3 | 6.6 | *** | 19.3 | 18.7 | ns | | |
| Sold more animals (non-productive) than usual | | 12.1 | 16.5 | *** | 27.7 | 14.9 | *** | 7.3 | 9.6 | ns | 16.3 | 16.2 | ns | 7.5 | 12.1 | ** | 11.1 | 23.5 | *** | 7.1 | 15.6 | *** | 12.4 | 21.0 | *** | | |
| Livelihood-Based CSI (mean) | | 3.9 | 4.2 | *** | 6.3 | 5.9 | ns | 1.9 | 2.9 | *** | 5.0 | 3.8 | *** | 3.4 | 3.2 | ns | 4.8 | 5.1 | ns | 1.9 | 3.8 | *** | 4.7 | 4.6 | ns | | |
| n (weighted) | | 4096 | | 4184 | 475 | 475 | | 345 | 345 | | 476 | 476 | | 697 | 697 | | 497 | 497 | | 906 | 906 | | 789 | 789 | | | |
| n (unweighted) | | 3353 | | 3353 | 516 | 516 | | 470 | 472 | | 494 | 494 | | 445 | 445 | | 474 | 474 | | 503 | 503 | | 449 | 449 | | | |

ns = not significant, † p<0.1, * p<0.05, ** p<0.01, *** p<0.001

a. The correlation and t cannot be computed because the standard error of the difference is 0.



Table 13b: Average Monthly Income and Expenditure (2019 USD), by Consortium and Survey Round

| Cash Sources (2019 USD) | Total Sample | | | Consortium | | | | | | | | | | | | | | | | | | | | |
|---------------------------------------------|--------------|-------|------|--------------|-------|------|--------------|--------|------|--------------|--------|------|--------------|-------|------|--------------|-------|------|--------------|-------|------|--------------|-------|------|
| | | | | BRACT | | | ECRAS | | | ECRIMS | | | MELANA | | | PROGRESS | | | SIZIMELE | | | ZVA | | |
| | Survey round | | | Survey round | | | Survey round | | | Survey round | | | Survey round | | | Survey round | | | Survey round | | | Survey round | | |
| | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. |
| Monthly household income¹ | | | | | | | | | | | | | | | | | | | | | | | | |
| Total | 76.01 | 82.75 | ns | 61.32 | 60.70 | ns | 117.41 | 149.24 | ns | 78.98 | 102.08 | ns | 56.55 | 65.33 | ns | 95.21 | 89.61 | ns | 78.98 | 87.01 | ns | 62.03 | 53.86 | ns |
| Cash | 67.69 | 69.34 | ns | 53.88 | 41.08 | ** | 101.48 | 135.73 | † | 72.72 | 85.55 | ns | 48.04 | 49.26 | ns | 84.98 | 79.88 | ns | 70.87 | 76.40 | ns | 57.21 | 43.95 | * |
| In-kind | 8.32 | 13.40 | *** | 7.44 | 19.62 | *** | 15.93 | 13.51 | ns | 6.25 | 16.53 | *** | 8.50 | 16.07 | *** | 10.23 | 9.73 | ns | 8.11 | 10.61 | * | 4.83 | 9.92 | *** |
| n (weighted) | 3498 | 3498 | | 444 | 444 | | 327 | 327 | | 433 | 433 | | 561 | 561 | | 445 | 445 | | 712 | 712 | | 576 | 576 | |
| n (unweighted) | | | | 484 | 484 | | 447 | 447 | | 454 | 454 | | 365 | 365 | | 422 | 422 | | 386 | 386 | | 327 | 327 | |
| Monthly household expenditures | | | | | | | | | | | | | | | | | | | | | | | | |
| Total | 46.60 | 44.58 | † | 41.43 | 43.71 | ns | 71.50 | 68.86 | ns | 63.48 | 64.44 | ns | 34.64 | 27.90 | *** | 58.60 | 54.15 | ns | 45.19 | 45.03 | ns | 32.34 | 29.58 | ns |
| n (weighted) | 4106 | 4106 | | 469 | 469 | | 345 | 345 | | 474 | 474 | | 665 | 665 | | 496 | 496 | | 894 | 894 | | 763 | 763 | |
| n (unweighted) | | | | 510 | 510 | | 472 | 472 | | 492 | 492 | | 425 | 425 | | 473 | 473 | | 495 | 495 | | 432 | 432 | |

ns = not significant, † p<0.1, * p<0.05, ** p<0.01, *** p<0.001

¹ Households reporting no income of any kind were excluded from the analysis.**Table 14b: Income Sources Based on Income from Last Month, Consortium and Survey Round**

| Cash Sources (2019 USD) | Total Sample | | | Consortium | | | | | | | | | | | | | | | | | | | | |
|----------------------------------|--------------|------|------|--------------|------|------|--------------|------|------|--------------|------|------|--------------|------|------|--------------|------|------|--------------|------|------|-----|------|------|
| | | | | BRACT | | | ECRAS | | | ECRIMS | | | MELANA | | | PROGRESS | | | SIZIMELE | | | ZVA | | |
| | Survey round | | | Survey round | | | Survey round | | | Survey round | | | Survey round | | | Survey round | | | Survey round | | | | | |
| | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. |
| Remittances | 9.5 | 8.1 | † | 6.3 | 8.0 | ns | 11.5 | 13.2 | ns | 13.8 | 12.5 | ns | 10.1 | 6.5 | * | 10.7 | 8.9 | ns | 11.1 | 9.8 | ns | 5.0 | 2.5 | † |
| Crop sales | 5.6 | 3.8 | ** | 6.6 | 6.1 | ns | 8.9 | 12.1 | ns | 4.7 | 5.8 | ns | 1.6 | 1.3 | ns | 6.8 | 4.2 | ns | 3.4 | 2.3 | † | 9.6 | 1.3 | *** |
| Casual labour | 8.1 | 7.8 | ns | 8.7 | 6.9 | ns | 9.7 | 8.5 | ns | 6.3 | 8.2 | * | 5.2 | 7.8 | *** | 13.0 | 12.4 | ns | 6.5 | 7.1 | ns | 9.6 | 5.7 | *** |
| Livestock sales | 13.2 | 22.9 | ** | 9.8 | 10.0 | ns | 23.2 | 35.9 | ns | 14.4 | 33.0 | ns | 10.4 | 17.4 | * | 21.4 | 22.3 | ns | 11.2 | 31.7 | * | 9.9 | 14.0 | ns |
| Sale of livestock products | 0.4 | 0.7 | * | 0.2 | 0.9 | ns | 0.7 | 1.6 | † | 0.3 | 1.6 | * | 0.3 | 0.6 | ns | 0.3 | 0.4 | ns | 0.5 | 0.2 | ns | 0.7 | 0.6 | ns |
| Skilled trade/artisan | 1.8 | 2.9 | ns | 2.3 | 1.8 | ns | 2.8 | 13.9 | ns | 3.6 | 3.2 | ns | 1.1 | 0.6 | † | 1.0 | 4.0 | ** | 1.7 | 2.4 | ns | 1.2 | 0.4 | ** |
| Own Business/beer brewing | 3.3 | 2.6 | ns | 0.6 | 1.3 | ns | 15.4 | 13.1 | ns | 5.5 | 3.3 | ns | 1.3 | 1.0 | ns | 2.3 | 5.2 | ns | 1.6 | 0.3 | ** | 2.4 | 0.7 | * |
| Petty trade | 3.1 | 2.1 | * | 1.3 | 1.2 | ns | 7.2 | 7.6 | ns | 5.1 | 3.3 | ns | 1.3 | 1.4 | ns | 5.0 | 2.7 | * | 1.4 | 0.6 | * | 3.5 | 1.4 | ns |
| Pensions | 2.3 | 1.3 | * | 1.8 | 1.4 | ns | 2.3 | 1.3 | † | 1.8 | 1.6 | ns | 1.8 | 1.3 | † | 4.2 | 1.1 | ns | 3.0 | 1.2 | *** | 1.5 | 1.5 | ns |
| Salary/wages/earnings | 6.5 | 6.0 | ns | 3.0 | 2.7 | ns | 14.6 | 14.4 | ns | 5.5 | 4.6 | ns | 3.7 | 3.1 | ns | 5.8 | 7.6 | ns | 6.7 | 4.2 | † | 8.2 | 8.6 | ns |
| Wild products, fishing | 0.5 | 0.6 | ns | 0.3 | 0.4 | ns | 0.5 | 0.7 | ns | 0.7 | 1.5 | ns | 0.3 | 0.2 | ns | 0.8 | 0.9 | ns | 0.7 | 0.2 | ** | 0.4 | 0.7 | ns |
| Small scale mining/mineral sales | 4.7 | 2.6 | ns | 2.3 | 3.2 | ns | 0.0 | 0.1 | ns | 4.3 | 2.6 | ns | 3.7 | 2.0 | ns | 0.4 | 1.7 | ** | 14.9 | 6.0 | ns | 0.3 | 0.8 | † |
| Social Transfers | 6.2 | 9.0 | *** | 12.7 | 13.3 | ns | 8.5 | 12.8 | ** | 3.7 | 13.1 | *** | 6.9 | 13.1 | *** | 8.8 | 6.9 | ns | 2.5 | 5.7 | *** | 4.9 | 3.8 | ns |
| Receipt of money owed | 1.0 | 1.6 | * | 0.2 | 3.6 | ** | 2.4 | 2.6 | ns | 1.3 | 1.5 | ns | 0.3 | 0.1 | † | 4.7 | 3.7 | ns | 0.1 | 0.2 | ns | 0.1 | 1.5 | * |
| Loan received | 0.8 | 1.0 | ns | 0.8 | 0.4 | ns | 2.6 | 6.3 | ns | 1.2 | 1.6 | ns | 0.3 | 0.1 | ns | 1.4 | 1.5 | ns | 0.2 | 0.0 | ** | 0.4 | 0.1 | ns |
| Rental incomes | 0.7 | 0.8 | ns | 0.4 | 0.2 | ns | 0.9 | 0.6 | ns | 0.1 | 1.1 | ns | 0.8 | 2.1 | ns | 1.9 | 0.8 | ns | 0.4 | 0.3 | ns | 0.4 | 0.4 | ns |
| Other | 0.7 | 0.8 | ns | 0.9 | 0.0 | † | 2.4 | 4.0 | ns | 0.2 | 1.2 | ns | 0.1 | 0.1 | ns | 0.5 | 0.6 | ns | 1.4 | 0.7 | ns | 0.0 | 0.5 | * |
| <i>n (weighted)</i> | 4096 | 4184 | | 475 | 475 | | 345 | 345 | | 476 | 476 | | 697 | 697 | | 497 | 497 | | 906 | 906 | | 789 | 789 | |
| <i>n (unweighted)</i> | 3353 | 3353 | | 516 | 516 | | 472 | 472 | | 494 | 494 | | 445 | 445 | | 474 | 474 | | 503 | 503 | | 449 | 449 | |

ns = not significant, † p<0.1, * p<0.05, ** p<0.01, *** p<0.001



Table 15b: Climate-Smart Agricultural Practices, by Consortium and Survey Round

| Agricultural Practices | Total Sample | | | Consortium | | | | | | | | | | | | | | | | | | | | |
|------------------------------------------------------------------|--------------|------|------|--------------|------|------|--------------|------|------|--------------|------|------|--------------|------|------|--------------|------|------|--------------|------|------|--------------|------|------|
| | | | | BRACT | | | ECRAS | | | ECRIMS | | | MELANA | | | PROGRESS | | | SIZIMELE | | | ZVA | | |
| | Survey round | | | Survey round | | | Survey round | | | Survey round | | | Survey round | | | Survey round | | | Survey round | | | Survey round | | |
| | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. |
| HHs with <u>at least</u> 3 trainings/ orientation (%) | | | | | | | | | | | | | | | | | | | | | | | | |
| Crop practices | 57.9 | 73.8 | *** | 60.8 | 93.6 | *** | 93.8 | 98.3 | * | 68.3 | 93.1 | *** | 58.0 | 75.9 | *** | 63.5 | 71.8 | ns | 52.5 | 60.2 | * | 35.8 | 54.4 | ** |
| Livestock practices | 51.3 | 67.6 | *** | 45.8 | 90.1 | *** | 89.7 | 95.8 | * | 65.0 | 86.0 | *** | 50.6 | 65.6 | ** | 56.6 | 60.1 | ns | 45.2 | 58.0 | ** | 33.6 | 48.2 | ** |
| Value chain practices | 27.1 | 45.5 | *** | 19.1 | 77.7 | *** | 76.9 | 78.0 | ns | 39.3 | 73.0 | *** | 25.8 | 36.3 | * | 35.4 | 39.3 | ns | 15.6 | 26.7 | * | 12.0 | 28.9 | ** |
| Water and soil conservation | 20.8 | 34.1 | *** | 25.2 | 78.6 | *** | 58.8 | 69.6 | * | 27.9 | 55.2 | *** | 11.3 | 23.4 | ** | 28.2 | 26.6 | ns | 13.4 | 13.9 | ns | 9.4 | 16.4 | † |
| HHs using <u>at least</u> 3 practices (%) | | | | | | | | | | | | | | | | | | | | | | | | |
| Crop practices | 66 | 75 | *** | 69.0 | 94.0 | *** | 93.7 | 97.1 | ns | 76.6 | 92.8 | *** | 56.6 | 70.6 | ** | 79.6 | 73.8 | ns | 68.2 | 64.0 | ns | 41.6 | 60.7 | ** |
| Livestock practices | 52.8 | 63.8 | *** | 47.9 | 81.6 | *** | 81.3 | 86.7 | ns | 63.3 | 80.4 | *** | 51.2 | 57.6 | ns | 58.4 | 56.8 | ns | 52.9 | 57.5 | ns | 33.9 | 50.1 | ** |
| Value chain practices | 26.6 | 38.9 | *** | 16.5 | 64.9 | *** | 68.9 | 62.2 | † | 37.2 | 64.6 | *** | 18.9 | 24.4 | ns | 25.3 | 34.9 | * | 27.5 | 24.3 | ns | 14.4 | 29.6 | ** |
| Water and soil conservation | 12.7 | 18.6 | *** | 20.1 | 54.1 | *** | 38.9 | 33.1 | ns | 15.0 | 26.3 | ** | 4.7 | 7.1 | ns | 20.3 | 21.1 | ns | 6.9 | 6.8 | ns | 4.5 | 8.3 | * |
| HHs practicing <u>at least</u> 3 CSA production technologies (%) | 81.3 | 89.6 | *** | 78.4 | 98.7 | *** | 98.0 | 99.0 | ns | 93.5 | 97.6 | * | 78.4 | 88.2 | * | 91.8 | 88.2 | ns | 84.9 | 86.6 | ns | 58.6 | 81.0 | *** |
| CSA practices/ technolo- gies (mean) | 10.7 | 13.7 | *** | 10.4 | 20.2 | *** | 21.1 | 20.9 | ns | 12.8 | 18.5 | *** | 8.8 | 11.3 | * | 12.1 | 12.7 | ns | 9.7 | 10.3 | ns | 6.7 | 10.6 | *** |
| HHs practicing <u>at least</u> 1 VC practice (%) | 58.8 | 70.3 | *** | 45.8 | 89.6 | *** | 91.9 | 89.6 | ns | 76.1 | 94.8 | *** | 57.4 | 62.5 | ns | 62.1 | 61.3 | ns | 62.1 | 56.7 | ns | 35.9 | 63.6 | *** |
| VC practices (mean) | 1.7 | 2.3 | *** | 1.2 | 3.9 | *** | 4.3 | 3.7 | ns | 2.2 | 3.6 | *** | 1.5 | 1.5 | ns | 1.6 | 2.1 | † | 1.6 | 1.5 | ns | 1.0 | 1.9 | ** |
| <i>n (weighted)</i> | 4096 | 4184 | | 475 | 475 | | 345 | 345 | | 476 | 476 | | 697 | 697 | | 497 | 497 | | 906 | 906 | | 789 | 789 | |
| <i>n (unweighted)</i> | 3353 | 3353 | | 516 | 516 | | 472 | 472 | | 494 | 494 | | 445 | 445 | | 474 | 474 | | 503 | 503 | | 449 | 449 | |

ns = not significant, † p<0.1, * p<0.05, ** p<0.01, *** p<0.001



Table 18b: Absorptive Capacity Index and Components, by Consortium and Survey Round

| Index (0-100) | Total Sample | | | Consortium | | | | | | | | | | | | | | | | | | | | |
|--------------------------------------|--------------|-------------|------------|--------------|-------------|------------|--------------|-------------|-----------|--------------|-------------|------------|--------------|-------------|-----------|--------------|-------------|------------|--------------|-------------|------------|--------------|-------------|-----------|
| | | | | BRACT | | | ECRAS | | | ECRIMS | | | MELANA | | | PROGRESS | | | SIZIMELE | | | ZVA | | |
| | Survey round | | | Survey round | | | Survey round | | | Survey round | | | Survey round | | | Survey round | | | Survey round | | | Survey round | | |
| | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. |
| Absorptive Capacity Index | 30.7 | 32.9 | *** | 25.1 | 35.0 | *** | 45.5 | 44.3 | ns | 33.5 | 39.8 | *** | 29.4 | 29.8 | ns | 34.1 | 30.6 | *** | 30.3 | 33.1 | *** | 25.3 | 26.4 | ** |
| Access to Informal Safety Nets (ISN) | 14.8 | 19.4 | *** | 16.2 | 37.1 | *** | 37.8 | 35.3 | ns | 14.1 | 26 | *** | 13.8 | 15.3 | † | 20.9 | 11.4 | *** | 7.1 | 13.8 | *** | 10.4 | 13.1 | ** |
| Bonding social capital | 47.7 | 50.1 | ** | 28.5 | 44 | *** | 53.5 | 59.4 | * | 52.7 | 60.8 | *** | 54.9 | 55.4 | ns | 48.7 | 53.2 | † | 57.8 | 51.5 | *** | 35 | 35 | ns |
| Access to Savings | 13.3 | 17.4 | *** | 7.6 | 17 | *** | 42.9 | 34 | ** | 19.2 | 30.5 | *** | 7.2 | 7.8 | ns | 19.3 | 21.2 | ns | 9.7 | 19.4 | *** | 5.9 | 6.4 | ns |
| Access to remittances | 11.2 | 12 | ns | 4.5 | 6 | ns | 3.8 | 7.4 | * | 10.5 | 13 | ns | 13.9 | 14 | ns | 14 | 16.6 | ns | 20.4 | 17.1 | * | 3.9 | 6.7 | * |
| Productive Assets | 33.0 | 33.2 | ns | 30.6 | 34.8 | *** | 40.1 | 41.3 | * | 37.2 | 39.5 | *** | 32.3 | 30.4 | *** | 32.7 | 30.9 | ** | 34.0 | 35.0 | * | 28.5 | 26.8 | ** |
| Livestock Assets | 58.4 | 58.5 | ns | 49.1 | 56.9 | *** | 68.4 | 69.9 | ns | 61.4 | 64.7 | *** | 59.5 | 58.8 | ns | 60.3 | 58.3 | † | 62.9 | 60.5 | ** | 50.3 | 48.1 | ** |
| Access to humanitarian assistance | 86.7 | 91.1 | *** | 73 | 95.8 | *** | 95.3 | 89.6 | ** | 93.6 | 96 | † | 93.8 | 90.6 | * | 92.1 | 85.3 | *** | 87.4 | 92.6 | *** | 76.3 | 88.2 | *** |
| Shock preparedness | 18.9 | 21.7 | *** | 13.1 | 16.6 | * | 40.9 | 34 | ** | 15.2 | 26.3 | *** | 7.5 | 14.1 | *** | 26.9 | 23.6 | † | 16.9 | 23.2 | *** | 22.1 | 20.1 | ns |
| <i>n (weighted)</i> | 4096 | 4184 | | 475 | 475 | | 345 | 345 | | 476 | 476 | | 697 | 697 | | 497 | 497 | | 906 | 906 | | 789 | 789 | |
| <i>n (unweighted)</i> | 3353 | 3353 | | 516 | 516 | | 472 | 472 | | 494 | 494 | | 445 | 445 | | 474 | 474 | | 503 | 503 | | 449 | 449 | |

ns = not significant, † p<0.1, * p<0.05, ** p<0.01, *** p<0.001



Table 19b: Adaptive Capacity Index and Components, by Consortium and Survey Round

| Index (0-100) | Total Sample | | | Consortium | | | | | | | | | | | | | | | | | | | | | |
|------------------------------|--------------|------|-----|--------------|------|-----|--------------|------|-----|--------------|------|-----|--------------|------|-----|--------------|------|-----|--------------|------|-----|------|------|-----|--|
| | | | | BRACT | | | ECRAS | | | ECRIMS | | | MELANA | | | PROGRESS | | | SIZIMELE | | | ZVA | | | |
| | Survey round | | | Survey round | | | Survey round | | | Survey round | | | Survey round | | | Survey round | | | Survey round | | | | | | |
| 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | | |
| Adaptive Capacity Index | 33.7 | 36.1 | *** | 27.7 | 40.0 | *** | 49.4 | 50.8 | † | 41.3 | 45.4 | *** | 32.8 | 32.9 | ns | 33.7 | 34.7 | ns | 33.8 | 33.6 | ns | 26.5 | 28.3 | *** | |
| Productive assets | 33.0 | 33.2 | ns | 30.6 | 34.8 | *** | 40.1 | 41.3 | * | 37.2 | 39.5 | *** | 32.3 | 30.4 | *** | 32.7 | 30.9 | ** | 34.0 | 35.0 | * | 28.5 | 26.8 | ** | |
| Livestock assets | 58.4 | 58.5 | ns | 49.1 | 56.9 | *** | 68.4 | 69.9 | ns | 61.4 | 64.7 | *** | 59.5 | 58.8 | ns | 60.3 | 58.3 | † | 62.9 | 60.5 | ** | 50.3 | 48.1 | ** | |
| Bridging social capital | 34.3 | 37.5 | *** | 22.1 | 30.7 | *** | 44.8 | 51.9 | ** | 39.9 | 41.9 | ns | 28.2 | 41.4 | *** | 31.6 | 36.3 | * | 45.6 | 39.7 | *** | 27.9 | 27.6 | ns | |
| Linking social capital | 27.1 | 37.1 | *** | 19.8 | 27.7 | *** | 52.4 | 73.4 | *** | 44.1 | 56.7 | *** | 31.5 | 39.6 | *** | 11.8 | 38.0 | *** | 25.3 | 23.8 | ns | 17.9 | 27.8 | *** | |
| Human capital | 92.2 | 94.6 | *** | 90.0 | 94.4 | ** | 94.0 | 93.5 | ns | 95.8 | 97.6 | † | 94.0 | 95.7 | ns | 87.5 | 94.2 | *** | 95.3 | 94.2 | ns | 88.2 | 92.9 | *** | |
| Livelihood diversification | 25.7 | 25.1 | * | 21.8 | 34.5 | *** | 33.9 | 32.1 | ns | 30.8 | 27.1 | *** | 22.3 | 21.2 | * | 27.6 | 24.9 | *** | 23.7 | 23.2 | ns | 25.7 | 21.0 | *** | |
| Access to financial services | 34.0 | 36.6 | † | 35.1 | 39.0 | ns | 58.3 | 61.0 | ns | 48.5 | 50.0 | ns | 23.4 | 20.8 | ns | 42.4 | 46.9 | ns | 22.3 | 29.8 | ** | 16.4 | 12.7 | ns | |
| Exposure to information | 42.8 | 50.0 | *** | 37.3 | 73.8 | *** | 66.4 | 69.4 | † | 58.2 | 71.0 | *** | 47.1 | 40.7 | *** | 49.7 | 46.9 | † | 38.7 | 37.5 | ns | 22.7 | 39.1 | *** | |
| n (weighted) | 4096 | 4184 | | 475 | 475 | | 345 | 345 | | 476 | 476 | | 697 | 697 | | 497 | 497 | | 906 | 906 | | 789 | 789 | | |
| n (unweighted) | 3353 | 3353 | | 516 | 516 | | 472 | 472 | | 494 | 494 | | 445 | 445 | | 474 | 474 | | 503 | 503 | | 449 | 449 | | |

ns = not significant, † p<0.1, * p<0.05, ** p<0.01, *** p<0.001



Table 20b: Transformative Capacity Index and Components, by Consortium and Survey Round

| Index (0-100) | Total Sample | | | Consortium | | | | | | | | | | | | | | | | | | | | |
|--------------------------------------|-----------------|-------------|------------|-------------|-------------|------------|-------------|-------------|------------|-------------|-------------|------------|-------------|-------------|-----------|-------------|-------------|-----------|-------------|-------------|-----------|-------------|-------------|------------|
| | Survey round | | | BRACT | | | ECRAS | | | ECRIMS | | | MELANA | | | PROGRESS | | | SIZIMELE | | | ZVA | | |
| | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. | 1 | 2 | Sig. |
| Transformative Capacity Index | 50.3 | 54.9 | *** | 47.5 | 55.6 | *** | 63.4 | 70.8 | *** | 58.2 | 63.4 | *** | 51.7 | 54.3 | ** | 51.3 | 53.7 | ** | 48.4 | 50.7 | ** | 42.0 | 48.4 | *** |
| Bridging social capital | 34.3 | 37.5 | *** | 22.1 | 30.7 | *** | 44.8 | 51.9 | ** | 39.9 | 41.9 | ns | 28.2 | 41.4 | *** | 31.6 | 36.3 | * | 45.6 | 39.7 | *** | 27.9 | 27.6 | ns |
| Linking Social Capital | 27.1 | 37.1 | *** | 19.8 | 27.7 | *** | 52.4 | 73.4 | *** | 44.1 | 56.7 | *** | 31.5 | 39.6 | *** | 11.8 | 38 | *** | 25.3 | 23.8 | ns | 17.9 | 27.8 | *** |
| Access to agricultural services | 68.8 | 76.7 | *** | 63.6 | 85.3 | *** | 97.2 | 98.1 | ns | 81.6 | 88.5 | ** | 73.8 | 79.9 | ** | 66.7 | 69.5 | ns | 62 | 69.2 | *** | 56.8 | 65.4 | *** |
| Access to formal safety nets | 69.7 | 79.5 | *** | 52.5 | 72.1 | *** | 84.8 | 86.7 | ns | 77 | 93.2 | *** | 79.8 | 82.1 | ns | 81.9 | 74.5 | ** | 63.3 | 83.7 | *** | 59.6 | 68.5 | *** |
| Access to markets | 30.5 | 32.1 | * | 38.8 | 38.5 | ns | 31.4 | 45.8 | *** | 31.1 | 28.9 | ns | 12.1 | 17.9 | *** | 41.6 | 41.0 | ns | 35.5 | 31.3 | * | 28.4 | 32.1 | † |
| Access to basic services | 61.2 | 66.0 | *** | 60.4 | 68.3 | *** | 64.8 | 71.1 | *** | 64.8 | 66.8 | ns | 65.3 | 69.5 | *** | 63.1 | 63.4 | ns | 57.9 | 62.3 | *** | 57 | 64.6 | *** |
| Access to infrastructure | 31.0 | 28.8 | *** | 42 | 37.3 | *** | 28.4 | 29.5 | ns | 30.9 | 31.3 | ns | 29.2 | 27 | * | 31.1 | 30 | ns | 34.1 | 25.7 | *** | 23.8 | 26.2 | *** |
| Gender norm | 42.4 | 52.0 | *** | 35.2 | 35 | ns | 65.5 | 64.5 | ns | 56.6 | 65.1 | *** | 30.6 | 48.5 | *** | 51.4 | 53.6 | ns | 32.3 | 57.9 | *** | 44.1 | 43.9 | ns |
| Collective action | 67.9 | 63.9 | *** | 68.8 | 74.7 | * | 81 | 91 | *** | 76.1 | 73.7 | ns | 78.9 | 52 | *** | 79 | 62.3 | *** | 58 | 55 | ns | 51.5 | 61.3 | *** |
| <i>n (weighted)</i> | 4096 | 4184 | | 475 | 475 | | 345 | 345 | | 476 | 476 | | 697 | 697 | | 497 | 497 | | 906 | 906 | | 789 | 789 | |
| <i>n (unweighted)</i> | 3353 | 3353 | | 516 | 516 | | 472 | 472 | | 494 | 494 | | 445 | 445 | | 474 | 474 | | 503 | 503 | | 449 | 449 | |

ns = not significant, † p<0.1, * p<0.05, ** p<0.01, *** p<0.001



Annex 10

REGRESSION OUTPUT TABLES

Results from multivariate regression equations

Table 24: Food security outcomes and resilience capacity indices

| Resilience capacity indices and recovery from shocks (crop and/or livestock shock) | p(Moderate to severe FIES) | | | | p(Acceptable HDDS) | | | | p(Adequate food consumption (FCS)) | | | |
|------------------------------------------------------------------------------------|----------------------------|----------|----------|----------|--------------------|---------|---------|---------|------------------------------------|----------|----------|----------|
| Resilience capacity indices | | | | | | | | | | | | |
| Absorptive | -0.02*** | | | | 0.03*** | | | | 0.02*** | | | |
| Adaptive | | -0.03*** | | | | 0.05*** | | | | 0.03*** | | |
| Transformative | | | -0.01 | | | | 0.01*** | | | | 0.01* | |
| Resilience | | | | -0.02*** | | | | 0.04*** | | | | 0.02*** |
| Program intensity/High | | | | | | | | | | | 0.00 | 0.00 |
| Medium | 0.31** | 0.29** | 0.40*** | 0.28** | -0.09 | -0.02 | -0.25* | -0.02 | -0.20 | -0.17 | -0.29** | -0.16 |
| Shock severity | 0.04*** | 0.05*** | 0.04*** | 0.05*** | -0.00 | -0.01 | -0.00 | -0.01 | -0.00 | -0.01 | -0.00 | -0.00 |
| Livestock 2019usd | -0.00** | -0.00* | -0.00*** | -0.00*** | 0.00** | 0.00 | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** |
| Survey round/OMS1 | | | | | | | | | | | 0.00 | 0.00 |
| OMS2 | 0.47*** | 0.51*** | 0.47*** | 0.49*** | -0.06 | -0.10 | -0.10 | -0.11 | -0.35*** | -0.39*** | -0.36*** | -0.38*** |
| <i>Observations</i> | 2916 | 2916 | 2916 | 2916 | 1956 | 1956 | 1956 | 1956 | 2720 | 2720 | 2720 | 2720 |
| <i>Log likelihood</i> | -865.27 | -854.79 | -871.97 | -862.25 | -630.22 | -605.98 | -641.35 | -621.40 | -878.29 | -863.65 | -884.62 | -874.94 |

* p<0.05, ** p<0.01, *** p<0.001



Moderate to Severe FIES

Table 25: Food security outcomes and resilience capacities (moderate to severe FIES)

| p(moderate to severe FIES_ | | | | | | | | | | |
|----------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Resilience capacities | | | | | | | | | | |
| ISN | -0.00 | | | | | | | | | |
| Bonding social capital | | 0.00 | | | | | | | | |
| Savings | | | -0.01*** | | | | | | | |
| Remittances | | | | -0.00* | | | | | | |
| HA | | | | | -0.00 | | | | | |
| Shock preparedness | | | | | | 0.00 | | | | |
| Productive assets | | | | | | | -0.02*** | | | |
| Livestock (2019usd) | | | | | | | | -0.01*** | | |
| Bridging social capital | | | | | | | | | 0.00 | |
| Linking social capital | | | | | | | | | | -0.00* |
| Prog intensity/high | | | | | | | | | | |
| Medium | 0.43*** | 0.44*** | 0.42*** | 0.44*** | 0.41*** | 0.45*** | 0.37*** | 0.40*** | 0.44*** | 0.41*** |
| Shock severity | 0.04*** | 0.04*** | 0.04*** | 0.04*** | 0.04*** | 0.04*** | 0.04*** | 0.04*** | 0.04*** | 0.04*** |
| Livestock 2019usd | -0.00*** | -0.00*** | -0.00*** | -0.00*** | -0.00*** | -0.00*** | -0.00*** | | -0.00*** | -0.00*** |
| Survey round/OMS1 | | | | | | | | | | |
| OMS2 | 0.45*** | 0.45*** | 0.49*** | 0.46*** | 0.45*** | 0.45*** | 0.45*** | 0.43*** | 0.45*** | 0.48*** |
| Observations. | 2916 | 2916 | 2916 | 2916 | 2916 | 2916 | 2916 | 2916 | 2916 | 2916 |
| Log-likelihood | -873.48 | -872.89 | -855.74 | -871.03 | -872.01 | -873.44 | -863.12 | -876.73 | -873.48 | -871.36 |
| * p<0.05, ** p<0.01, *** p<0.001 | | | | | | | | | | |

* p<0.05, ** p<0.01, *** p<0.001

Moderate to Severe FIES (continued)

Table 26: Food security outcomes and resilience capacities (moderate to severe FIES continued)

| p(moderate to severe FIES_ | | | | | | | | | | | |
|----------------------------|----------|---------|----------|---------|---------|---------|---------|---------|---------|---------|---------|
| Resilience capacities | | | | | | | | | | | |
| Human capital | -0.00 | | | | | | | | | | |
| Livelihood diversification | -0.01*** | | | | | | | | | | |
| Financial services | | -0.00* | | | | | | | | | |
| Information exposure | | | -0.01*** | | | | | | | | |
| FSN | | | | -0.00 | | | | | | | |
| Basic services | | | | | -0.01** | | | | | | |
| Agriculture extension | | | | | | 0.00 | | | | | |
| Markets | | | | | | | -0.00 | | | | |
| Infrastructure | | | | | | | | 0.00 | | | |
| Gender norms | | | | | | | | | -0.00 | | |
| Collective action | | | | | | | | | | -0.00 | |
| Prog intensity/high | | | | | | | | | | | |
| Medium | 0.44*** | 0.41*** | 0.43*** | 0.35** | 0.43*** | 0.42*** | 0.46*** | 0.45*** | 0.44*** | 0.44*** | 0.44*** |
| Shock severity | 0.04*** | 0.04*** | 0.04*** | 0.05*** | 0.04*** | 0.04*** | 0.04*** | 0.04*** | 0.04*** | 0.04*** | 0.04*** |



Table 26: Food security outcomes and resilience capacities (moderate to severe FIES continued)

| | p(moderate to severe FIES_ | | | | | | | | | | | |
|-------------------|----------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Livestock 2019usd | -0.00*** | -0.00*** | -0.00*** | -0.00*** | -0.00*** | -0.00*** | -0.00*** | -0.00*** | -0.00*** | -0.00*** | -0.00*** | -0.00*** |
| Survey round/OMS1 | | | | | | | | | | | | |
| OMS2 | 0.46*** | 0.44*** | 0.47*** | 0.47*** | 0.46*** | 0.48*** | 0.45*** | 0.46*** | 0.46*** | 0.46*** | 0.46*** | 0.45*** |
| Observations | 2916 | 2916 | 2916 | 2916 | 2916 | 2916 | 2916 | 2916 | 2916 | 2916 | 2916 | 2916 |
| Log-likelihood | -872.45 | -864.31 | -870.72 | -866.07 | -873.40 | -868.69 | -872.73 | -872.38 | -873.38 | -873.00 | -873.41 | -873.41 |

* p<0.05, ** p<0.01, *** p<0.001

Acceptable HDDS

Table 27: Food security outcomes and resilience capacities (Acceptable HDDS)

| | p(Acceptable HDDS) | | | | | | | | | | | |
|-------------------------|--------------------|---------|---------|----------|---------|---------|---------|---------|---------|---------|---------|---------|
| Resilience capacities | | | | | | | | | | | | |
| ISN | -0.00 | | | | | | | | | | | |
| Bonding social capital | 0.01*** | | | | | | | | | | | |
| Savings | | 0.01*** | | | | | | | | | | |
| Remittances | | | 0.00 | | | | | | | | | |
| HA | | | | 0.00 | | | | | | | | |
| Shock preparedness | | | | | 0.00 | | | | | | | |
| Productive assets | | | | | | 0.04*** | | | | | | |
| Livestock (2019usd) | | | | | | | 0.02*** | | | | | |
| Bridging social capital | | | | | | | | 0.00 | | | | |
| Linking social capital | | | | | | | | | 0.00** | | | |
| Human capital | | | | | | | | | | 0.00 | | |
| Prog intensity/high | | | | | | | | | | | | 0 |
| Medium | -0.40*** | -0.33** | -0.32** | -0.36*** | -0.34** | -0.34** | -0.15 | -0.25* | -0.35** | -0.30** | -0.36** | -0.28* |
| Shock severity | 0.00 | -0.00 | -0.00 | 0.00 | -0.00 | 0.00 | 0.00 | -0.00 | 0.00 | -0.00 | 0.00 | -0.00 |
| Livestock 2019usd | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** | | 0.00*** | 0.00*** | 0.00*** | 0.00*** |
| Survey round/OMS1 | | | | | | | | | | | | |
| OMS2 | -0.06 | -0.08 | -0.07 | -0.06 | -0.06 | -0.06 | -0.01 | -0.03 | -0.07 | -0.08 | -0.06 | -0.04 |
| Observations | 1956 | 1956 | 1956 | 1956 | 1956 | 1956 | 1956 | 1956 | 1956 | 1956 | 1956 | 1956 |
| Log-likelihood | -648.45 | -638.53 | -639.49 | -648.73 | -647.54 | -648.50 | -616.66 | -638.44 | -647.34 | -645.05 | -648.28 | -633.53 |

* p<0.05, ** p<0.01, *** p<0.001



Acceptable HDDS (continued)

Table 28: Food security outcomes and resilience capacities (Acceptable HDDS continued)

| | p(Acceptable HDDS) | | | | | | | | | |
|----------------------------|--------------------|---------|---------|---------|---------|---------|----------|----------|----------|---------|
| Resilience capacities | | | | | | | | | | |
| Livelihood diversification | 0.02*** | | | | | | | | | |
| Financial services | | 0.01*** | | | | | | | | |
| Information exposure | | | 0.01*** | | | | | | | |
| FSN | | | | 0.00 | | | | | | |
| Basic services | | | | | 0.00 | | | | | |
| Agriculture extension | | | | | | 0.00 | | | | |
| Markets | | | | | | | 0.00 | | | |
| Infrastructure | | | | | | | | 0.01 | | |
| Gender norms | | | | | | | | | -0.00 | |
| Collective action | | | | | | | | | | 0.00** |
| Prog intensity/high | | | | | | | | | | |
| Medium | -0.28* | -0.34** | -0.22 | -0.33** | -0.35** | -0.34** | -0.36*** | -0.36*** | -0.36*** | -0.34** |
| Shock severity | -0.00 | 0.00 | -0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Livestock 2019usd | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** |
| Survey round/OMS1 | | | | | | | | | | |
| OMS2 | -0.04 | -0.07 | -0.07 | -0.06 | -0.06 | -0.06 | -0.06 | -0.04 | -0.05 | -0.06 |
| Observations | 1956 | 1956 | 1956 | 1956 | 1956 | 1956 | 1956 | 1956 | 1956 | 1956 |
| Log-likelihood | -633.53 | -641.65 | -636.13 | -646.99 | -648.59 | -648.51 | -647.87 | -647.19 | -648.22 | -645.02 |

* p<0.05, ** p<0.01, *** p<0.001



Adequate Food Consumption

Table 29: Food security outcomes and resilience capacities (Adequate food consumption)

| | p(Adequate food consumption (FCS)) | | | | | | | | |
|-------------------------|------------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|
| Resilience capacities | | | | | | | | | |
| ISN | -0.00 | | | | | | | | |
| Bonding social capital | | 0.00*** | | | | | | | |
| Savings | | | 0.00** | | | | | | |
| Remittances | | | | 0.00 | | | | | |
| HA | | | | | 0.00 | | | | |
| Shock preparedness | | | | | | -0.00 | | | |
| Productive assets | | | | | | | 0.04*** | | |
| Livestock (2019usd) | | | | | | | | 0.02*** | |
| Bridging social capital | | | | | | | | | 0.00* |
| Prog intensity/high | | | | | | | | | |
| Medium | -0.40*** | -0.34*** | -0.32*** | -0.35*** | -0.34*** | -0.37*** | -0.21* | -0.30** | -0.35*** |
| Shock severity | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Livestock 2019usd | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** | | 0.00*** |
| Survey round/OMS1 | | | | | | | | | |
| OMS2 | -0.34*** | -0.36*** | -0.35*** | -0.34*** | -0.34*** | -0.34*** | -0.33*** | -0.32*** | -0.36*** |
| Observations | 2720 | 2720 | 2720 | 2720 | 2720 | 2720 | 2720 | 2720 | 2720 |
| Log-likelihood | -886.98 | -880.54 | -882.89 | -887.54 | -887.30 | -886.79 | -855.18 | -895.79 | -885.66 |

* p<0.05, ** p<0.01, *** p<0.001

Adequate Food Consumption (continued)

Table 30: Food security outcomes and resilience capacities (Adequate FCS)

| | p(Adequate food consumption (FCS)) | | | | | | | | | |
|----------------------------|------------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Resilience capacities | | | | | | | | | | |
| Livelihood diversification | 0.01*** | | | | | | | | | |
| Financial services | | 0.00 | | | | | | | | |
| Information exposure | | | 0.01*** | | | | | | | |
| FSN | | | | 0.00* | | | | | | |
| Basic services | | | | | -0.00 | | | | | |
| Agriculture extension | | | | | | -0.00 | | | | |
| Markets | | | | | | | 0.00 | | | |
| Infrastructure | | | | | | | | -0.00 | | |
| Gender norms | | | | | | | | | -0.00 | |
| Collective action | | | | | | | | | | 0.00** |
| Prog intensity/high | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 |
| Medium | -0.30** | -0.34*** | -0.26** | -0.31** | -0.36*** | -0.35*** | -0.35*** | -0.35*** | -0.35*** | -0.34*** |
| Shock severity | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Livestock 2019usd | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** |
| Survey round/OMS1 | | | | | | | | | | |
| OMS2 | -0.34*** | -0.35*** | -0.36*** | -0.35*** | -0.34*** | -0.34*** | -0.35*** | -0.34*** | -0.34*** | -0.34*** |
| Observations. | 2720 | 2720 | 2720 | 2720 | 2720 | 2720 | 2720 | 2720 | 2720 | 2720 |
| Log likelihood | -878.41 | -886.88 | -881.39 | -885.28 | -887.38 | -887.62 | -886.91 | -887.64 | -887.59 | -884.24 |

* p<0.05, ** p<0.01, *** p<0.001



Economic Wellbeing and Resilience

Table 31: Economic well-being outcomes and resilience capacity indices

| | Per-capita monthly income | | | Per-capita monthly expenditures | | | | |
|-----------------------------|---------------------------|----------|----------|---------------------------------|----------|----------|----------|----------|
| Resilience capacity indices | | | | | | | | |
| Absorptive | 0.01*** | | | | 0.01*** | | | |
| Adaptive | | 0.01*** | | | | 0.02*** | | |
| Transformative | | | 0.00 | | | | 0.00*** | |
| Resilience | | | | 0.01*** | | | | 0.01*** |
| Program intensity/High | | | | | | | | |
| Medium | -0.03 | -0.06 | -0.11* | -0.04 | -0.07 | -0.09* | -0.14*** | -0.08 |
| Shock severity | -0.00 | -0.00 | -0.00 | -0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Livestock 2019usd | 0.00** | 0.00** | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** |
| Survey round/OMS1 | | | | | | | | |
| OMS2 | -0.13*** | -0.14*** | -0.13*** | -0.14*** | -0.34*** | -0.35*** | -0.35*** | -0.35*** |
| Constant | 1.57*** | 1.56*** | 1.85*** | 1.59*** | 1.29*** | 1.20*** | 1.47*** | 1.28*** |
| Observations | 6158 | 6158 | 6158 | 6158 | 6594 | 6594 | 6594 | 6594 |
| log likelihood | -7063.97 | -7067.96 | -7097.49 | -7075.00 | -6456.56 | -6440.68 | -6504.73 | -6469.09 |

* p<0.05, ** p<0.01, *** p<0.001



Expenditures

Table 32: Economic well-being outcomes and resilience capacities (expenditures)

| | Per-capita monthly expenditures | | | | | | | | | | |
|--------------------------|---------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Resilience capacities | | | | | | | | | | | |
| ISN | 0.00** | | | | | | | | | | |
| Bonding social capital | | 0.00*** | | | | | | | | | |
| Savings | | | 0.00*** | | | | | | | | |
| Remittances | | | | 0.00 | | | | | | | |
| HA | | | | | 0.00 | | | | | | |
| Shock preparedness | | | | | | 0.00* | | | | | |
| Productive assets | | | | | | | 0.02*** | | | | |
| Livestock (2019usd) | | | | | | | | 0.01*** | | | |
| Bridging social capital | | | | | | | | | 0.00*** | | |
| Linking social capital | | | | | | | | | | 0.00** | |
| Human capital | | | | | | | | | | | 0.00 |
| Program intensity/Medium | | | | | | | | | | | |
| High | 0.13** | 0.18*** | 0.17*** | 0.18*** | 0.19*** | 0.16*** | 0.12** | -0.15*** | 0.18*** | 0.16*** | 0.18*** |
| Shock severity | 0.00 | 0.00 | 0.00 | 0.00* | 0.00* | 0.00 | 0.00 | 0.00 | 0.00* | 0.00 | 0.00* |
| Livestock 2019usd | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** | | 0.00*** | 0.00*** | 0.00*** |
| Survey round/OMS1 | | | | | | | | | | | |
| OMS2 | -0.34*** | -0.35*** | -0.34*** | -0.34*** | -0.34*** | -0.34*** | -0.33*** | -0.33*** | -0.35*** | -0.35*** | -0.34*** |
| Constant | 1.53*** | 1.46*** | 1.51*** | 1.54*** | 1.61*** | 1.52*** | 1.06*** | 1.36*** | 1.45*** | 1.51*** | 1.54*** |
| Observations | 6594 | 6594 | 6594 | 6594 | 6594 | 6594 | 6594 | 6594 | 6594 | 6594 | 6594 |
| log likelihood | -6509.82 | -6504.61 | -6483.88 | -6519.24 | -6516.99 | -6513.26 | -6444.51 | -6521.25 | -6488.08 | -6509.58 | -6519.55 |

* p<0.05, ** p<0.01, *** p<0.001

Expenditures (continued)

Table 33: Economic well-being outcomes and resilience capacities (expenditures continued)

| Per-capita monthly expenditures | | | | | | | | | | |
|----------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Resilience capacities | | | | | | | | | | |
| Livelihood diversification | 0.01*** | | | | | | | | | |
| Financial services | | 0.00* | | | | | | | | |
| Information exposure | | | 0.00* | | | | | | | |
| FSN | | | | -0.00* | | | | | | |
| Agriculture extension | | | | | 0.00 | | | | | |
| Markets | | | | | | 0.00 | | | | |
| Basic services | | | | | | | 0.00 | | | |
| Infrastructure | | | | | | | | 0.00* | | |
| Gender norms | | | | | | | | | 0.00 | |
| Program intensity/Medium | | | | | | | | | | |
| High | 0.17*** | 0.17*** | 0.16*** | 0.19*** | 0.17*** | 0.18*** | 0.17*** | 0.18*** | 0.18*** | 0.18*** |
| Shock severity | 0.00 | 0.00* | 0.00 | 0.00* | 0.00* | 0.00 | 0.00* | 0.00 | 0.00 | 0.00 |
| Livestock 2019usd | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** |
| Survey round/OMS1 | | | | | | | | | | |
| OMS2 | -0.33*** | -0.34*** | -0.34*** | -0.33*** | -0.34*** | -0.34*** | -0.34*** | -0.33*** | -0.33*** | -0.33*** |
| Constant | 1.40*** | 1.52*** | 1.50*** | 1.60*** | 1.52*** | 1.52*** | 1.47*** | 1.47*** | 1.57*** | 1.50*** |
| Observations | 6594 | 6594 | 6594 | 6594 | 6594 | 6594 | 6594 | 6594 | 6594 | 6594 |
| log likelihood | -6500.26 | -6512.95 | -6514.29 | -6513.92 | -6519.19 | -6517.11 | -6517.39 | -6513.26 | -6518.02 | -6516.55 |
| * p<0.05, ** p<0.01, *** p<0.001 | | | | | | | | | | |



Income

Table 34: Economic well-being outcomes and resilience capacities (income)

| | Per-capita monthly income | | | | | | | | | | |
|--------------------------|---------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Resilience capacities | | | | | | | | | | | |
| ISN | 0.00 | | | | | | | | | | |
| Bonding social capital | | 0.00** | | | | | | | | | |
| Savings | | | 0.00*** | | | | | | | | |
| Remittances | | | | 0.00 | | | | | | | |
| HA | | | | | 0.00 | | | | | | |
| Shock preparedness | | | | | | 0.00 | | | | | |
| Productive assets | | | | | | | 0.01*** | | | | |
| Livestock (2019usd) | | | | | | | | 0.01*** | | | |
| Bridging social capital | | | | | | | | | 0.00*** | | |
| Linking social capital | | | | | | | | | | 0.00 | |
| Human capital | | | | | | | | | | | 0.00 |
| Program intensity/Medium | | | | | | | | | | | |
| High | 0.10 | 0.13* | 0.12* | 0.13* | 0.12* | 0.12* | 0.08 | -0.11* | 0.13* | 0.13* | 0.13* |
| Shock severity | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Livestock 2019usd | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** | | 0.00*** | 0.00*** | 0.00*** |
| Survey round/OMS1 | | | | | | | | | | | |
| OMS2 | -0.12*** | -0.13*** | -0.13*** | -0.12*** | -0.12*** | -0.12*** | -0.12*** | -0.11*** | -0.14*** | -0.12*** | -0.12*** |
| Constant | 1.84*** | 1.77*** | 1.82*** | 1.83*** | 1.76*** | 1.83*** | 1.47*** | 1.68*** | 1.76*** | 1.84*** | 1.94*** |
| Observations | 6158 | 6158 | 6158 | 6158 | 6158 | 6158 | 6158 | 6158 | 6158 | 6158 | 6158 |
| log likelihood | -7097.47 | -7089.62 | -7079.68 | -7096.47 | -7097.51 | -7097.54 | -7070.4 | -7101.97 | -7079.99 | -7099.84 | -7099.04 |

* p<0.05, ** p<0.01, *** p<0.001



Income (continued)

Table 35: Economic well-being outcomes and resilience capacities (income continued)

| | Per-capita monthly income | | | | | | | | | |
|----------------------------|---------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Resilience capacities | | | | | | | | | | |
| Livelihood diversification | 0.01*** | | | | | | | | | |
| Financial services | | 0.00 | | | | | | | | |
| Information exposure | | | 0.00 | | | | | | | |
| FSN | | | | 0.00* | | | | | | |
| Agriculture extension | | | | | 0.00 | | | | | |
| Markets | | | | | | 0.00 | | | | |
| Basic services | | | | | | | 0.00 | | | |
| Infrastructure | | | | | | | | 0.00 | | |
| Gender norms | | | | | | | | | -0.00*** | |
| Program intensity/Medium | | | | | | | | | | |
| High | 0.11* | 0.13* | 0.12* | 0.11* | 0.14* | 0.13* | 0.13* | 0.13* | 0.14* | 0.13* |
| Shock severity | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Livestock 2019usd | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** |
| Survey round/OMS1 | | | | | | | | | | |
| OMS2 | -0.11*** | -0.12*** | -0.12*** | -0.13*** | -0.12*** | -0.12*** | -0.12*** | -0.12*** | -0.11*** | -0.12*** |
| Constant | 1.63*** | 1.83*** | 1.84*** | 1.78*** | 1.86*** | 1.84*** | 1.81*** | 1.84*** | 1.94*** | 1.85*** |
| Observations | 6158 | 6158 | 6158 | 6158 | 6158 | 6158 | 6158 | 6158 | 6158 | 6158 |
| log likelihood | -7069.93 | -7097.78 | -7099.75 | -7095.69 | -7099.76 | -7099.97 | -7099.5 | -7099.93 | -7086.95 | -7100 |

* p<0.05, ** p<0.01, *** p<0.001

Resilience Capacity Indices and Coping Strategies

Table 36: Resilience capacity indices and coping strategies

| | Coping strategies index (WFP) | | | | Livelihood-based coping strategies | | | |
|-----------------------------|-------------------------------|-----------|-----------|-----------|------------------------------------|-----------|-----------|-----------|
| Resilience capacity indices | | | | | | | | |
| Absorptive | -0.30*** | | | | -0.03*** | | | |
| Adaptive | | -0.40*** | | | | -0.02* | | |
| Transformative | | | -0.10*** | | | | -0.00 | |
| Resilience | | | | -0.30*** | | | | -0.02** |
| Program intensity/High | | | | | | | | |
| Medium | -0.39 | -0.32 | 1.12 | -0.82 | -0.13 | 0.01 | 0.09 | -0.04 |
| Shock severity | 0.37*** | 0.39*** | 0.36*** | 0.39*** | 0.11*** | 0.11*** | 0.11*** | 0.11*** |
| Livestock 2019usd | -0.00* | -0.00 | -0.00*** | -0.00*** | -0.00* | -0.00** | -0.00*** | -0.00*** |
| Survey round/OMS1 | | | | | | | | |
| OMS2 | 0.62 | 0.96* | 0.80 | 0.97* | -0.22 | -0.21 | -0.22 | -0.20 |
| Constant | 21.14*** | 24.61*** | 17.44*** | 23.86*** | 3.16*** | 2.79*** | 2.38*** | 2.88*** |
| Observations | 6706 | 6706 | 6706 | 6706 | 6706 | 6706 | 6706 | 6706 |
| log likelihood | -26703.99 | -26654.11 | -26759.81 | -26681.85 | -16914.60 | -16926.31 | -16931.90 | -16925.44 |

* p<0.05, ** p<0.01, *** p<0.001



Resilience Capacities and Coping Strategies (CSI)

Table 37: Resilience capacities and coping strategies (CSI)

| | Coping strategies index (WFP) | | | | | | | | | | |
|--------------------------|-------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Resilience capacities | | | | | | | | | | | |
| ISN | -0.06*** | | | | | | | | | | |
| Bonding social capital | | -0.01 | | | | | | | | | |
| Savings | | | -0.04*** | | | | | | | | |
| Remittances | | | | -0.04** | | | | | | | |
| HA | | | | | -0.06*** | | | | | | |
| Shock preparedness | | | | | | -0.02* | | | | | |
| Productive assets | | | | | | | -0.29*** | | | | |
| Livestock (2019usd) | | | | | | | | -0.17*** | | | |
| Bridging social capital | | | | | | | | | 0.00 | | |
| Linking social capital | | | | | | | | | | -0.04*** | |
| Human capital | | | | | | | | | | | -0.05*** |
| Program intensity/Medium | | | | | | | | | | | |
| High | | | | | | | | | | | |
| High | -0.75 | -1.87* | -1.66* | -1.90* | -1.29 | -1.56 | -0.78 | 1.11 | -1.88* | -1.27 | -1.84* |
| Shock severity | 0.36*** | 0.34*** | 0.35*** | 0.34*** | 0.36*** | 0.34*** | 0.35*** | 0.36*** | 0.34*** | 0.36*** | 0.34*** |
| Livestock 2019usd | -0.00*** | -0.00*** | -0.00*** | -0.00*** | -0.00*** | -0.00*** | -0.00*** | | -0.00*** | -0.00*** | -0.00*** |
| Survey round/OMS1 | | | | | | | | | | | |
| OMS2 | 0.56 | 0.55 | 0.61 | 0.56 | 0.56 | 0.49 | 0.35 | 0.29 | 0.49 | 0.82 | 0.62 |
| Constant | 14.20*** | 14.44*** | 14.42*** | 14.36*** | 18.37*** | 14.28*** | 22.45*** | 20.48*** | 13.87*** | 14.74*** | 18.72*** |
| Observations | 6706 | 6706 | 6706 | 6706 | 6706 | 6706 | 6706 | 6706 | 6706 | 6706 | 6706 |
| log likelihood | -26763.25 | -26776.01 | -26754.95 | -26768.00 | -26747.72 | -26773.37 | -26713.71 | -26736.90 | -26777.22 | -26753.51 | -26764.63 |

* p<0.05, ** p<0.01, *** p<0.001



CSI (continued)

Table 38: Resilience capacities and coping strategies (CSI continued)

| | Coping strategies index (WFP) | | | | | | | | | |
|----------------------------|-------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Resilience capacities | | | | | | | | | | |
| Livelihood diversification | -0.15*** | | | | | | | | | |
| Financial services | | -0.03 | | | | | | | | |
| Information exposure | | | -0.12*** | | | | | | | |
| FSN | | | | -0.03*** | | | | | | |
| Agriculture extension | | | | | -0.03*** | | | | | |
| Markets | | | | | | -0.02* | | | | |
| Basic services | | | | | | | -0.02 | | | |
| Infrastructure | | | | | | | | 0.01 | | |
| Gender norms | | | | | | | | | 0.02* | |
| Collective action | | | | | | | | | | 0.01 |
| Program intensity/Medium | | | | | | | | | | |
| High | -1.56 | -1.78* | -0.08 | -1.49 | -1.31 | -1.93* | -1.80* | -1.88* | -1.97* | -1.96* |
| Shock severity | 0.35*** | 0.34*** | 0.42*** | 0.35*** | 0.35*** | 0.34*** | 0.34*** | 0.34*** | 0.35*** | 0.34*** |
| Livestock 2019usd | -0.00*** | -0.00*** | -0.00*** | -0.00*** | -0.00*** | -0.00*** | -0.00*** | -0.00*** | -0.00*** | -0.00*** |
| Survey round/OMS1 | | | | | | | | | | |
| OMS2 | 0.38 | 0.53 | 0.83 | 0.63 | 0.62 | 0.55 | 0.61 | 0.54 | 0.34 | 0.57 |
| Constant | 17.59*** | 14.24*** | 16.90*** | 15.64*** | 15.72*** | 14.69*** | 15.41*** | 13.70*** | 12.96*** | 13.18*** |
| Observations | 6706 | 6706 | 6706 | 6706 | 6706 | 6706 | 6706 | 6706 | 6706 | 6706 |
| log likelihood | -26744.71 | -26773.82 | -26684.51 | -26765.63 | -26764.82 | -26771.08 | -26774.79 | -26777.16 | -26770.91 | -26773.89 |

* p<0.05, ** p<0.01, *** p<0.001



Resilience Capacities and Coping Strategies (LACS)

Table 39: Resilience capacities and coping strategies (LACS)

| | Livelihood-based coping strategies | | | | | | | | | | | |
|--------------------------|------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|--|
| Resilience capacities | | | | | | | | | | | | |
| ISN | -0.01** | | | | | | | | | | | |
| Bonding social capital | | -0.00 | | | | | | | | | | |
| Savings | | | -0.00 | | | | | | | | | |
| Remittances | | | | -0.00 | | | | | | | | |
| HA | | | | | -0.00 | | | | | | | |
| Shock preparedness | | | | | | -0.01* | | | | | | |
| Productive assets | | | | | | | -0.04*** | | | | | |
| Livestock (2019usd) | | | | | | | | -0.01** | | | | |
| Bridging social capital | | | | | | | | | -0.00 | | | |
| Linking social capital | | | | | | | | | | -0.00 | | |
| Human capital | | | | | | | | | | | -0.00 | |
| Program intensity/Medium | | | | | | | | | | | | |
| High | 0.09 | -0.13 | -0.12 | -0.13 | -0.09 | -0.06 | 0.00 | 0.10 | -0.13 | -0.10 | -0.13 | |
| Shock severity | 0.11*** | 0.11*** | 0.11*** | 0.11*** | 0.11*** | 0.11*** | 0.11*** | 0.11*** | 0.11*** | 0.11*** | 0.11*** | |
| Livestock 2019usd | -0.00*** | -0.00*** | -0.00*** | -0.00*** | -0.00*** | -0.00*** | -0.00** | | -0.00*** | -0.00*** | -0.00*** | |
| Survey round/OMS1 | | | | | | | | | | | | |
| OMS2 | -0.22* | -0.22* | -0.23* | -0.22* | -0.23* | -0.23* | -0.25* | -0.25* | -0.22* | -0.21 | -0.23* | |
| Constant | 2.30*** | 2.34*** | 2.27*** | 2.29*** | 2.57*** | 2.32*** | 3.28*** | 2.54*** | 2.29*** | 2.30*** | 2.38*** | |
| Observations | 6706 | 6706 | 6706 | 6706 | 6706 | 6706 | 6706 | 6706 | 6706 | 6706 | 6706 | |
| log likelihood | -16922.90 | -16931.79 | -16932.28 | -16931.27 | -16929.83 | -16928.68 | -16915.07 | -16943.60 | -16932.43 | -16931.25 | -16932.49 | |

* p<0.05, ** p<0.01, *** p<0.001



LACS (continued)

Table 40: Resilience capacities and coping strategies (LACS)

| | Livelihood-based coping strategies | | | | | | | | | |
|----------------------------|------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Resilience capacities | | | | | | | | | | |
| Livelihood diversification | -0.00 | | | | | | | | | |
| Financial services | | 0.00 | | | | | | | | |
| Information exposure | | | -0.00 | | | | | | | |
| FSN | | | | 0.00 | | | | | | |
| Agriculture extension | | | | | -0.00 | | | | | |
| Markets | | | | | | -0.00 | | | | |
| Basic services | | | | | | | -0.00 | | | |
| Infrastructure | | | | | | | | 0.00 | | |
| Gender norms | | | | | | | | | 0.00* | |
| Collective action | | | | | | | | | | 0.00 |
| Program intensity/Medium | | | | | | | | | | |
| High | -0.13 | -0.14 | -0.06 | -0.14 | -0.07 | -0.13 | -0.12 | -0.13 | -0.15 | -0.14 |
| Shock severity | 0.11*** | 0.11*** | 0.11*** | 0.11*** | 0.11*** | 0.11*** | 0.11*** | 0.11*** | 0.11*** | 0.11*** |
| Livestock 2019usd | -0.00*** | -0.00*** | -0.00*** | -0.00*** | -0.00*** | -0.00*** | -0.00*** | -0.00*** | -0.00*** | -0.00*** |
| Survey round/OMS1 | | | | | | | | | | |
| OMS2 | -0.23* | -0.23* | -0.22 | -0.23* | -0.22 | -0.23* | -0.21 | -0.22* | -0.26* | -0.22* |
| Constant | 2.29*** | 2.24*** | 2.37*** | 2.20*** | 2.45*** | 2.32*** | 2.48*** | 2.20*** | 2.07*** | 2.15*** |
| Observations | 6706 | 6706 | 6706 | 6706 | 6706 | 6706 | 6706 | 6706 | 6706 | 6706 |
| log likelihood | -16932.57 | -16932.31 | -16930.22 | -16932.40 | -16929.76 | -16931.66 | -16931.46 | -16932.47 | -16928.54 | -16931.50 |

* p<0.05, ** p<0.01, *** p<0.001



Resilience Capacity Indices and Shock Recovery

Table 41: Resilience capacity indices and recovery from shocks

| | p[recover from sharp food price increase | | | p[recover from drought or variable rains | | | | p[recover from crop and/or livestock disease | | | | |
|-----------------------------|------------------------------------------|----------|----------|------------------------------------------|----------|----------|----------|----------------------------------------------|----------|----------|----------|----------|
| Resilience capacity indices | | | | | | | | | | | | |
| Absorptive | 0.02** | | | | 0.03*** | | | 0.02* | | | | |
| Adaptive | | 0.02* | | | | 0.03*** | | | | 0.03*** | | |
| Transformative | | | 0.01 | | | | 0.01*** | | | | 0.01 | |
| Resilience | | | | 0.02** | | | | 0.03*** | | | | 0.02** |
| Program intensity/High | | | | | | | | | | | | |
| Medium | -0.33 | -0.36 | -0.47* | -0.34 | -0.11 | -0.11 | -0.21 | -0.04 | -0.13 | -0.17 | -0.22 | -0.10 |
| Shock severity | -0.05*** | -0.05*** | -0.05*** | -0.05*** | -0.03*** | -0.04*** | -0.03*** | -0.04*** | -0.03*** | -0.03*** | -0.03*** | -0.03*** |
| Livestock 2019usd | 0.00 | 0.00 | 0.00** | 0.00 | -0.00 | -0.00 | 0.00 | 0.00 | 0.00 | -0.00 | 0.00 | 0.00 |
| Survey round/OMS1 | | | | | | | | | | | | |
| OMS2 | -0.20 | -0.18 | -0.22 | -0.20 | 0.06 | 0.04 | 0.03 | 0.05 | -0.10 | -0.17 | -0.13 | -0.15 |
| Observations | 846 | 846 | 846 | 846 | 1328 | 1328 | 1328 | 1328 | 676 | 676 | 676 | 676 |
| log likelihood | -251.65 | -253.28 | -255.44 | -252.81 | -431.61 | -427.07 | -435.20 | -426.09 | -222.88 | -218.20 | -224.35 | -220.53 |

* p<0.05, ** p<0.01, *** p<0.001



Sharp Increases in Food Prices

Table 42: Resilience capacity indices and recovery from shocks (sharp increase in food prices)

| | p(recover from sharp food price increases) | | | | | | | | | | |
|-------------------------|--------------------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Resilience capacities | | | | | | | | | | | |
| ISN | 0.01 | | | | | | | | | | |
| Bonding social capital | | 0.00 | | | | | | | | | |
| Savings | | | 0.01** | | | | | | | | |
| Remittances | | | | 0.00 | | | | | | | |
| HA | | | | | 0.00 | | | | | | |
| Shock preparedness | | | | | | 0.00 | | | | | |
| Productive assets | | | | | | | 0.01 | | | | |
| Livestock (2019usd) | | | | | | | | 0.00 | | | |
| Bridging social capital | | | | | | | | | 0.00 | | |
| Linking social capital | | | | | | | | | | 0.00 | |
| Human capital | | | | | | | | | | | -0.00 |
| Prog intensity/medium | | | | | | | | | | | |
| High | 0.43* | 0.52* | 0.45* | 0.53** | 0.50* | 0.46* | 0.47* | -0.56** | 0.53* | 0.48* | 0.52* |
| Shock severity | -0.05*** | -0.05*** | -0.05*** | -0.05*** | -0.05*** | -0.05*** | -0.05*** | -0.05*** | -0.05*** | -0.05*** | -0.05*** |
| Livestock 2019usd | 0.00** | 0.00** | 0.00* | 0.00** | 0.00** | 0.00** | 0.00* | | 0.00** | 0.00** | 0.00** |
| Survey round/OMS1 | | | | | | | | | | | |
| OMS2 | -0.22 | -0.20 | -0.20 | -0.21 | -0.20 | -0.21 | -0.18 | -0.18 | -0.20 | -0.21 | -0.19 |
| Observations | 846 | 846 | 846 | 846 | 846 | 846 | 846 | 846.00 | 846 | 846 | 846 |
| log likelihood | -255.05 | -256.09 | -252.53 | -255.92 | -255.98 | -255.26 | -254.85 | -260.72 | -254.73 | -255.98 | -256.00 |

* p<0.05, ** p<0.01, *** p<0.001



Sharp Increases in Food Prices (continued)

Table 43: Resilience capacity indices and recovery from shocks (sharp increase in food prices continued)

| | p(recover from sharp food price increases) | | | | | | | | | |
|----------------------------|--------------------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Resilience capacities | | | | | | | | | | |
| Livelihood diversification | 0.00 | | | | | | | | | |
| Financial services | | 0.00 | | | | | | | | |
| Information exposure | | | 0.00 | | | | | | | |
| FSN | | | | -0.00 | | | | | | |
| Agriculture extension | | | | | -0.00 | | | | | |
| Markets | | | | | | 0.00 | | | | |
| Basic services | | | | | | | 0.00 | | | |
| Infrastructure | | | | | | | | 0.00 | | |
| Gender norms | | | | | | | | | 0.00 | |
| Collective action | | | | | | | | | | 0.00 |
| Prog intensity/medium | | | | | | | | | | |
| High | 0.52* | 0.47* | 0.43* | 0.53* | 0.56** | 0.54** | 0.53* | 0.52* | 0.50* | 0.52* |
| Shock severity | -0.05*** | -0.05*** | -0.05*** | -0.05*** | -0.05*** | -0.05*** | -0.05*** | -0.05*** | -0.05*** | -0.05*** |
| Livestock 2019usd | 0.00** | 0.00** | 0.00** | 0.00** | 0.00** | 0.00** | 0.00** | 0.00** | 0.00** | 0.00** |
| Survey round/OMS1 | | | | | | | | | | |
| OMS2 | -0.20 | -0.17 | -0.20 | -0.20 | -0.19 | -0.21 | -0.22 | -0.20 | -0.21 | -0.20 |
| Observations | 846 | 846 | 846 | 846 | 846 | 846 | 846 | 846 | 846 | 846 |
| log likelihood | -256.21 | -254.99 | -255.13 | -256.12 | -255.73 | -254.87 | -255.44 | -256.13 | -255.56 | -256.19 |

* p<0.05, ** p<0.01, *** p<0.001



Drought and/or Variable Rains

Table 44: Resilience capacity indices and recovery from shocks (drought and/or variable rains)

| | p(recover from drought or variable rains) | | | | | | | | | | |
|-------------------------|-------------------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Resilience capacities | | | | | | | | | | | |
| ISN | 0.01* | | | | | | | | | | |
| Bonding social capital | | 0.00* | | | | | | | | | |
| Savings | | | 0.00** | | | | | | | | |
| Remittances | | | | 0.00 | | | | | | | |
| HA | | | | | 0.00 | | | | | | |
| Shock preparedness | | | | | | 0.00* | | | | | |
| Productive assets | | | | | | | 0.01* | | | | |
| Livestock (2019usd) | | | | | | | | 0.00 | | | |
| Bridging social capital | | | | | | | | | 0.01** | | |
| Linking social capital | | | | | | | | | | 0.00 | |
| Human capital | | | | | | | | | | | 0.00 |
| Prog intensity/medium | | | | | | | | | | | |
| High | 0.23 | 0.34* | 0.31* | 0.33* | 0.28 | 0.27 | 0.27 | -0.32* | 0.35* | 0.28 | 0.33* |
| Shock severity | -0.03*** | -0.03*** | -0.03*** | -0.03*** | -0.03*** | -0.03*** | -0.03*** | -0.03*** | -0.03*** | -0.03*** | -0.03*** |
| Livestock 2019usd | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 |
| Survey round/OMS1 | | | | | | | | | | | |
| OMS2 | 0.05 | 0.03 | 0.06 | 0.05 | 0.05 | 0.06 | 0.06 | 0.06 | 0.02 | 0.03 | 0.05 |
| Observations | 1328 | 1328 | 1328 | 1328 | 1328 | 1328 | 1328 | 1328.00 | 1328 | 1328 | 1328 |
| log likelihood | -438.93 | -439.03 | -436.18 | -440.95 | -440.04 | -438.77 | -438.86 | -441.83 | -436.09 | -439.82 | -440.91 |

* p<0.05, ** p<0.01, *** p<0.001



Drought and/or Variable Rains (continued)

Table 45: Resilience capacity indices and recovery from shocks (drought or variable rains continued)

| | p(recover from drought or variable rains) | | | | | | | | | |
|----------------------------|-------------------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Resilience capacities | | | | | | | | | | |
| Livelihood diversification | 0.01** | | | | | | | | | |
| Financial services | | 0.01*** | | | | | | | | |
| Information exposure | | | 0.01* | | | | | | | |
| FSN | | | | 0.00 | | | | | | |
| Agriculture extension | | | | | 0.00* | | | | | |
| Markets | | | | | | 0.00 | | | | |
| Basic services | | | | | | | 0.00 | | | |
| Infrastructure | | | | | | | | 0.00 | | |
| Gender norms | | | | | | | | | 0.00 | |
| Collective action | | | | | | | | | | 0.00 |
| Prog intensity/medium | | | | | | | | | | |
| High | 0.31* | 0.29 | 0.22 | 0.30* | 0.25 | 0.33* | 0.32* | 0.33* | 0.31* | 0.33* |
| Shock severity | -0.03*** | -0.03*** | -0.04*** | -0.03*** | -0.03*** | -0.03*** | -0.03*** | -0.03*** | -0.03*** | -0.03*** |
| Livestock 2019usd | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Survey round/OMS1 | | | | | | | | | | |
| OMS2 | 0.05 | 0.06 | 0.05 | 0.04 | 0.05 | 0.05 | 0.04 | 0.05 | 0.04 | 0.05 |
| Observations | 1328 | 1328 | 1328 | 1328 | 1328 | 1328 | 1328 | 1328 | 1328 | 1328 |
| log likelihood | -437.08 | -433.78 | -438.22 | -439.17 | -438.92 | -440.96 | -440.87 | -440.65 | -440.19 | -440.98 |

* p<0.05, ** p<0.01, *** p<0.001

Crop and/or Livestock Shock

Table 46: Resilience capacity indices and recovery from shocks (crop and/or livestock shock)

| | p(recover from crop and/or livestock disease) | | | | | | | | | | | |
|----------------------------|-----------------------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Resilience capacities | | | | | | | | | | | | |
| ISN | 0.01* | | | | | | | | | | | |
| Bonding social capital | | -0.00 | | | | | | | | | | |
| Savings | | | 0.00 | | | | | | | | | |
| Remittances | | | | -0.00 | | | | | | | | |
| HA | | | | | 0.00 | | | | | | | |
| Shock preparedness | | | | | | -0.00 | | | | | | |
| Productive assets | | | | | | | 0.03** | | | | | |
| Livestock (2019usd) | | | | | | | | 0.01* | | | | |
| Bridging social capital | | | | | | | | | 0.00 | | | |
| Linking social capital | | | | | | | | | | 0.00* | | |
| Human capital | | | | | | | | | | | -0.00 | |
| Livelihood diversification | | | | | | | | | | | | 0.01 |
| Prog intensity/medium | | | | | | | | | | | | |
| High | 0.12 | 0.24 | 0.23 | 0.26 | 0.19 | 0.27 | 0.24 | -0.20 | 0.26 | 0.18 | 0.25 | 0.28 |
| Shock severity | -0.03*** | -0.03*** | -0.03*** | -0.02*** | -0.02*** | -0.02*** | -0.03*** | -0.03*** | -0.02*** | -0.03*** | -0.03*** | -0.03*** |
| Livestock 2019usd | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 |
| Survey round/OMS1 | | | | | | | | | | | | |
| OMS2 | -0.10 | -0.07 | -0.07 | -0.08 | -0.09 | -0.08 | -0.10 | -0.08 | -0.08 | -0.14 | -0.07 | -0.09 |
| Observations | 676 | 676 | 676 | 676 | 676 | 676 | 676 | 676.00 | 676 | 676 | 676 | 676 |
| log likelihood | -223.76 | -225.48 | -224.65 | -225.75 | -224.30 | -225.62 | -220.08 | -224.24 | -225.76 | -223.65 | -225.28 | -224.34 |

* p<0.05, ** p<0.01, *** p<0.001



Crop and/or Livestock Shock (continued)

Table 47: Resilience capacity indices and recovery from shocks (crop and/or livestock shock)

| | p(recover from crop and/or livestock disease) | | | | | | | | |
|-----------------------|-----------------------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|
| Resilience capacities | | | | | | | | | |
| Financial services | 0.01 | | | | | | | | |
| Information exposure | | 0.01** | | | | | | | |
| FSN | | | 0.00 | | | | | | |
| Agriculture extension | | | | 0.00 | | | | | |
| Markets | | | | | 0.00 | | | | |
| Basic services | | | | | | 0.00 | | | |
| Infrastructure | | | | | | | -0.00 | | |
| Gender norms | | | | | | | | -0.00 | |
| Collective action | | | | | | | | | 0.00 |
| Prog intensity/medium | | | | | | | | | |
| High | 0.23 | 0.16 | 0.25 | 0.22 | 0.27 | 0.25 | 0.25 | 0.26 | 0.26 |
| Shock severity | -0.02** | -0.03*** | -0.02*** | -0.02*** | -0.02*** | -0.02*** | -0.02*** | -0.03*** | -0.03*** |
| Livestock 2019usd | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Survey round/OMS1 | | | | | | | | | |
| OMS2 | -0.07 | -0.14 | -0.09 | -0.10 | -0.08 | -0.08 | -0.09 | -0.07 | -0.07 |
| Observations | 676 | 676 | 676 | 676 | 676 | 676 | 676 | 676 | 676 |
| log likelihood | -224.05 | -221.97 | -225.55 | -225.40 | -225.56 | -225.72 | -225.57 | -225.53 | -225.65 |

* p<0.05, ** p<0.01, *** p<0.001