

Baseline Report for the PRO-ACT Programme

Presented by VACID Africa to International Rescue Committee for the Pro-Resilience Action

Presented to

International Rescue Committee – South Sudan Country Programme



LEAD CONSULTANT & CONTACT: KIRINGAI KAMAU

Field Economist: Bernard Migwi

Nutritionist: Esther Mumbi

VACID AFRICA

PO Box 35046 - 00200

City Square, Nairobi-Kenya

Tel: +25420 2041299/2719733

Email: kiringai@vacidafrica.or.ke

Office Email: info@vacidafrica.or.ke

Office Web site: www.vacidafrica.or.ke



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Abbreviations

EBF	Exclusive breast feeding
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FFS	Farmer Field School
FGD	Focus group discussion
FSC	Food Consumption Score
FSNMS	Food security and nutrition monitoring system
GAM	Global Acute Malnutrition
HH	Household
IRC	International Rescue Committee
M&E	Monitoring and evaluation
MCG	Mother care group
PHCC	Primary health care centre
PLW	Pregnant and lactating women
PRO-ACT	Pro-Resilience Action
SSRRA	South Sudan Relief and Rehabilitation Agency
UNIDO	Universal Intervention and Development Organization
VSLA	Village savings and lending association
WFP	World Food Programme of the United Nations



Executive summary

The Pro-Resilience Action (PRO-ACT) project 'Building resilience of vulnerable communities of Panyijiar County through integrated food security and nutrition approaches' is a 24-month (starting December 2015) project funded by the European Union (EU) and implemented by the International Rescue Committee (IRC) in collaboration with Universal Intervention and Development Organization (UNIDO). The project aims to support vulnerable groups in the conflict areas of Panyijiar County in Unity State, South Sudan. The project specifically targets the poor and food- and nutrition-insecure communities in the county to help them cope with crises associated with nutrition, hunger and economic insecurity so as to strengthen their resilience and coping capacity. The project needed information on its target group and a baseline study.

The baseline study was conducted using a household survey, and covered ten Payams of Panyijiar County: Ganyiel, Thornhuom, Pachar, Pachak, Pachienjok, Tiap, Nyal, Khol, Pathiel and Katieth. The sample consisted 408 households. Trained enumerators collected data in the local community, supervised by VACID Africa consultants, IRC and UNIDO livelihood managers.

Results

Socio-demographic data: Of the sampled respondents 68.3% were female and 31.7% male; 62.9% were from the host community, 11.0% were returnees and 26.1% were IDPs; 49% of the households are agro-pastoralists, 36.1% pastoralists, 12.2% fisherfolk. The highest age of a household head was 30–34 years (26.3%) while the youngest was between 15–19 years (0.7%). Other age groups were 20–24 years (7.8%), 25–29 years (16.1%), 35–39 years (22%) 40–44 years (16.1%) and over 45 years (11%). More than 88% of the respondents were married, the rest were either widows or widowers, or single. 79.5% of the respondents did not have any level of education, and about 5% had secondary or college education. There was an apparent difference in the levels of education between males and females with 6.8% females against 11.5% males having an elementary education and a bigger proportion of 83.9% females against 70% male having no education at all.

Household gender roles: Males (55.9%) dominated in household income earning against 38.8% of females; financial budget control was at 52.9% (male) and 34.2% (female); bush clearing: 45.8% (female) and 36.7% (male); fishing: male 68.7% and females 1%. Acquisition of inputs was 52% for women and 32.6% for males.

Agriculture, fisheries and agribusiness indicators: At least 63% of households cultivated in 2015, with the average cultivated land being 4.95 feddans. Slightly over 60% of households stored their harvest in 2015. About 30% of the respondents grew vegetables; 82.5% of vegetables produced were for home consumption while 3% were for sale. Respondents gave various reasons for delayed ploughing: lack of seed, drought, insecurity, poor soil fertility, floods, shortage of labour, and lack of tools.

Livestock: More than 75% of respondents kept at least one type of livestock: 47.6% had cattle, 25.4% sheep, 41.2 goats, and 17.1% had poultry. The challenges in livestock

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production were diseases (91.2%), shortage of veterinary services (80.7%), low-producing breeds (73%), shortage of water during drought (25.8%) and cattle rustling (4.8%).

69.5% of the respondents said no conservation activities were taking place in the grazing camp, while 18% reported conservation activities in both the rangeland and enclosure areas.

Fishing: 62.2% of the respondents had access to fishing grounds and of these 80.4% practice fishing; 68.7% males were involved in fishing and only 1% of females. 75.8% of the catch was for home consumption. 23.1% of the respondents had received training on fish handling while 29.5% had received fishing equipment.

Sources of inputs: The respondents said their sources of inputs were NGOs (50.3%), market (40.1%), distant market (8.4%) and own source (1.2).

Outlet markets: 39.2% of the respondents sold their livestock or crops to traders, 17.6% to village communities away from home while 39.2% sold to village communities near their homes.

Marketing constraints: Respondents mentioned lack of transportation (36.1%), high prices of market commodities (18.9%), lack of diversified products for market (13.6%) and lack of credit (13%).

Agricultural extension: 53.5% of the respondents had received agricultural extension while 49.4% had participated in agricultural training. The common agricultural topic was crop production.

Sources of livelihood: Agriculture and sale of cereals took the lead with 20.5% of respondents indulging in the activity, next was sale of firewood and poles with 11.2%; followed by livestock and sale of livestock products at 10.7%.

Sources of off-farm income were sale of firewood and charcoal (for 61.2% of respondents), business/petty trade (37.1%), cash for work (17.1%), and casual labour (15.9%). The respondents' food expenditure share of income was 77.1% (very high), 13.5% high, 5.3% medium, and 4.10% low.

Sources of financial credit: 66.7% of respondents borrowed money from relatives/friends, 15.2% from merry-go-rounds, 9.10% from NGOs, 6.10% from village savings and loan associations (VSLAs), while 3% borrowed from farmer groups. Membership of groups shows 30.6% of respondents were in women's groups, 8.2% in fisherfolk groups, 14.1% in youth groups, 5.9% in both Farmer Field Schools and VSLAs, 4.7% were in vegetable-producing group.

Livelihood stresses and shocks and coping strategies: Shocks encountered by the households were food insecurity (79%), (health (48.8%), and loss of livestock (44.9%). The coping strategy most employed by respondents was sale of firewood (62.9%) while 29% said they reduced the number of meals they took in a day.



Water sources and sanitation/hygiene: 74.1% of respondents said their water source was borehole/protected spring/protected shallow well, 18.3% used river/spring, while 6.3% used unprotected shallow well. 84.4% of respondents reported they washed their hands before cooking, 85.6% before eating, 77% after assisting children to relieve themselves and 36% after relieving themselves.

Nutrition

- 66.6% of the respondents reported receiving counselling on infant and young child feeding, exclusive breastfeeding, and optimum complementary feeding practices through mother care groups. 60.5% reported to have participated in campaigns in the community promoting exclusive breastfeeding.
- 83.7% of the respondents said they had or were exclusively breastfeeding for up to 6 months.
- 57.6% of the respondents reported to have participated in initiatives supporting micronutrient supplementation and deworming among pregnant and lactating women and children.
- 56.3% of households mentioned special food other than family meals was given to children below 2 years.
- Food consumption score (FCS): 29.3% of households had poor FCS, 34.1% had borderline and 36.6% had acceptable FCS while the household dietary diversity (HDD) was 59.3% had low HDD, 19.1% medium and 21.6% had a high HDD.

Others: No households applied sustainable consumption and production practices and there were no community disaster risk reduction management committees.

Recommendations

Acreage under agricultural production is still low; hence, it is necessary to identify the key constraints affecting agricultural performance in the target areas and implement activities that will help farmers to overcome their production constraints. Agricultural production needs to be diversified to include more nutrient-dense foods that can improve micronutrient intake. This would include fruits and vegetables as well as biofortified crops that can make an important contribution to nutrition, in addition to animal source foods, which still remain too expensive for many. As fishing is relatively widely practiced, the communities should be encouraged to consume fish and their capacity built in traditional ways of conserving fish.

Interventions in nutrition should continue being directed at providing basic nutrition education, hygiene practice sensitization, supplementary feeding programme, targeted feeding programme, blanket supplementary feeding programme that targets pregnant and lactating women and children below 5 years.

As several agencies, such as Mercy Corps, GAA and IRC, deliver capacity building, activities should be coordinated to reduce duplication of efforts. Capacity building on fish preservation methods, postharvest handling of cereals, and WASH activities require a multi-agency angle to address. However, the uptake of capacity building and extension knowledge among those charged with extension is very low, as evidenced through what

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was found on the ground, and farming tools and methods farmers were using to cultivate were rudimentary. To enhance agricultural production and fisheries, more in-depth capacity building is needed as are grants in form of modern farming and fishing tools to upscale both fisheries and agricultural production.

Farmers should be encouraged to join production groups, such as vegetable and seed production groups. Farmers, particularly smallholders, who work together in the 'common interest groups' create a necessary institutional framework to support their productive efforts.¹ Membership to agricultural group has been shown to influence positively adoption of technologies. Agricultural groups are knowledge exchange avenues of among the farmers. Nkamleu (2007) found that involvement in group activities exposed farmers to a wide range of ideas and information that may positively change their attitude towards new agricultural technologies while Singh et al. (2008) found that membership in an agricultural self-help group was significant in the adoption of new farming practices.

The potential for science, technology, and innovation should be harnessed to reduce postharvest losses and food waste; promote product diversification with nutritious foods; improve processing to extend shelf life, and make healthy foods easier to prepare; and improve storage and preservation to retain nutritional value, ensure food safety, and extend seasonal availability. This calls for a food systems approach.

¹<file:///C:/2017/VACID%20Africa/IRC/References/Final%20Landcare%20Report%20-%202nd%20September.pdf>

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1 Background

1.1 Introduction

The International Rescue Committee (IRC) has had a long presence in South Sudan supporting humanitarian relief, community reconstruction initiatives including rural community development since 1989. At the centre of IRC's development philosophy is active participation of affected communities in ensuring lasting or positive change and social transformation. Through the Economic Recovery and Development sector, the IRC focuses on identifying and delivering sustainable solutions for the recovery and growth of agricultural livelihoods, as well as disaster preparedness for the affected communities. These solutions include access to climate-smart agricultural technologies, quality inputs; crop diversification; small-scale irrigation; basic business and marketing training; improved livestock management; linkages to financial services; and disaster risk reduction planning. The IRC works with communities who often face the dual challenges of political instability and climatic shocks to recover and build resilience to future shocks. The IRC recognizes that agriculture plays a key role in ensuring the foundations of food security and nutrition of availability, access, and utilization of food are being met. The IRC takes a holistic and multi-sectoral approach (health, economic recovery and development, governance and protection) to food security, designing, implementing and monitoring programmes to address the diverse causes of malnutrition.

All IRC programmes are committed to the principles of protecting and promoting rights, participation, capacity building, and partnership. One such being the relationship with Universal Intervention and Development Organization (UNIDO) through the support of the EU-funded Pro-Resilience Action (PRO-ACT) that seeks to build resilience through crisis prevention and post-crisis response strategy in Panyijiar County.

1.2 The Pro-Resilience Action Project

The Pro-Resilience Action (PRO-ACT) project 'Building resilience of vulnerable communities of Panyijiar County through integrated food security and nutrition approaches' is a 24-month (December 2015–December 2017) food and nutrition security project to support vulnerable groups in the conflict areas of Panyijiar County in the southern part Unity State. This EU-funded project is implemented by the International Rescue Committee (IRC) in collaboration with the Universal Intervention and Development Organization (UNIDO). The project aims to support poor food- and nutrition-insecure communities in South Sudan and specifically in Panyijiar County to react to crises and to strengthen their resilience and coping capacity. The project targets 36,000 individuals (4,500 households). Key foci of this project are food security, nutrition, and disaster risk reduction. Food insecurity and lack of a nutritious diet are having a disproportionate impact on women and children, denying children the food and nutrition they need to reach their cognitive and development potential.

The specific objectives of the PRO-ACT project are to:

- Enhance the capacity of individuals in vulnerable households (those households whose resilience has been reduced by conflict and the impact of weather but are still

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able to engage in agro-production and other livelihood options) to diversify production and livelihoods for improved food access and dietary diversification.

- Enhance improved income by introducing basic agricultural techniques.
- Enhance increased access to extension services and inputs.

The project seeks to realize the following outcomes:

- Increased household food availability through improved agricultural productivity and storage (through transfer of sustainable agricultural practices and technologies)
- Increased household income through enhanced access to market systems (market linkages) and financial services
- Increased dietary diversity through improved food access and utilization
- Increased community capacity to mitigate and enhance resilience to natural shocks and stresses.

1.3 Objectives of the baseline survey

The IRC/UNIDO PRO-ACT project has defined its targets and indicators in its logframe but baselines for several of the projected targets are unavailable. A baseline survey was therefore necessary to establish the current situation. The baseline information will guide and help measure the project's achievements and outputs. The information will also help in developing an appropriate tool for monitoring and evaluating (M&E) project interventions that target specific results (outputs, outcomes and impacts). Furthermore, the baseline will generate and develop an information base comprising the relevant information of the general and targeted beneficiaries in the project's working areas.

The specific objectives of the baseline study were:

- To determine the baseline values for all impact and outcome level performance indicators in the targeted programme locations.
- To collect and analyse information on the existing situation among the project's targeted beneficiaries
- To collect and analyse information on sources and levels of income, food security situation, access and control to available productive resources, and malnutrition of targeted beneficiaries
- To determine the feeding practices of infant and young child (< 2 years), and pregnant and lactating women.

1.4 Background of research area

1.4.1 Unity State

Unity State (one of the original 10 states of the South Sudan) (currently there are 28⁴ states in SS) is one of the states that have suffered the effects of armed conflict, resulting in very high levels of food insecurity and cereal deficits to a people whose income streams are stressed. The situation is exacerbated by localized floods, which normally affect crops and settlements in Unity State and other states in August and September. This sometimes ameliorates the food situation as it supports harvests of early crops and the late-maturing, late-sown sorghums. Much as it may ameliorate the food situation, flooding is without

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doubt a challenge affecting many people who have had their livelihoods disrupted as they are unable to farm and access their normal food sources, increasing susceptibility of livestock to diseases and worsening food insecurity. This puts large numbers of the population at acute risk.

1.4.2 Panyijiar County

Panyijiar County is located in the southern part of Unity State. Panyijiar is made up of 10 Payams, divided into two greater Payams: Greater Ganyiel and Greater Nyal. Greater Ganyiel comprises of Ganyiel, Thornhuom, Tiap, Pachak, Pachar and Pachienjok. Greater Nyal comprises of Nyal, Mayom, Chuk and Khol.

The topography of Panyijiar is flat. The area experiences heavy Equatorial rainfall, which leads to regular annual floods. Some parts of this county also experience water shortages, forcing livestock owners to move their cattle to cattle camps as they search for water and pasture at different times of the year, depending on the prevailing environmental situation.

The county has an estimated population of 74,734 host community (mid-2015 WFP population figures) in addition to an estimated 51,000 internally displaced persons (IDPs) from neighbouring conflict-affected areas (report from SSRRA Office in Ganyiel). Panyijiar is predominantly inhabited by the Nuer-speaking ethnic group, who are the majority. The county also hosts other ethnic groups like the Dinka, who inhabit areas neighbouring other counties like Duk, Yirol and Rumbek Centre. Panyijiar is a relatively stable county compared with other neighbouring counties in Unity State. Due to its relative calm, it hosts many IDPs, who have strained the host community and contributed to the current food insecurity in the area.

1.4.3 Agriculture and Food Systems

Panyijiar County is predominantly occupied by agro-pastoralists who rely on rainfed crop production. The average land cultivation is about 0.6 hectares per household, with the use of limited animal draught power only being accessible to better-off families. Lack of improved farming tools has also contributed to low cultivated areas, with most of the population still using traditional rudimentary basic tools like *maloda*. The area of land cultivated is determined by availability of family labour, as the family provides the minimum acreage tillage necessary to assure basic household food supply. The main food crops grown are sorghum, maize, groundnut and cowpea. Sesame and vegetable crops such as okra, tomato, and pumpkin are also grown on small scale and during the wet season.

The main sources of income for the poorer groups include sale of fish, goats, charcoal, firewood, papyrus mats, local brew and wild foods. These are supplemented by the sale of labour, especially during seasons of low rainfall. The wealthier groups sell livestock products mostly milk, ghee and yogurt as the main source of income, but may sell cattle to purchase food in years of low production. This group also engages in retail trade, fish trade, timber, and vegetables, with a small number being in formal employment.



Livestock production is important to the county as one of the major livelihoods to most of the population and also contributes significantly to the economy. Livestock are the primary investment resource, which also provide food (meat and milk), cash income, fuel, clothing, employment, and capital stock. Livestock also provide manure and draught power for crop production. Additionally, they are stores of wealth, which provide a sense of security, prestige, social status, and cultural value. The main livestock reared in Panyijiar County are cattle, goats and sheep. Livestock are moved toward The Nile from February to April and returned to homesteads from May to June.

This county has limited physical access to markets due to poor road conditions especially during the rainy season—August and September—when flooding takes place. This scenario holds despite the county's strategic location on the main road that links the four states of the Upper Nile, Unity, Jonglei and Lake. Due to its close proximity to the border with Sudan, market access for Unity State is also constrained by insecurity. However, this region also enjoys exclusive access to five major ports along the Nile River on the western side bordering Unity State, which provide opportunity for the wealthier group to sell livestock, livestock products, as well as fish to traders from Juba and the rest of Sudan, who travel along the main highway linking Bor, Malakal and Rumbek with Juba.

The main hazards in agriculture are floods, which tend to limit fishing activities, reduce crop, livestock and wild food production, and result in losses of income for the wealthier communities while putting the poorer group at greater risk of food insecurity.

The communities living in Panyijiar are mainly agro-pastoralists practicing crop-based agriculture and livestock keeping within the swamps. They also engage in fishing to complement food production and other livelihoods activities.



2 Methodology

2.1 Approach

The survey was conducted by VACID Africa in collaboration with the implementing agencies, IRC and UNIDO, and their staff at the headquarters office and in the field stations. Both qualitative and quantitative research techniques were explored. Participatory data collection techniques were used in data collection and analysis, and data were triangulated to verify authenticity of data collected. Primary data were collected from sampled beneficiaries in the county. The survey was conducted in October–November 2016 and was structured and managed in a way that ensured high data quality. Specifically, the survey focused on collecting the following data:

- Socio-demographic data
- Agriculture and agribusiness indicators
- Livestock
- Market data
- Extension service/capacity building
- Livelihood sources
- Financial credit services
- Infrastructure availability
- Livelihood stresses and shocks
- Water, sanitation and hygiene (WASH)
- Food access, utilization and nutritional diversity

The approach used to collect these data involved the following steps:

- Defining the sample size, identifying respondents and gauging their accessibility
- Reflecting on the research design and collecting secondary data
- Preparing research instruments and recruiting and training survey supervisors responsible for data collection and entry
- Pre-testing and revising instruments
- Recruiting and training enumerators, and collecting primary data
- Data entry and analysis
- Preparing report
- Validating information in the report with IRC.

2.2 Design of the baseline

The baseline adopted a cross-sectional study to ensure that data and information obtained from the sampled areas were transferable and able to be generalized for other Payams as well. Both qualitative and quantitative participatory techniques were applied to ensure in-depth probing, as well as structured and less biased capture of information on livelihoods and related issues through the use of a structured questionnaire and participatory rural appraisal (PRA) methods and technique such as focus group discussions, key informant interview and observations. The 10 Payams within Panyijiar



County were purposefully selected by the IRC/UNIDO because they have PRO-ACT projects ongoing.

2.3 Area and population of the survey

A total of 408 households were selected within 10 Payams of Panyijiar County: Ganyiel, Thornhuom, Pachar, Pachak, Pachienjok, Tiap, Nyal, Khol, Pathiel and Katieth. The household survey questionnaire was administered to household heads or their spouses. In total, 408 respondents were interviewed out of which about 41 households were interviewed in each of the sample Payams ensuring that women's views were sufficiently represented in the exercise. In all, 68.3% survey respondents were female and 32.7% of respondents were male.

2.4 Sample selection

All the 10 Payams where the project was being implemented were sampled for the baseline survey. A sample of 408 households was selected for the Panyinjar County, which was approximately 10% of 4000, the total number of the targeted households. The survey was confined to the prominent food systems—vegetable households (HHs), cereals HHs, and fish HHs—that were randomly distributed in the county. Forty (plus one for each Payam to account for those that may be discarded) households from each Payam were randomly selected and interviewed (Table 1).

Table 2.1: The sample size

Greater Ganyiel		Greater Nyal	
Payam	No. of HH interviewed	Payam	No. of HH interviewed
Pachar	41	Nyal	41
Pachak	40	Khol	41
Pachienjok	41	Pathiel	41
Tiap	41	Katieh	41
Thornhuom	40		
Ganyiel	41		
Total	244	Total	164

2.5 Data collection methods and procedures

Both qualitative and quantitative techniques were employed to ensure greater participation and deeper probing of information to reveal salient food security and livelihood related issues that may be embedded or perceived as sensitive, including gender and other community values. Below are some of the main activities that were undertaken during study:

Extensive Literature Review: Existing relevant food security and nutrition-related literature for Panyijiar in general and for each of the 10 Payams were identified and reviewed, including programme information and reports from IRC/UNIDO in South Sudan. The information among others included among others the Government of the Republic of South Sudan Comprehensive Agriculture Master Plan 2010-2012, Statistical yearbook for South Sudan 2010, Food Security and Nutrition Monitoring Systems, SMART survey reports etc. The review revealed historical trends, enabled the research to triangulate



quantitative and other qualitative data, existing scientifically proven information that can possibly be used to draw conclusions, replicate and design similar initiatives.

Focus Group Discussions: Focus group discussion was carried out in small groups comprising both men and women selected randomly from each Payam with the help of the IRC livelihood managers. The discussions were structured with a check list to allow moderation of responses. The moderator engaged the participants in discussions in areas of agriculture, vulnerability and resource access.

Key Informant Interviews: A Key Informant Interview guide was developed. During data collection, key informants included elders/Sultans from each Payam, County Commissioner and South Sudan Relief Rehabilitation Agency. This built on prior discussions held with the IRC economic recovery and development coordinator in Juba office at the inception of the baseline survey.

Food Security and Livelihood Assessment Tools: A seven-day food recall was developed and used to investigate food taken in the last one week and also the sources of the foods taken. All the food items were included in the tool and the household members revealed which foods they had consumed. The livelihood activities carried out by the household were probed and identified and their contribution to the household income assessed.

Survey Questionnaire: A structured survey questionnaire was also developed and administered to capture information on livelihood-related data and household characteristics. Some of the aspects included agriculture-agronomic information, food security, livestock ownership extension service and capacity building among others.

Site Observation: Enumerators were equipped with skills to observe aspects of livelihood-related variables while in the field, such as distance to water sources, ongoing commerce, and residential structures of the households and general wellbeing of the families in Panyijiar County.

2.6 Data analysis

The team undertook 'on-going' as well as 'post-field data' analyses. Secondary data were contextualized building on different components of the Sustainable livelihood model. During data collection, qualitative data were analysed by probing for in-depth information and observation. Verification was undertaken to triangulate information provided by other respondents. After collection, quantitative data were analysed using the Statistical Package for Social Scientists (SPSS) to reveal statistical trends, descriptive statistics, frequencies, multiple response analysis as well as comparisons and correlations to determine significance.

Data quality assurance

To ensure data quality, data collection, and data handling were undertaken and controlled by experienced researchers from VACID in close consultation with IRC/UNIDO staffs, in particular, the Economic Recovery and Development coordinator. Secondly, field enumerators were trained before data collection to ensure they had good understanding of the baseline survey. A full day was dedicated to discussion and orientation of the



different research teams; enumerators were familiarized with the questionnaires and data collection methodologies. To ensure consistency and accuracy, tools were pre-tested and necessary adjustments made to address any anomalies. Lastly, all survey questionnaires were double checked to ensure completeness and accuracy.

2.7 Limitations of the baseline survey

Below are some limitations that may have affected the findings.

Language barrier: The local dialects in the area are Nuer and Arabic. Language barrier affected the quality and speed at which questionnaires were administered. To fill the gap, thorough checks were undertaken by the lead consultants and in some instances additional information had to be re-collected from the data collection sites.

Qualified enumerators: There were also difficulties in finding qualified enumerators as most of the locals had completed only primary level of education. Although suitable enumerators were found, not all enumerators could work in some of the Payams for fear of 'revenge killing'. This meant restraining enumerators to areas where they were safe.

Insecurity: As the assignment progressed the VACID Africa team had to leave the field as the security situation deteriorated, relying more on data being delivered to them in Juba and more of the data collection taking place (especially in Nyal) in the absence of the consultants. This also delayed data entry, which was essentially to be keyed in while in the field, and the consultants had to carry the filled questionnaires back to their VACID office in Nairobi where data entry was done.

Transport: The area lacks proper means of transport from one Payam to another, and most areas were still swampy during the baseline survey. The only means of transport available to cross some of the rivers were canoes, and some team member lost their documents in the process. Transport arrangements also delayed our movement from Ganyiel to Nyal for a whole week after we had challenges with getting the United Nations Humanitarian Air Service ticket on time.

Timing of the baseline: The baseline was conducted six months after the project had started. Since the study focused on the target beneficiaries of PRO-ACT, there is a possibility that some findings of the study had a margin of error where respondents could not distinguish the help they received from PRO-ACT and from other projects. This anomaly was corrected by triangulating data from other studies done in the county and also by consulting the IRC livelihood coordinator who provided insights as to how the situation was before the start of the project.

Inadequate preparations: Because of delayed deployment to some locations due to security reasons, time to prepare the enumerators properly was inadequate. This was in addition to short preparation of enumerators. The survey was expected to be participatory with involvement of key stakeholders, but not all participants were adequately prepared or had knowledge of their participation. Bringing on board the full participation of IRC/UNIDO livelihoods managers helped to address some of these challenges.



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3 Survey results

This chapter presents the results of the analyses based on the sample survey data. The results focus mainly on the current status or levels of the various indicators in the PRO- ACT programme log frame.

3.1 Household socioeconomic characteristics

3.1.1 Population distribution

Four hundred and eight households were surveyed in 10 Payams. Female respondents made up 68.3% and males 31.7%. The distribution of the respondents according to the settlement was 62.9% were from the host community, 11% were returnees and 26.1% IDPs.

3.1.2 Main engagement

Respondent households were in four broad categories of livelihood engagement: 49% agro-pastoralists, 36.1% pastoralist, 12.2% fisherfolk and 2.7% traders.

3.1.3 Age

Figure 3.1 shows the distribution of respondents, by age. Most respondents (88.3%) were married, 11.5% were either widows or widowers, and only 0.2 % were single.

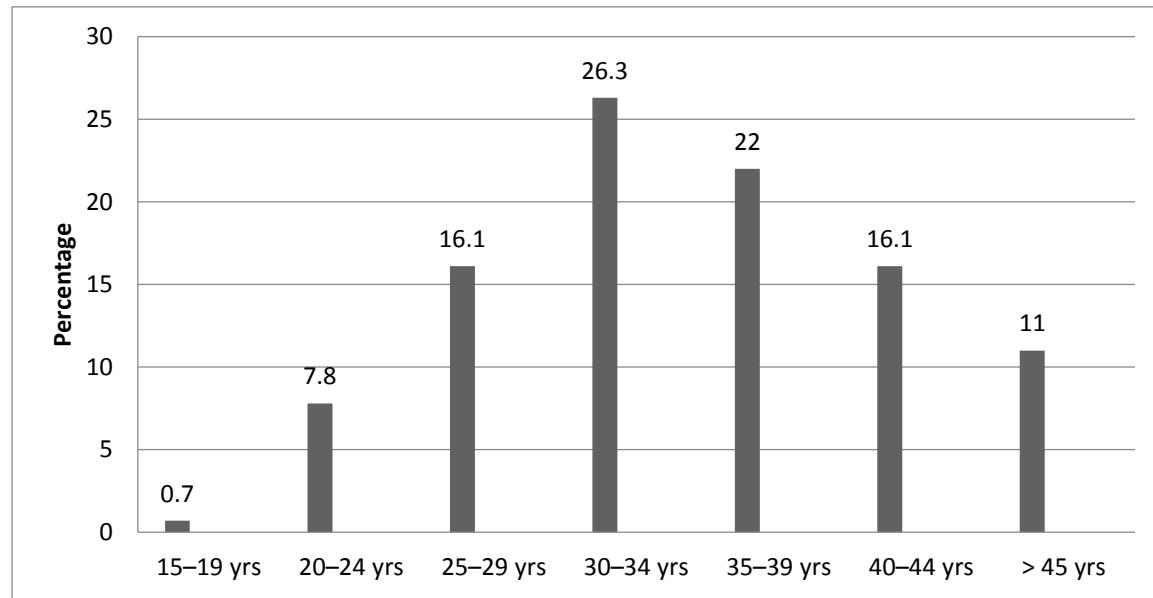


Figure 3.1: Distribution of respondents, by age categories

3.1.4 Level of education

Figure 3.2 compares education levels between male and female-headed households. Most respondents (79.5%) had never gone to school; 8.3% had attained an elementary level of education; 6.6% had an intermediate education; 4.4% had a secondary level of education and 1.2% had attained highest level: a college-level education.

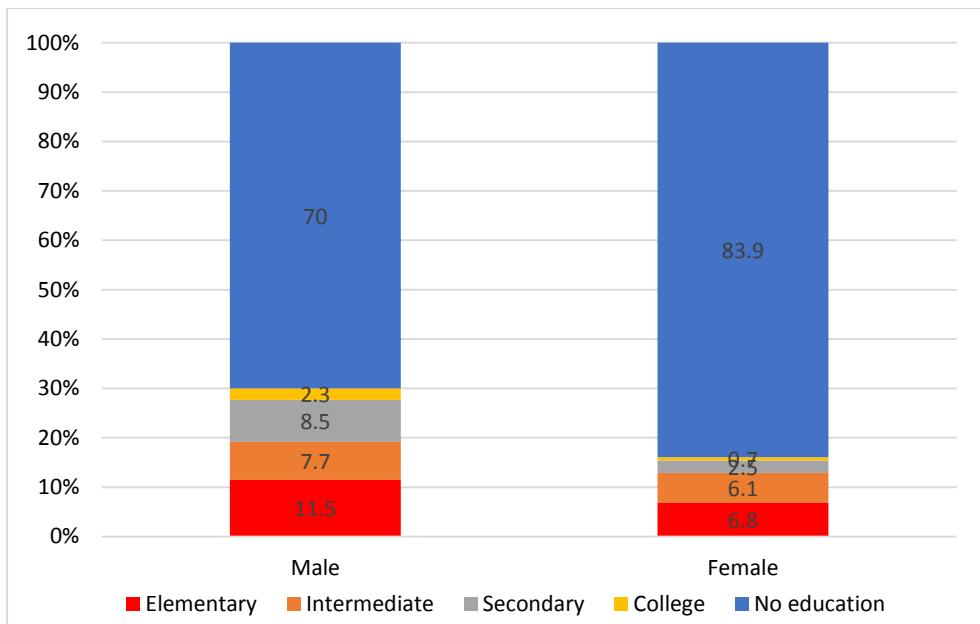


Figure 3.2: Comparison of education level between male and female respondents

3.1.5 Distribution of household gender roles

Figure 3.3 shows the gendered distribution of household labour. About 68.7% male adults and 30.3% male children are involved in fishing while only about 0.90% of the females are involved. Adult females and female children (>72%) were involved in milking. Male children at 60.9% dominated in feeding livestock. Harvesting, weeding and planting, however, were shown to be activities dominated by women at 63.8%, 62% and 59.9%, respectively. This clearly showed that women were the gender group most involved in labour provision on the farm. Household acquisition of inputs showed women accounting for about 52% while male accounted about 32.6%. Proportion of respondents involved in land preparation was 35.8% male and 45.6% female. The household financial controller was 52.9% male and 34.2% female while the income earner were 38.8% women and 55.9% for males.

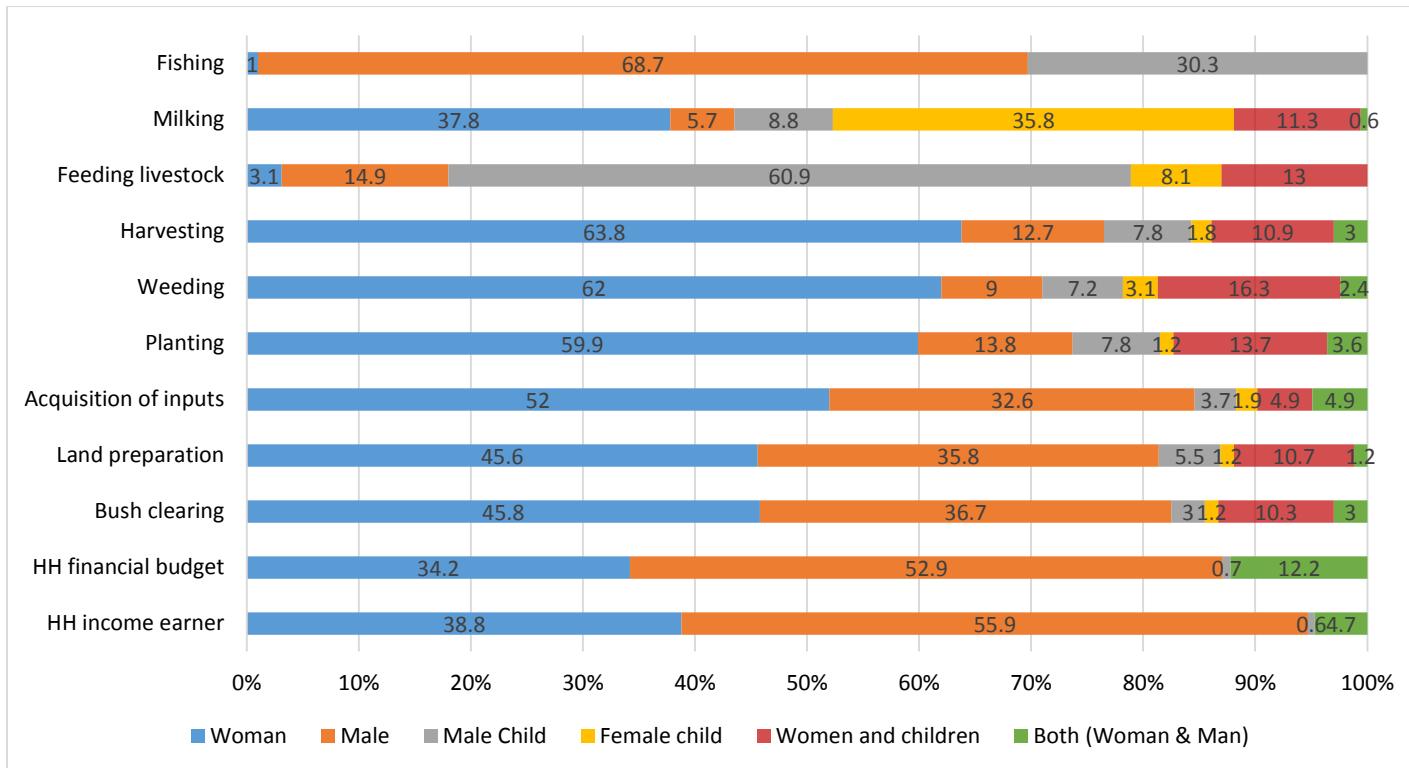


Figure 3.3: Gendered distribution of household labour

3.1.6 Households main livelihood sources

Agriculture is the main source of livelihood for communities in Panyijiar County. Agricultural-related activities make up 57.1% of sources of livelihood: agriculture and sales of cereals took a share of 20.5%; livestock and sale of livestock took 10.7%; sale of firewood at 11.2%; sale of alcoholic beverages 11%. Figure 3.4 highlights the importance of agriculture as a livelihood in the county, much as the potential still remains untapped, as was noted earlier, given the amount of land that has been opened to agricultural activities. This potential can even be enhanced further if fishing is tapped as well. It is therefore a finding of this survey that to enable the community in Panyijiar County to become food secure and exploit trade opportunities especially when food aid is phased out in the near future, there is need to formalize the engagement with agriculture through capacity building and innovation in agricultural engagement.

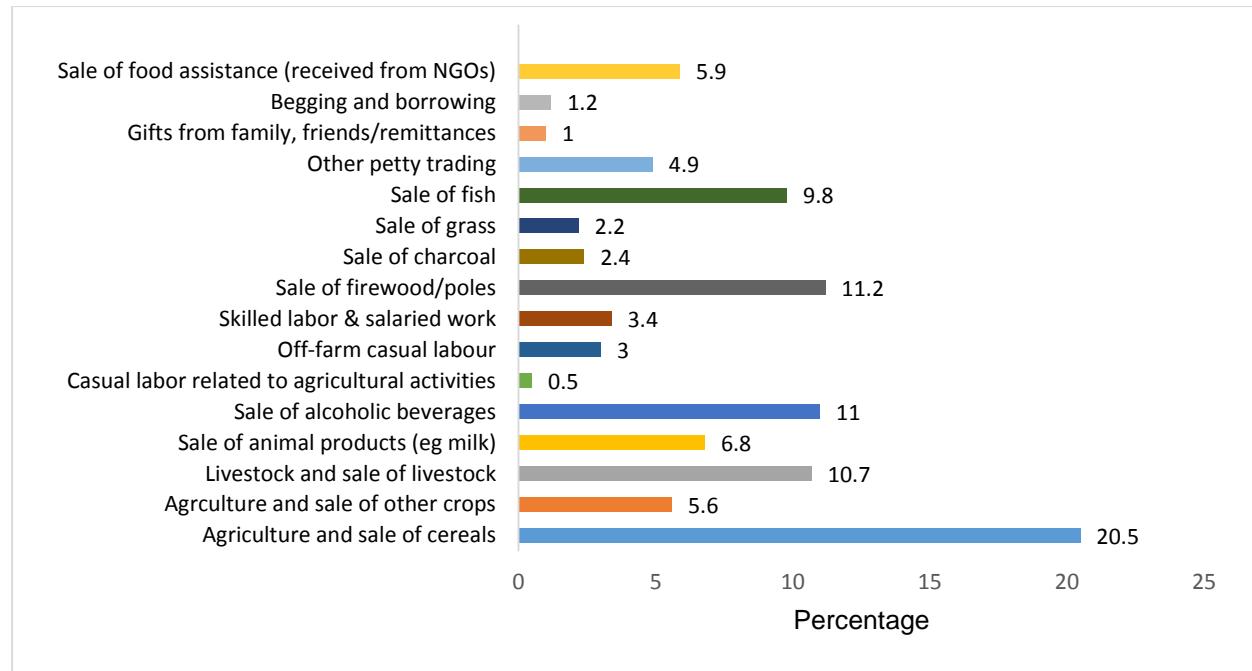


Figure 3.4: Households' main livelihood source by May 2016

3.1.7 Infrastructure availability

The infrastructure of the county is poorly developed with no proper means of transport or communication. Water transport via boats and canoes is the common means of transport—one is likely to take approximately two days from Juba to Tayar port! The road network is not efficient either, which makes access to markets near impossible. There is no all-weather road in the area of study, and transport is highly hindered during rainy season. Table 3.1 shows the minimum, maximum and the average distances to some of the available infrastructure.

Table 3.1: Distance to available infrastructure

Variable	Min (km)	Max. (km)	Mean (SD)
Primary school	0.20	16.00	3.19(2.50)
Health centre	0.20	18.00	3.43 (3.01)
Cereal market	0.40	32.00	6.31 (7.39)
Livestock market	1.00	34.00	7.43 (8.27)
Administration centre	0.20	20.00	3.67 (3.08)
Functional borehole	0.20	8.00	1.83 (1.18)
Functional road	0.50	11.00	3.39(2.19)
Police station	0.50	20.00	2.49 (2.24)
Church	0.50	10.00	1.96 (1.53)

SD - Standard deviation

3.2 Agriculture

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3.2.1 Increased agricultural productivity of major staples/ livestock

The main staples respondents grow are sorghum and maize; sorghum is the cereal most preferred by the community. The average land size cultivated in 2015 for maize was 1.67 feddans compared with 1.44 feddans in 2016. (1 feddan = 1.038 acres.)

The average land size for sorghum was 2.02 feddans, for groundnut 0.8 feddans while other crops took up about 0.46 feddans, averaging a total of 4.95 feddans per household. The average output of sorghum harvested per household was 2.7 bags (50-kg bags) and 1.62 bags of maize. Despite 63.4% of respondents reporting having cultivated in 2015, production is still low as cultivation is on very small portions of land, a situation that may need to be addressed in the project since the availability of arable land is not a constraint. However, this may be understood from the constraint in gaining access to farming tools, which is again constrained by lack of seeds by the households. 61.3% of respondent households stored their produce in 2015. Sun drying was the only preservation method used. Of the respondents who still had some of their produce by June 2016, 32.5% still had sorghum and 17.8% still had maize; all the other farmers had already consumed every crop stored.

Although 63.4% of the respondent households cultivated in 2015, a considerable percentage of households (47.1%) were not able to plough on time citing lack of seed (48.4%) and drought (24.2%) as their major constraints. Figure 3.5 shows the reasons the respondents gave for not ploughing their farms on time.

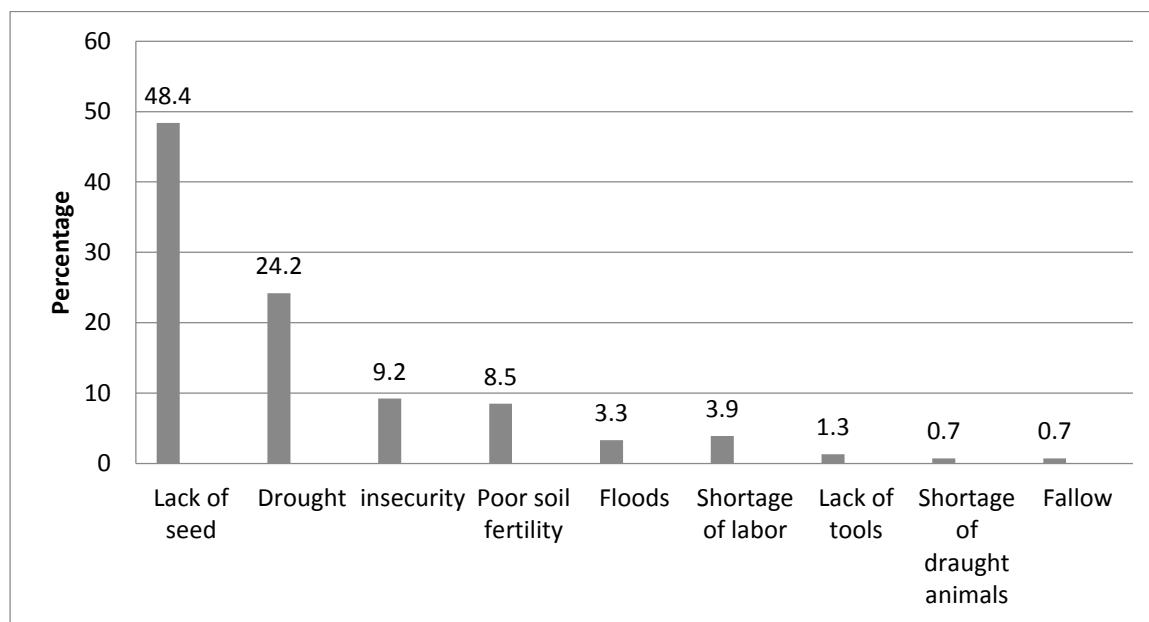


Figure 3.5: Reasons respondents gave for not ploughing on time

3.2.2 Ability to grow vegetables and fruits

Slightly over 56% of respondents reported to have received vegetable seeds especially from NGOs; of these only 29.3% grew vegetables and fruits for own or local consumption. This was confirmed through the key informant interview, where it was reported that not all NGOs



educate farmers on how to grow vegetables, hence respondents do not plant them or end up selling the seeds in the market. The vegetable most commonly grown was okra. This was also supported by market observation where the only vegetable present and mostly sold and consumed was okra. Other vegetables consumed include pumpkin leaves, Jews marlow and eggplant.

The main purpose of vegetable growing was for home consumption (82.5%) while only 3% grew them for commercial purposes, mainly because production is done at subsistence level.

3.2.3 Livestock production

The survey established that livestock are not kept as a food source alone but for varied reasons such as prestige, dowry, conflict resolution and settlement, and for cultural identity; the latter was expressed as a very critical reason. Livestock rearing is therefore a central focus of the lives of this community. Figure 3.6 shows that 77.6% of respondents owned livestock; 23.4% of those recorded as lacking livestock reported that they were IDPs, their livestock were stolen by raiders, or killed by disease. Those with livestock also expressed disappointment that their livestock numbers were similarly reduced for the same reasons.

Poultry is reared and owned by a very small percentage of the surveyed HHs (17.1%) (Figure 3.6). This is even when poultry has major benefits of improving nutrition and HH incomes, and can survive as free range or scavenging livestock. Of those who kept poultry, 61.2% said they kept them for home consumption, 26.9% for selling and 11.9% for egg production to sell. The benefits of poultry are that it reproduces and matures fast, produces eggs that can be consumed for improved diets, and sold to enhance livelihood and is an easy asset for converting into cash. This community prefers livestock (cow, goat, sheep), and most community members do not see poultry as important. However, there is a great opportunity that the PRO-ACT project can pursue to make the community appreciate the potential in poultry rearing both for income generation and as a source of high-quality protein.

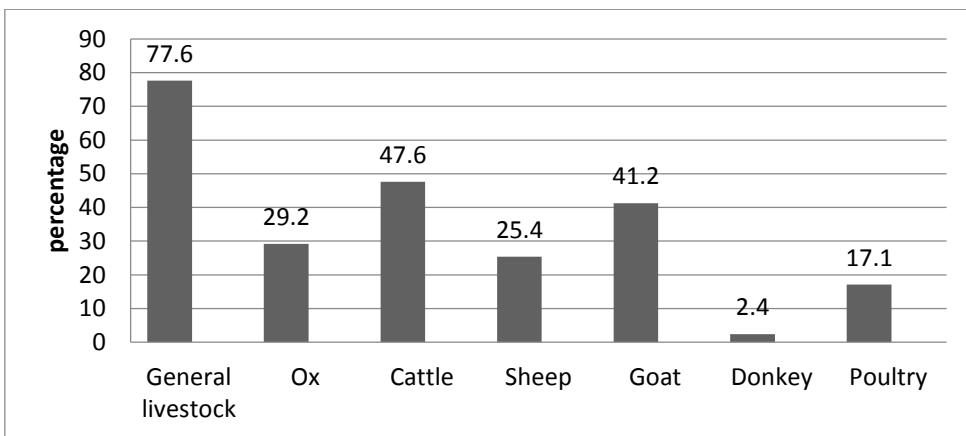


Figure 3.6: Household livestock ownership

Figure 3.7 shows some of the challenges respondents reported they faced in animal production. Respondents reported they faced several of these challenges at the same time.

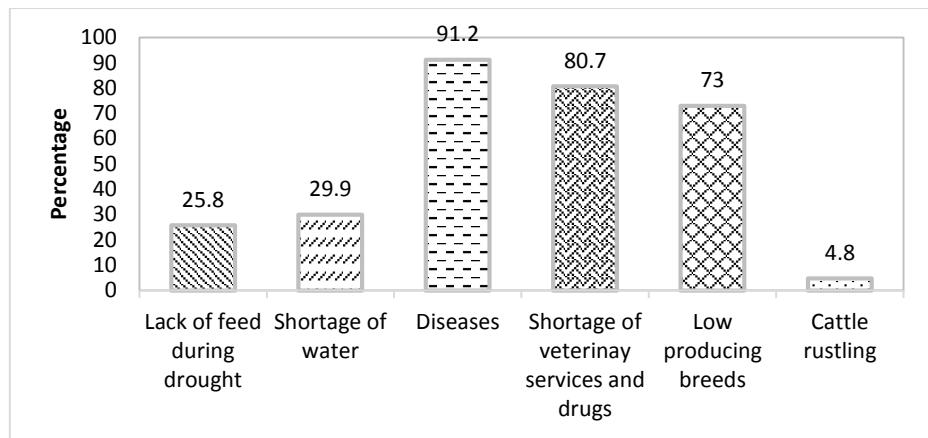


Figure 17: Constraints to livestock production

Some respondent households (69.8%) claimed that a cattle camp (grazing) committee existed. However, they also noted that few activities were taking place to conserve soil and water in the cattle camps (Figure 3.8).

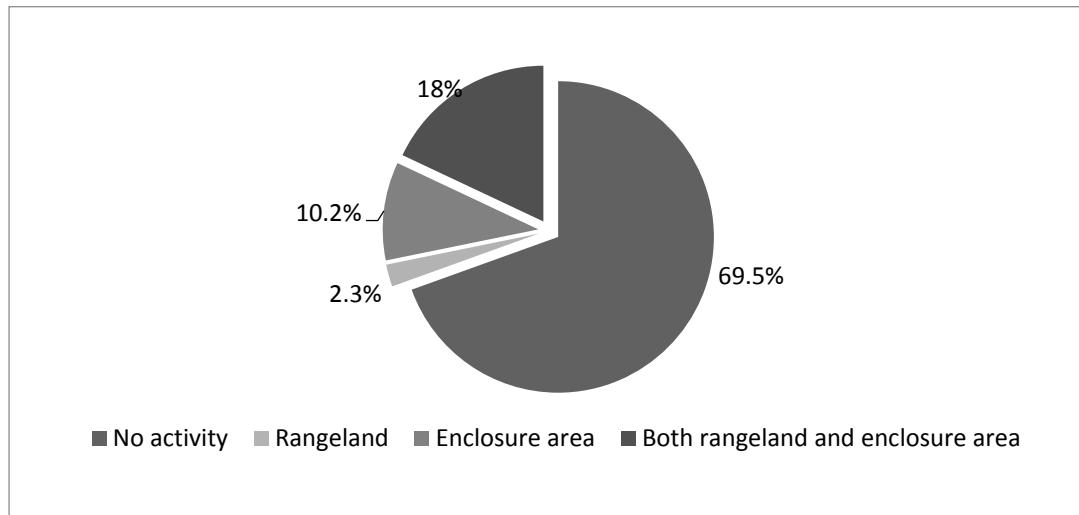


Figure 3.8: Soil and water conservation activities taking place in cattle camps

3.2.4 Fish and fishing

About 62% of the respondents could gain access to fishing grounds. Of these households only 80.4% (50% of the total sample size) were involved in fishing, and the rest claimed access to fishing equipment as the major challenge for their lack of involvement. The respondent households involved in fishing cited home consumption as the main purpose while 24.2% said fishing was a business. The common method of preserving fish was smoking, carried out by both men and women. Distance to the fish market (average distance of 4.6 km, ranging from 0.5–20 km) and lack of proper transport facilities were major challenges. Fish and fish products are consumed more considerably as they are common in the place.

As was shown in the household gender distribution of labour (Figure 3.3), mostly males (68.7%) and male children (30.3%) practiced fishing. Targeting fisherfolk keen on adopting fishing

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is a challenge for an organization that may seek to distribute fishing gear. Considering that fishing is a major source of livelihood for only 13.2% of the population, there is concern that not all the households with potential and the desire to access the fishing grounds can engage in fishing as they may not have the fishing gear to realize this. Even those who engage in fishing face the same problem of fishing gears and thus do not exploit fishing to the full potential.

In the past one year, 23.1% of the respondent households had received training in fish handling and 29.5% had received fishing equipment from NGOs.

3.3 Market complement

The respondents' main source of agricultural inputs is NGOs, who provide 50.3% of input sources, mainly seeds and tools. The next source is the market at 40.1% (Figure 3.9). Of the respondents, 1.2% reported to be using own seeds, most probably from the previous harvest. Since NGOs target certain groups of people (mostly endorsed by the local administration) very few benefit from the NGO interventions. The reality commonly seen and confirmed through focus group discussions, was that some beneficiaries receive inputs, but sell them in the open market, as is common with free supplies. There is a high possibility that those households that source their inputs from the market may actually be buying NGO supplies.

The 68.5% of respondents who purchased inputs also complained that the inputs were mostly expensive.

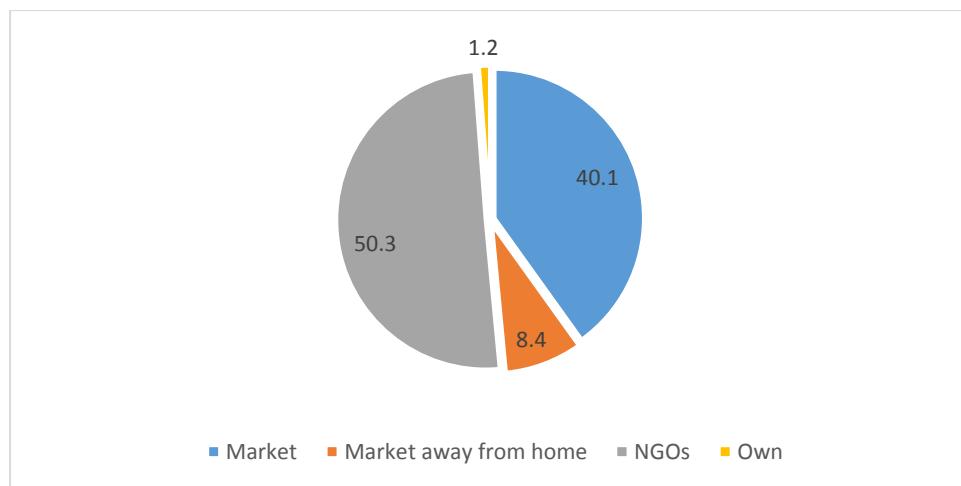


Figure 3.9: Sources of inputs for the household

In the last one year, 44.4% of respondent households reported they sold crops and livestock and livestock products in the market. The market outlet for these households was 39.2% for both village communities near home, and for traders, and 17.6% for village communities away from home (Figure 3.10). Respondents walked to and from markets.

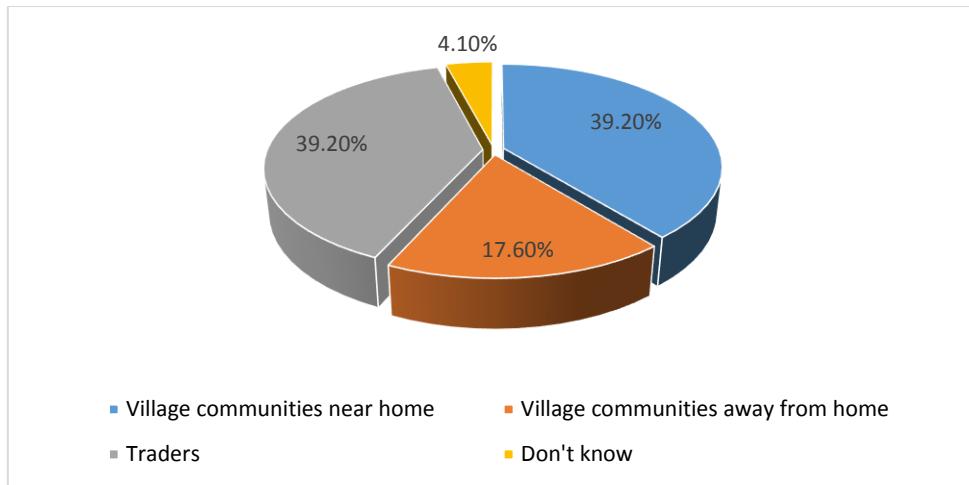


Figure 3.10: Household outlet markets

3.3.1 Household marketing constraints

There are no proper roads to connect the county to outside areas. Lack of proper means of transport, as reported by 36.1% of the respondents, presented the biggest marketing challenge in the county. Figure 3.11 presents the marketing challenges respondents reported they faced. Lack of credit reduces their purchasing power while high prices of commodities reduce demand for the commodity.

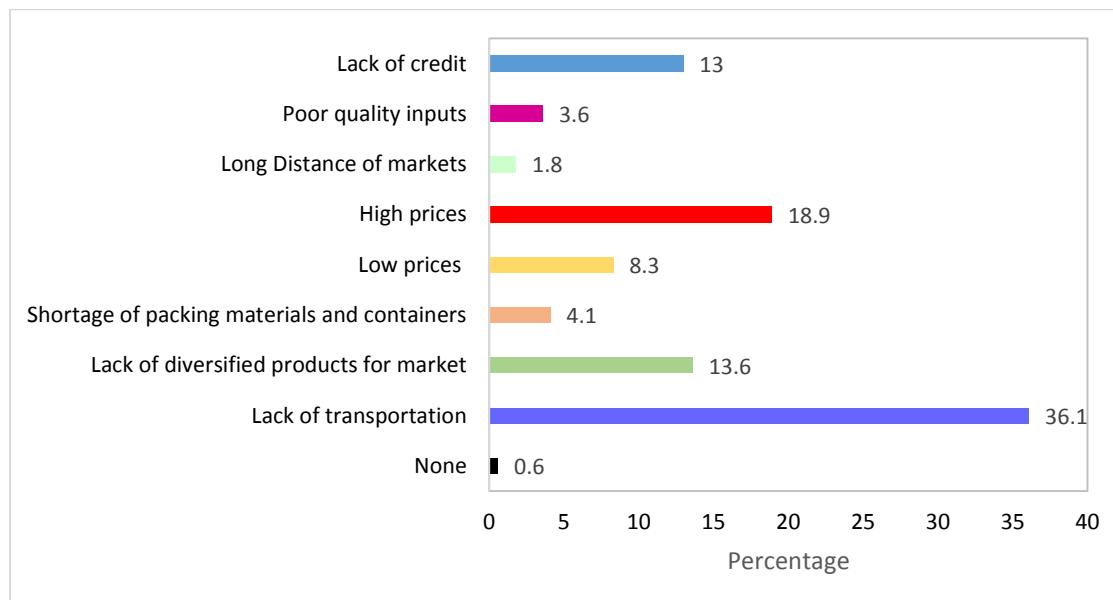


Figure 3.11: Marketing constraints reported by respondents

3.4 Extension services /capacity building

3.4.1 Received agricultural extension

Of the respondents surveyed, 53.5% received agricultural extension services in the last one year (Table 3.2), a sign that capacity to deliver agricultural extension services exists in



the county. This includes visits by veterinary officers while mainly from NGO sponsored programmes visited fisherfolk.

Table 3.2: Comparison of different groups of households that received extension services

Household type	% of respondents who received extension services in last one year	
	Received	Not received
Pastoralist	50.0	50.0
Agro-pastoralist	58.6	41.4
Fisherfolk	57.9	42.1
Trader	12.5	87.5
Total	53.5	46.5

Some respondents received more than one type of extension service. The extension service received most frequently was general agricultural advice at 17%, next was on input supply at 8.5% (Figure 3.12). Of the respondents who received extension services, 71.4% reported they found the services useful in helping them improve agricultural production.

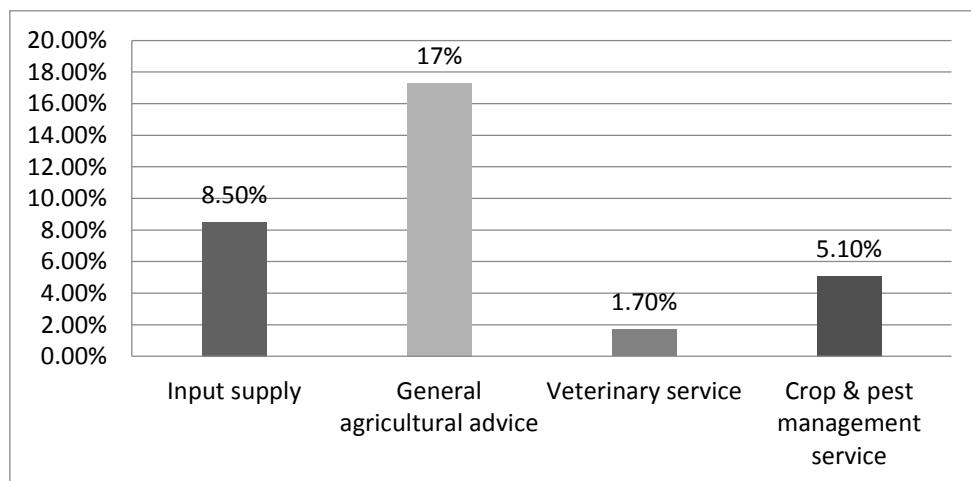


Figure 3.12: Agricultural extension services received by respondents

3.4.2 Participation in agricultural training / capacity building

Of the households surveyed, 49.4% of the respondents reported having participated in agricultural training in the last one year (Figure 3.13). This is where they attended training sessions outside their homes. Although respondents could participate in more than one training session in a year, the training session most attended over the last one year was on crop production at 15.6%, next was plant protection at 8.3%. All the other types of training recorded participation of less than 7% of respondents. Average attendance in training was 1.96 times, ranging from 1 to 5 times in the last one year. 86.9% of respondents who participated in training believed that it would help them improve their agricultural production. The low level of participation in training needs to be addressed.

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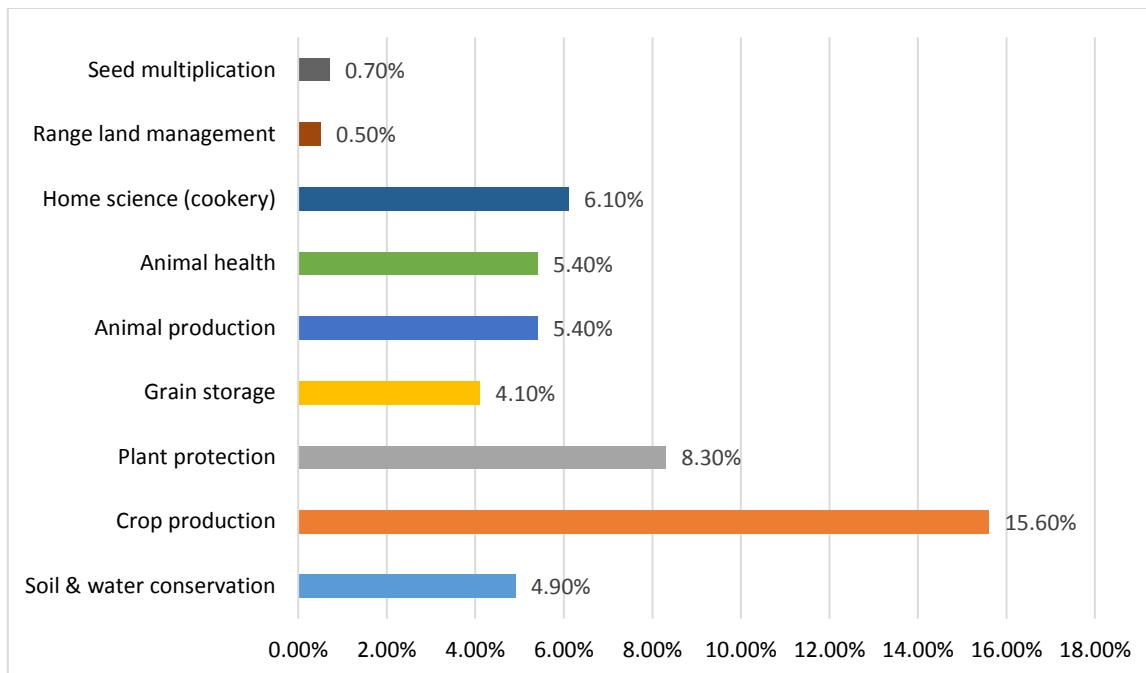


Figure 3.13: Types of agricultural training offered

3.5 Off-farm income

3.5.1. Sources of off-farm income

Table 3.3 shows the sources of off-farm income. 61.2% of the respondents reporting selling firewood and charcoal. Other sources include business/petty trade especially of selling alcohol and tea in market centres.

Table 3.3: Sources of off-farm income

Sources	% of respondents with soi of income	Average monthly income (in South Sudan Pound [SSP])
Sale of firewood and charcoal	61.2	587.40
Casual labour	15.9	777.03
Business/petty trade	37.1	925.87
Formal employment (Salaried)	3.5	3,166.70
Cash for work	17.1	351.72
Remittances from friends & relatives	11.2	284.21
Cash transfers from NGOs	10.0	338.30

3.5.2. Food expenditure share

The share of income spent on food was considered low (where it was less than 25%), medium (25–50%), high (51–75%) and very high (over 75%). The data show that respondents share of income on food expenditure was very high (77.1%) (Figure 3.14).

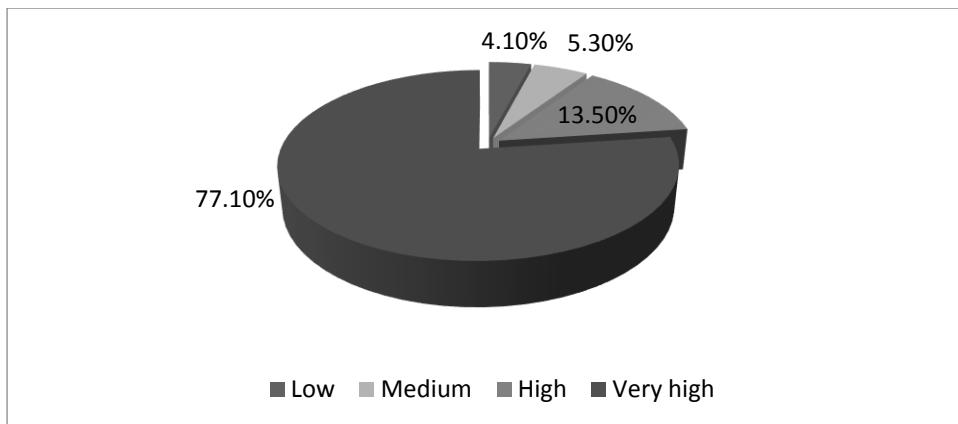


Figure 3.14: Food expenditure share categories

3.6 Financial credit services and group membership

3.6.1 Sources of loans and financial services

Figure 3.15 shows the sources of loans and financial resources. In the absence of more formalized sources of credit, most respondents (66.7%) received loan from relatives and friends, mainly staying in the urban areas or in other countries, 6.10% received credit from village saving and lending association (VSLAs), locally known as Sanduk Sanduk. Many of these loans were used to buy food and basic needs, and very few were spent expanding businesses in the market place. With borrowed money, nutrition is relegated to the back.

Availing finances in the agricultural sector is a challenge in most of the developing countries as it calls for government to be involved in creating an enabling environment for the lending institutions and suitable infrastructure for the producer community.

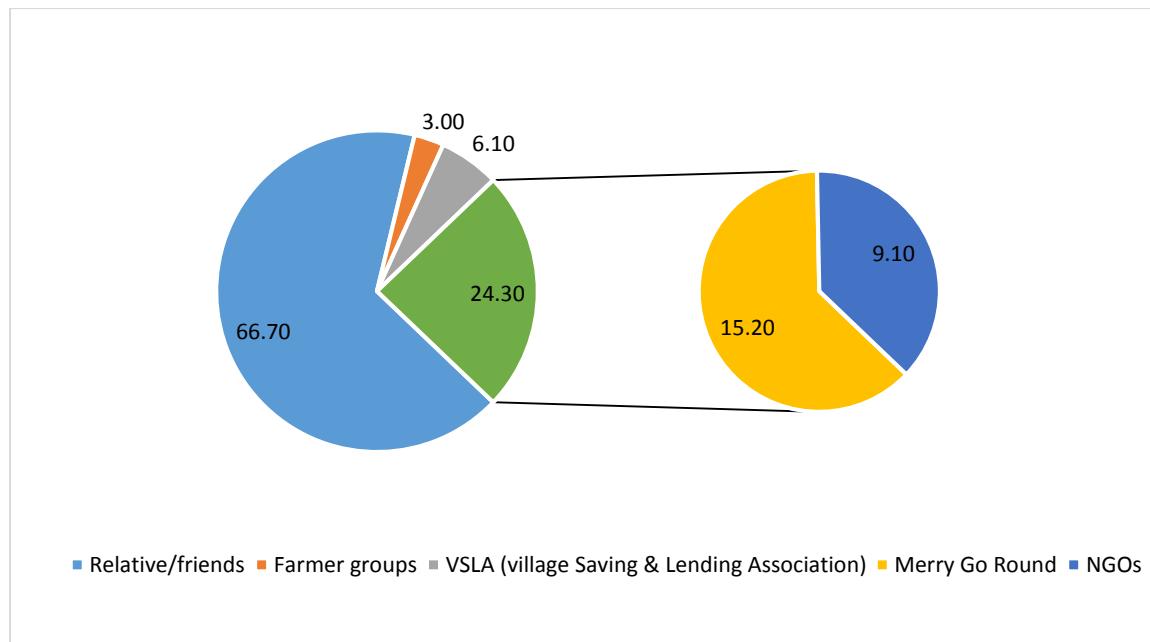


Figure 3.15: Sources of financial credit

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3.6.2 Membership of groups

Figure 3.16 shows respondents' membership of different groups: women's, youth, and fisher folk and VSLA groups. The production groups such as fisher folk, Farmer Field School, VSLA, seed processing group and vegetable producer group are young; most respondents joined towards the end of 2015 or early 2016. The key informant interview with various stakeholders revealed that they were in initial stages of establishing those groups. Much as these groups have not harnessed the benefits of collective action because their activities are not well elucidated, a framework of social cohesion exists that the project will find easy to work with.

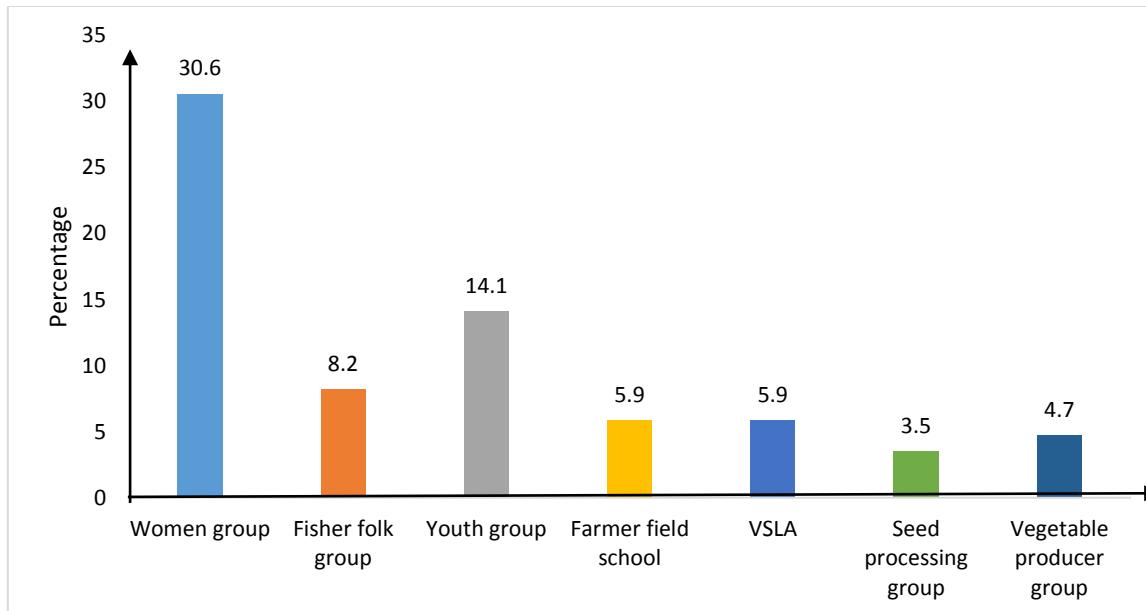


Figure 3.16: Households group membership

3.7 Shocks and coping strategies

3.7.1 Households shocks

Communities in this county face different forms of shock and stress. Shocks that topped the list were food insecurity, health, and livestock losses (Figure 3.17).

3.7.2 Household coping mechanisms

Respondents reported they employed several mechanisms to cope with the shocks (Figure 3.18). However, these coping mechanisms are not sustainable due to depletion of tree cover and related resources. Emphasis should therefore be given to options that are more sustainable such as agriculture and livestock production.

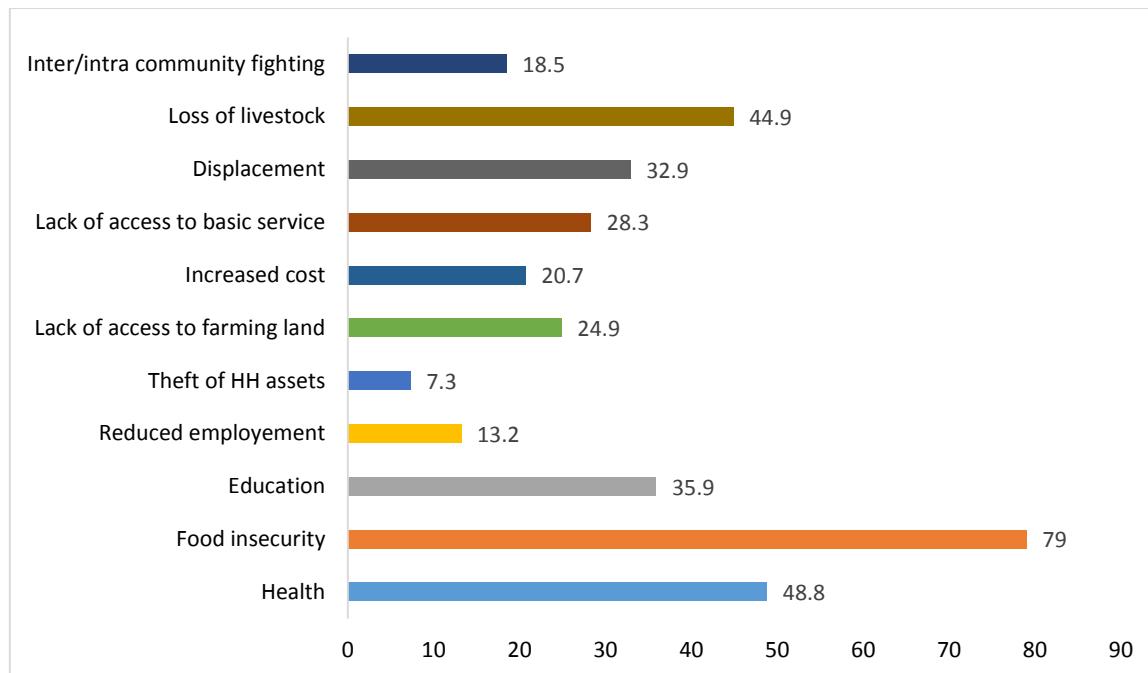


Figure 3.17: Vulnerability areas of respondents

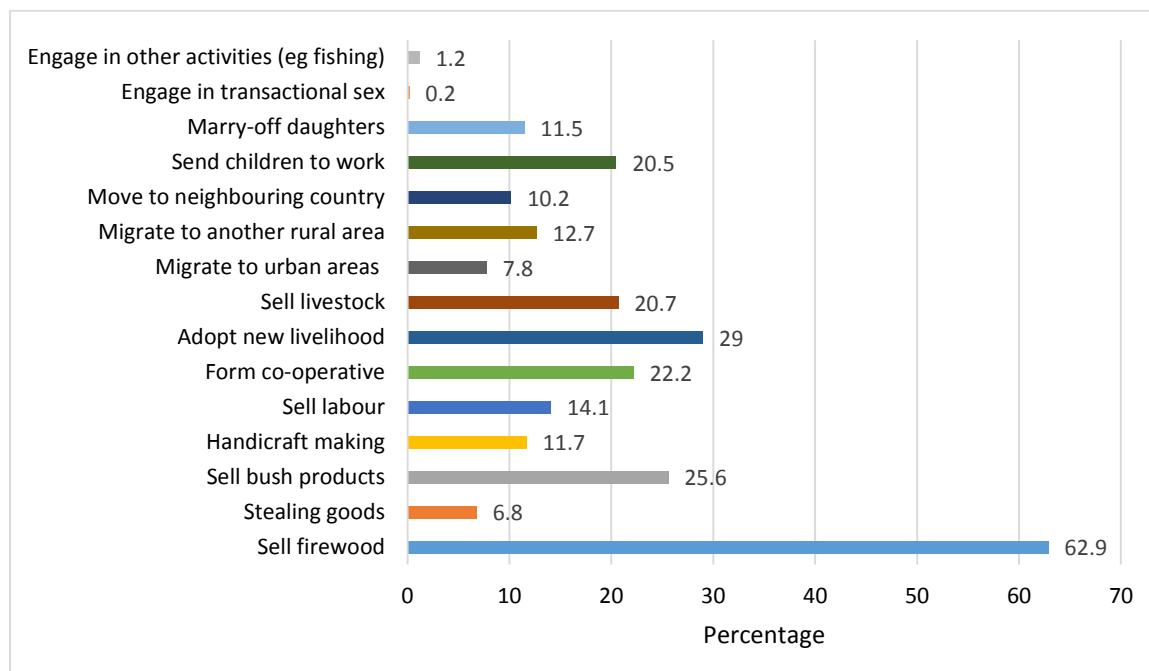


Figure 3.18: Household coping strategies



3.6.3 Household coping ability

The ability of the households to cope with the shocks was 6% high, 32% medium, and 62% no to low coping ability.

3.7 Water, sanitation and hygiene (WASH)

3.7.1 Sources of drinking water

Respondents reported they had several sources of water; 74.1% of the respondent households said their sources were borehole/protected spring/protected shallow wells (Figure 3.19).

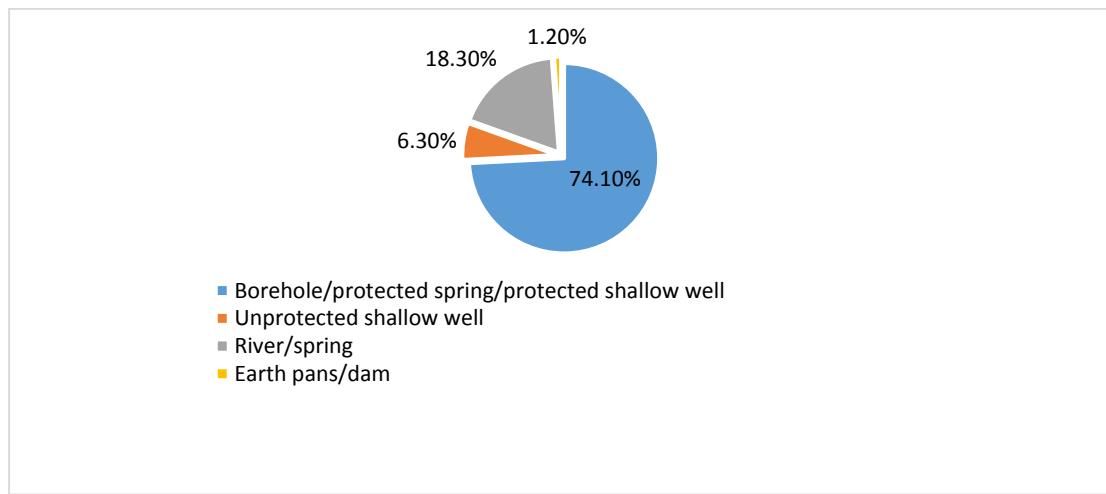


Figure 3.19: Sources of drinking

3.7.2 Household treatment of water

The large proportion of the respondents (58.8%) reported they did nothing to the drinking water fetched from the sources mentioned. Only 41.2% treated their water. Boiling (54.4%) was the most common method mentioned among those treating their water; 36.5% used chemicals such as chlorine, Pur and Waterguard; 5.4% used traditional herbs; and 3.7% used pot filters.

3.7.3 Hand washing/hygiene

Figure 3.20 shows a high degree of hand washing among respondents.

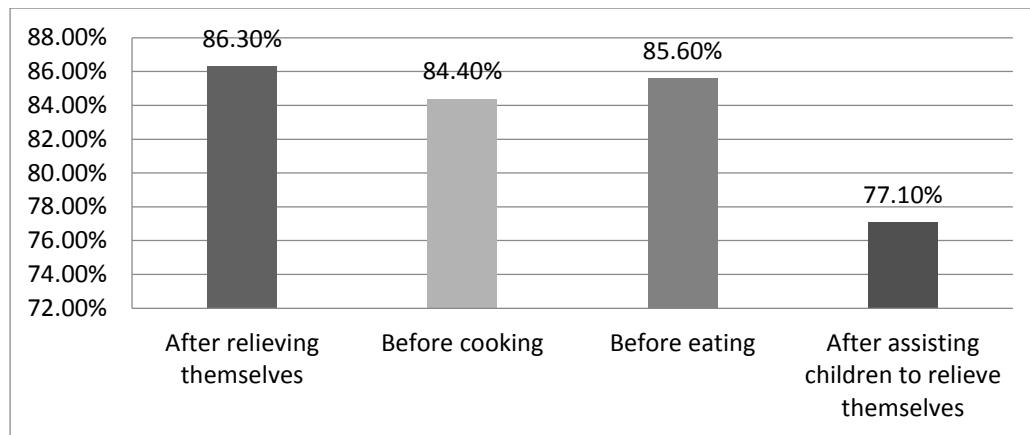


Figure 3.20: Handwashing by household

3.7.4 Sanitation

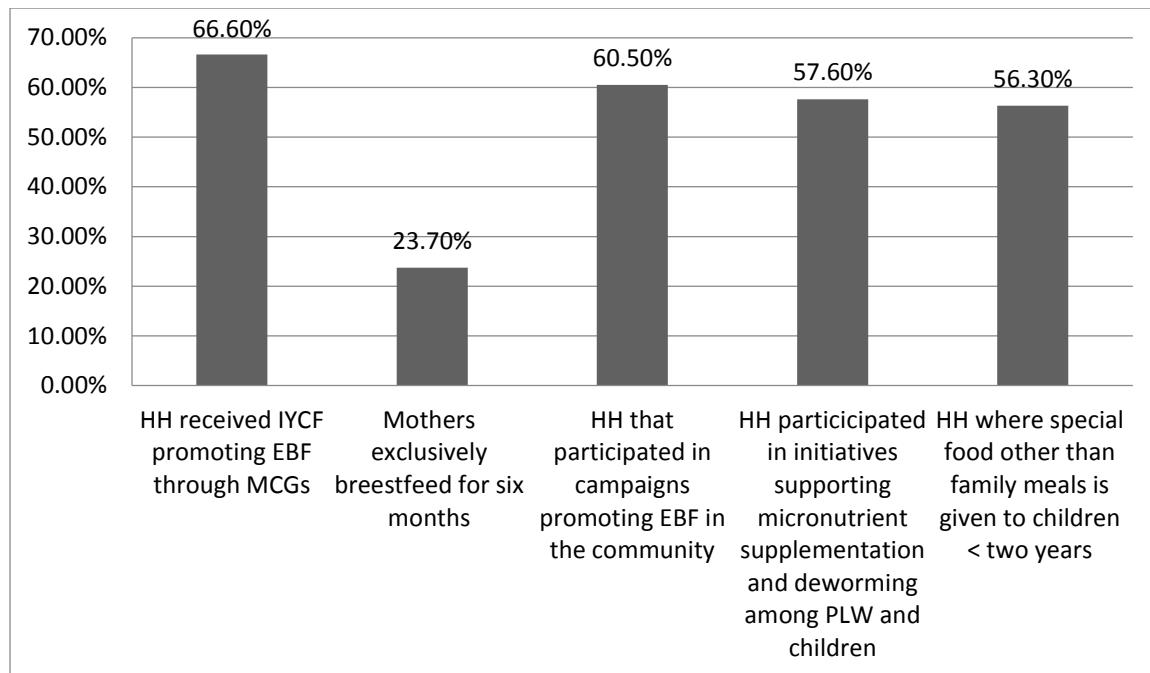
The highest number of respondents (64.6%) used bushes/open defecation. Only 20.70% had their own traditional/improved latrine while 14.6% used shared traditional/improved latrine.

3.8 Food access, utilization and nutritional diversity

3.8.1 Nutrition for children and pregnant and lactating women

Information on early initiation of breastfeeding and exclusive breastfeeding for the first six months is given in primary health care centres (PHCCs). This information was obtained from key informant interviews with health professionals. Mothers are given health educations in groups called mother care groups. Attendance to these meetings is not as high, as most pregnant mothers attend PHCCs when they are sick rather than procedurally as required through scheduled meetings with the health professionals.

Slightly over 66% of respondents reported receiving counselling on infant and young child feeding, promoting exclusive breastfeeding, and optimum complementary feeding practices through mother care groups. Figure 3.21 shows that 83.7% of the respondents reported they breastfed exclusively for up to 6 months. Such a proportion of breastfeeding shows above-average breastfeeding. This raises questions on the quantity of the breast milk, given the low quantity and quality of dietary nutrition of many mothers. Special food included items such as milk to supplement children's daily intake.



IYCF infant and young child feeding; EBF exclusive breastfeeding; MCG mother care groups; PLW pregnant and lactating women

Figure 3.21: Nutrition for children and PLW

3.9 Household dietary diversity

3.9.1 Mean Household Food Consumption Score

The food consumption score in Panyijiar County after a seven-day recall stood at 29.3% poor, 34.1% borderline and 36.6% acceptable. We observed limited diet diversification, as the staple food consumed was mostly sorghum with limited maize during the seven-day recall. In the market place, the vegetable on sale was mostly okra. We observed small bunches of okra being sold in markets. Consumption of vegetables is restricted to okra and minimal cowpea leaves. From seed inputs supplied by earlier project interventions, the expected varieties of kale, cabbage, tomato, pumpkin, traditional vegetables, were missing.

These findings may be too general considering that there are vulnerable groups in households, such as children <2 years and pregnant and lactating women. It is also noted that 56.3% of the households with children <2 years give special food to this special group (Figure 3.21). This proportion is low considering the special nutrition need of them.

3.9.2 Household dietary diversity score

Figure 3.22 shows the household dietary diversity score. The average number of food types consumed in the last one week was 6.6 out of a possible 12.

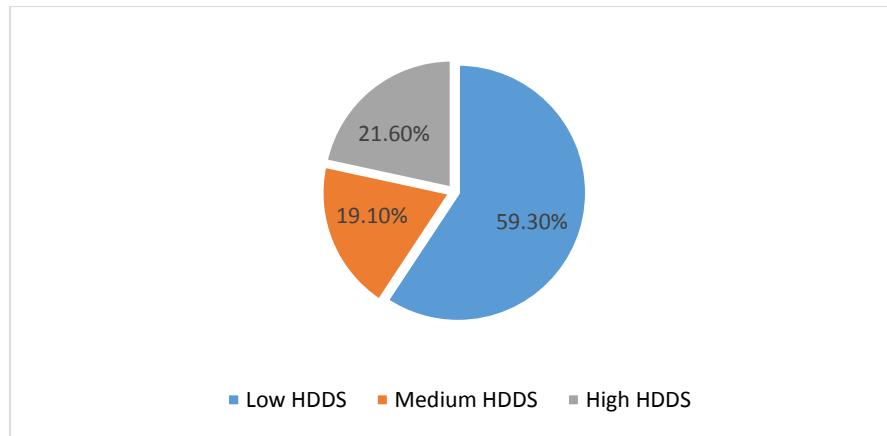


Figure 3.22: Household dietary diversity score

3.9.3 Sources of foods

Figure 3.23 shows the sources of different food types. The sources of the major staples (cereals and legumes) show that food aid played a critical role. Over 50% of household cereals was from own production but more than 40% of cereals consumed was food aid or purchased. The key informant interview acknowledged that reliance on food aid is not sustainable in the long run. The capacity-building component of PRO-ACT will be most needed here to show respondents how to increase production of all food types.

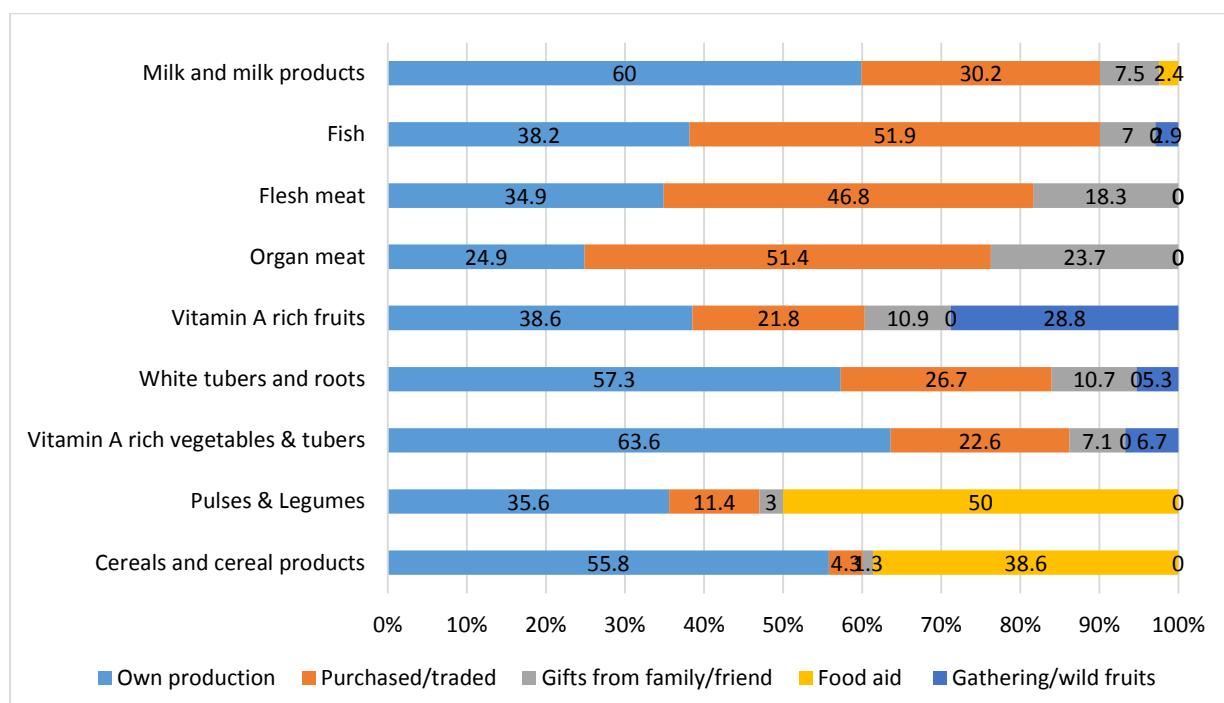


Figure 3.23 Sources of food consumed in the period of last one week

3.10 Applying sustainable consumption and production practices

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From the focus group discussions, it was evident that before the EU funds, households did not use any sustainable consumption and production practices. Production had been individualized, with little if any assistance provided. Agricultural production is still at subsistence level using traditional farm tools such as malouda on small parcels of land.

3.11 Community disaster risk-reduction management committee plans and frameworks

During the focus group discussion and key informant interviews, it was apparent that there were no committees for mitigating risks and calamities. However, each community/payam through its established administrators had structures that would enable them work with other organizations such as NGOs in identifying areas for intervention while they were engaged in cash-for-work activities. A key focus of many humanitarian organizations undertaking interventions in the county was dyke construction to reduce flooding in settlement areas through cash-for-work programmes, at the expense of land resource management, which may explain why floods wreck so much havoc on crop-based agriculture.



4 Conclusions

This report has attempted to analyse information collected through the PRO-ACT baseline survey in the areas targeted by the programme. It provides baseline values for indicators in a wide range of areas. These findings are expected to be used as the benchmark against which IRC and UNIDO implement the programme. We summarize the important observations below:

Only 17.1% of the sample keep poultry. This commodity should be promoted to achieve diet diversification. Poultry provides eggs and meat and is an easy asset to sell. The products are a rich source of locally available and cheap protein for households.

There is a great potential for fish and the fishing industry. Only 50% of the sample size was found to practice fishing, basically for home consumption with commercial fishing only contributing to 24.2%. Given the nutritional and gender dimensions of the fish value chain, particularly in processing through smoking, interventions related to the fish value chain need to be promoted as they present an interesting social cohesion for a more inclusive economic dimension that bridges the gender divide and to promote marketing which is hampered by the poor organizational framework of fishing communities as they do not have formal groups. Supporting farmers with fishing tools and training in fish handling will help grow the sector.

There is need to facilitate and encourage formation and membership of more fisher folk groups. Marketing of fish is hampered by the poor organizational framework of fishing communities, as they do not have formal groups as producer organizations, except in areas where there have been donor interventions. Fisher folk have however evolved social initiatives in the form of basic organizational units through which co-management measures are addressed, especially managing fish stocks to ensure there is no overfishing.

Agricultural production is low. Only an average of 4.95 feddans per household is under agriculture. As the study shows only 32.5% of respondent households still had food stocks by June 2016. The major constraint was lack of seed. Although conflict has led to markets not being functional and also seeds being destroyed in the humanitarian stores during conflict as revealed during key informant interview, there is still potential for increased production.

The effect of military confrontation in Unity State has resulted in high levels of food insecurity, cereal deficits and hence a high dependency on food aid, to a people whose income streams are already stressed. Public service delivery has also been affected. Better-organized farmer organizations may be necessary for a country going through governance challenges. Innovation through farmer-centred interventions would increase the proportion of farmers' activities in the productive sector through agribusinesses.

Vegetables are important as sources of micronutrients and an avenue for food diversification, but only about 30% of households grow them. The key informant interviews revealed that though a number of humanitarian organizations such the Red Cross distribute vegetable seeds, farmers have not been trained in how to plant and

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maintain the crops. There were also claims that some of the seedlings were already approaching their expiry dates, hence reducing their germination rates when planting is delayed. Distribution of vegetable seeds should be coordinated and training provided on the management cultures.

It is necessary to promote integrated land management practices, focusing on effective soil and nutrient conservation, fuel supply, agroforestry and improved yields from animal and crop husbandry. Practices that promote effective land management are highly recommended.

Constraints respondents faced include gaining access to markets and marketing, lacked of transportation facilities, and high commodity prices. Although transport infrastructure and commodity prices are more macro, PRO-ACT project can tap from the existing groups, even in their informal existence for capacity building or financial empowerment, and facilitate formation of more financial groups—VSLAs, women's groups and youth groups—to help address the credit challenge.

It is necessary to create an extension service training programme and align it to the food systems perspective that should guide the PRO-ACT project. Only about a half of the respondents received agricultural extension on a few topics such as general agricultural advice, input supply, veterinary services and crop and pest management. There is still potential to reach more farmers. Farmers should be encouraged to attend agricultural training forums where demonstrations are carried out and model farms cultivated.

The dietary intake by breastfeeding mothers where the household dietary diversity (HDD) lean heavily to poor (59.3%) and global acute malnutrition (GAM) is 16.9% calls for a balance in both quantity and quality to ensure children are safe from stunting and wasting. Consumption of fish, poultry and vegetables provide the essential nutrition to improve health. Farmers particularly women have embraced vegetable farming, such as okra, pumpkin leaves, Jews marlow and eggplant, though more can still be done to improve food diversity with nutritious foods. Cooking demonstrations are also needed to ensure food can be easy to prepare and does not lose its nutritional value during preparation and cooking. Equally important, there is need to look at local ways of reducing postharvest losses and food waste and of processing to extend shelf-life while ensuring food safety, and of improving storage and preservation. Opportunities exist to make the local food system deliver healthier and more nutritious foods, and to make these foods more available and affordable to all people, to promote better food consumption patterns. But these need institutional and policy environments that enable agriculture to support nutrition and health goals, and communities also need information on the same.².

Considering firewood trade is rampant, accounting for about 61.2% of the sources of off-farm income, and firewood is the main source of household fuel, depletion of the

² Covic, N. and S. L. Hendriks (Eds). 2016. *Achieving a Nutrition Revolution for Africa: The Road to Healthier Diets and Optimal Nutrition*. ReSAKSS Annual Trends and Outlook Report 2015. International Food Policy Research Institute, Washington, DC.
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environment is inevitable. Infusing agroforestry practices will in the long run help address energy needs of the county and to forestall depletion of forest resources.



5 Recommendations

Acreage under agricultural production is still low, hence it is necessary to address the key constraints that have been identified that are affecting agricultural performance in the target areas, and to implement activities that will help farmers to overcome their production constraints. Agricultural production needs to be diversified to include more nutrient-dense foods that can improve micronutrient intake. This would include promoting the consumption of locally available fruits and vegetables as well as planting bio fortified crops.

Interventions in nutrition should continue being directed at providing basic nutrition education, hygiene practice sensitization, supplementary feeding programme, targeted feeding programme, and blanket supplementary feeding programme that target pregnant and lactating women and children below 5 years.

As several agencies—Mercy Corps, GAA and IRC—deliver capacity building, activities should be coordinated to reduce duplication of efforts. Capacity building on fish preservation methods, postharvest handling of cereals, and WASH activities require a multi-agency approach to address. However the uptake of the capacity building and extension knowledge among those charged with extension is very low, as evidenced through what we found on the ground, and farming tools and methods farmers were using to cultivate were rudimentary. To enhance agricultural production and fisheries, more in-depth capacity building is needed as are grants in form of modern farming and fishing tools to upscale both fisheries and agricultural production.

Farmers should be encouraged to join production groups such as vegetable and seed production groups. Farmers, particularly smallholders, who work together in the ‘common interest groups’ create a necessary institutional framework to support their productive efforts.³ Membership to an agricultural group has been shown to influence positively adoption of technologies. Agricultural groups are avenues of exchange of knowledge among the farmers. Nkamleu (2007) found that involvement in group activities exposed farmers to a wide range of ideas and information that may positively change their attitude towards new agricultural technologies while Singh et al. (2008) found that membership in an agricultural self-help group was significant in the adoption of new farming practices.

The potential for science, technology, and innovation should be harnessed to reduce postharvest losses and food waste; promote product diversification with nutritious foods; improve processing to extend shelf life, and make healthy foods easier to prepare; and improve storage and preservation to retain nutritional value, ensure food safety, and extend seasonal availability. This calls for a food systems approach.

³ file:///C:/2017/VACID%20Africa/IRC/References/Final%20Landcare%20Report%20-%202nd%20September.pdf

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References

Singh, A., Vasisht, A. K., Kumar, R., and Das, D. K. (2008). Adoption of Integrated Pest Management Practices in Paddy and Cotton: A Case Study in Haryana and Punjab. *Agricultural Economics Research Review*, 21, 221-226.

Nkamleu, G. B. (2007). Modelling farmers' decisions on integrated soil nutrient management in sub-Saharan Africa: A multinomial Logit analysis in Cameroon. In A. Batiano, B. Waswa, J. Kihara, and J. Kimetu (Eds.), *Advances in Integrated Soil Fertility Management in sub-Saharan Africa: Challenges and Opportunities* (pp. 891-904). Netherlands: Springer Netherlands.

Covic, N. and S. L. Hendriks (Eds). 2016. *Achieving a Nutrition Revolution for Africa: The Road to Healthier Diets and Optimal Nutrition*. ReSAKSS Annual Trends and Outlook Report 2015. International Food Policy Research Institute, Washington, DC.



Annexes

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Annex 1: Questionnaire

Section 1.0: General Interviewee Data

1.1: Name of interviewee.....Contact.....

1.2: Date of interview (dd/mm/yyyy).....Enumerator's name.....

1.3: Interview duration —Start:End:Duration:

1.4: Study Payam (✓ or Circle as appropriate)

Payams							
1	Pachar	4	Thornoum	7	Nyal	10	Panyijiar
2	Pachak	5	Tiap	8	Khol	11	
3	Ganyiel	6	Pachienjok	9	Mayom		

Section 2.0: Interviewee Demographic Data

2.1: Gender of respondent 1 Male 2 Female (Tick(✓) one)2.2: Category A Settlement 1 IDP 2 Host community 3 Returnee(Tick(✓) one)2.2a Category B - Livelihood 1 Pastoralist 2 Agro-pastoralist 3 Fish monger (Tick(✓) one)2.2b: Category C: 1 Urban 2 Rural (Tick(✓) one)2.3: Age of respondent (Tick (✓) as appropriate)
 1 15 -19 year 2 20-24 Years 3 25-29 ye 4 30-34 ye 5 35-39 ye 6 40-44 ye 7 45 years and above

2.3b: Marital status (Tick (✓) as appropriate)

1. Single (Never married) 2. Widow 3. Widower 4. Divorced 5. Married with children 6. Married with no children

2.4: What is the highest level of education that you have attained? (Tick (✓) as appropriate)

1. Elementary 3. Intermediate 3. Secondary 4. College 5. University 6. None (Never went to school)

2.5: Size of household: How many children do you have? (Circle or tick (✓) a response that apply)

S/N	Own children	Circle (or ✓) Choice
2.5a	0-1	1
2.5b	2-4	2
2.5c	5-7	3
2.5d	Above 7	4

2.6. Family status: How many dependants do you have? (Circle or tick (✓) a response that apply)

S/N	Dependant(s)	Circle (or ✓) Choice
2.6a	0-1	1
2.6b	2-4	2
2.6c	5-7	3
2.6d	> 7	4



2.7. Ages of dependants

S/N	Dependant(s)	Insert number here
2.7a	0<5 year	
2.7b	5–12 years	
2.7c	13–17 years	
2.7d	18–20 years	
2.7e	20–60 years	
2.7f	> 60 years	

2.8. Housing/shelter: What kind of housing/shelter do you live in with your family? (One answer only)

S/N	Housing/Shelter	Circle (or ✓) Choice
2.8a	Tents/canvas	1
2.8b	Traditional houses	2
2.8c	Grass roof/mud walled	3
2.8d	Iron roof/mud walled	4
2.8e	Permanent/brick house	5
2.8f	Iron roof/iron walled	6
2.8g	Other (specify)	7

2.9. Who provides the following labor /services in the household?

S/N	Household Labor Division	HH labor/services distribution 1= Woman, 2=Man, 3=Male child, 4=Female child, 5= All
2.9a	Main HH income earner	
2.9b	Household financial budget	
2.9c	Bush clearing	
2.9d	Land preparation	
2.9e	Acquisition of inputs	
2.9f	Planting	
2.9g	Weeding	
2.9h	Harvesting	
2.9i	Feeding livestock	
2.9j	Milking	

Section 3.0: Agriculture and Agribusiness Indicators

Did you cultivate/plant crops in the 2015 season						1 = Yes , 0 = No
Crop	Area HH cultivated last year (2015) feddans for both season if applicable	Areas HH cultivated this season (2016) feddans for both season if applicable	Actual production last season (2015) by number of bags (50 kg)	How much wheat still available June 2016 (50 kg)	How many months did you stock(s) last your family	Typically, how many months does stock the below cereal crops last? (in reference to normal /typical year)
Sorghum						
Maize						
Groundnut						
Sesame						
Cowpea						
Other (specify)						

3.1d	Did you plough your plot on time?	1 = Yes, 2= No
3.1e	If NO, what is the reason for not plowing on time (SEE CODES BELOW*)	
3.1f	What equipment did you use to plough the plot (SEE CODES BELOW**)	
3.1g	Did you use improved seed for planting?	1 = Yes, No = 2
*1=Drought 2=Lack of seed 3=Shortage of draught animals 4=Shortage of tractor service 5=Shortage of labour 6=Poor soil fertility 7=Fallow 8=Floods 9.Other (specify)		

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**1= 0x /donkey, 2 = maloda 3 = hoe 4=tractor services

3.2. How many months does your harvest feed your family?

i) Months in a **good** year... Months

ii) Months in a **bad** year... Months

3.3. Was 2015 a good or bad year...1 = Good year, 2 = Bad year, 3 = Average ... []

3.4. Did you store any of your harvest in 2015? 1=Yes 2=No..... []

3.5. If **YES** how did you preserve the stored crop harvested? (Use the table below)

Crop Stored		Method
Crop code	Crop type	1. Drying 3. Smoking 3. Ashes 4. Sand 5. Grain mixture 6. Leaves/grasses 7. Banana juice 8. Chemicals 9. Others (Specify).....
Sorghum	Cereal	
Maize	Cereal	
Groundnut	Legume	
Simsim	Cereal	
Cowpea	Legume	

3.6a. Have your household received vegetable seeds.... **1 = Yes, 2 = No.**

3.6b. Does your household grow vegetables and fruits**1 = Yes, 2 = No,**

3.6c. If **YES**, which vegetables do you grow? [.....]

1= Okra, 2 = Kale, 3 = tomato, 4 = Onion, 5 = Pumpkin 6 = Cowpea 7 = Traditional vegetables 8 = Banana 9= Mango 10 = Pawpaw

3.6d. which season do you **normally** plant your vegetables. **1 = Dry season, 2 = Wet season..... []**

3.6e. Does your household produce vegetables for? []
1 = Home consumption, 2 = For sale 3. Other (Specify).....



4.0 Livestock

4.0a. Do you own any Livestock 1 = Yes, 2 = No.....

4.0b. Give details about your livestock.

Animal type	No. owned in 2015	No. owned in 2016	Who owns the animal	No. that died in 2016	No. of milking livestock	Av. milk yield per animal (litres)	Vaccinated in last year Yes=1 No=2 (circle as appropriate)	If Yes No. vaccinated last year	No. slaughtered for household consumption	No. given for dowry	No sold in past year	Average price per animal
1.Ox						1 2						
2.Cattle						1 2						
3.Sheep						1 2						
4.Goat						1 2						
5.Camel						1 2						
6.Donkey						1 2						
7.Poultry						1 2						

* 1 = Husband, 2= wife, 3 = Both, 4 = Male children, 5 = Others (Specify)

4.0c.	If YES poultry, How do you MAINLY benefit from the poultry(1 = sell of poultry, 2 = Sell eggs, 3 = Consume eggs and Poultry (Don't sell)	Grazing/Browsing(Rangeland) = 1 Crop residues2 Agro-industry by-products.....3 Hay.....4 Other(SPECIFY).....5
4.0d	(IF LIVESTOCK(4.0b 1-6)) What is the source of feed for Your livestock?	Months..... <input type="checkbox"/> <input type="checkbox"/>
4.0e	(IF LIVESTOCK(4.0b 1-6)) For how many months of the Year does grazing provide enough feed for your livestock?	Yes.....1 No.....2
4.0f	Are there cattle camp (grazing) committee in your village?	Rangeland.....1 Enclosures area.....2 Both.....3 No.....4
4.0g	Is there any soil and water conservation activities taking place in the Rangeland or cattle camp areas?	Yes.....1 No.....2
4.0h	Did any member of your household participate in such activity?	



4.1. Starting with the **most critical/greatest**, list the constraints that you face in livestock production. (Use chart below.)

#1 Constraint	#2 Constraint	#3 Constraint

0 = None, 1= Lack of feed, 2 = Shortage of water, 3 = Diseases 4= Shortage of veterinary services and drugs 5= Low producing animals (breeds)

4.2. Fish and fishing

4.2a. Do your family have access to the fishing ground1 = Yes, 2 = No.

4.2b. If **YES**, is your household involved in fishing activity?1 = Yes, 2 = No.

4.2c. If **NO**, what are the limiting factors.....

4.2d. If **YES**, who is engaged in Fishing? 1 =Husband, 2 = wife 3 = male children, 4 = female children, 5 = other (Specify).....

4.2e. **Main** reason for fishing? 1= Home consumption, 2 = For sale/Business 3. Other Specify.....

4.2f.What is the distance from the fishing grounds to the fish market?km and Walking time in minutesmins

4.2g. Do you belong to any Fish Folk Group/organization 1 = Yes, 2 = No..... []

4.2h. Have you received any 1.Training on fish handling. 1 = Yes, 2 = No []

3. Fishing equipment. 1 = Yes, 2 = No..... []

5.0: Market Complement

5.0a	What is the main source of Agricultural inputs?	Market.....1 Market away from home.....2 Government.....3 NGOs.....4 Other Specify).....5
5.0b	Are they affordable? (APPLIES IF BOUGHT)	Yes.....1 No.....2
5.0c	Have you sold crops, livestock and their by-products the market from 2015 to date?	Yes.....1 No.....2
5.0d	To whom did you sell your product? (circle all that apply)	Village communities near home.....1 Village communities away from home.....2 Traders.....3 Other (specify)4 Don't know.....5
5.0e	Which period of the year do you sell your production? (circle all that apply)	January–March.....1 April–June.....2 July–September.....3 October–December.....4
5.0f	Which means of transport do you usually use to take products and inputs to and from the market?	Pack animals.....1 Bus.....2 Track/Tractor/Small cars.....3 Human labor.....4 Other (specify).....5

5.1. Starting with **the most critical/greatest**, list the constraints that you face in marketing. (Use chart below)

#1 Constraint	#2 Constraint	#3 Constraint	#4 Constraint	#5 Constraint

0 = none 1 = Lack of Transportation 2= Lack of diversified products for markets 3 = Shortage of packing materials and containers 4 = Low prices 5 = High prices 6 = Absence or long distance of markets 7 =Poor quality inputs 8 = Lack of credit 9 = Other (Specify).....

6.0: Extension Service/Capacity Building

6.0a	Did your HH receive Agricultural Extension service in the last 1 months?	Yes.....1 No.....2
6.0b	What type of extension service was given to you In the last 12 months? (CIRCLE ALL THAT APPLY)	Input supply.....1 Advice.....2 Veterinary service.....3 Crop & pest mngrt service.....4 Others (Specify).....5
6.0c	Do you find the extension services useful to Improve your agricult production?	Yes.....1 No.....2
6.0d	Have any member of your household participated In any agricult training programme in the last 12 months?	Yes.....1 No.....2
6.0e	How many times have members of your household participated in agricultural training in the last 12 months?	Number of times
6.0f	Indicate type of training provided in the last 12 months? (Circle all that apply)	Soil and water conservation.....1 Crop production.....2 Plant protection.....3 Grain storage.....4 Animal production.....5 Animal health.....6 Home science(cookery).....7 Range land management.....8 Seed multiplication.....9
6.0g	Do you find the training useful to improve your agricultural produc	Yes.....1 No.....2

7.0: Livelihood Sources

Please complete the table regarding livelihood sources using the livelihood source codes provided below.	7.1 What were your household's main income activi by MAY 2016 ?	7.2 Using proportional piling or 'divide the pie' methods, please estimate the relative contrib to total income of each activity.
7.0a Main livelihood source		%
7.0b Second livelihood source		%
7.0c Third livelihood source		%
		Total = 100%

LIVELIHOOD SOURCE CODES:

1 = Agriculture and sale of cereals (sorghum, maize etc)	11 = Sale of firewood/poles
2 = Agriculture and sale of other crops and products	12 = Sales of charcoal
3 = Livestock and sale of livestock	13 = Sales of grass
4 = Sale of animal products (milk etc.)	14 = Fish and sale of fish
5 = Sale of alcoholic beverages	15 = Other petty trading/small business (tea seller, kiosk, sa of handicraft etc)



6 = Casual labor related to agricultural activities	16 = Kinship/gifts from family friends/remittances
7 = Casual labor related to construction	17 = Begging
8 = Other non-agricultural casual labor (porter, domestic labor etc.)	18 = Sale of food assistance (received from NGOs, WFP, Government)
9 = Skilled labor	19 = Borrowing
10 = Salaried work	99 = Other, specify

8.0 Main Off-Farm Sources of Income

	Source	1=Yes, 2= No	If yes, give amount per Month (Average)
8.0a	Sale of firewood and charcoal		
8.0b	Casual labour		
8.0c	Business/Petty trade		
8.0d	Formal employment (Salaried)		
8.0e	Cash for work		
8.0f	Remittances (from friend and relatives)		
8.0g	Cash Transfer from NGOs		
8.0h	Others (Specify).....		

8.1 How do you **MAINLY** spend your income?

S/N	Expenditure	% (as per key below)
8.1a	Food	
8.1b	Health	
8.1c	Clothing	
8.1d	Education	
8.1e	Purchase of inputs	
8.1f	Leisure/Entertainment	
8.1g	Others (specify).....	

Key: 1 = <25%, 2 = 25-50%, 3 = 51-75% 4 = > 75%

9.0: Financial Credit Services

Since the conflict began, have you received any **financial credit services** (Yes=1 No=2)... []

9.0a if **YES**, fill the table below?

9.0a From who/where was the credit received?	9.0b How much was received	9.0c Intended use for the Credit
1=Relative/Friend 2 = Farmer group 3 = VSLA (Village saving & lending Association 4 = Informal money lender/Shylock 5 = Merry-go-round 6 = Commercial bank 7 = (MFIs) Microfinance institutions 8 = Others (specify)	SSP	1 = Buying food and cloths 2 = On Business/Farming 3 = Improving shelter 4= On basic services–health & education 5 = Agribusiness Activities 6 = Others(Specify)

9.1 Which groups do you belong to and what activities are they involved in?

9.1a	Type of Group	Activities of the Group (use BELOW)	Year formed	Year Joined
9.1b	Women Group			



9.1c	Youth Group				
9.1d	Fisher Folk Group				
9.1e	Farmers Field school				
9.1f	VSLA(Village Savings N Lending Association)				
9.1g	Seed processing Group				
9.1g	Vegetable Producer Grp				
9.1h	Other (Specify).....				

KEY, 1= Merry go round, 2 =Savings, 3 = Marketing, 4 = Producer Group, 5 = Other (specify).....

9.2 D0 women have financial access or generated interest in participating in Village Savings and Lending Associations (VSLAs):

S/N	D0 women participate in....	(Yes=1 N0=2)
9.2a	Community awareness on savings and lending	
9.2b	Did you belong to any VSLAs groups	
9.2c	Had you received capacity building of VSLA groups on issues related to group dynamics savings	

10.0. Infrastructure Availability

Section 10.0– Distance (Kkm) to the nearest functional facilities (Circle responses that apply)				
	Facility	1=Yes 2=No	Distance (in	Travel time (hour/minute)
10.0a	Primary School	Is there a functional primary school		
10.0b	Health Centre	Is there a functional Health center		
10.0c	Cereal Market	Is there a functional Cereal market		
10.0d	Livestock Market	Is there a functional livestock market		
10.0e	Administrative Cen	Is there a functional Administrative cent		
10.0f	Borehole	Is there a functional borehole		
10.0g	Roads	Is there a functional road		
10.0h	Prison/police statio	Is there a functional police station		
10.0j	Church	Is there a functional church		

11.0: Livelihood Stresses and Shocks

11.0: Which **Main** areas are you most vulnerable? (Circle responses that apply)

S/N	Constraints	Circle (or ✓) Choices
11.0a	Health	1
11.0b	Food insecurity	2
11.0c	Education	3
11.0d	Reduced employment and trade opportunities	4
11.0e	Theft of household assets	5
11.0f	Lack of access to farming land	6
11.0g	Increased cost of basic supplies	7
11.0h	Lack of access to basic services e.g. school, hospital	8
11.0i	Displacement	9
11.0j	Loss of livestock	10
11.0k	Inter and intra community fighting/revenge killings	11
11.0l	Other (specify)	

11.1: How are you able to reduce vulnerability/Coping mechanisms? (Circle responses that apply)

S/N	Opportunities for improving livelihoods	Circle (or ✓) Choices
11.1a	Sell firewood and charcoal	1

11.1b	Stealing goods	2
11.1c	Collect and sell bush products	3
11.1d	Rely on handicraft making	4
11.1e	Sell labor	5
11.1f	Form a cooperative with other producers	6
11.1g	Adopt a new livelihood	7
11.1h	Sell livestock	8
11.1i	Migrate to urban areas to find work	9
11.1j	Migrate to another rural area	10
11.1k	Move to neighboring country	11
11.1l	Send children to work	12
11.1m	Marry off daughters for dowry	13
11.1n	Engage in transactional sex	14
11.1o	Other (specify)	15

12.0: Water, Sanitation and Hygiene (Wash)

12.0a What is the MAIN source of drinking water for the household NOW?

Piped water system/ borehole/ protected spring/protected shallow wells

Unprotected shallow well

River/spring

Earth pan/dam

Earth pan/dam with infiltration well

Water trucking /Water vendor

Other (Please specify) _____

12.0b Is anything done to your water before drinking (*Use 1 if YES and 2 if NO*). if No skip

12.0c If yes what do you do? (MULTIPLE RESPONSES POSSIBLE) (*Use 1 if YES and 2 if NO*).

Boiling

Chemicals (Chlorine, Pur, Waterguard)

Traditional herb

Pot filters

Other (specify) _____

12.0d If YES, where did you learn about the water treatment activity?.....

12.0e At what instances do you wash your hands? (MULTIPLE RESPONSE- Circle (or ✓) all Choices that a

1. After toilet

3. Before cooking

3. Before eating

4. After taking children to toilet

5. Other (Specify).....

12.of Where do members of your household mainly relieve themselves?

In the bushes, open defecation

Neighbor or shared traditional pit/improved latrine



Own traditional pit/improved latrine

13.0: Food Access, Utilization and Nutritional Diversity

13.1 At what age do you introduce other foods to children (other than breast milk) Age in months

S/N	Nutrition for children and PLW	(Yes=1 No=0)
13.1a	Have you received IYCF counseling that promote exclusive breastfeeding (EBF) and optimum complementary feeding practices (OCFP) through Mother Care Groups (MCG)	
13.1b	Do you exclusively breastfeed for up to six months	
13.1c	Have members of your family participated in campaigns for the promotion of exclusive breast feeding in the community/ health centers	
13.1d	Have member(s) of the HH benefitted from initiatives to Support micronutrient supplementation and deworming among PLW and children 6 to 24 months	
13.1e	Are children < 2yrs given special foods other than family meals (e.g. milk, fruits)	

13.2 Dietary Diversity

		Did members of your household consume any from these food groups in the last SEVEN (7) days? (food must have been cooked/served at the household)	What was the main source of the dominant food item consumed in the HHD?
	Type of food		
13.2a	Cereals and cereal products (e.g. sorghum, maize, spaghetti, anjera, bread)?		
13.2b	Vitamin A rich vegetables and tubers: Pumpkins, carrots or orange sweet potatoes		
13.2c	White tubers and roots: White potatoes, white yams, cassava, or foods made from roots		
13.2d	Dark green leafy vegetables: Dark green leafy vegetables including wild ones + locally available vitamin A rich leaves such as cassava leaves etc.		
13.2e	Other vegetables (e.g. tomatoes, eggplant, onions)?		
13.2f	Vitamin A rich fruits: + other locally available vitamin A rich fruits		
13.2g	Other fruits		
13.2h	Organ meat (iron rich): Liver, kidney, heart or other organs or blood based foods		
13.2i	Flesh meats: Meat, poultry (e.g. goat/camel meat, beef; chicken/poultry)?		
13.2j	Eggs?		
13.2k	Fish: Fresh or dried fish or shellfish		
13.2l	Pulses/legumes, nuts (e.g. beans, lentils, green grams, cowpeas)?		
13.2m	Milk and milk products (e.g. goat/camel/ fermented milk, powder)?		
13.2n	Oils/fats (e.g. cooking fat or oil, butter, ghee, margarine)?		
13.2p	Sweets: Sugar, honey, sweetened soda or sugary foods such as chocolates, sweets or candies		
13.2r	Condiments, spices and beverages:		

Annex 2. Key informant Guide and Focus group discussion

1. Key informant Guide Questions – IRC staff

- i. Before the conflict, what was the level of donor support? Was it enough?
- ii. What was the collaboration with partners, CBOs, Local Administration, community (Elders/Village Committees/) and other agencies?
- iii. Before May 2016 whom would you consider the most vulnerable groups
 - a. IDPs
 - b. Women
 - c. Children
 - d. Pastoralists, or
 - e. Agro-pastoralists

Have gatekeepers, unscrupulous traders, clans, etc. protected them from exploitation/intimidation/violence etc.?

Before the conflict was there any distribution of cash? How fair has been the distribution?
- iv. Was there any measures put in place to safeguard the vulnerable from physical and psycho-social effects of violence and other abuses such as exploitation by traders, inter-clan conflicts, violence, discrimination, gate keepers, corruption etc.?

2. Key informant Guide Questions –Government officers, Local Opinion Leaders, Village Committees

- i. Before the conflict:
 - a. Were there any organized farmer groups
 - b. Was the government/ local authority involved in planning any agricultural/agribusiness activities with the farmer organization
 - c. Who was responsible for offering farmer support activities
- ii. Before May 2016 whom would you consider the most vulnerable groups
 - a. IDPs
 - b. Women
 - c. Children
 - d. Pastoralists, or
 - e. Agro-pastoralists

Have gatekeepers, unscrupulous traders, clans, etc. protected them from exploitation/intimidation/violence etc.?

Before the conflict was there any distribution of cash? How fare has been the distribution?
- iii. Was there any measures put in place to safeguard the vulnerable from physical and psycho-social effects of violence and other abuses such as exploitation by traders, inter-clan conflicts, violence, discrimination, gate keepers, corruption etc.?

3. Focus Group Discussions (FGDs)

- i. Did you receive vegetable seeds before the conflict? If yes, from who?
- ii. Was cooking demonstration carried out before the conflict? If yes, was it helpful?
- iii. Where would you want improvement?

- iv. Before May 2016, was there other agricultural/agribusiness interventions? Which ones? From whom? Were you involved in the implementation of these interventions?
- v. In such initiatives was the selection of beneficiaries and distribution of benefits been transparent? Would you consider it necessary to propose some improvement?
- vi. What benefits have been gained from the programme? How much cash have you received as individuals or as a group? How has it been utilized? Have you been able to cater for your basic needs? Who has benefited most among men, women and children? Have you received assistance from other sources?
- vii. Before May 2016, were there any IDPs? What challenges did IDPs and host communities face? Would you offer an opinion how they can be solved? In your view would cash benefits assist in solving these IDP challenges? In your view what are the positive and negative impacts of the cash transfer/cash for work systems??
- viii. If a program existed that addressed many of the challenges communities have faced before May 2016, how would they sustain themselves? What coping mechanisms would you advice to be put in place to sustain livelihoods?
- ix. Any suggestions for IRC and other development agencies to support the vulnerable in South Sudan?
- x. Before May 2016, how did communities plan against drought, water resource rights, or inter-clan conflicts in your Payam?
- xi. Was there any government or project based training on natural hazard awareness on how to reduce the occurrence of such conflicts?
- xii. Was any disaster risk training undertaken in your Payam to improve knowledge of available insurance, micro-insurance, risk-sharing, risk-financing or other financial protection tools?
- xiii. Before the conflict was there any government or project resources allocated for natural hazard awareness and disaster risk reduction education efforts?
- xiv. What is the general perception of the community on humanitarian organization, government, donors, humanitarian actors
- xv. How many humanitarian organizations work in your Payam?
- xvi. In what seasons do these organizations work in your Payam?
- xvii. Do they have preference on where they work and what seems to be the most attractive reasons to attract them?
- xviii. Where do people in this Payam sell their producer or buy such inputs as may be needed in their agricultural work?