



Food and Agriculture  
Organization of the  
United Nations

ANALYSING RESILIENCE FOR BETTER TARGETING AND ACTION



**FOOD AND NUTRITION SECURITY  
RESILIENCE PROGRAMME IN**

# SOMALILAND

**BASELINE REPORT**



**FAO RESILIENCE  
ANALYSIS REPORT**

**RESILIENCE INDEX MEASUREMENT AND ANALYSIS II - RIMA II**



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## ABBREVIATIONS AND ACRONYMS

<b>ABS</b>	Access to Basic Services
<b>AC</b>	Adaptive Capacity
<b>AST</b>	Assets
<b>CPF</b>	Country Programming Framework
<b>ESA</b>	Agricultural Development Economics Division
<b>FAO</b>	Food and Agriculture Organization of the United Nations
<b>FCS</b>	Food Consumption Score
<b>FNS-REPRO</b>	Food and Nutrition Security Resilience Programme
<b>HDDS</b>	Household Dietary Diversity Score
<b>IPC</b>	Integrated Phase Classification
<b>MEAL</b>	Monitoring, Evaluation, Accountability and Learning
<b>MIMIC</b>	Multiple Indicators Multiple Causes
<b>MoPND</b>	Ministry of Planning and National Development
<b>NGOs</b>	Non-governmental organizations
<b>PPS</b>	Probability Proportional to Size (method)
<b>RAP</b>	Resilience Analysis and Policies
<b>RCI</b>	Resilience Capacity Index
<b>rCSI</b>	Reduced Coping Strategy Index
<b>RIMA</b>	Resilience Index Measurement and Analysis
<b>RTEA</b>	Resilience Team for Eastern Africa
<b>SSN</b>	Social Safety Nets
<b>TLU</b>	Tropical Livestock Units
<b>USD</b>	United States Dollar
<b>UN</b>	United Nations
<b>UNSF</b>	United Nations Strategic Framework
<b>VICOBA</b>	Village Community Bank
<b>VSLA</b>	Village Savings and Loans Association
<b>WASH</b>	Water, Sanitation and Hygiene

## EXECUTIVE SUMMARY

The Food and Nutrition Security Resilience Programme (FNS-REPRO), funded by the Government of the Netherlands through FAO, is a four-year programme of USD 28 million that contributes directly to the operationalization of the United Nations Security Council Resolution 2417 by addressing the “cause-effect” relationship between conflict and food insecurity in the Republic of South Sudan, the Republic of the Sudan (Darfur) and Somaliland. The programme, which became operational in October 2019, is designed to foster peace and food security at scale through a multi-year livelihood- and resilience-based approach. The FNS-REPRO component in Somaliland focuses largely on support to livestock fodder/feed production and is implemented in the Sool and Sanaag regions.

### STUDY APPROACH

This report acts as a baseline for the FNS-REPRO project for Somaliland. The purpose of the current study is two-pronged. The first objective is to collect baseline values for identified project indicators, which will be tracked over time and used to establish the impact of the project. The second is to identify and document lessons learned that will facilitate the continuous realignment of the current project’s theory of change and assist in defining and designing similar future food security projects in Somaliland and other parts of the world with similar contexts. Overall, the study will employ a panel design with both intervention/treatment and non-intervention/controls.

The study seeks to respond to the following broad questions:

1. To what extent has the Resilience Capacity Index (RCI) of the households in the study area changed from the beginning of the FNS-REPRO project to the end of the project?
2. What are the drivers of resilience and resilience change in the study area?
3. To what extent has the income of the households in the study area changed from the beginning of the FNS-REPRO project to the end of the project?
4. Has the FNS-REPRO project supported the formation of fodder-production groups/associations that are linked to markets/consumers?
5. To what extent has participation in the FNS-REPRO project improved knowledge on better fodder-production and storage methods in the study area?

To respond to the research questions, a baseline study was designed and data were collected from both intervention and non-intervention areas in the Sool and Sanaag regions. Data were collected from a total of 1 026 households, 816 treatment households and 210 control households from Erigavo, Eil Afweyn Garadag and Badhan/Lasqooray districts in Sanaag region and Lasanood,

Hudun/Xudun, Caynaba/Ainabo and Taleh districts in Sool region. The survey was conducted in two phases – in the first phase data were collected from 655 households in February 2020, while in the second phase an additional 371 households were surveyed in October. The data collection was done by staff of the Somaliland Ministry of Planning and National Development (MoPND). The staff were trained in mobile data collection techniques (implemented using Kobo Collect) and the basics of FAO’s Resilience Index Measurement and Analysis (RIMA) methodology by FAO RIMA experts.

## MAIN FINDINGS

- The Resilience Capacity Index (RCI) is estimated at 38, with variations across the districts – Badhan (RCI = 46) and Caynaba (RCI = 41) are the most resilient districts, while Taleh (RCI = 33) is the least resilient of the districts surveyed. There is no statistically significant difference between the RCI for male-headed and female-headed households. The observed resilience capacity is driven by access to basic services and assets.
- The three main sources of household income are livestock keeping and sale of livestock (76 percent), crop farming and sale of cereals (29 percent) and petty trade (10 percent).
- The median annual income of households in the survey area is USD 180. The earnings of male-headed households are higher (USD 282) than those of female-headed households (USD 120). Male-headed households are more dependent on income from crop production and livestock production, while female-headed households are more dependent on crop production and petty trade.
- The fodder-production sector in Somaliland is clearly underdeveloped, with most producers being subsistence producers. Most farmers do not belong to any fodder production association/group. Approximately 10 percent of households in the study area were engaged in fodder production in the last 12 months. Only five percent of the households reported belonging to a fodder association/group – Illad fodder association (Erigavo district) and Buq agricultural organization (Erigavo and El Afwein districts). The three main challenges faced by households in fodder production are pests and diseases, limited availability of fodder inputs and inadequate water.
- Approximately 56 percent of households fall into the acceptable food-consumption category, while 20 percent are in borderline and 24 percent are in the poor food-consumption category. Proteins from meat, eggs and pulses are least consumed by the households. Fruits are rarely consumed in the households. The key determinants of household food security are access to both productive and non-productive assets, tropical livestock unit ownership, access to improved cooking and lighting energy and household head education level. The three main shocks that undermine food security in the study area are drought, reduced household income, unusually high food prices and, recently, desert locusts.



# 1

## INTRODUCTION

### 1.1 PURPOSE OF THE BASELINES IN THE FOOD AND NUTRITION SECURITY RESILIENCE PROGRAMME

The FNS-REPRO funded by the Government of the Netherlands through FAO is a four-year programme of USD 28 million that contributes directly to the operationalization of the United Nations Security Council Resolution 2417 by addressing the “cause-effect” relationship between conflict and food insecurity in the Republic of South Sudan, the Republic of the Sudan (Darfur) and Somaliland. The programme became operational in October 2019.

FNS-REPRO is the first programme in Eastern Africa specifically designed to foster peace and food security at scale through a multi-year livelihood and resilience-based approach in some of the least stable regions where interventions have been, until now, of a humanitarian programming nature exclusively. Its design allows FAO and partners to set examples of building food-system resilience in protracted crises. In this programme, resilience is defined as, “The ability to prevent disasters and crises as well as to anticipate, absorb, accommodate or recover from them in a timely, efficient and sustainable manner. This includes protecting, restoring and improving livelihoods systems in the face of threats that impact agriculture, nutrition, food security and food safety” (FNS-REPRO proposal 2019; 6).

FNS-REPRO deliberately focuses on unstable regions in the Horn of Africa with a view to address root causes and consequences of protracted crises and food and nutrition insecurity from a conflict-sensitive perspective. FNS-REPRO contributes to the potential of sustainable, inclusive growth and climate action by working with other actors and stakeholders on the humanitarian-development and peace nexus.

The programme adopts an innovative area- and livelihood-based approach that looks at the multidimensional threats and risks that communities are exposed to, while identifying and utilizing opportunities for improved livelihood resilience. Value chains that can contribute to more resilient food systems resulting in improved food and nutrition security and localized peace dividend were agreed in the proposal. These are fodder (Somaliland), gum Arabic (the Sudan – Darfur) and seeds (South Sudan). FNS-REPRO activities will be built around these value chains.

In addition to the analyses undertaken during the development of the proposal and further in-depth context and value chain analysis during FNS-REPRO’s inception phase, a baseline study was conducted, whose design feeds into the overall monitoring, evaluation, accountability and learning agenda of the individual projects. In this regard, the baseline has short-, medium- and long-term objectives.

The baseline analysis provides a snapshot of the current situation regarding resilience capacity and its determinants of access to basic services and infrastructure, adaptive capacities, income-generating activities, formal and informal social safety nets, social networks and productive and non-productive assets, and shocks. With this information, the programming team can gain a better understanding of the profiles of the populations with whom they are working and their needs in terms of resilience to food insecurity to provide project/programme managers with the evidence to support their decisions about the intervention. The baseline analysis will provide the project with an adaptive management approach by reconsidering if the project theory of change is still valid, if targeting needs to be adjusted and what kind of partnerships will be important during the project implementation.

It will also serve as a basis to respond to the learning questions established for the programme. These learning questions explore operational, technical and context-specific questions to better understand what works, and why, in a given context to increase resilience to food crises. The baselines of the FNS-REPRO are designed to feed into the overall monitoring, evaluation, accountability and learning agendas of the individual country projects. In this regard, the baseline has short-, medium- and long-term objectives.

In the short term, the baseline will provide feedback on the project's theory of change – whether it is well conceived in terms of project entry points or if some adjustments/complementary actions are to be considered. From the analysis, the programming team can ascertain if the project strategy will address the critical factors for resilience to food insecurity. The baseline also serves to support the targeting strategy of the project to ensure that the selection criteria are aligned with local profiles and realities of the implementation context.

In the medium term, it sets the thresholds and standards for monitoring at activity, output and outcome levels. In this programme, outcome-level food security and coping strategy indicators will be tracked to understand fluctuations and to inform any required adaptations required.

In addition, the baseline has been designed with sufficient rigour in terms of sample size and methodology (outlined in more detail in Chapter 2) to allow for the data and findings to be used for four years to inform interventions in the same areas. By gathering a wealth of data on the pillars of resilience, the data and analysis may exceed the scope of the current programme; as such, the baseline can provide evidence for discussion with programming teams and humanitarian, development and peace partners on how to collaborate and coordinate to meet the needs of the affected population most effectively. Therefore, the value of the current baseline does not stop with its initial analysis, but continues as the findings are shared, discussed and re-examined in collaboration with various partners and stakeholders, including the communities profiled in the report.

In the long term, the baseline serves as the reference point for impact assessment at the end of the intervention by analysing both changes over time and differences between populations with the same profiles and risk exposure.

## 1.2 COUNTRY BACKGROUND

Somaliland is located at the Horn of Africa between latitudes 8° and 11° 30' North and longitudes 43° and 49° 30' East. It borders the Gulf of Aden to the north, Somalia to the east, Ethiopia to the south and Djibouti to the northwest. It has an estimated area of 137 600 km<sup>2</sup> with a coastline of 850 km (MoL, 2006). The country is divided into six regions, namely Togdheer, Sahil, Awdal, Marodi Jeex, Sanaag and Sool. The six regions are subdivided into 32 districts and subdistricts.

Somaliland, a former British protectorate, achieved its independence on 26 June 1960 and united with the former Italian colony of Somalia on 1 July 1960 to form the Republic of Somalia. Later, it separated from Somalia after the collapse of the central government, Said Barre military regime, back to its original colonial boundaries and restored a democratic rule on 18 May 1991. Constitutionally, Somaliland has a multi-party system of democracy, with an elected president and local councils.

Several conflicts have occurred since the early collapse of the previous military government. The conflicts are complex, with multiple combatants, motives and interests and with the seeds of the instability sown during the military regime of 1969 to 1991 (Adam, 2013). Despite the challenges, Somaliland has established regional administrations, bringing relative stability, which are the product of a local peace process, uniting different clans to form a joint administration (Adam, 2013).

In Somaliland, FNS-REPRO aligns with priorities of the Somaliland National Development Plan II (2017–2021) to achieve Economic Development (Pillar 1) and Environmental Protection (Pillar 5), and contributes to Sustainable Development Goals 1, 2, 5, 8, 9, 10, 12, 13, 15 and 17.

The project primarily contributes to the FAO Representation in Somalia’s draft Country Programming Framework (CPF) Outcome 2: Resilient agriculture, livestock, fisheries and forestry sectors, leaving no one behind, malnourished or hungry. Within the United Nations Strategic Framework (UNSF) for Somalia 2017–2020, the project will contribute to UNSF Strategic Priority 5: Political and socio-economic opportunities enhanced, leading to meaningful poverty reduction, access to basic social services and sustainable, inclusive and equitable development.

Project interventions will also contribute to Somalia’s upcoming Recovery and Resilience Framework, which aims to promote a sustainable recovery from the recent drought while addressing the underlying drivers of drought vulnerability.

In Somaliland, FNS-REPRO will focus primarily on people in Integrated Phase Classification (IPC) Phase 3 and above (acutely food insecure households in IPC 2 may also be targeted) and on so-called “poor pastoralists”. It will focus on the fodder value chain in the predominantly pastoral areas, where frequent shortage of animal feed severely affects pastoral livelihoods, food security, nutrition and overall well-being. The fodder value chain is a priority that cuts across humanitarian and development interventions, with numerous missing links in between (particularly access to and use by poor pastoralists). Fodder represents both a major need and an opportunity, considering its scarcity, demand and market potential and it being a recurrent need in humanitarian response that is difficult, costly and inefficient to import (as experienced during the 2016/17 drought).

Specifically, FNS-REPRO seeks to build food system resilience in Sool and Sanaag regions through support to fodder/feed production, but will not be exclusively geared towards the commercial potential of the value chain *per se*. Although commercial fodder exports and the links with regional trade will be explored, improved availability and quality of fodder/feed in Sool and Sanaag (and bordering areas) is the key focus of the interventions. Throughout the project cycle, FAO will develop participatory approaches that especially include women and youth in various links of the fodder value chain.

The programme will improve fodder availability and access, while responding to these nexus challenges by (i) deliberately engaging poor pastoralists in animal feed production and range-management practices; and (ii) supporting communities to produce fodder in ways that are climate-savvy and protect the environment. The latter includes sourcing scarce feed ingredients from harvests (crop residues) and from invasive plants that resist drought (*Prosopis* pods and leaves), while contributing to control their spread and expansion through utilization.

FNS-REPRO activities are also designed to help communities make the best sustainable use of local resources and manage challenges in innovative ways. The activities will increase the resilience of communities and their food security status by providing technical support and advisory services to increase productivity of fodder/feed; promoting good agricultural practices, restoration of degraded rangelands and actions against desertification; establishing linkages between fodder/feed producers and traders to consumers, and supporting the storage and processing of feed/forage, among other initiatives.

### **1.3 OBJECTIVES OF THE FNS-REPRO BASELINE SURVEY**

The overall objective of this baseline survey is to determine preliminary baseline values of the project indicators through the RIMA-II approach and establish targets for the indicators during the inception phase.

### **1.4 SCOPE OF THE FNS-REPRO BASELINE STUDY**

The FNS-REPRO baseline study covered 1 026 households, 816 treatment households and 210 control households from Erigabo, Eil Afweyn/Garadag and Badhan districts in the Sanaag region and Lasanood, Hudun/Xudun, Caynaba/Ainabo and Taleh districts in the Sool region.

# 2

## **BASELINE METHODOLOGY**

The baseline is underpinned by the RIMA II model developed by FAO in 2016. This methodology systematically explores the relationship between selected household-level variables of resilience to construct the Resilience Capacity Index (RCI) based on the four pillars of resilience (assets, social safety nets, adaptive capacity and access to basic services) and well-being outcome (food security indicators). The RCI measures a household's capacity to withstand stresses and shocks that have long-lasting effects (FAO, 2016). The RCI provides a useful baseline to inform or validate targeting decisions, as it can be used as a ranking tool to identify households that are most at risk and the specific weaknesses that increase vulnerability (FAO, 2016). In addition, the methodology explains how much each pillar contributes to resilience capacity and how each observed variable contributes to its pillar (FAO, 2016). It is with this information that the theory of change, targeting and implementation strategy can be examined and that selected indicators of the project, including food consumption score, household dietary diversity, coping strategy and RCI, can be calculated.

### **2.1 SAMPLING STRATEGY**

A two-stage cluster sampling design was used in this study. All the villages in the identified target areas were listed and categorized according to areas receiving project interventions and those that will not receive any interventions proposed by the project. In the first stage of sampling, the clusters (villages) were selected using the Probability Proportional to Size (PPS) method. Households within each identified village were selected randomly using a systematic random-walk method.

The enumerators engaged in the survey were government field officers working for the Ministry of Planning and National Development (MoPND). An important criterion for selection of the enumerators was their ability to speak English and the native local language. The officers were trained for three days in Hargeisa on the types of questions in the survey and how to ask these by means of a hardcopy questionnaire and through tables using KoBoCollect software. A total of 22 enumerators were trained and engaged for data collection. The enumerators were divided into two teams and each team was headed by a supervisor, an FAO employee. Each enumerator was expected to complete four interviews in a working day.

A random sample of 1 026 households was drawn from the two regions of Sool and Sanaag, distributed as shown in Table 1. Of the 1 026 households, 816 were under intervention areas while 210 were under non-intervention areas. The survey was conducted in two phases. In the first phase 655 households were interviewed in February 2020, while an additional 371 households were interviewed in the second phase in October 2020. The household questionnaire was designed

to capture individual and household well-being parameters/indicators useful for measuring and monitoring progress of the project, while also allowing for analysis of an index for household resilience capacity using the FAO resilience index measurement and analysis (RIMA-II) tool (FAO, 2016).

The questionnaire covered the following topics:

- Household location demographics
- Household assets
- Household access to basic services
- Household participation in social networks and trainings
- Migration pattern
- Water, sanitation and hygiene (WASH)
- Household livelihoods and sources of income (including livestock, crop and fodder production)
- Remittances and credit
- Expenditure
- Food consumption – Food Consumption Score (FCS), Household Dietary Diversity Score (HDDS)
- Shocks and coping strategies
- Assistance/gifts received
- Decision-making

Midway or towards the end of the project, a mid- or endline survey will be conducted on the same households and the results compared with the baseline for evaluating the impact of the project on the target households and locations. This method of panel data collection provides the strongest evidence for attribution of a causal relationship between the implemented interventions and the effect on beneficiaries.

**Table 1: Distribution of sampled households by region/district and treatment/control**

Region	District	Beneficiary households	Non-beneficiary households	Total
Sanaag	Badhan	65	32	97
	Eil Afwein	75	22	97
	Erigabo	334	37	371
Sool	Caynabo	109	31	140
	Lasanod	154	31	185
	Taleh	36	30	66
	Xudun	43	27	70
<b>Total</b>		<b>816</b>	<b>210</b>	<b>1 026</b>

## 2.2 MAIN LIMITATIONS

The team faced a number of challenges during and after the data-collection process. During the data-collection process there were incidences of insecurity, halting data collection in several locations. It is usually recommended to have a data validation workshop with the enumerators immediately after data collection is finalized to check on any inconsistencies in the dataset. This data validation exercise was not undertaken as several cases of COVID-19 were reported in the Horn of Africa region immediately after data collection had been concluded and many countries started imposing travel restrictions. The data analysts held virtual meetings with the supervisors who oversaw data collection and made clarifications in sets of data that seemed inconsistent.





# 3

## BASELINE RESULTS

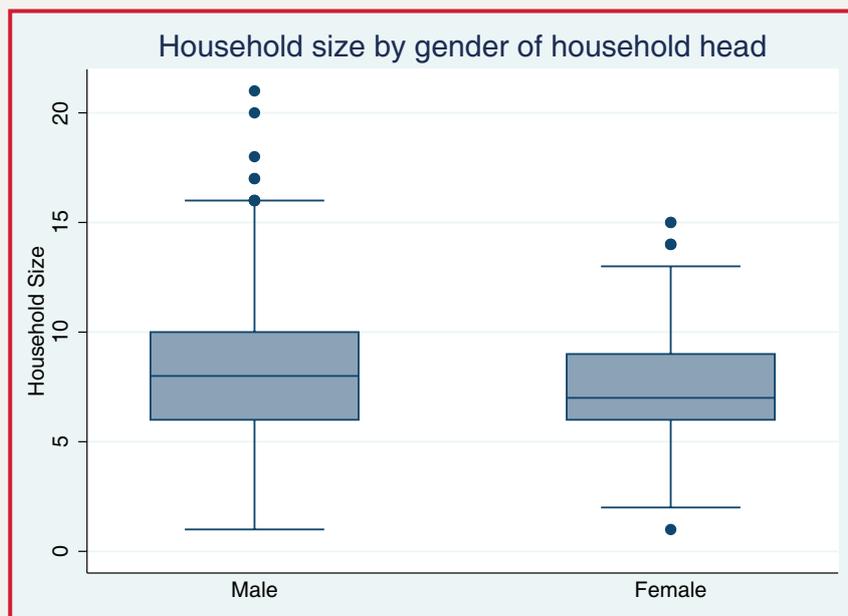
This section presents the findings of this baseline study disaggregated by beneficiary and non-beneficiaries and, where applicable, gender of the household head.

### 3.1 DEMOGRAPHICS

#### 3.1.1 HOUSEHOLD SIZE

The median household size in the study area is 8; with male-headed households having a higher median household size of 8 compared with female-headed households at 7. This is illustrated in Figure 1. Both beneficiary and non-beneficiary households have an average household size of 8.

Figure 1: Household size by gender of the household head



### 3.1.2 DEPENDENCY RATIO

The dependency ratio is the number of dependants in a population divided by the number of working-age people. Dependants are defined as those aged zero to 14 years and those aged 65 years and older. Working age is from 15 to 64 years. The ratio describes how much pressure an economy faces in supporting its non-productive population. The higher the ratio, the greater the burden carried by working-age people.

From the sampled households, the median age dependency ratio is estimated at 187<sup>1</sup>, suggesting that for every 100 productive/working community members there are 187 dependants. Male-headed households have a higher dependency ratio (166) than female-headed households (150). Non-beneficiary households have a higher dependency ratio (187) than beneficiary households (150). By district, Caynabo has the lowest dependency ratio, estimated at 150, while Taleh has the highest dependency ratio, estimated at 233.

### 3.1.3 AVERAGE LEVEL OF EDUCATION IN YEARS

Table 2 summarizes the level of education of the heads of the sampled households and household beneficiary type. Over 50 percent of household heads did not attend any formal education and fewer than eight percent have secondary-level and above education. Disaggregation by gender of the household head revealed that over 65 percent of female household heads did not attend formal education, compared with 46 percent in the case of their male counterparts.

**Table 2: Education level by gender of household head and beneficiary type**

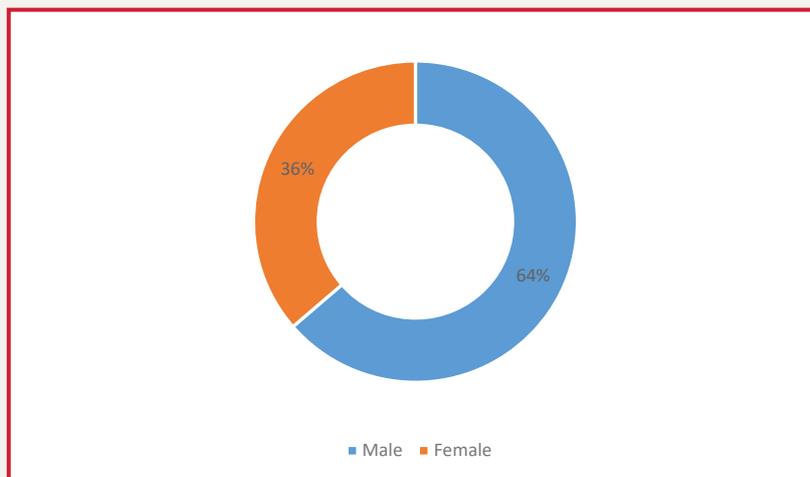
Highest education level of household head	Male-headed households	Female-headed households	Beneficiary households	Non-beneficiary households	Total
None/Never been to school	46.26	67.82	53.92	49.05	52.92
Primary incomplete	27.79	21.45	25.61	26.67	25.83
Primary complete	12.98	7.89	10.79	13.81	11.4
Secondary school incomplete	4.8	0.63	4.04	1.43	3.51
Secondary school complete	6.06	1.58	4.54	5.23	4.68
Higher than secondary school	2.11	0.63	1.10	3.81	1.66
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

### 3.1.4 GENDER OF HOUSEHOLD HEAD

Figure 2 presents the gender of household heads for the households surveyed. Most of the households (70 percent) are headed by males.

<sup>1</sup> Dependency ratio has been multiplied by 100.

Figure 2: Gender of household head

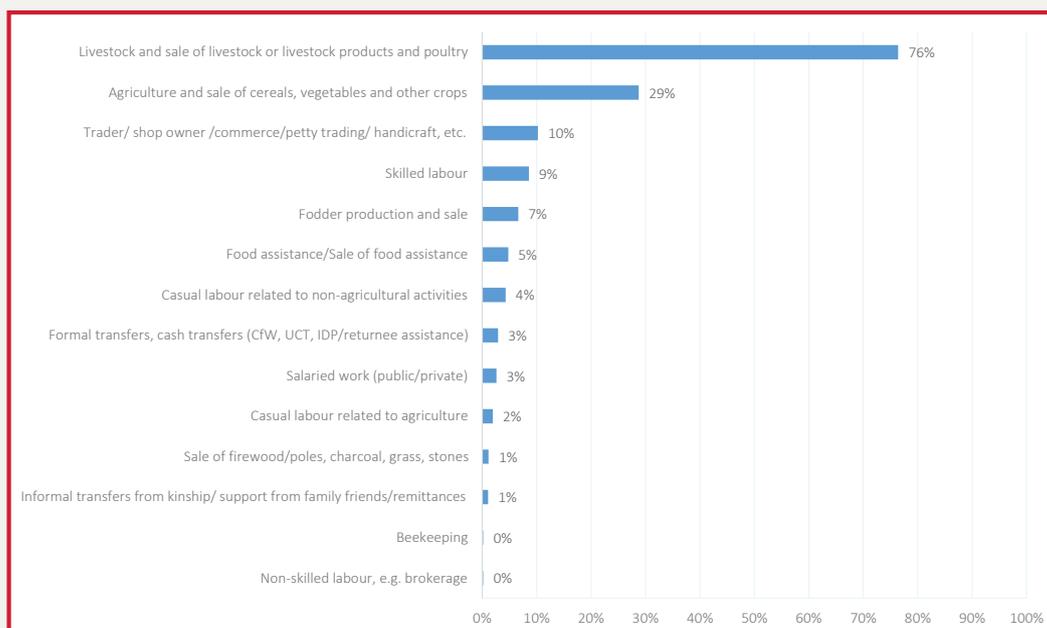


## 3.2 LIVELIHOOD

### 3.2.1 MAIN SOURCE(S) OF INCOME

The three main sources of income for the households in the last 12 months preceding the survey are livestock rearing (76 percent), sale of vegetable and cereal crops (29 percent) and petty trade (10 percent), as summarized in Figure 3. The same trend is observed for the main source of income for the last three months. There are no variations in terms of sources of income for male-headed and female-headed households; both groups rely on livestock, crop sales and petty trade.

Figure 3: Livelihood sources in the last 12 months



The median annual income of households in the survey area is USD 180. The earnings of male-headed households are higher (USD 200) than those of female-headed households (USD 75). There is variation in income generated from the three main sources disaggregated by household head gender and beneficiary type (see Table 3). Male-headed households are more dependent on income from crop and livestock production, while female-headed households are more dependent on crop production and petty trade. Approximately 10 percent of the households reported that they received remittance from family members. Each household received an average of USD 150 as remittance in a period of 12 months preceding the survey. The median annual income for beneficiary households (USD 200) is higher than for non-beneficiary households (USD 120).

**Table 3: Annual income in USD by gender of household head and beneficiary type**

Gender of household head and beneficiary type	Annual median income from sale of cereals, vegetables and other crops (USD)	Median annual income from livestock (USD)	Median annual income from petty trade (USD)
Male	400	141	170
Female	300	50	237
Beneficiary	400	112	118
Non-beneficiary	300	53	200

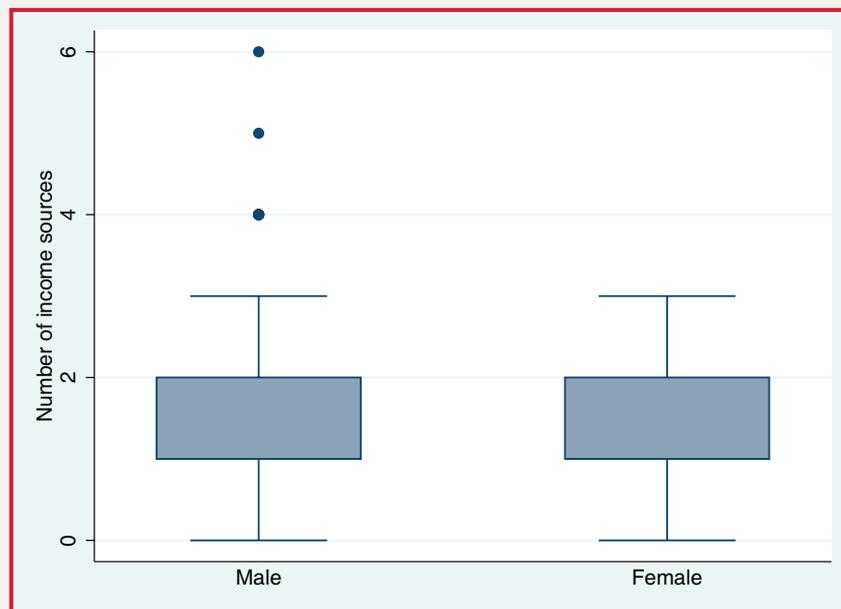
### 3.2.2 LIVELIHOOD STRATEGIES (DIVERSIFICATION): INCLUDES LIVELIHOOD/ INCOME DIVERSIFICATION AND CROP DIVERSIFICATION

There is limited diversification in sources of income. Over 60 percent of the households rely on one income source. Furthermore, on average, each household has a median of one income source and there is minimal variation in income sources by gender of the household head and beneficiary type (See Table 4 and Figure 4).

**Table 4: Number of income sources by gender of household head**

Number of income sources	Male-headed households	Female-headed households	Beneficiary households	Non-beneficiary households	Total
1	52.75	64.67	53.92	66.19	56.43
2	37.52	29.02	36.52	28.57	34.89
3	8.18	6.31	8.33	4.76	7.6
4	1.27	0	0.99	0.48	0.88
5	0.14	0	0.12	0	0.1
6	0.14	0	0.12	0	0.1
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

Figure 4: Number of income sources by gender of household head

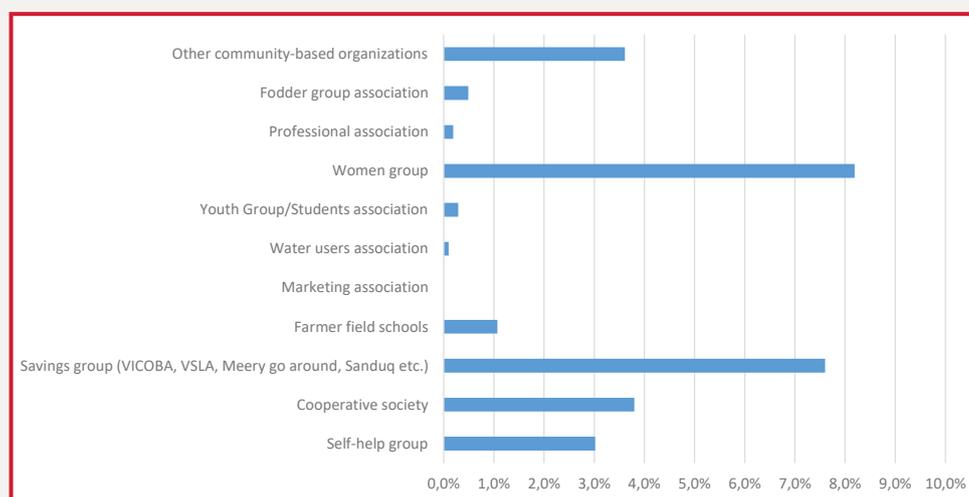


### 3.3 ASSETS, SOCIAL NETWORKS AND ACCESS TO BASIC SERVICES

#### 3.3.1 SOCIAL CAPITAL: SOCIAL NETWORKS AND ASSETS AVAILABLE TO THE HOUSEHOLD IN TIMES OF DIFFICULTY, SUCH AS ABILITY TO RELY ON FAMILIAL AND COMMUNITY NETWORKS

Approximately only 30 percent of the households have a household member belonging to at least one community network/group. The three main networks in the study area are women groups (8 percent); savings groups such as the Village Savings and Loans Association (VSLA) and Village Community Bank (VICOBA) (7.6 percent); and cooperative society (4 percent) (Figure 5). Only one percent of the sampled households have at least one member belonging to a fodder users' group (this corresponds with five percent for households that are involved in fodder production).

Figure 5: Social networks and associations



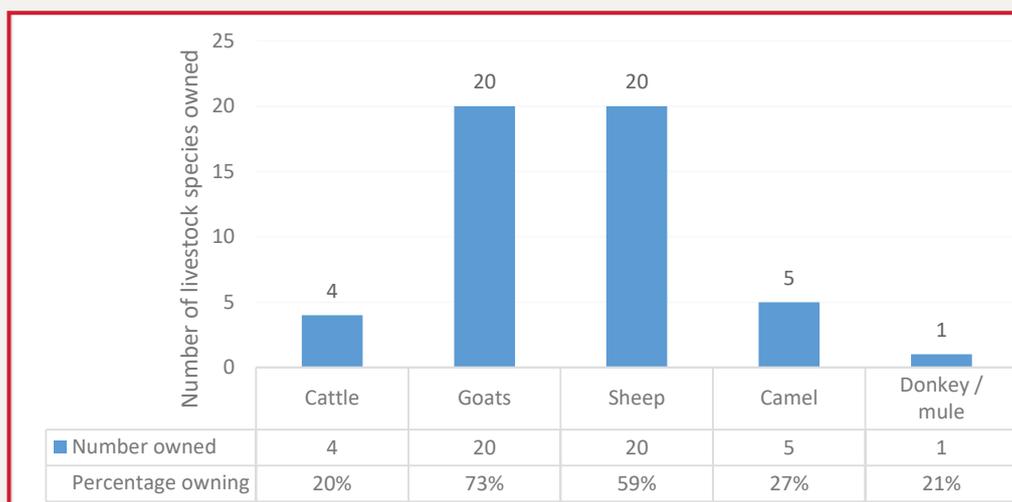
### 3.3.2 NATURAL CAPITAL: ACCESS TO LAND

Access to sufficient cultivation and grazing land is important in increasing rural household productivity and diversification of income sources. Approximately 23 percent of households in the study areas have access to arable land and use it for cropping. On average, each household holds 1.2 ha. Male-headed households have access to one ha on average, while female-headed households have access to 1.7 ha. During the 2019 DEYR season (the minor rainy season: October to December), male-headed households planted on 0.5 ha and female households on 0.7 ha.

### 3.3.3 PHYSICAL CAPITAL: LIVESTOCK ASSETS AND ACCESS TO PRODUCTIVE TOOLS

Access to assets increases the households’ ability to manage and mitigate against assorted shocks (including drought and conflict) and helps to smooth consumption during such periods. Furthermore, access to assets can help such households to handle income uncertainties and escape poverty. In this section, two kinds of assets are discussed that are important in the survey area – livestock and productive tools. Figure 6 presents the livestock ownership and average number of livestock species owned per household. Approximately 73 percent of the households own goats and each household owns 20 goats on average; 59 percent of households own sheep, with an average of 20 sheep per household; 27 percent of the households own camels, with an average of five camels per household; 21 percent of households own donkeys, with an average of one donkey per household; and 20 percent of households own cattle, with an average of four heads of cattle per household. In terms of Tropical Livestock Units<sup>2</sup> (TLU), each household has an average of three TLU and 0.5 per capita TLU.

**Figure 6: Summary of livestock ownership and average number of livestock owned**



<sup>2</sup> Tropical Livestock Units are livestock numbers converted to a common unit. An increased number of animals per adult available to support the household, indicates improved food security and household resilience. Relative changes to the TLU provide a direct indicator of food security risk.

The main livestock products sold by households in the study area are live animals (80 percent) and milk (21 percent). Figure 7 presents the main challenges that households experience with livestock rearing in the survey area.

**Figure 7: Livestock-rearing challenges**

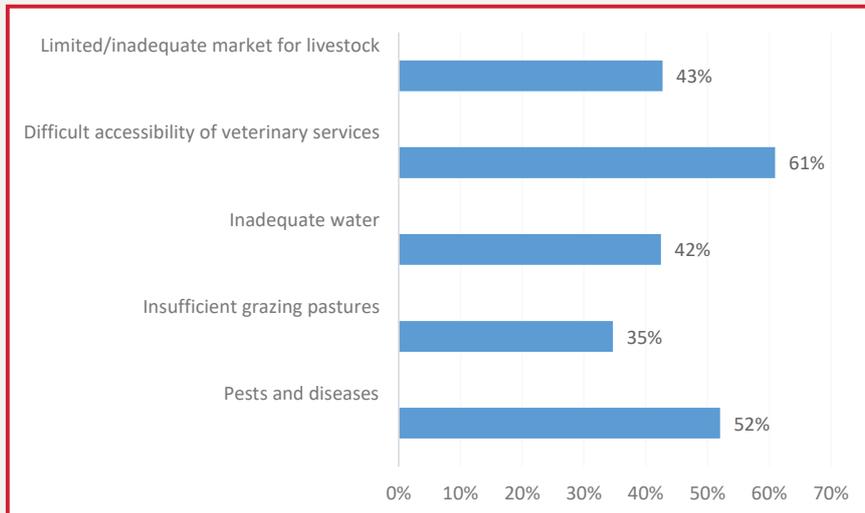


Figure 8 presents typical livestock migration months in the survey area. Animal migrations have a bimodal pattern, with most migrations occurring around September/October and March/April. These migrations are experienced during the dry periods in search of water and pasture.

**Figure 8: Months with livestock migration**

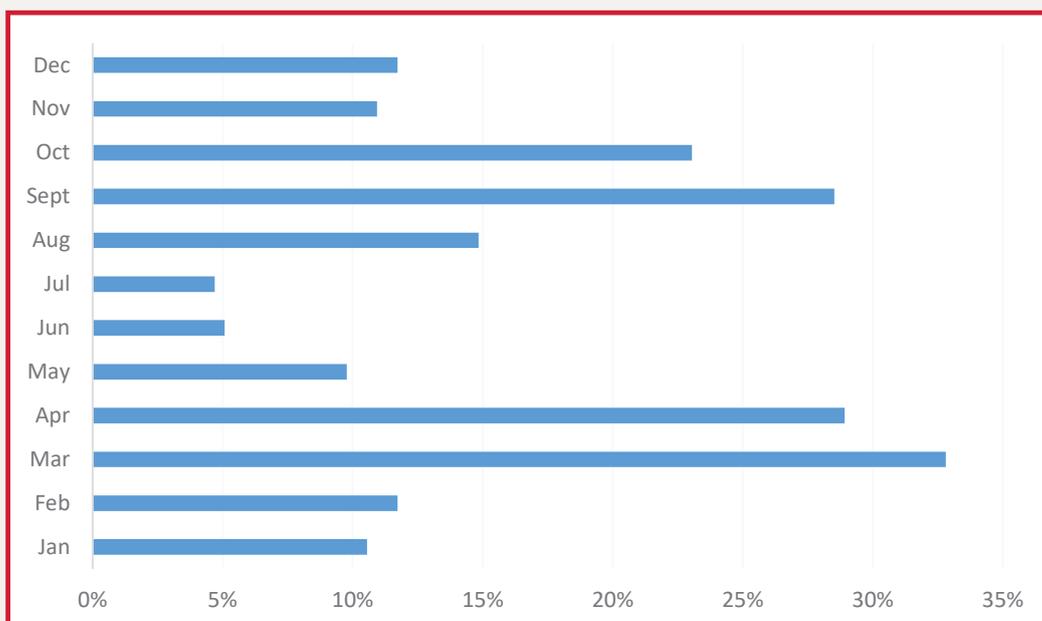
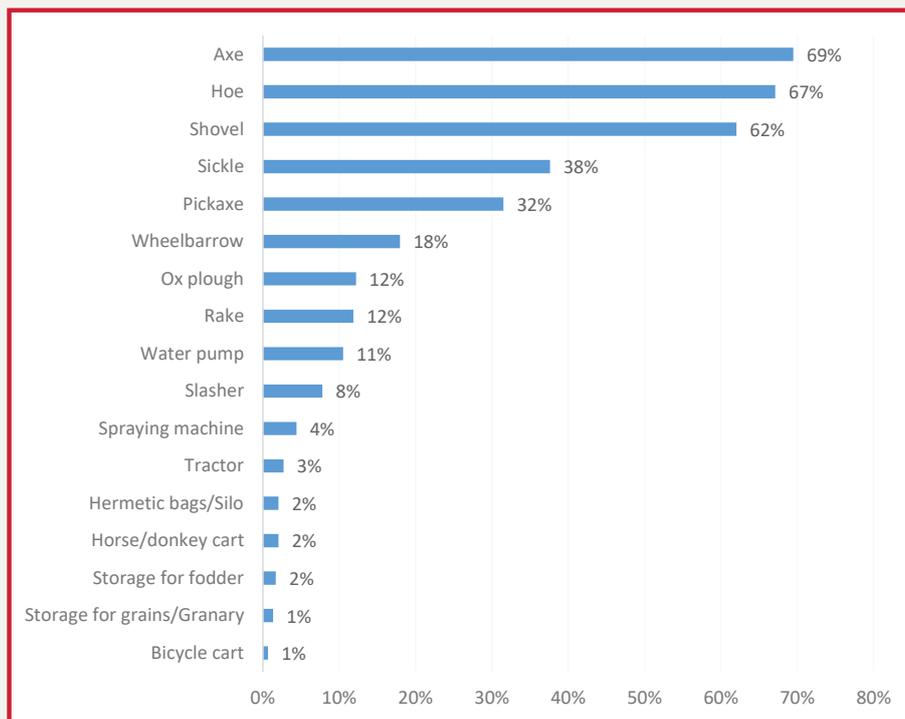


Figure 9 shows the types of agricultural tools owned by the households in the survey area. Most households own less productive tools including an axe (69 percent), hoe (67 percent) and shovel (62 percent). Although 23 percent of households were reported to be involved in crop production, fewer than five percent indicated that they have some form of storage facility – fodder storage (two percent), hermetic bags/silos (two percent) and granary (one percent).

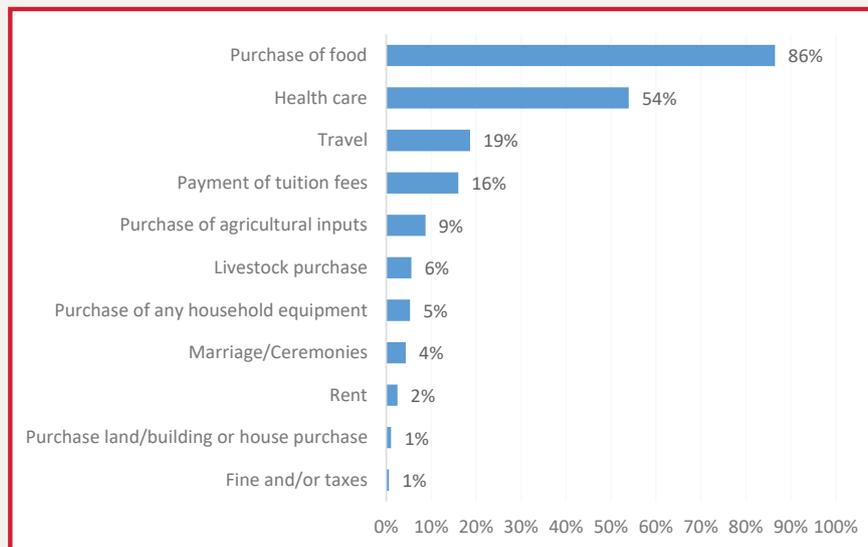
**Figure 9: Agricultural tools owned by households**



**3.3.4 FINANCIAL CAPITAL: ACCESS TO CREDIT AND MONETARY TRANSFERS**

Access to credit plays an important role in improving households’ daily productivity, increasing their knowledge, improving their well-being and providing an avenue to mitigate poverty. Approximately 63 percent of households were reported to have accessed some form of credit in the last three months preceding the survey. Figure 10 presents the main purpose of seeking the credit. The four main purposes for which credit was sought were purchase of food (86 percent), access to health care (54 percent), travel (19 percent) and education (16 percent). Based on the results, little of the accessed credit was used to improve productivity in the households (minimal use in livestock investment, equipment purchases or agricultural packages). In fact, most of the accessed credit was used for daily food consumption and health care needs, which could play a catalytic role in sinking the households into deeper levels of poverty and reducing their creditworthiness in their social circles.

Figure 10: Main purpose for accessing credit

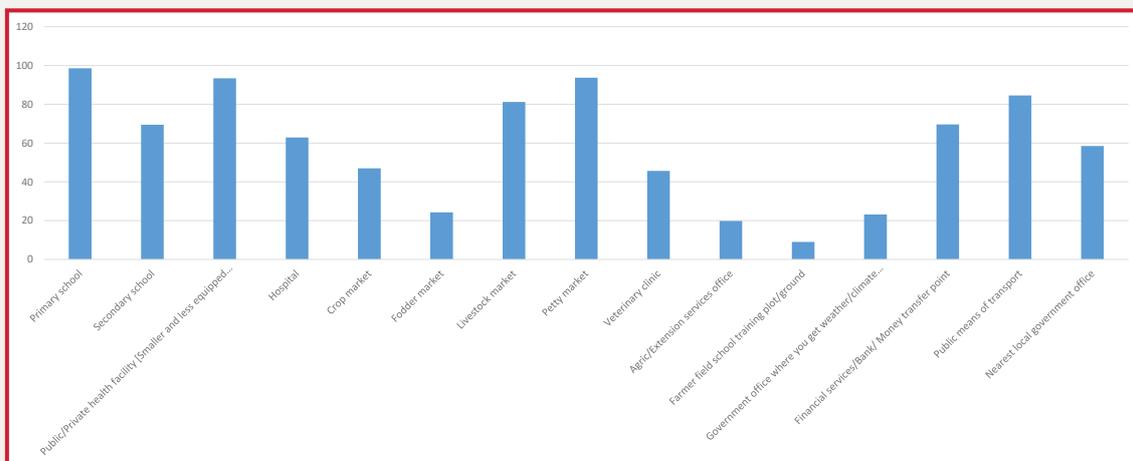


The sources of accessed credit were mainly friends, neighbours and relatives (95 percent), local cooperatives (three percent) and small microcredit and savings programmes (two percent), an indication of limited access to formal financial services and especially credit.

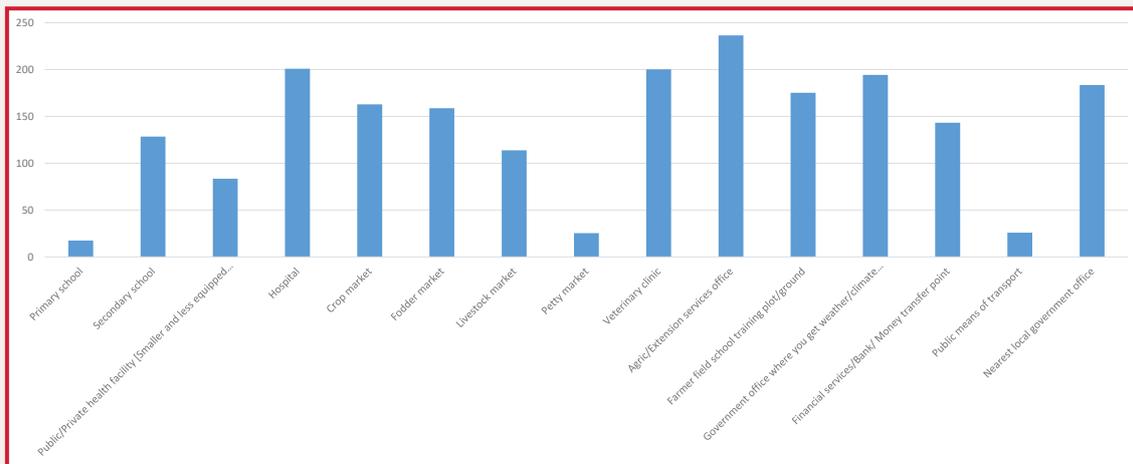
### 3.3.5 ACCESS TO BASIC SERVICES VARIABLES

Significant leaps in alleviating poverty and improving the food security situation in the area are highly dependent on the availability of functioning basic services. Moreover, access to basic services is a key ingredient for economic and social development in rural areas. Improved infrastructure, including transport, electricity connectivity and water facilities, improves access to education and health services as well as access to information and agricultural extension services. Access to financial services such as mobile money and banking increases opportunities for doing business. The availability of functioning markets for the purchase of inputs and sale of livestock and agricultural products minimizes exposure to losses emanating from poor prices for smallholder farmers and spoilt perishable products. In this section, access to basic services is explored by looking at how far they are (in terms of minutes it takes a person in the survey area to reach locations where selected services are provided). Figures 11 and 12 present the proportion of households that have access to the selected facility and how long it takes for someone to reach the point of service (one way). The least accessible facilities are extension services offices, veterinary clinics and hospitals. Close to 100 percent of households in the study area can access primary schools. Only 71 percent can access secondary schools and the average time it takes them to reach a secondary school is over two hours.

**Figure 11: Proportion of households that have access to facility**



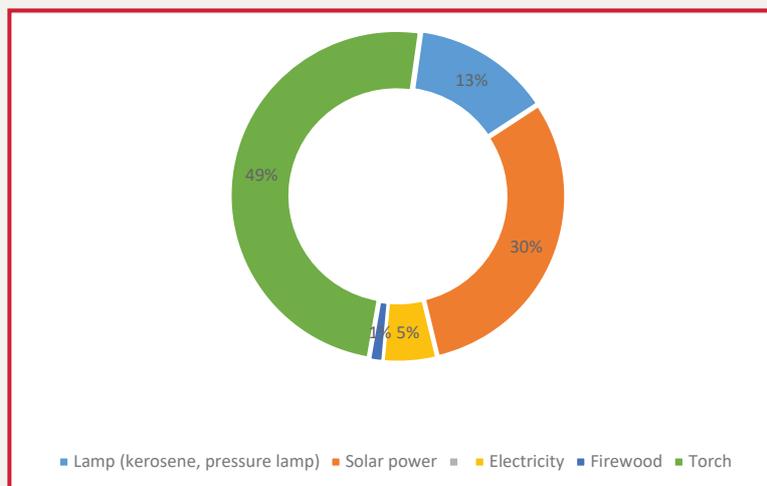
**Figure 12: Time in minutes it takes households to reach the facility (walking one way)**



Another facet of household access to basic services is access to water, hygiene and sanitation services. Approximately 36 percent of sampled households in the survey area have access to improved toilet facilities and 58 percent have access to improved water sources during the dry season.

Figure 13 presents sources of light energy used by households in the survey area. The three main sources of light energy used by households are battery-powered torches (49 percent), solar-powered lamps (30 percent) and lamps (13 percent). Only five percent of the households use electricity for lighting.

Figure 13: Sources of light energy in the survey area



### 3.4 SHOCKS AND COPING STRATEGIES

#### Relevant shocks reported by the households, as well as coping strategies to respond to and overcome reported shocks

Figure 14 presents the main shocks experienced by households in the survey area in the last 12 months preceding the survey. The main shocks are drought, reduced household income and high food prices, loss of employment, serious illness and violent insecurity.

Approximately 96 percent of the households reported being invaded by desert locusts at the end of 2019 and beginning of 2020. Among those households, only 12 percent reported that the desert locusts were still around. Most households used traditional methods to drive away the locusts including smoke, gunshot sounds and noise (human voice and hitting tins/iron sheets).

Figure 14: Shocks experienced by the households in the last 12 months

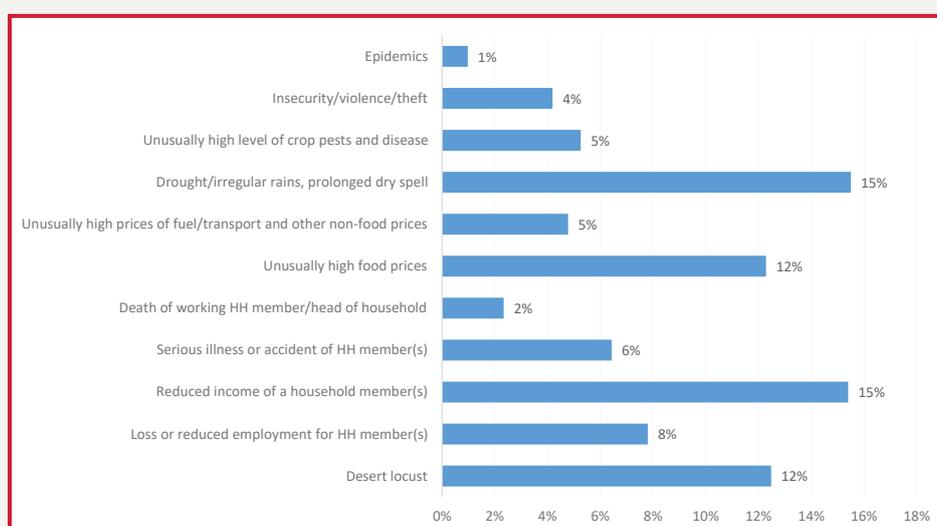
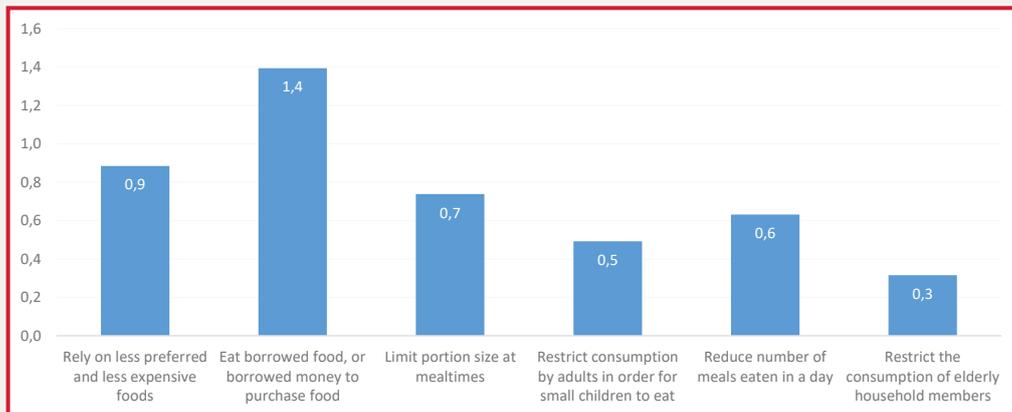


Figure 15 presents food consumption coping strategies undertaken by households in the last seven days preceding the survey. On average, each household purchased food on credit for approximately two days in the last seven days.

**Figure 15: Number of days in the last seven days that households used a coping strategy**



The average Reduced Coping Strategy Index (rCSI)<sup>3</sup> in the study area is 8.23, measured on a scale of 0 to 56. This indicates that households are not employing very severe coping strategies. Figure 16 presents the rCSI disaggregated by main source of livelihood. Households whose main livelihood source is skilled labour have the lowest rCSI, while households engaging in petty trade have the highest rCSI. Households engaged in crop and livestock production have a similar rCSI. The difference in rCSI between male-headed and female-headed households is not statistically significant.

Approximately 40 percent of the households reported that they had received assorted assistance from various partners in the last 12 months. The assistance received by the households is presented in Figure 17. The main forms of assistance include free food rations (14 percent), cash transfers (13 percent), free vaccination for children (9 percent) and free health care (8 percent).



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<sup>3</sup> For more information, see [https://documents.wfp.org/stellent/groups/public/documents/manual\\_guide\\_proced/wfp211058.pdf](https://documents.wfp.org/stellent/groups/public/documents/manual_guide_proced/wfp211058.pdf); page 17.

Figure 16: Reduced Coping Strategy Index by main livelihoods

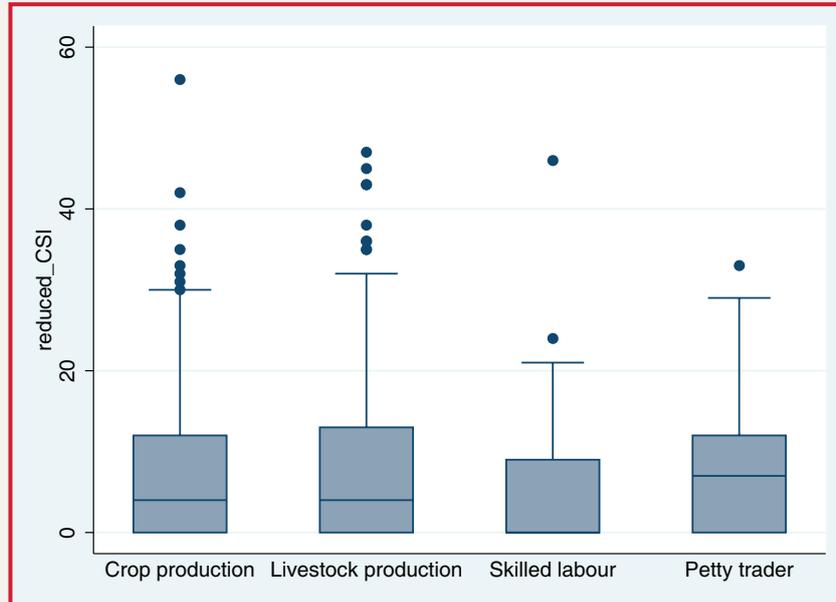
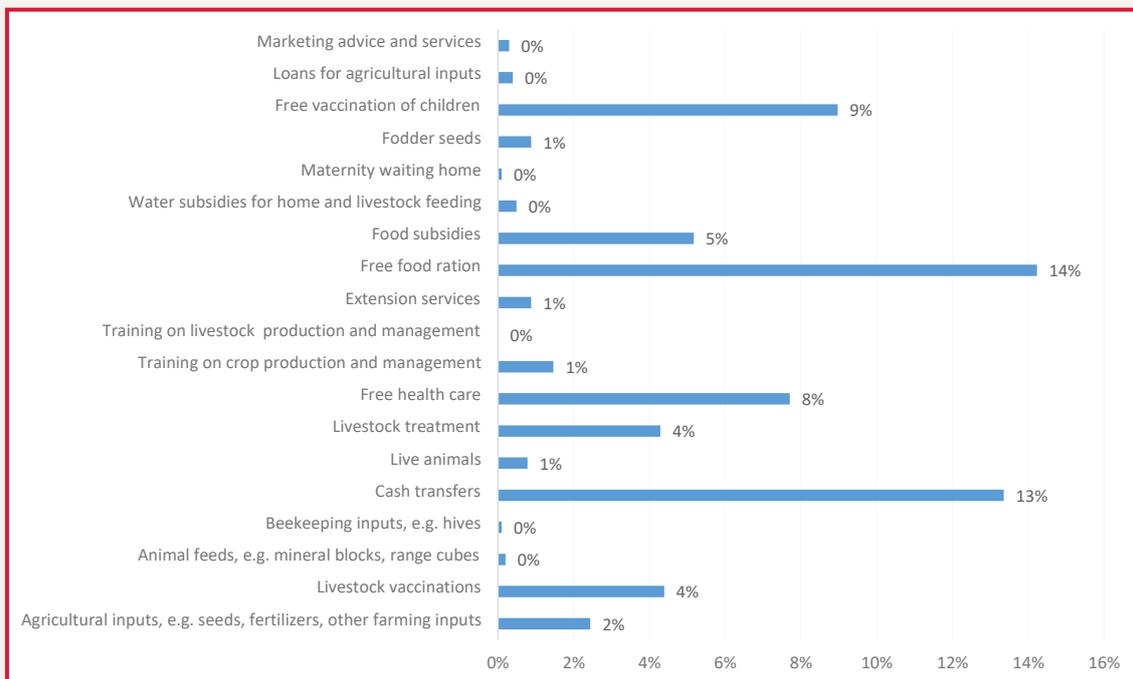


Figure 17: Assistance received in the last 12 months



### 3.5 FOOD SECURITY/NUTRITION

#### 3.5.1 FOOD CONSUMPTION SCORE

Food Consumption Score (FCS) measures the variety, quality and quantity of food consumed by a household in a period of seven days. The average FCS in the surveyed area is 47. Figure 18 shows the proportion of households in the different FCS categories. Approximately 56 percent of the households have acceptable FCS. There is no statistically significant difference in FCS by gender of the household head (FCS for male-headed households is 46.4 and for female-headed households 47.7). There is a statistically significant difference in FCS between beneficiary households (FCS=48.6) and non-beneficiary households (FCS=43.1)

Figure 18: FCS categories

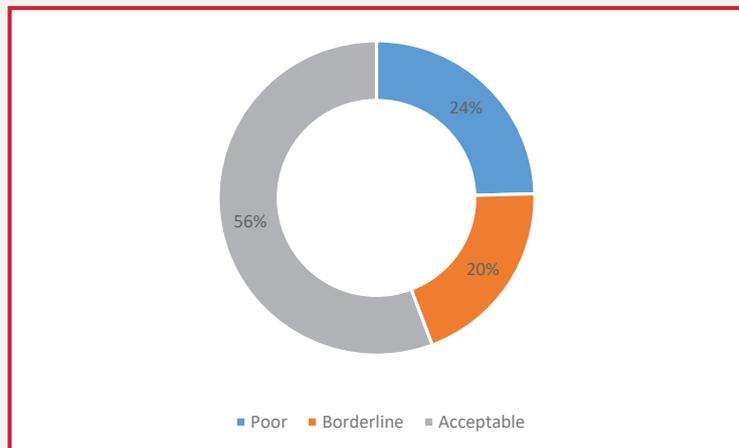
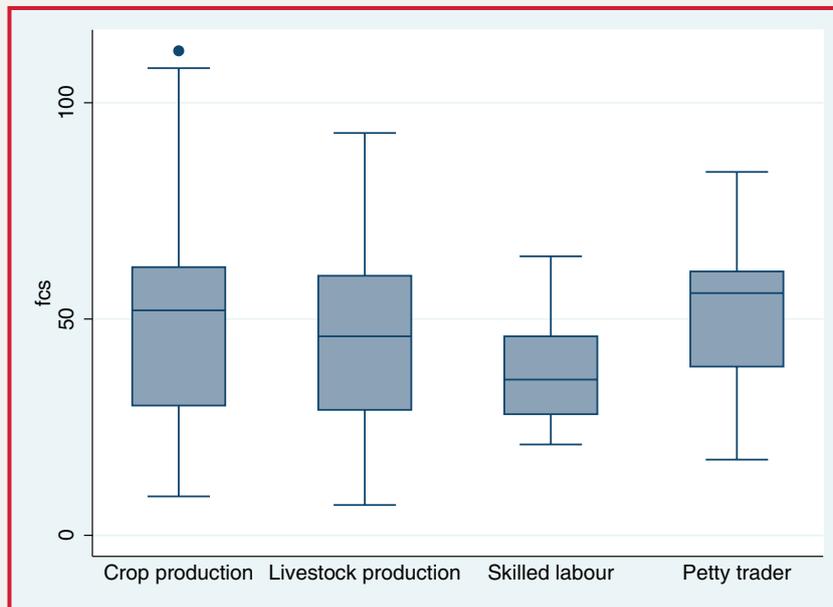


Figure 19 presents variation in FCS by main livelihood source. Households engaging in petty trade and crop production have the highest FCS, while those engaged in skilled labour have the lowest FCS. While households engaging in skilled labour have low rCSI, they have poor FCS. The skilled labour households could have access to food and maybe the required resources to purchase food but have a mismatch in terms of utilization. This could indicate a need to conduct mass sensitization on different nutritional aspects and the importance of ensuring that adequate foods across all groups are consumed in the households. There is also a need to document locally available food items for each of the food groups.

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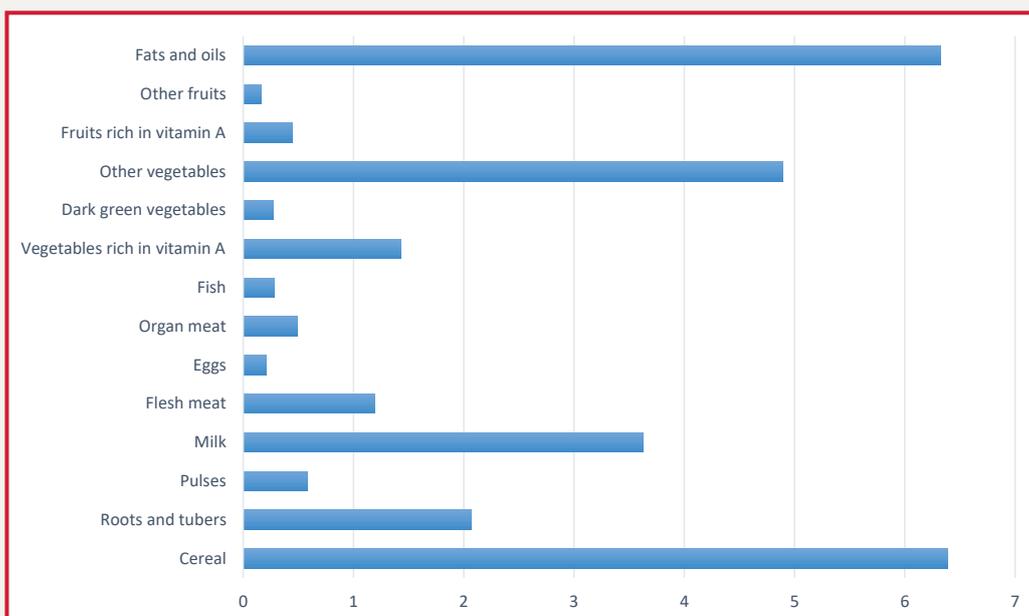


Figure 19: FCS disaggregated by main livelihoods



In terms of the foods eaten in the past seven days, oils and fats, cereals, other vegetables and milk are frequently consumed, at least three days a week. Proteins from meat, eggs and pulses are least consumed by the households. Fruits are rarely consumed in the households within a period of seven days.

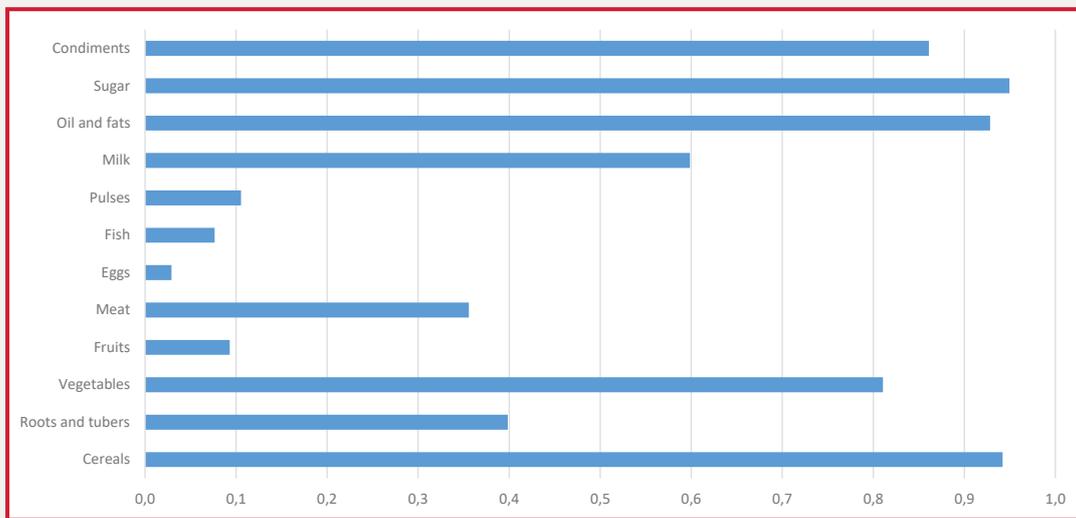
Figure 20: Food groups consumed in the household in the last seven days



### 3.5.2 HOUSEHOLD DIETARY DIVERSITY SCORE

Household Dietary Diversity Score<sup>4</sup> (HDDS) measures the diversity of foods consumed in a household. The data of consumption are collected for a recall period of 24 hours. The average HDDS for the households in the survey area is 6. On average, a household in the survey area consumed six different kinds of food out of the 12 food groups. Figure 21 presents the proportion of households that consumed food groups in the last 24 hours preceding the survey. There is a high consumption of cereals, vegetables, oils and sugar in the survey area. The main sources of protein are milk and meat. Very few households are consuming protein-rich foods; less than 20 percent pulses, fish and eggs. Fewer than 10 percent of the households consumed fruits in the last 24 hours before the survey.

Figure 21: Food groups consumed in the household in the last 24 hours



### 3.5.3 DRIVERS OF FOOD INSECURITY

Table 5 presents the drivers of food insecurity in the survey area. Two food security indicators were used, namely FCS and HDDS. Both productive and non-productive household assets are positively associated with food security (p-value<0.001). Households with higher TLU are more food secure (p-value<0.001). Households that have bank accounts have better food security status than households that do not have access to financial services. Households that have access to improved lighting and cooking energy are more food secure than those without improved basic facilities. The education level of the household head is positively associated with food security status – those with higher education have better food security status (p-value = 0.08).

The three main shocks that undermine food security in the survey area are drought, conflict/insecurity and reduced household income. However, only households that reported conflict/insecurity had their food security status undermined in a significant manner.

<sup>4</sup> More information at [http://www.fao.org/nutrition/assessment/tools/household-dietary-diversity/en/#:~:text=Household%20dietary%20diversity%20Score%20\(HDDS\)%20is%20a%20qualitative%20measure%20of,dietary%20diversity%20at%20individual%20level.](http://www.fao.org/nutrition/assessment/tools/household-dietary-diversity/en/#:~:text=Household%20dietary%20diversity%20Score%20(HDDS)%20is%20a%20qualitative%20measure%20of,dietary%20diversity%20at%20individual%20level.)

Table 5: Determinants of food security

VARIABLES	FCS	HDDS
Wealth index	44.23*** (11.09)	4.133*** (0.976)
Agricultural assets index	17.12** (6.830)	2.128*** (0.601)
TLU	2.215*** (0.560)	0.145*** (0.0493)
Size of cultivated land	0.225 (0.699)	0.0646 (0.0615)
Access to informal transfers	-1.799 (2.613)	0.212 (0.230)
Number of associations	0.520 (1.324)	0.136 (0.116)
Access to bank	10.23*** (2.639)	0.731*** (0.232)
Distance index	0.843 (1.990)	-0.0594 (0.175)
Access to safe water	1.667 (1.532)	0.130 (0.135)
Sanitation	4.235 (2.591)	-0.0595 (0.228)
Improved cooking energy	11.13*** (2.247)	0.459** (0.198)
Improved lighting	4.820*** (1.571)	0.426*** (0.138)
Education	0.849 (0.907)	0.137* (0.0797)
Number of income sources (scaled to 0–1)	-0.187 (0.961)	-0.143 (0.1045)
Dependency ratio (inv)	-39.03 (72.02)	4.596 (6.333)
Household head gender: Female	2.012 (1.561)	0.116 (0.137)
Shock: Drought	-0.719 (2.148)	0.0542 (0.189)
Shock: Reduced income	1.459 (2.051)	-0.0150 (0.180)
Shock: Conflict/insecurity	-1.274 (3.016)	-0.454* (0.265)
District dummies	Yes	Yes
Constant	43.54*** (3.111)	5.144*** (0.274)
Observations	655	655
R-squared	0.241	0.166

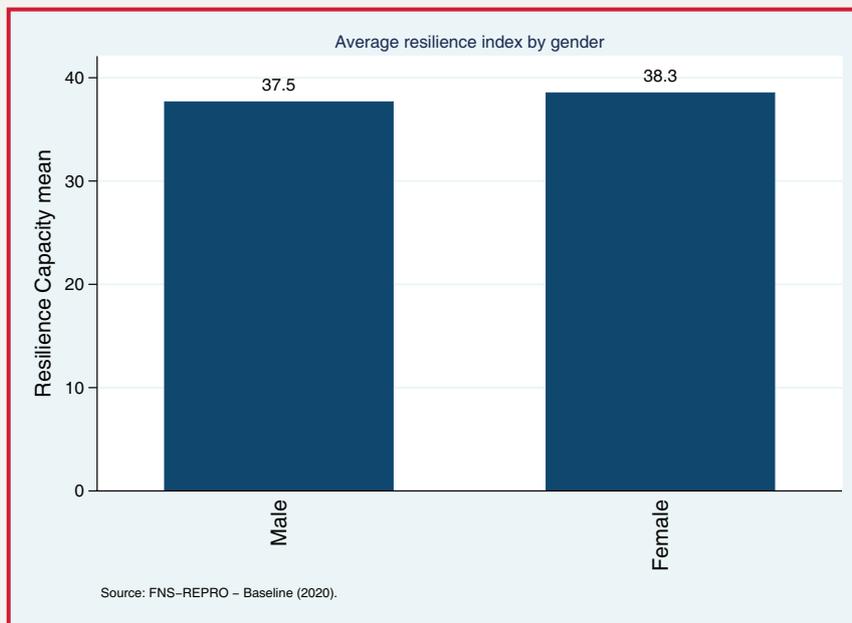
Standard errors in parentheses \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

### 3.6 RESILIENCE

#### 3.6.1 RESILIENCE CAPACITY INDEX

The average resilience capacity in the study area is 38. However, there are variations in the Resilience Capacity Index (RCI) by gender of the household head and administration units (district). Albeit not statistically significant, female-headed households (RCI=38.3) are more resilient than male-headed households (RCI=37.5) as indicated in Figure 22. Badhan (RCI=46) and Caynaba (RCI=41) are the most resilient districts, while Taleh (RCI=33) is the least resilient (See Figure 23). These are indicative figures as the survey was not calibrated to produce estimates at district level. Beneficiary households (RCI=39.4) have higher resilience capacity than non-beneficiary households (RCI=34.9).

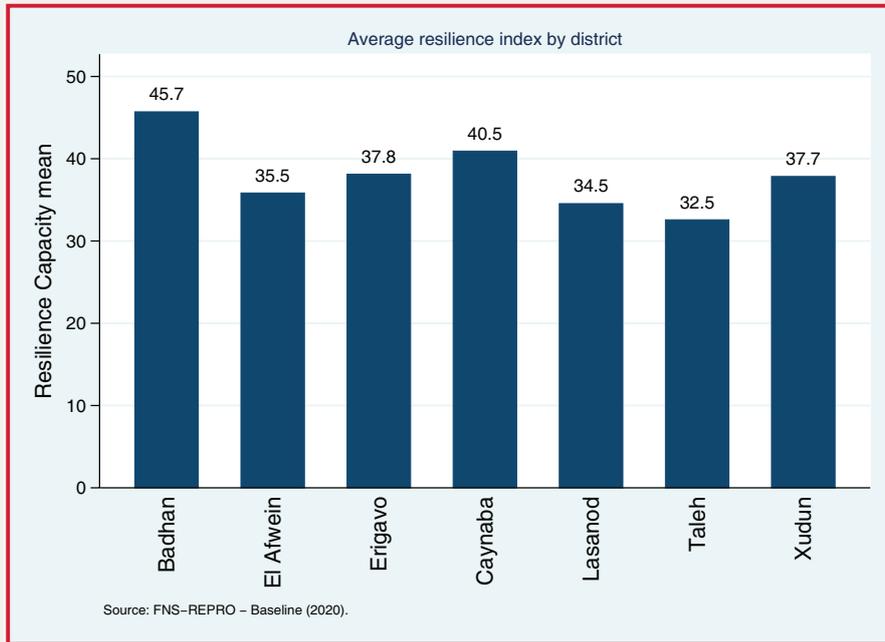
Figure 22: RCI by gender of household head



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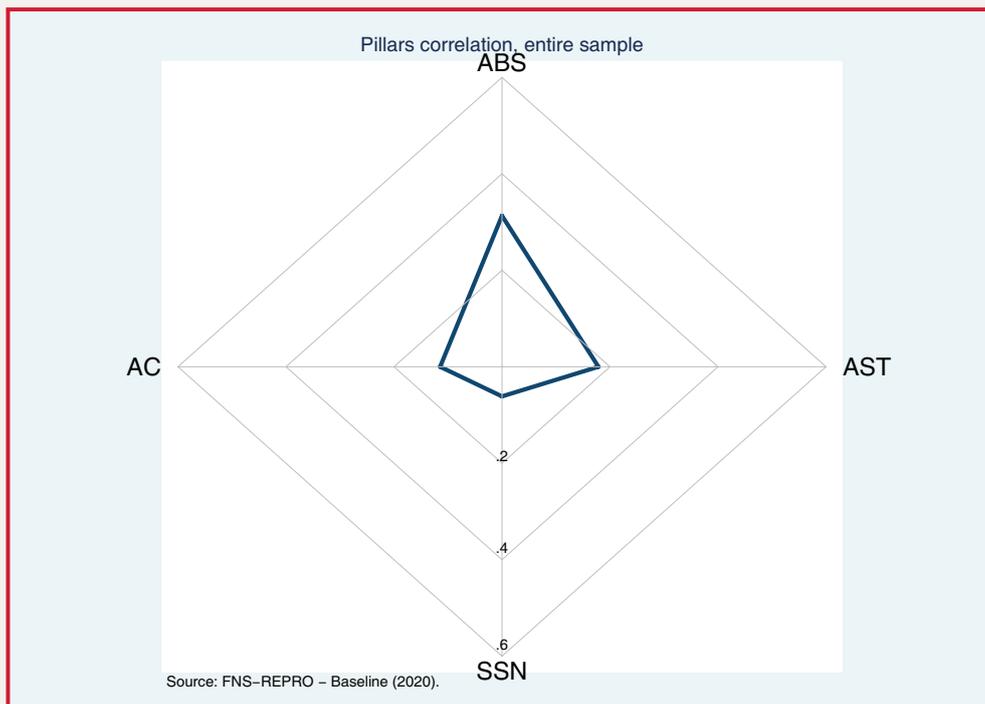


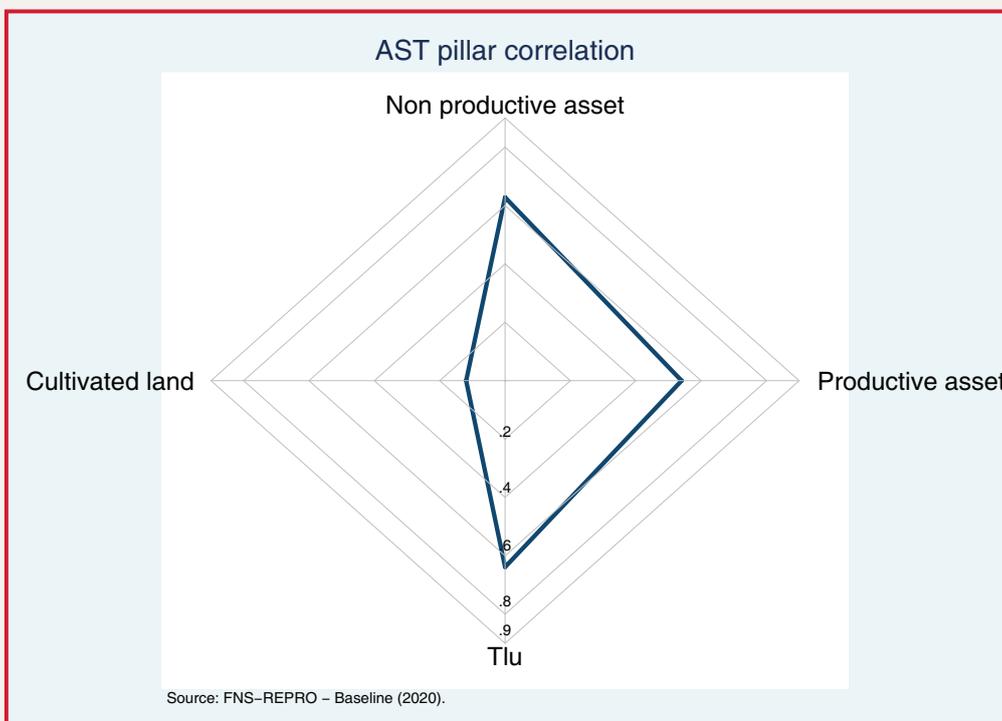
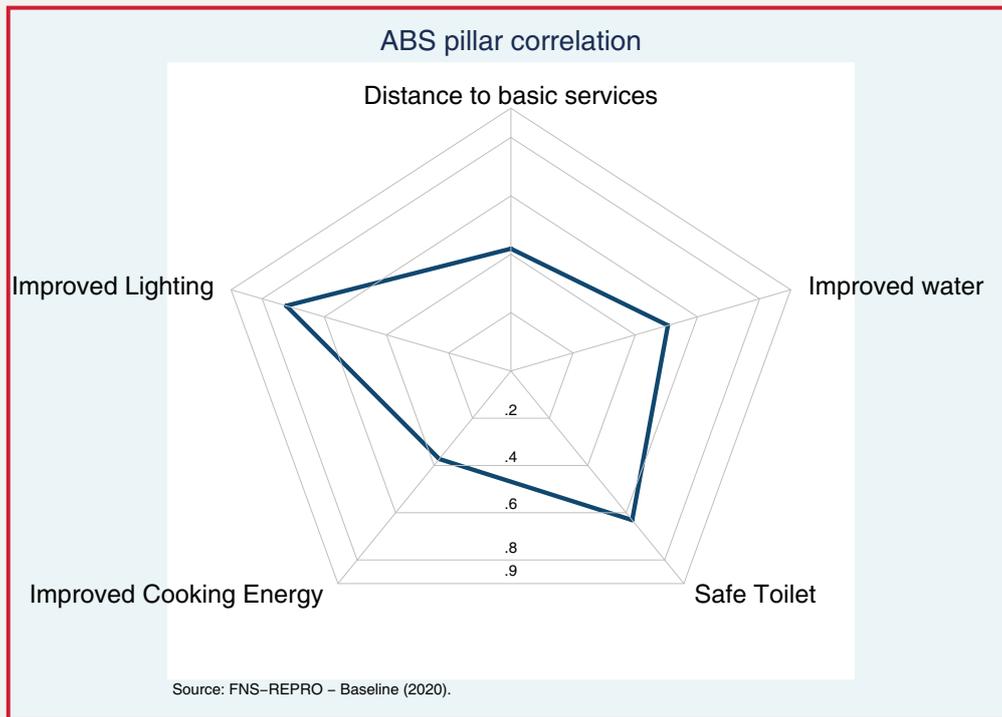
Figure 23: Average RCI by district

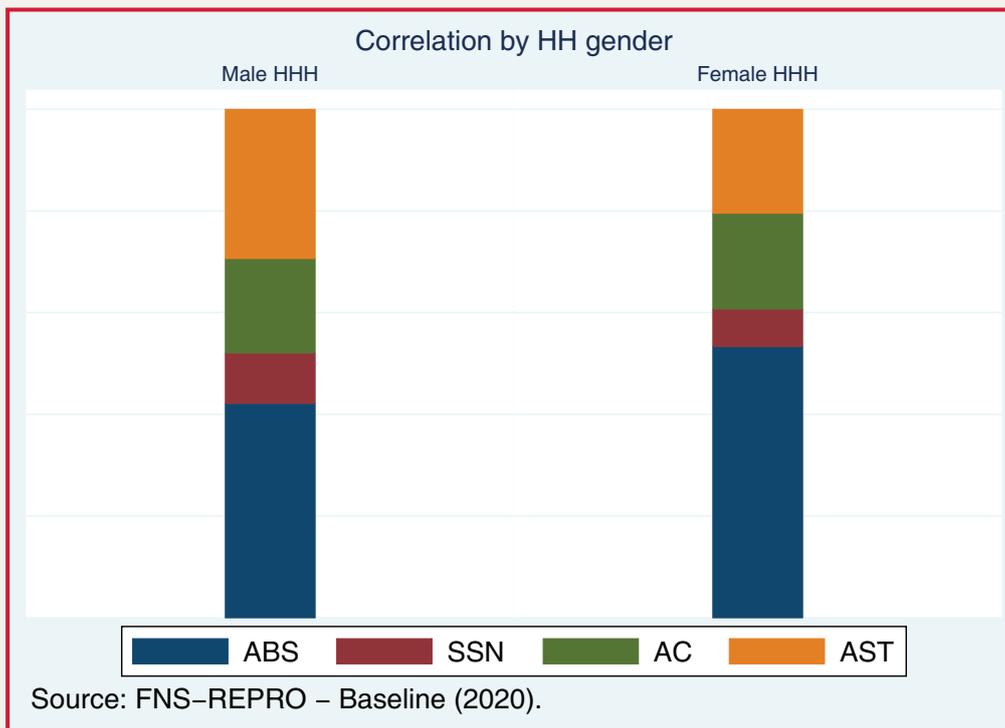


### 3.6.2 CONTRIBUTION OF KEY VARIABLES TO RELEVANT PILLARS

Among the four pillars of resilience, access to basic services (ABS) and assets (AST) contribute the most to the observed resilience capacity, followed by adaptive capacity. With respect to ABS, access to safe water and to improved sources of lighting plays a key role in the observed resilience. For AST, livestock ownership (TLU) and access to productive and non-productive assets are key drivers of resilience.







### 3.6.3 EFFECT OF SHOCKS ON RESILIENCE CAPACITY INDEX

Table 6 presents the effect of shocks on the estimated RCI in the survey area while controlling for household characteristics. Although the three main shocks in the study area all have a negative effect on the resilience of households, only drought has a significant negative effect (p-value<0.1).



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Table 6: Effect of shocks on RCI

VARIABLES	RCI
Household head age	-0.046 (0.064)
Household head gender: Female	1.381 (1.822)
Household size	-0.831*** (0.284)
Shock: Drought	-4.050* (2.723)
Shock: Reduced income	-2.539 (2.399)
Shock: Conflict/insecurity	0.494 (3.567)
Livelihood: Others (Ref)	
Livelihood: Crop production and sale	5.265* (2.843)
Livelihood: Livestock and livestock products sale	2.178 (2.436)
Livelihood: Casual labour	-3.341 (4.363)
Livelihood: Petty trade	7.905** (3.583)
Constant	44.72*** (4.180)
Observations	655

Standard errors in parentheses \*\*\* p<0.01, \*\* p<0.05, \* p<0.1



# 4

## BASELINE FINDINGS RELATED TO SPECIFIC INDICATORS OF THE LOGICAL FRAMEWORK

### 4.1 FODDER PRODUCTION ASPECTS

#### 4.1.1 CHARACTERISTICS OF HOUSEHOLDS PRODUCING FODDER

Approximately 10 percent of the households relied on fodder production as a livelihood source in the last 12 months (Figure 24). Figure 25 shows the distribution of households involved in fodder production by district. Over 10 percent of households in Erigabo, Lasanod and Caynabo are engaged in fodder production. Of these households, 71 percent are male-headed households and 29 percent are female-headed households. Households engaged in fodder production have a median dependency ratio of 150, while households not growing fodder have a dependency ratio of 167. Most of the households are not registered in fodder production groups/associations; only five percent of the households involved in fodder production reported that they belong to groups/associations, namely the Illad fodder association and Buq agricultural organization.

Figure 24: Percentage of households deriving livelihood from fodder production

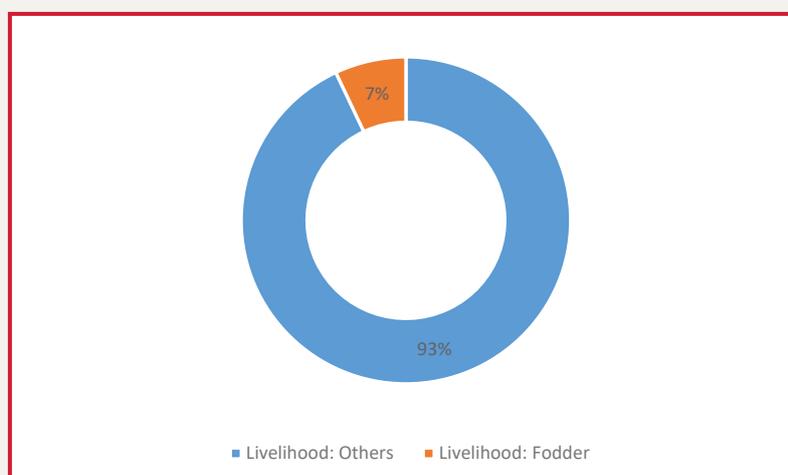
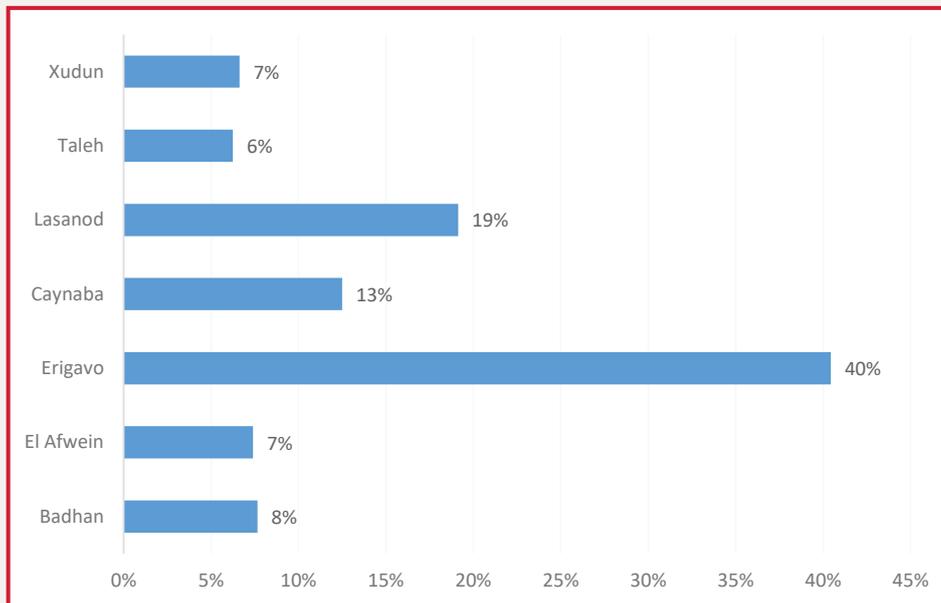


Figure 25: Fodder-growing households by district



#### 4.1.2 FODDER PRODUCTION INPUTS AND TRAINING

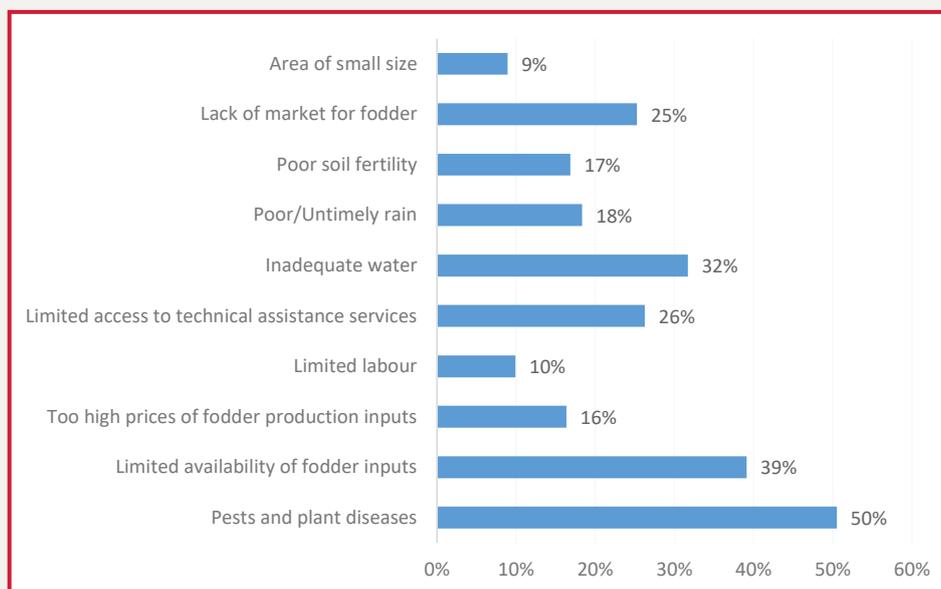
The main types of fodder crops that these households grow include natural grass (73 percent), sorghum (59 percent) and maize (23 percent). The households obtained their fodder seeds from multiple sources – 61 percent of the households purchased the seeds, 40 percent had seed stored from the previous harvest and 11 percent borrowed from neighbours. Among the households growing fodder, nine percent reported that they had received training in land preparation, pest and disease control and fertilizer application.

#### 4.1.3 FODDER HARVESTING AND PRODUCTION CHALLENGES

Among the fodder-growing households, 74 percent reported that they had harvested fodder in the last 12 months preceding the survey. The households used the harvested fodder for multiple purposes. The majority (83 percent) used the fodder to feed their own livestock, 52 percent stored it for future use and 8 percent sold it.

Figure 26 presents challenges faced by households during fodder production. The three main challenges are pests and diseases, limited availability of fodder inputs and inadequate water.

Figure 26: Challenges in fodder production



## 4.2 SUMMARY OF LOG-FRAME INDICATORS

Table 7 presents a summary of baseline values of selected log-frame indicators that can be derived from a household survey.

Table 7: Summary of key log-frame indicators

Indicator	Baseline value
RCI	38
Median annual income (USD)	180



# 5

## DISCUSSION OF LEARNING AGENDA QUESTIONS

The RIMA baseline analysis is one of the main data sets informing the learning agenda (output 4) of FNS-REPRO, which aims to establish and implement learning mechanisms to inform policy and practice, including adaptive management of FNS-REPRO. In the Monitoring, Evaluation, Accountability and Learning (MEAL) framework of FNS-REPRO, all information is collected and analysed to formulate answers to FNS-REPRO's learning questions, which have been contextualized for each FNS-REPRO country. RIMA, among other data sets, is one of the main information sources, fuelling the learning agenda and the MEAL framework.

Key learning questions will be addressed from the analysis of RIMA combined with the analysis of other studies and trajectories which have already taken place within the project, such as context analysis, food/seed system resilience assessments, special studies, learning journeys and communities of practice (all under output 4), and the beneficiary and benefits mapping from the target sites.

The objective of the learning agenda of FNS-REPRO is threefold:

- a) Improving project implementation: Evidence-based information supporting programme management with insights to be used towards achieving the objectives described in the monitoring and evaluation databases.
- b) Observatory: To develop new policy/practice insights and perspectives about food system resilience programming in areas of protracted conflict, for the benefit of target beneficiaries and partners.
- c) Building capacity: To build the capacity of FNS-REPRO staff and partners (including donors, government, UN organizations, NGOs, the private sector and knowledge institutes) by offering an ongoing facility for reflection and sense-making. This will enable a learning process among partners on what works best and which practices need amplification as the implementation progresses.

The learning agenda forms part of improving the implementation specific to the context, based on evidence derived from the field and co-created with local actors and partners. Moreover, the learning agenda enables adaptive and flexible programming by identifying critical food system resilience factors on an iterative basis.

Please note that this is a baseline report. Similar surveys will be carried out at mid term and end term. Analysis will be carried out over time and by beneficiary type. In order to measure the impact of the FNS-REPRO, the baseline data will be combined with midline or endline data to establish the changes in the key indicators of interest. Attribution of the changes to the FNS-REPRO will be established by use of econometric models for impact evaluation.

## 5.1 IMPACT-LEVEL LEARNING QUESTIONS

### *LQ 11. To what extent are households better able to withstand and recover from shocks and stressors as a result of FNS-REPRO? (at project and country level)*

Relevant RIMA indicators include household income and RCI, disaggregated by beneficiary and non-beneficiary households.

Indicator	Beneficiary	Non-beneficiary	Male	Female	Overall value
RCI	39.4	34.9	37.5	38.3	38
Median annual income (USD)	200	120	200	75	180

#### **Income**

The median annual income of households in the survey area is USD 180. This is USD 0.66 per household per day and with a median household size of eight members, this comes down to USD 0.08 per household member per day. Male-headed households earn significantly more income (USD 200) than female-headed households (USD 75).

There is variation in income generated from the three main sources disaggregated by household head gender. Male-headed households are more dependent on income from crop and livestock production, while female-headed households are more dependent on crop production and petty trade. Approximately 10 percent of the households reported that they had received remittance from family members. Each household received an average of USD 150 as remittance in a period of 12 months preceding the survey. Median annual income for beneficiary households (USD 200) is higher than for non-beneficiary households (USD 120).

#### **Resilience Capacity Index**

The average resilience capacity in the study area is 38. However, there are variations in the RCI by gender of the household head and administration units (district). Albeit not statistically significant, female-headed households (RCI=38.3) are slightly more resilient than male-headed households (RCI=37.5). Badhan (RCI=46) and Caynaba (RCI=41) are the most resilient districts, while Taleh (RCI=33) is the least resilient. However, these are indicative figures as the survey was not intended to produce estimates at district level. Beneficiary households (RCI=39.4) have higher resilience capacity than non-beneficiary households (RCI=34.9).

In order to understand the extent to which the FNS-REPRO has influenced all these indicators, a mid- or endline dataset is required so that the change in these indicators can be estimated and attributed to the current project.

#### **Shocks**

The main shocks are drought, reduced household income and high food prices, loss of employment, serious illness and violent insecurity.

Approximately 96 percent of the households reported that they had been invaded by desert locusts at the end of 2019 and beginning of 2020. Among those reporting a desert locust invasion, only 12 percent reported that the locusts were still around. Most households used traditional methods to drive away the desert locusts, including smoke, gunshot sounds and noise (human voice and hitting tins/iron sheets).

***LQ 13. Is a value chain approach an effective catalyst for building resilient communities and who benefits or not?***

This question cannot be answered at baseline as there is no value chain approach applied yet by FNS-REPRO.

***LQ 14. To what extent is there improved food and income security as a result of FNS-REPRO?***

Relevant RIMA-based survey indicators include food security indicators such as HDDS, FCS and FIES, disaggregated by beneficiary type. Household income is derived from various sources.

***HDDS***

The average HDDS for the households in the survey area is 6, and there is no difference between male- and female-headed households. On average, a household in the survey area consumed six different kinds of food out of the 12 food groups. There is high consumption of cereals, vegetables, oils and sugar in the survey area. The main sources of protein are milk and meat. Very few households are consuming protein-rich foods; fewer than 20 percent consume pulses, fish and eggs. Fewer than 10 percent of the households indicated consuming fruits in the past 24 hours. There is room to improve on the diversity of foods eaten, especially in terms of protein-rich food (pulses, fish and eggs) and fruits. There was no statistical difference in HDDS between beneficiary and non-beneficiary households.

***FCS***

The average FCS in the survey area is 47. Approximately 56 percent of the households have acceptable FCS. There is no statistically significant difference in FCS by gender of the household head and type of beneficiary. There is a statistical difference in FCS between beneficiary households (FCS=48.6) and non-beneficiary household (FCS=43.1).

Households engaging in petty trade and crop production have the highest FCS, while those engaging in skilled labour have the lowest FCS. While households engaging in skilled labour have low rCSI, they have poor FCS. The skilled labour households could have access to food and maybe the required resources to purchase food but have a mismatch in terms of utilization. This could be an indication of a need to conduct mass sensitization on different nutritional aspects and the importance of ensuring that adequate foods across all groups are consumed in the households. There is also a need to document locally available food items for each of the food groups.

In terms of the foods eaten in the past seven days, oils and fats, cereals, other vegetables and milk are frequently consumed, at least three days a week. Proteins from meat, eggs and pulses are least consumed by the households. Fruits are rarely consumed in the household within a period of seven days. This confirms the information on HDDS, indicating a low consumption of proteins and fruits.

***Drivers of food security***

Both productive and non-productive household assets are positively associated with food security (p-value<0.001). Households with higher TLU are more food secure (p-value<0.001). Households that have bank accounts have a better food security status than households that do not have access to financial services. Households that have access to improved lighting and cooking energy are more food secure compared with those that do not have improved basic facilities. The education level of household heads is positively associated with food security status – persons with higher education have a better food security status (p-value = 0.08).

The three main shocks that undermine food security in the survey area are drought, conflict/insecurity and reduced household income. However, only households that reported conflict/insecurity had their food security status undermined in a significant manner.

***LQ 15. What are the positive and negative (expected and unexpected) effects of FNS-REPRO on households and communities (including income, social cohesion, stability, triple nexus [development, humanitarian aid, conflict], etc.)?***

Country situation: Somaliland, a former British Protectorate, achieved its independence on 26 June 1960 and united with the former Italian colony of Somalia on 1 July 1960 to form the Republic of Somalia. Later, it separated from the rest of Somalia after the collapse of the central government, the Siad Barre military regime, back to its original colonial boundaries and restored a democratic rule on 18 May 1991. Constitutionally, Somaliland has a multi-party system of democracy, with an elected president and local councils.

Several conflicts have erupted since the early collapse of the previous military government. The conflicts are complex, with multiple combatants, motives and interests, with the seeds of instability sown during the military regime from 1969 to 1991 (Adam, 2013). Despite the challenges, Somaliland has established regional administrations, bringing relative stability, which are the product of a local peace process, uniting different clans to form a joint administration (Adam, 2013).

## 5.2 OUTCOME-LEVEL LEARNING QUESTIONS

***LQ 02.4. What is the contribution of improved income to improved FNS and resilience status?***

Relevant indicators: income, resilience index, FNS data.

The main shocks are drought, reduced household income and high food prices, loss of employment, serious illness and violent insecurity.

The extent to which income is improved by FNS-REPRO and how this relates to improved FNS and resilience is to be determined at mid term and end term after another set of data has been collected from the same households (panel data).

***LQ 03.1. What is the role of FNS-REPRO and other factors in stimulating healthy diets by targeted communities?***

Relevant indicators: HDDS, FCS.

The role of FNS-REPRO and other factors is yet to be determined, but wealth index, agricultural assets index, TLU holding, size of land cultivated during summer and education of the household head (years) were found to be positively associated with household food security, while reduced household income is the main shock that undermines food security in the survey area.

***LQ 03.3. What role does FNS-REPRO play in reducing gender disparities?***

Based on this RIMA study, there are currently significant differences between male- and female-headed households in terms of:

- **Income:** The income of male-headed households is higher (USD 294) than that of female-headed households (USD 184). There is variation in income generated from the three main

sources disaggregated by household head gender. Male-headed households are more dependent on income from crop and livestock production, while female-headed households are more dependent on crop production and petty trade.

- **Resilience:** There are variations in the RCI by gender of the household head. Albeit not statistically significant, female-headed households (RCI=38.3) are slightly more resilient than male-headed households (RCI=37.5).
- **HDDS:** There is no statistically significant difference in HDDS by gender of the household head.
- **FCS:** There is no statistically significant difference in FCS by gender of the household head.

The RIMA information discussed in Chapter 5 will have to be analysed in combination with data from other sources to make sense of available information that can answer the learning questions. Some of this sensemaking takes place in the communities of practice and some during the annual sensemaking events that are held prior to the annual review and planning meetings of FNS-REPRO at country and regional levels. The sensemaking of available documentation on the different learning questions can inform policy and practice of FNS-REPRO and other stakeholders.



# 6 CONCLUSION

The fodder production sector in Somaliland is clearly underdeveloped, with most producers being subsistence farmers. Most farmers do not belong to any fodder production association/group. There is a good opportunity to promote fodder production in the study area. Given that drought is a key shock in the area and limited adequate water is one of the main challenges in fodder production, minimizing reliance on rainfed fodder production is key in meeting the objectives of the project.

The study area seems to be prone to desert locust infestation, hence there is a need to include mitigation options in the project to counter desert locust invasion should it recur.

It was proposed in the project framework to use pastoral field schools for capacity building. Based on the descriptive statistics of household members' engagement in associations/groups, only 10 percent of the households had a member participating in farmer field schools. There will be a need for more advocacy to encourage farmers and pastorals to join and embrace pastoral and farmer field schools if the project's implementing partners decide to use this route to access and continuously engage farmers.

Most of the target beneficiaries are dependent on only one source of livelihood. This limited number of livelihood sources could leave the households vulnerable to shocks that affect their livelihood. There is a need to invest in livelihood support systems to enhance the number of household income sources.



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## APPENDICES

### APPENDIX I: RESILIENCE MEASUREMENT APPROACH

RIMA-II methodology (FAO, 2016) was used to measure resilience in this study (see Figure 27). The methodology estimates the Resilience Capacity Index (RCI) based on a two-stage procedure:

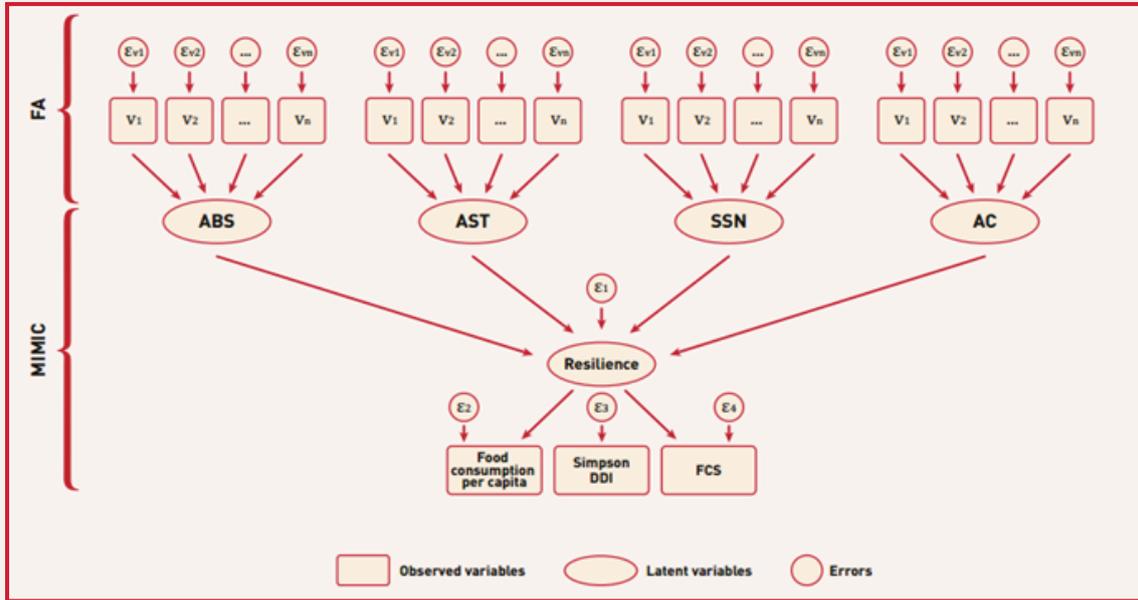
- i) The resilience pillars are estimated from observed variables through factor analysis. The definition of each pillar of resilience and the related variables are reported in Table 8.
- ii) The RCI is estimated from the pillars, considering the indicators of food security using the Multiple Indicators Multiple Causes (MIMIC) model. The food security indicators are considered outcomes of resilience.

After estimating the pillars, the RCI is jointly estimated through its pillars and by considering the food security indicators. After estimating the RCI, a min-max scaling is used to transform the RCI value into a standardized index, ranging between 0 and 100, with higher values indicating higher resilience capacity.

**Table 8: Definition of variables used in each pillar for RCI estimation**

Pillars of resilience	Definition	Variables
<b>ABS</b>	Access to basic services (ABS) shows the ability of a household to meet basic needs by accessing and effectively using basic services such as sending children to school; accessing water, electricity and sanitation; accessing markets for selling and buying goods.	Access to safe water; access to safe toilet; access to soap for handwashing; improved cooking energy; improved lighting energy; closeness to services such as schools, health facilities, hospitals, markets, financial services and public transport.
<b>AST</b>	Assets (AST), both productive and non-productive, are the key elements of a livelihood as they enable households to produce and consume goods. Examples of productive assets include land and agricultural index (e.g. agricultural equipment), while non-agricultural assets take into account the monetary value of the house where the household is located and its appliances.	Household asset index; ownership of productive tools and equipment; cultivated land area; TLU per capita.
<b>SSN</b>	Social safety nets (SSN) proxy the ability of the household to access formal and informal assistance from institutions, as well as from relatives and friends.	Access to credit; access to formal transfers; access to informal transfers; access to credit from financial institutions; having a bank account; participation in social networks such as market associations, cooperatives, women and youth networks, etc.
<b>AC</b>	Adaptive capacity (AC) is the ability to adapt to a new situation and develop new livelihood strategies. For instance, proxies of the AC are the average years of education of household members and the household perception of the decision-making process of their community.	Average education of the household head and whether he/she can read and write in any language; number of income sources; dependency ratio (active/non-active members).

Figure 27: RIMA-II model structure



For causal analysis, two models are fitted to identify the determinants of household resilience and food security status.

For resilience determinants (excluding any household variable used to construct the index), the model employed is:

$$RCI_i = \beta_0 + \alpha X_i + \varepsilon_i; \quad (1)$$

where

$RCI_i$  is the resilience capacity index of household  $i$ .

$X_i$  is a vector of household control characteristics and a shock.

$\varepsilon_i \sim N(0, \sigma_\varepsilon^2)$  is the error term.

For food security determinants, the model employed is:

$$\begin{bmatrix} HDDS_i \\ FCS_i \end{bmatrix} = \begin{bmatrix} \beta_{01} & \theta_1 & \vartheta_1 & \alpha_1 \\ \beta_{02} & \theta_2 & \vartheta_2 & \alpha_2 \end{bmatrix} \begin{bmatrix} 1 \\ R_i \\ \gamma_i \\ X_i \end{bmatrix} + \begin{bmatrix} \varepsilon_{1i} \\ \varepsilon_{2i} \end{bmatrix}; \quad (2)$$

where,

$HDDS_i$  and  $FCS_i$  are the household dietary diversity score (HDDS) and food consumption score (FCS) for household  $i$  respectively;

$\gamma_i$  is a vector of shocks; and

$X_i$  is a vector of household control characteristics.

$R_i$  is the vector of all observed variables employed in the estimation of the pillars.

$\alpha, \theta, \vartheta$  and  $\beta_0$  are the parameters in the models.

$\hat{a}_i \sim N(0, \sigma_a^2)$  is the error term.





This document forms part of a series of FNS-REPRO resilience baseline analyses prepared by the Food and Agriculture Organization of the United Nations (FAO) and the FAO Resilience Team for Eastern Africa.

The series provides programming and policy guidance to FNS-REPRO actors, policy-makers, practitioners, United Nations agencies, non-governmental organizations and other stakeholders by identifying the key factors that contribute to the resilience of households in food insecure countries and regions.

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