BASELINE STUDY

Food Assistance for Ebola-Affected and Food Insecure Populations of Beni and Lubero (FABELU)

January 2020

EDITORIAL NOTE

This report covers the baseline survey of the Food Assistance for Ebola-Affected and Food Insecure Populations of Beni and Lubero (FABELU) project, a project being implemented by ADRA-RDC and funded by USAID and FFP. This is the initial situation which will facilitate the monitoring and evaluation of the progress and effectiveness of actions implemented in this project in the Territories of Beni and Lubero, East of the DRC.

Data collected and analyzed during this baseline study relate to four axes: (i) household demography and economic, (ii) food security, (iii) access to public infrastructure and marketing information and (iv) ebola perception.

Household survey covered by this report was carried out by the Center for Informatics and Statistics (CIS) of "Institut Supérieur de Statistique et de Nouvelles Technologies" (ISSNT) with the financial support of ADRA within the framework of the FABELU Project.

This study was conducted by ISSNT-CIS researchers under the coordination of Edson NIYONSABA SEBIGUNDA[1], Célestin KIMANUKA RURIHO[2] and Promesse KASEREKA KAVULIRENE[3].

The editors thank the entire ADRA team for supervising this work as well as all the other project partners for their diverse support.

To all the investigative staff who worked selflessly on a riskiness field, to the reviewers of this report may you find our gratitude here.

Finally, thanks to all key informants, population of Lubero, Beni or Butembo who gave their time to answer questions and to provide useful guidance.

Information provided and opinions expressed in this report do not necessarily reflect the view of ADRA and USAID/FFP.

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[3] Expert in digital data collection, he configured the survey questionnaire on tablets, ensured the quality control of the server and took part in the data analyzes. He also ensured the translation of the questionnaire into the local language during the training.

LIST OF ACRONYMS AND ABBREVIATIONS

Abbreviation	Signification
ADRA	Adventist Development and Relief Agency
CAPI	Computer Assisted Personal Interviews
CDF	Congolese Francs
CNP	Congolese National Police
DRC	Democratic Republic of Congo
EVD	Ebola Virus Disease
FABELU	Food Assistance for Ebola-Affected and Food Insecure Populations of Beni and Lubero
FCS	Food Consumption Score
FFP	Food for Peace
ISSNT-CIS	Institut Supérieur de Statistique et de Nouvelles Technologies/Centre Informatique et Statistique
M&E	Monitoring and Evaluation
NIS	National Institute of Statistics
SPSS	Statistical Package for Social Sciences
STATA	Statistics and Data
UNWFP	United Nations World Food Program
USAID	United States Agency for International Development

TABLE OF CONTENT

LIST OF TABLES

LIST OF FIGURES

Executive Summary

The study was conducted in January 2020 and date collected from 12th to 17th January and mainly aimed to determine the basic indicators of "Food Assistance for Ebola-Affected and Food Insecure Populations of Beni and Lubero (FABELU)" project, by organizing a survey of 480 inhabitants randomly selected from households in Beni and Lubero territories. This study aimed to:

- Determine the percentage of household's food consumption score
- Prevalence of households suffering from moderate or severe hunger (household hunger scale);
- Compute the reduced coping strategy index (according to sex, gender and type of household);
- Compute the mean Household Dietary Diversity Score.
- Perform a market analysis;
- Identify community perceptions of Ebola.

For the in-depth exploration of targeted themes, a standard questionnaire was administered using CAPI by tablets to adults aged 18 and over from randomly selected households. Among the randomly selected persons, 65% of them did not go beyond primary school. Their main source of income is agriculture (75%).

Analysis of the data provided the following main results:

The majority of households (88%) are residents of these region with 9% being displaced whiles the remaining 3% are returnees.

The study shows that 87.5% of households surveyed have debts and the typical household has a debt of $ 14.71[4] which represents 83% of its monthly income ($ 17.65). Almost all of the households encountered (93%) live on less than $ 0.5 per person per day.

The overall average household FCS (Food Consumption Score) is 35.3, and 14% of households are in a situation of severe vulnerability with a "poor" FCS (or less than 21). The quality and quantity of their food is inadequate.

The average household FCS is lower in the Lubero Territory (32.7) compared to the Beni Territory (37.3)

[4] Exchange rate is 1USD=1700CDF

Households in situation of severe vulnerability (poor FCS) are in greater proportion in the Health Zones of Alimbongo (28%), Beni (16%), Oicha (16%) and Lubero (15%).

The most vulnerable areas of health are: Kasingiri (57%) in the Alimbongo Health Zone, Mbindji (33%) in the Beni Health Zone, Mbau (20%) in the Oicha Health Zone, Vuhoyo (17%) in the Kayna Health Zone and Kasima in the Lubero Health Zone.

Households with adult women without male adults appear to be more severely vulnerable (23% poor FCS) than households with both male and female adults (13% poor FCS) and adult male without women (8% poor).

Internally displaced households (24% poor FCS) and returnees (23% poor FCS) are relatively more in a situation of severe vulnerability than residents (13%).

The study shows that the average reduced coping strategy index (rCSI) for the set of households visited is 14.6. This simplified mean index differs significantly between the two Territories, between Health Zones, according to status and health areas. However, there is an insignificant difference according to Household (HH) Gender.

Taking into account the coping strategies adopted, households in Beni territory are more food insecure than those in Lubero, households in the Oicha and Kalunguta health zones are finding it more and more difficult to obtain food. IDPs and returnees are more forced to use high coping strategies to obtain food compared to resident households.' Rely on less preferred and less expensive foods

Overall, 69% of households use High Coping. The proportions of households that have more difficulty to obtain food and therefore resort to high coping mechanisms are highest in the Health Zones of Kalunguta (95%), Alimbongo (82%) and Oicha (78%). Within the health zones surveyed, the following health areas were found to have high coping mechanisms and for that matter have difficulty in obtaining food[: Kasingiri (HZ Alimbongo), Ngongolio (HZ Beni), Kanyihunga and Lisasa (HZ Kalunguta) and Mbau (HZ Oicha)].

The most used survival strategies by households in case of difficulty of obtaining food are: Rely on less preferred and less expensive foods (used by 95% of households), Limit portion size at mealtimes (used by 76% of households), Borrow food, or rely on help from a friend or relative (used by 76% of households) and Reduce number of meals eaten in a day (used by 71% of households).

The computation of the household hunger scale shows that 20% of households in the Beni Territory against 10% households in the Lubero Territory show severe hunger. The study also shows that households in the Health Zones of Oicha (33% for severe hunger), Kalunguta (20% for severe hunger) and Beni (18% for severe hunger) have more experience of deprivation (severe hunger in households) than other health zones. In addition, internally displaced and returnee households (31% severe hunger) experience more food deprivation than resident households (with 14% severe hunger). However, the difference observed in the distribution of household's hunger scale is not significant according to the Household (HH) Gender.

The distribution of household hunger scale by health area shows that severe food deprivation is more recorded in households in health areas of Mbau (43%) and Pakanza (23%) (HZ Oicha), Bundji (23%) and Ngongolio (20%) (HZ Beni) and Lisasa (27%) (HZ Kalunguta).
Across the surveyed territories, household diets are not generally diverse. Households frequently consume staple foods (cereals and tubers), vegetables and oil.

In terms of health zones, the diet is almost identical, with a high consumption of oil in Mutwanga (6.5 days per week) and Oicha (6.1 days per week). There is a remarkable consumption of legumes in Mutwanga (4.1 days per week). The Kalunguta Health Zone has the lowest consumption of animal protein (0.9 days per week). The lowest frequencies were observed in the Health Zones of Alimbongo and Kayna, however Kayna has the highest consumption of cereals and tubers (6.6 days per week).

Households with a "Poor" Food Consumption Score consume only leaves, staple foods and oil. The very low level of consumption of basic foods (cereals and tubers) among households with a poor FCS is a concern.

The consumption of the different food groups is not significantly different among the HH Genders, nor between the IDP and Return and the Residents. However, we observe differences in the consumption of vegetables and oil between the two territories Beni and Lubero.

Regarding the markets, there is an increase in prices in August 2019, especially for cassava flour, peeled dry corn and multi-colored beans. We observe that 84% of households obtain food by purchase at the market and 74% obtain it from the Garden / Farm. A large majority (97%) of the population walk to the market and 51% consider the distance "very long or long".

The study found that Ebola virus disease (EVD) is known to many in the seven surveyed health zones where this study was conducted. Overall, 95% of people know or have heard about Ebola virus disease.

A large proportion of respondents are aware of signs and symptoms of EVD (85%). There are 61% who know the causes of EVD and only 11% who know the EVD can be treated.

51% of surveyed declared that they know types of people who can contract Ebola. In addition, 79% of respondents said that they are vulnerable to EVD and 89% consider EVD to be a very dangerous disease in the community.

It was also observed that 41% of respondents reported to hear regularly (1 à 3 mois) that people are affected by Ebola mainly in Health Zones of Oicha (72%), Beni (66%) and Mutwanga (65%)

Hygiene practice comes first as a means of preventing EVD with 97%. Avoid unprotected contact with 70% in the territory of Beni and 60% in the Territory of Lubero. Overall, inhabitants of Beni territory have better control of various means of prevention than those of Lubero.
The study also shows that control measures are working normally: case identification and isolation with 90% in Beni, 86% in Lubero and 88% overall.

The community has access to health facilities. About 84% declared to have a nearby health facility. However, 19% do not have easy access to health facilities. The typical household is 1 km from the nearest health facility.

Most people cut all contact with a person affected by EVD. Even after recovery, some continue to isolate people for fear of contamination.

EVD has not only impacted the health sector, it has affected the region’s economy globally. About 47% of people who have already waited to speak about EVD believe that this epidemic has affected their work and economic activities and 46% declare that it has an impact on agricultural activities and therefore on food security in the two territories. Respondents declared that the territory of Beni is more affected than the territory of Lubero.

I. INTRODUCTION

1.1 Overview of the FABELU Project

FABELU Project is being implemented in Beni and Lubero territories of North Kivu Province. The Upper North-Kivu province of the Democratic Republic of Congo (DRC) is currently experiencing renewed inter-ethnic violence and attacks by armed groups, leading to the displacement of thousands.[5] High youth unemployment is a major issue associated with political violence, and unemployed youth often become active participants in armed conflict to escape vulnerability and marginalization, seeking peers, purpose, and economic security they perceive in armed groups.[6] Most youth in eastern DRC have lived their childhood, adolescent and/or adult developmental years in conflicts beginning 1996 till today. Indeed, wars in eastern DRC have increased child labor and other exploitations in addition to the direct involvement of children as combatants. In this context, the vulnerability of different youth segments in eastern DRC is largely shaped by characteristics that make individuals susceptible to exclusion, exploitation, abuse, violence, and/or recruitment into armed groups.[7]

Over the past three months, various armed groups have increased attacks and abuses in the territories of Beni and Lubero. These areas are also suffering the Ebola epidemic. The persistence of the Ebola epidemic in Beni and Lubero territories continues to disrupt agricultural activity, limiting people's access to livelihoods. The situation has affected agro-pastoral activities in the eastern part of the DRC[8]. The latest report of 29th October 2019 indicates that, there were 3,151 confirmed cases of Ebola in Eastern DRC, with a high fatality rate (65%).[9] Insecurity has reduced agricultural activities and efforts to combat the Ebola disease. This has led to a decrease in food security and, without humanitarian assistance, household food consumption will be impacted.

To address unmet needs, improve conditions of the population, and reduce vulnerability to food insecurity in Ebola-affected and food insecure areas, ADRA with support from USAID is providing a 12-month Food Assistance for Ebola-Affected and Food Insecure Populations of Beni and Lubero (FABELU) in North Kivu. These areas are chosen due to the high level of vulnerability to the food crisis aggravated by the current EVD epidemic negatively impacting the food security situation in these territories.

Program Goal: The overarching goal of the intervention is to contribute to improving the living conditions and reducing the risk of food insecurity of displaced persons, returnees

[5] FEWS NET, Democratic Republic of Congo Food Security Outlook Update, February to September 2019
[6] Liro Pankakoski, Youth livelihoods and the local conflict in North Kivu, 2017
[7] USAID, overview of youth development perspectives in the eastern Democratic Republic of Congo, July
[8] FEWS NET, Democratic Republic of Congo Food Security Outlook, June to January 2020
[9] WHO, Ebola Rapport de situation N°319, July 2019

and host families including young people in the health areas of Beni (Beni, Oicha, Kalunguta and Mutwanga) and Lubero (Kayna, Lubero and Alimbongo) affected by the Ebola Disease Virus in the provinces of North Kivu in the Democratic Republic of Congo.

Activity Objectives: FABELU project will alleviate suffering and maintain human dignity among vulnerable, displaced IDPs and host communities, with an emphasis on households experiencing crisis and food insecurity in Ebola-affected health zones of North Kivu and Ituri Provinces, Eastern DRC. Specifics objectives are:

- To increase access to food and complementary resources to meet the immediate food needs of vulnerable populations through conditional food vouchers.
- To reduce vulnerability of crisis affected IDPs and host communities, especially youth, women, and children through community asset rehabilitation.

1.2 Objectives of the study

The overall objective of the baseline is to provide the USAID/FFP-funded FABELU project and partners with sufficient and accurate data/information to enable them set a benchmark against which outcomes and objectives of the project will be measured. The baseline exercise will focus on six key outcome indicators of the project.

Specifically, the baseline survey seeks to establish benchmark values for the following outcome indicators:

1. Percentage of household with poor, borderline and acceptable food consumption score;
2. Prevalence of households with moderate or severe hunger (Household Hunger Scale);
3. Mean reduced Coping Strategy Index (rCSI)
4. Average household dietary diversity score (HDDS);
5. Total number of households gaining access to local markets;
6. Percentage of beneficiaries who have access to basic public infrastructure;
7. Community perception and knowledge of Ebola virus.

1.3 Structure of the report

This report is organized into the following sections: the editorial note (1), the executive summary (2), acronyms and abbreviations (3), the introduction (4), methodology (5), the main results by indicators and by themes (6), and the conclusion highlighting key recommendations and finally the appendices (7).

II. METHODOLOGY

2.1 Preliminary work for the survey

Preliminary work which preceded the data collection consisted respectively in:

- Development of survey tools: questionnaire and training manual,
- Configuration of the questionnaire on tablet under Kobo Collect,
- Recruitment and training for 3 days of investigators and supervisors (see list in Annex 1), and
- The development of an activity schedule and a team deployment plan.

2.2 Sampling

For data collection, we used a five-stage cluster survey with proportionate allocation:

- At the first reasonably selection, territories to be surveyed was identified by project team;
- Health zones;
- Health areas;
- Town;
- At the third stage, we randomly selected (with random walk methods) households in villages previously selected.

2.3 Survey implementation

a. Investigators training

The theoretical and practical training of investigators for quantitative data collection took 3 days and focused on:

- The objectives of the baseline survey;
- Household survey methodology: random walk in dense villages and scattered villages;
- Basic rules, basic techniques necessary in contact with the population, role and tasks of investigators;
- Explanation and translation of the questionnaire into the main survey language: Kiswahili and Kinande;
- Explanation of the security context and instructions, data quality control mechanism and the deployment plan.

b. Sample Presentation

The following table presents the Baseline sample by Territory and Health Zone.

Table 1.Sampling

Territory	Health Zone	Population	Health areas (grappes)	#HH
Lubero *n=210*	**Alimbongo** *n=60*	247993	Kalungu	30
			Kasingiri	30
	Kayna *n=90*	379189	Bulotwa	30
			Butsiri	30
			Vuhoyo	30
	Lubero *n=60*	274739	Kasima	30
			Lubero	30
Beni *n=270*	**Beni** *n=90*	447012	Bundji	30
			Ngongolio	30
			Mabolio	30
	Kalunguta *n=60*	207754	Kanyihunga	30
			Lisasa	30
	Mutwanga *n=60*	298048	Bulongo	30
			Kangahuka	30
	Oicha *n=60*	303623	Mbau	30
			Pakanza	30
Total			**16**	**480**

2.4 Data analysis

Data collected by CAPI was compiled in Excel format (2013 version). Then, exported and analyzed with SPSS 23 and STATA 15.

For statistical tests, we consider a result as statistically significant when the probability $p \leq 0.05$. To test the dependence of two characters represented in a contingency table, we used the Chi-square independence test. While to compare the means of several populations, we used the Analysis of Variance (ANOVA) test.

III. RESULTS

3.1 Socio-demographic characteristics

3.1.1 Distribution of households by sex and age of respondents

As Figure 1 illustrates, both sexes are validly represented among the respondents. Overall the difference is very insignificant.

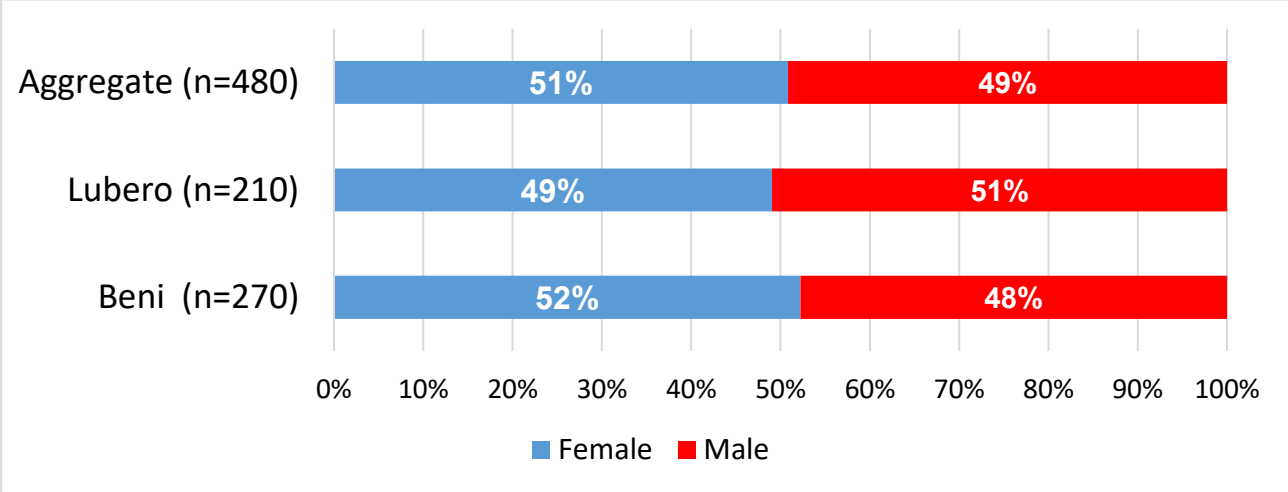

Figure 1. Distribution of households by sex of respondents

The average age of respondents is 41 years. Their age varies between 18 and 85 years (Table 2). They are therefore all adults.

Table 2.Age of respondents

Territory	Obs.	Mean	Std. Dev.	Min	Max
Beni 18-59	240	36.4	11.0	18	59
Lubero 18-59	161	36.4	9.4	19	57
Aggregate 18-59	*401*	*36.4*	*10.4*	*18*	*59*
Beni 60+	30	67.3	6.9	60	85
Lubero 60+	49	65.6	5.6	60	84
Aggregate 60+	*79*	*66.2*	*6.1*	*60*	*85*
Beni	270	39.9	14.4	18	85
Lubero	210	43.2	15.1	19	84
Aggregate	**480**	**41.3**	**14.8**	**18**	**85**

3.1.2 Level of education

Figure 2 illustrates that, 67.5% of respondents have not gone beyond primary school, 29.6% are at secondary level and only 3% are at higher education level.

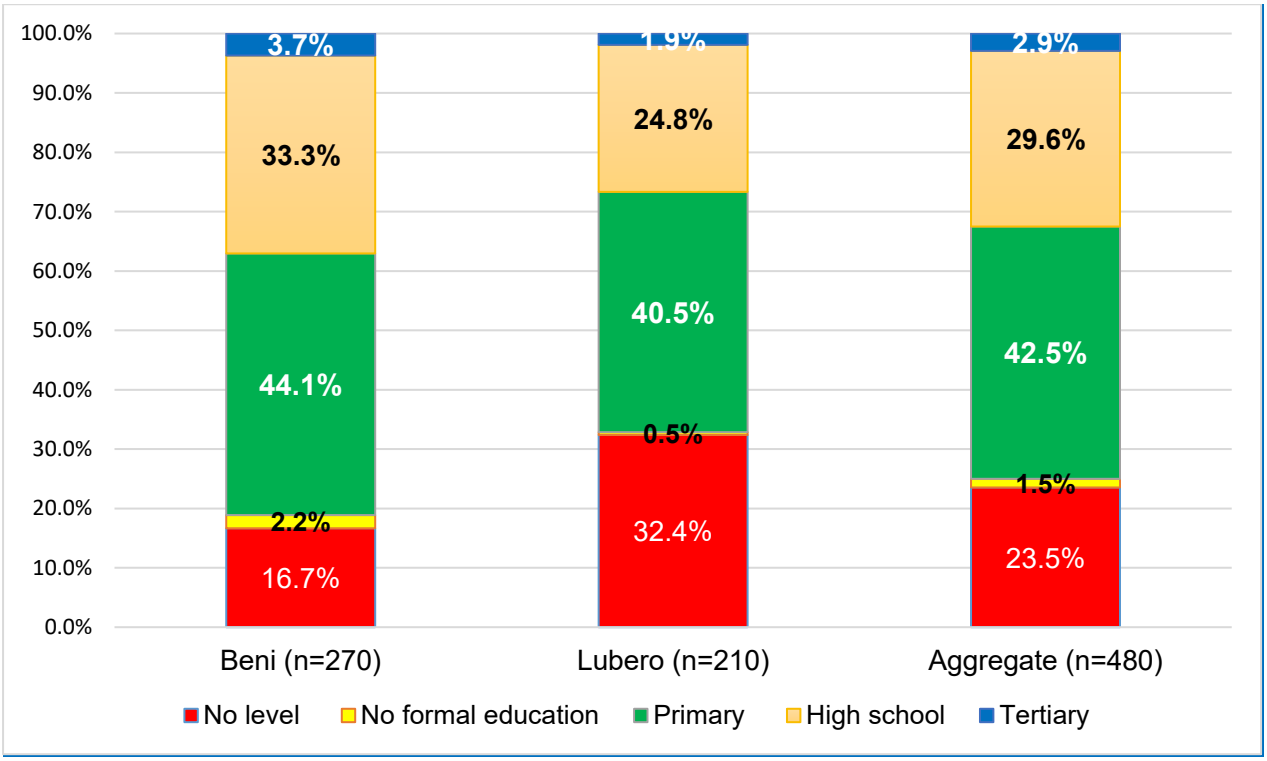

Figure 2. Distribution of education level of respondents

3.1.3 Household size

The results in Table 3 show that the average household size is 6 people with a standard deviation of 2.6. The average household size differs one health zone to another as shown in appendix 4.6. The average number of people in the household is highest in Oicha and Alimbongo Health Zones, at 7.1 and 6.9 respectively. It is lowest in Beni Health Zone (4.9).

Table 3. Household size of respondents

Territory	Obs.	Mean	Std. Dev.	Min	Max
Beni	270	5.5	2.7	1	23
Lubero	210	6.1	2.5	2	13
Aggregate	**480**	**5.8**	**2.6**	**1**	**23**

3.1.4 Household Residential Status and Household Gender

The Figures 3 and 4 show that the dominant category of household type is the Male Adult and Female Adult (M&F) Households which represent 85.8%. In our random draw, we did not observe households made up only of children (CAN).

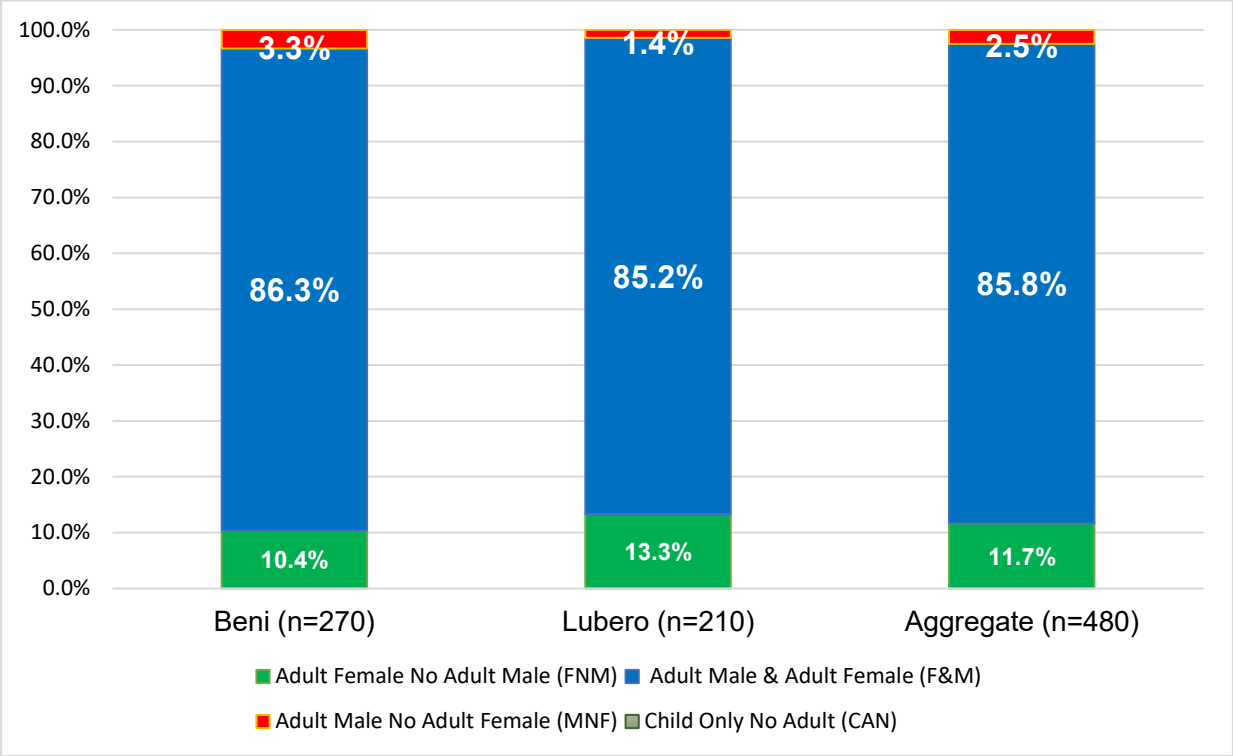

Figure 3. Household Gender Status

The majority of households (88%) are made up of residents. Next comes the internally displaced (almost one in ten) while the phenomenon of returnees is almost rare (only 2.7%).

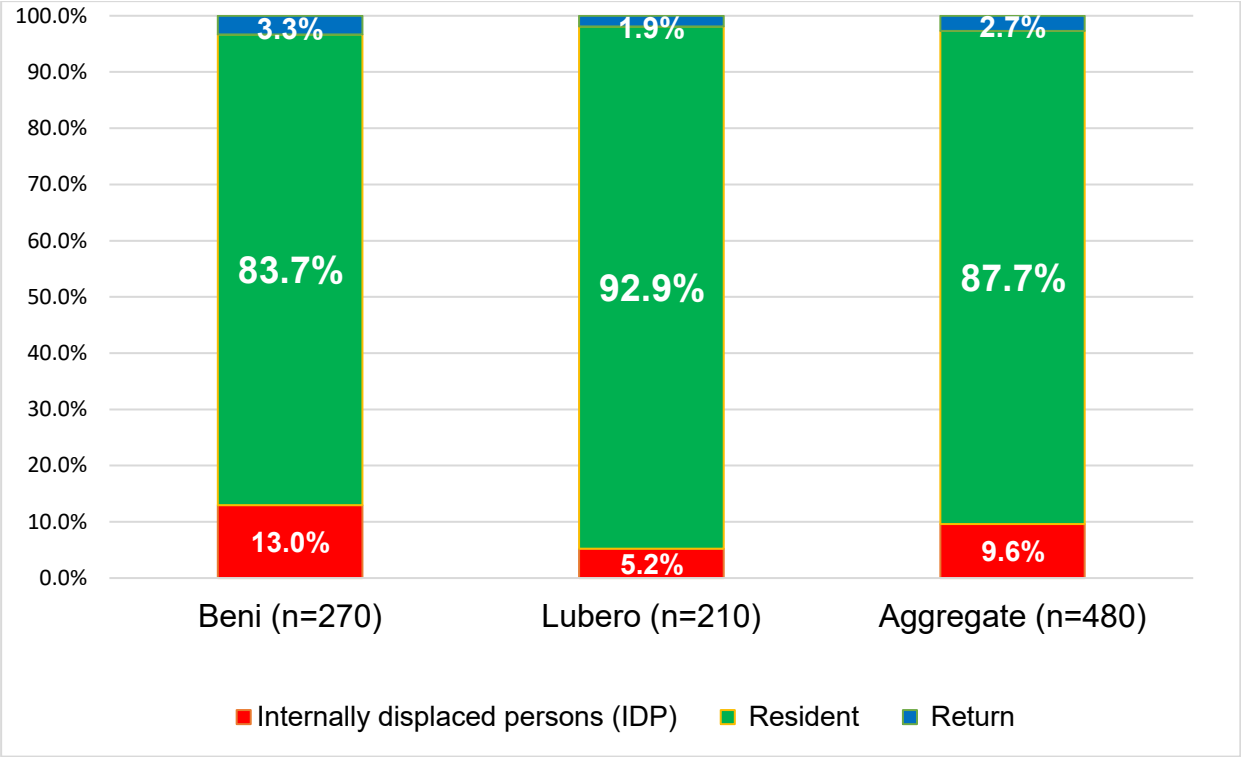

Figure 4. Household status

3.1.5 Main Occupation, Household Income & Household Debt

The main occupation of households is agriculture which is necessary for the survival of 75%of households in the two territories. We cannot neglect the agricultural workforce (5%) and the small-scale business (5%).

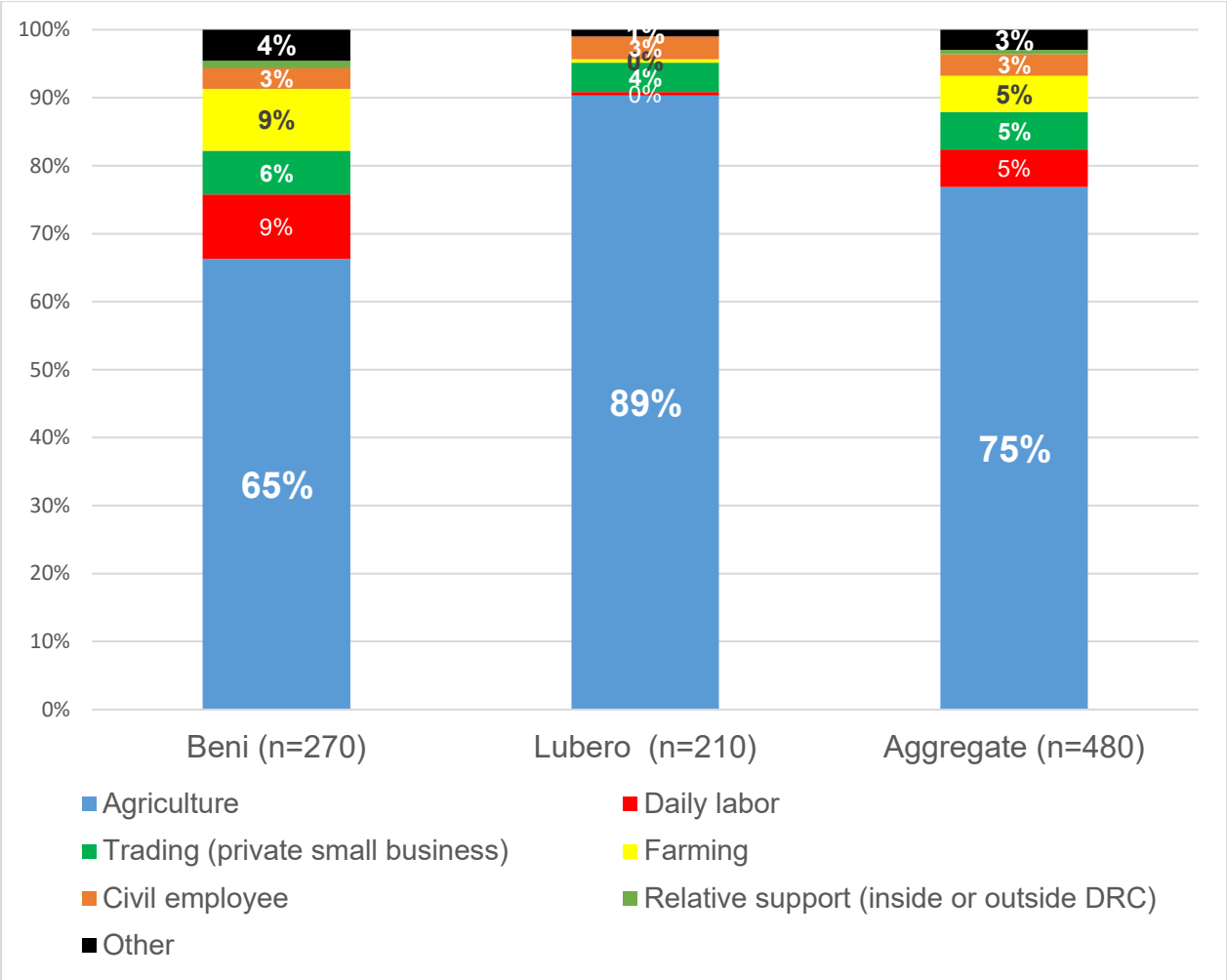

Figure 5. Household current main occupation for living

Monthly household income

The average monthly household income is 60458 CDF soit $ 35.56 (Sd = $ 94.36)[10]. Since there is a large dispersion, we consider the median income. Thus, a typical household has a monthly income of 30 005 CDF ($ 17.65). These incomes are very low. There is a significant difference in average monthly income between the Health Zones. Households in the Mutwanga, Oicha and Beni health zones have the highest monthly incomes and those in the Alimbongo and Lubero, Kalunguta health zones are the lowest.

Table 4.Household current monthly income in CDF

Health Zone	n	Average Monthly Income in CDF	Average Monthly Income in $	standard deviation	Median income in $
Alimbongo (T=Lubero)	60	31008.3	18,24	20,59	10,00
Beni (T=Beni)	90	72622.2	42,72	60,77	25,29

[10] Exchange rate of 1$=1700 CDF

Kalunguta (T=Beni)	60	35391.7	20,82	19,50	11,76
Kayna (T=Lubero)	90	45212.2	26,60	30,16	17,65
Lubero (T=Lubero)	60	32508.3	19,12	21,69	16,18
Mutwanga (T=Beni)	60	122125.0	71,84	227,75	29,41
Oicha (T=Beni)	60	85878.3	50,52	98,12	20,59
Total	**480**	**60457.9**	**35,56**	**94,36**	**17,65**

Income per person per day

It can be seen that the computation of income per person per day shows that almost all of the inhabitants encountered live far below the poverty line of $ 1 per person per day.

Table 5.Income per person per day

Income per person per day in CDF	Income per person per day in $	Frequency	%
0 – 850	0 - 0,5	444	93%
851 -1700	0,501-1,0	23	5%
1701 -13600	1,001-8,0	13	3%
Total		**480**	**100%**

Household debt

When asked "What is the level of debt in your household?" The responses collected are grouped in the following Table 6.

• The study shows that of the 480 households surveyed, only 60 declared that they have no debt, or 12.5%.

• The average household debt is 50934 CDF soit $ 29.96 (SD = $ 58.99). The typical household has a debt of 25007 CDF ($ 14.71). Thus, with a typical household monthly income of $ 17.65, the proportion of debt represents 83% of income. Households are in difficulty.

Table 6.Household level of debt in CDF

Health Zone	n	Average debt in CDF	Average debt in $	Standard deviation	Median
Alimbongo (T=Lubero)	60	74133,33	43,61	95,45	17,79
Beni (T=Beni)	90	35494,44	20,88	27,53	11,76
Kalunguta (T=Beni)	60	57941,67	34,08	53,17	18,53
Kayna (T=Lubero)	90	39132,02	23,02	28,22	14,71
Lubero (T=Lubero)	60	23250,00	13,68	16,84	5,88
Mutwanga (T=Beni)	60	70030,00	41,19	94,82	9,71
Oicha (T=Beni)	60	70177,50	41,28	61,33	21,47
Total	**480**	**50934,03**	**29,96**	**58,99**	**14,71**

Household Food Security Measures

Households which have received assistance in the past two months

In all of the households visited in the two territories, 8% received food aid and 8% received means of subsistence. The proportion of those who benefited from food aid and livelihoods is higher in the Territory of Lubero compared to that of Beni.

Table 7.Receipt or not of assistance by households

Territory	n	Has your household received any food support in the last two months?				Has your household received any livelihood support in the last two months?			
		No		Yes		No		Yes	
		Frequency	%	Frequency	%	Frequency	%	Frequency	%
BENI	270	260	96%	10	4%	257	95%	13	5%
LUBERO	210	181	86%	29	14%	184	88%	26	12%
Total	480	441	92%	39	8%	441	92%	39	8%

According to the statements of the people we met,
• Food aid was mainly received from: CARITAS, ICRC, WFP, Solidarity, USAID, World vision, SODERU, NRC, Churches, parents and family members.
• Means of subsistence were received from: AIDES, CARITAS, MEDAIR, MERLIN, MSF, NRC, OXFAM, USAID, UNICEF, RESCUE, Churches, Government, Parents and family members, personnel response, Community relay.

Food Consumption Score

The Food Consumption Score (FCS) is a composite score based on dietary diversity, frequency and relative nutritional importance of different food groups. It is a basic indicator recommended by the VAM (Vulnerability Analysis and Mapping) in food security analyses. The FCS is calculated based on the past 7-day food consumption recall for the household and classified into three categories: **poor consumption (FCS = 1.0 to 21); borderline (FCS = 21.5 to 35); and acceptable consumption (FCS = >35.0)[11].** The FCS is a weighted sum of food groups. The score for each food group is calculated by multiplying the number of days the commodity was consumed and its relative weight.

The following thresholds of FSC are used to categorize households into three food consumption groups – Poor, Borderline and Acceptable:

[11] USAID Food for Peace, Indicators for Emergency Program Performance Indicator Reference Sheets, February 2019.

Table 8.Interpretation of the Food Consumption Score

Food consumption groups	Food Consumption Score	Description
Poor	1-21	An expected consumption of staple 7 days, vegetables 5-6 days, sugar 3-4 days, oil/fat 1 day a week, while animal proteins are totally absent
Borderline	21.5 -35	An **expected consumption** of staple 7 days, vegetables 6-7 days, sugar 3-4 days, oil/fat 3 days, meat/fish/egg/pulses 1-2 days a week, while dairy products are totally absent
Acceptable	> 35	As defined for the borderline group with more number of days a week eating meat, fish, egg, oil, and complemented by other foods such as pulses, fruits, milk

Note: In principle, the standard thresholds are as follows: poor: <21; limit: between 21.5 and 35; and acceptable :> 35. However, according to WFP DRC, for populations where there is a high frequency of consumption of sugar and / or oil, alternative thresholds of 28 and 42 may be more appropriate. In other words, if through the cluster analysis, we find that the population consumes oil and / or sugar in a homogeneous way every day, the thresholds of the 3 groups (poor, borderline and acceptable) can be raised from 21/35 to 28/42 (adding 7 to the thresholds of 21/35).

As can be seen in the table in appendix 4.7, 68% of households consume the oil 5 to 7 days a week.

3.1.6 Food Consumption Score by Territory and Health Zone

a. Food Consumption Score by Territory

The overall average household (FCS) is 35.3, and 14% of households are in a situation of severe vulnerability with a “poor” FCS (or less than 21). The quality and quantity of their food is inadequate.[12]

The average household (FCS) is lower in the Territory of Lubero (32.7) compared to the Territory of Beni (37.3) as we can read in Appendix 4.1.

Figure 6 shows that the “poor” food consumption score is higher in the territory of Lubero (16%) and lower in the Territory of Beni (13%)[13].

[12] Considering the classification of the score according to the WFP recommendation, we see that 33% of households have a poor FC (less than 28), 40% have a Borderline FCS and 27% have a acceptable FCS.
[13] *The distribution of households according to* FCS *is significantly different between the two Territories (p = 0.036)*

It is therefore households in the Lubero Territory who are more in a situation of severe vulnerability.

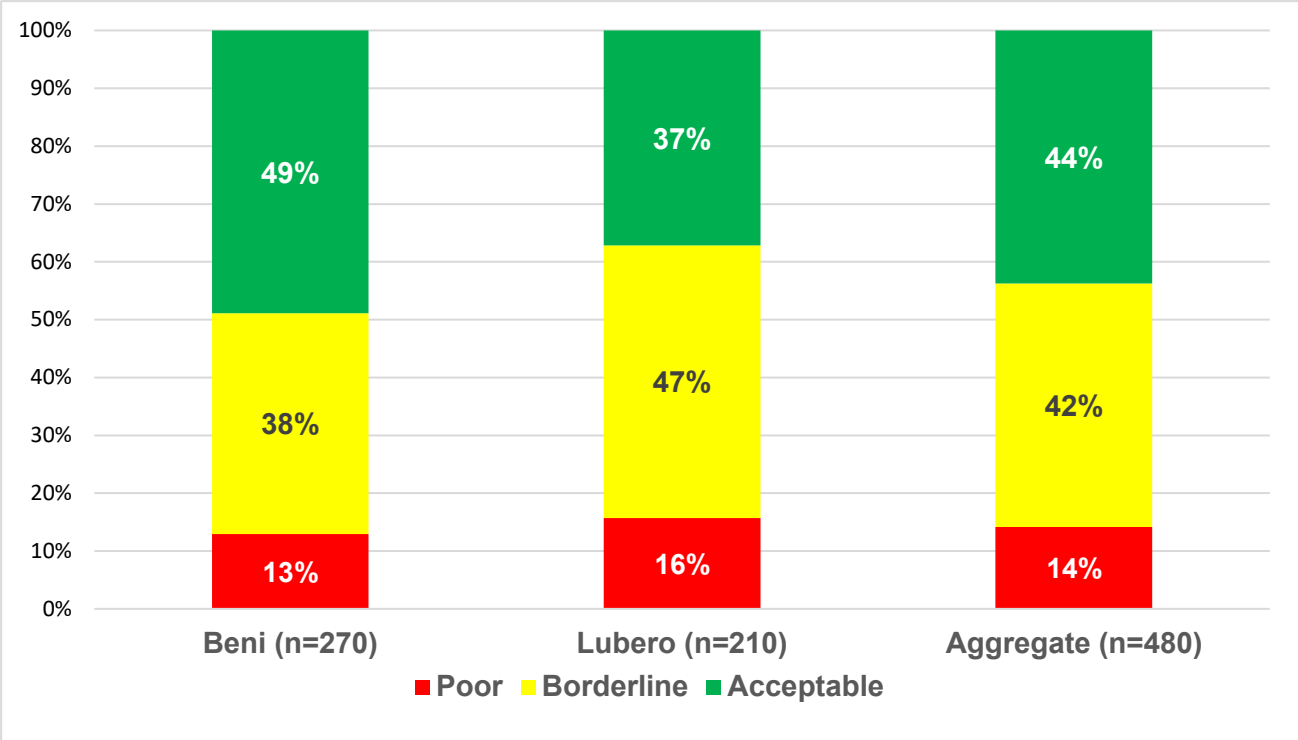

Figure 6. Food Consumption score by Territory

b. Food Consumption Score by Health Zone

The lowest average FCS was recorded in the Alimbongo (29.7), Kalunguta (31.0) and Kayna (33.0) Health Zones. More details see appendix 4.1.

As illustrated in Figure 7, households in situation of severe vulnerability (poor FCS) are in greater proportion in the Health Zones of Alimbongo (28%), Oicha (16%) , Beni (16%) and Lubero (15%).[14].

The health areas most in a situation of severe vulnerability (poor FCS) are: Kasingiri (57%) in the Alimbongo Health Zone, Bundji (33%) in the Beni health zone and Mbau health center (20%) in the Oicha Health Zone. More details on the distribution of FCS according to Health Areas are presented in appendix 4.2.

[14] The difference in the distribution of households according to the SCA is very significant between the Health Zones ($p<0,0001$)

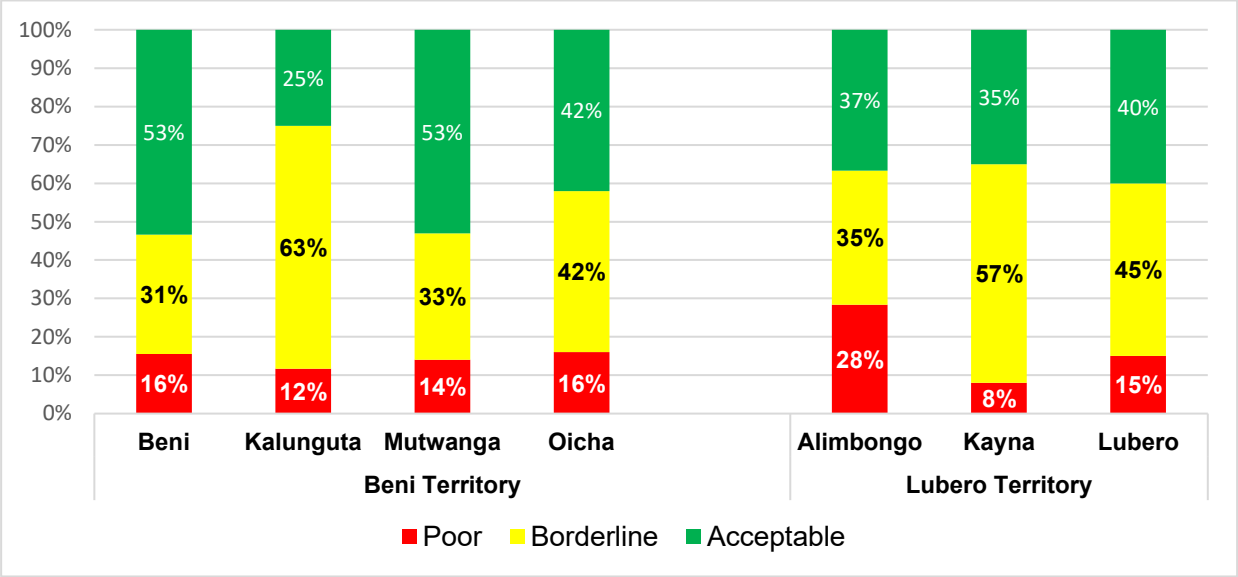

Figure 7. Food Consumption score by Health Zone of Beni and Lubero

Food Consumption score by Household type

Households with adult women without male adults appear to be more vulnerable (23% poor FCS) than households with both male and female adults (13% poor FCS).[15] (Figure 8).

[15] We have presented the distribution for households with male adults without female adults for information, given their small size. We did not find in our sample households with only children (under the age of 18).

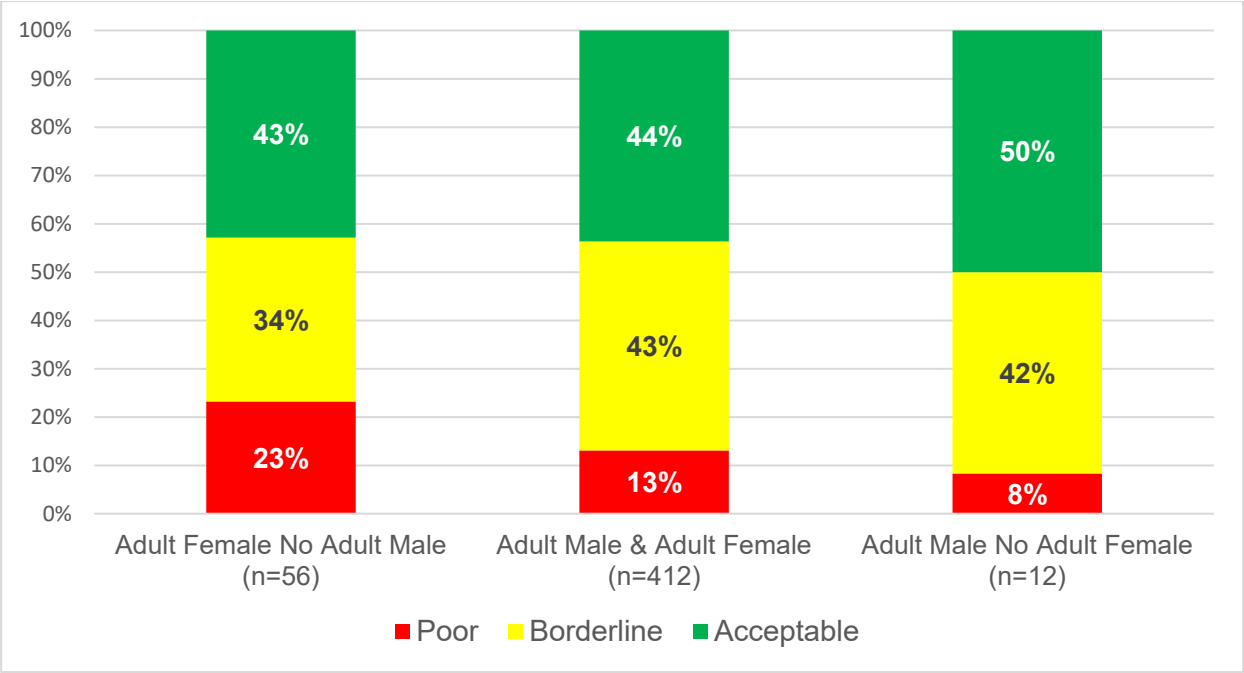

Figure 8. Food Consumption score by household type

3.1.7 Food Consumption Score according to household status

Internally displaced households (24% poor FCS) and returnees (23% poor FCS) are relatively more in situations of severe vulnerability than residents (13% poor FCS) [16].

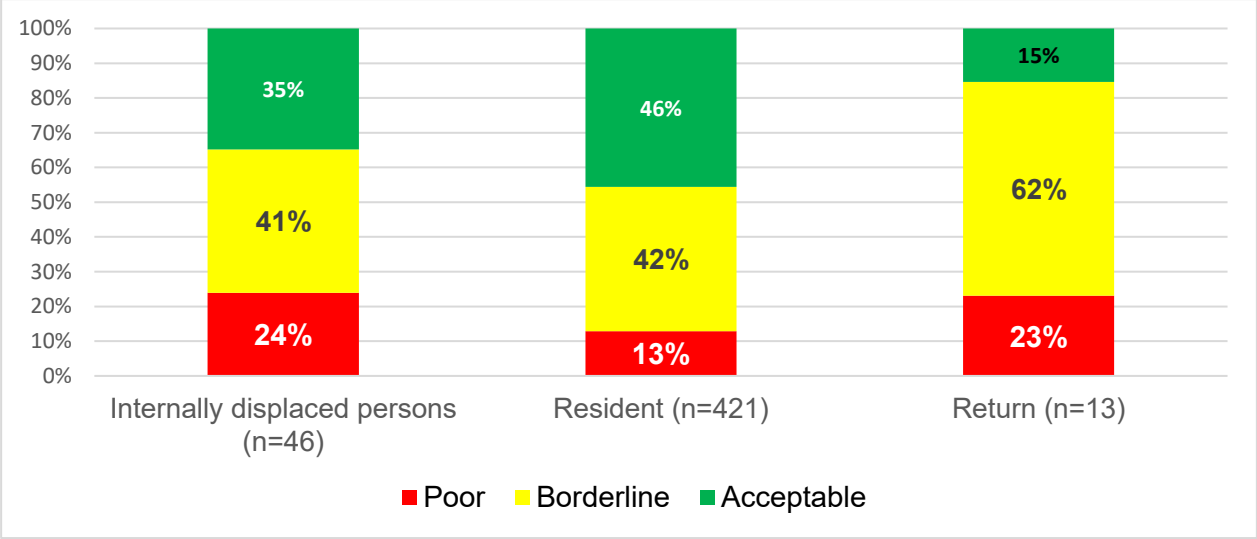

Figure 9. Food Consumption score according to household status

[16] The statistical test shows that the difference in distribution between internally displaced households, returnees and resident is not significant (p = 0.058)

By grouping IDPs and returnees we observe that this group is relatively more vulnerable (24% poor FCS) than residents (13%) and this difference is statistically significant.[17]

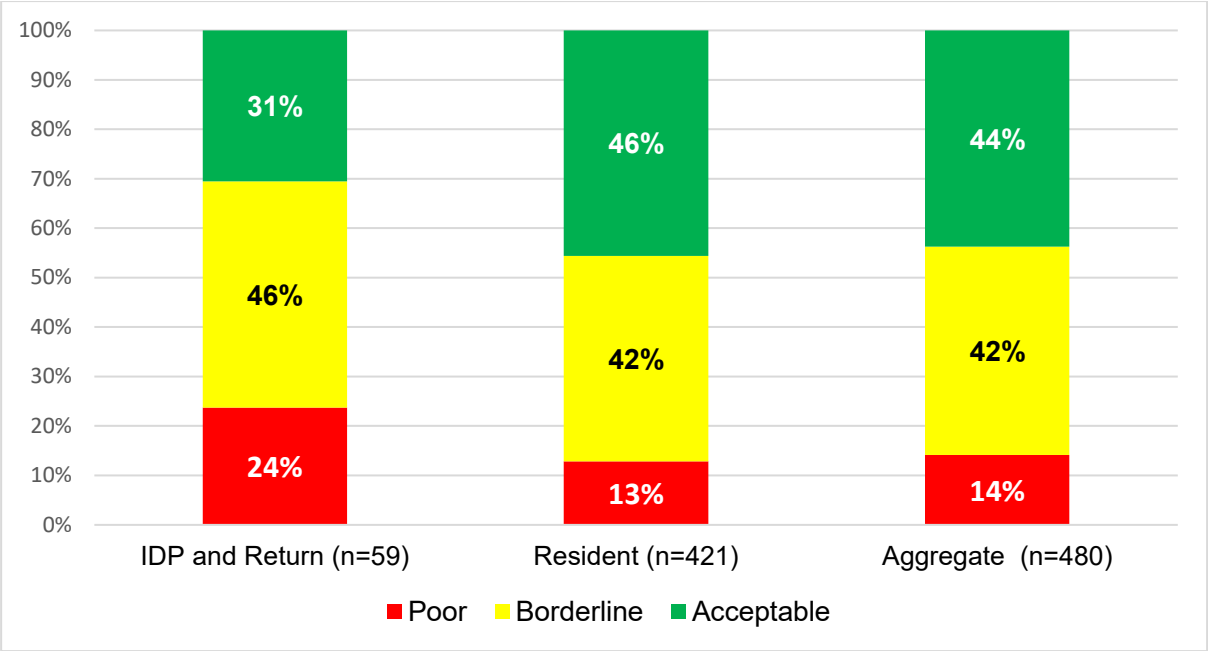

Figure 10. Food Consumption Score according to household status

3.1.8 Food consumption score according to whether or not the household received food aid in the past two months

The following table shows that almost half of households (49%) having received food aid in the past 12 months have a poor food consumption score. The proportion of households with poor ACS is only 11% for those who have not received food aid in the past 12 months. Poor households were therefore well targeted.

Table 9. Food consumption score according to whether or not the household received food aid

FCS	Has your household received any food support in the last two months?					
	No		Yes		Aggregate	
	Frequency	%	Frequency	%	Frequency	%
Poor	49	11%	19	49%	68	14%
Borderline	190	43%	12	31%	202	42%
Acceptable	202	46%	8	21%	210	44%
Total	441	100%	39	100%	480	100%

[17] p=0,027

3.2 Reduced Coping Strategy Index

Elements for the computation of the rCSI

Reduced Coping Strategy Index (rCSI) is often used as a proxy indicator of household food insecurity. Households were asked about how often they used a set of five short-term food based coping strategies in situations in which they did not have enough food, or money to buy food, during the one-week period prior to interview. The information is combined into the rCSI which is a score assigned to a household that represents the frequency and severity of coping strategies employed. First, each of the five strategies is assigned a standard weight based on its severity. These weights are: Relying on less preferred and less expensive foods (=1.0); Limiting portion size at meal times (=1.0); Reducing the number of meals eaten in a day (=1.0); Borrow food or rely on help from relatives or friends (=2.0); Restricting consumption by adults for small children to eat (=3.0). Household rCSI scores are then determined by multiplying the number of days in the past week each strategy was employed by its corresponding severity weight, and then summing together the totals.[18]

Based on the country's context, the total rCSI score is the basis to determine and classify the level of coping: into three categories: **No or low coping (rCSI= 0-3), medium (rCSI = 4-9, high coping (rCSI ≥10).**

Comments on results

The Reduced Coping Strategy index reflects the difficulties households face in feeding themselves.

- The results in Table 10 show that the average reduced Coping Strategy Index for the set of visited households is 14.6. This reduced index differs significantly between the two Territories, between the Health Zones, according to the status and the health areas (see appendix 4.3). Note that there is no significant difference according to Household (HH) Gender.

- Following the coping strategies adopted, households in Beni territory (70% use High coping) are more food insecure than those in Lubero territory (68% use High coping). IDPs and returnees (85% use High coping) are more forced to use high coping to obtain food than residents (67% use high coping).

[18] Malick Ndiaye ; Indicateurs de la sécurité alimentaire, PAM, Dakar, June 2014.

- Overall, 69% of households use high coping. The proportions of households that have more difficulty obtaining food and therefore resort to high coping are highest in Health Zones of Kalunguta (95%), Alimbongo (82%) and Oicha (78%). As it can be read in appendix 4.3, health areas with households experiencing difficulties in obtaining food are: Kasingiri (HZ Alimbongo), Ngongolio (HZ Beni), Kanyihunga and Lisasa (HZ Kalunguta) and Mbau (HZ Oicha).

Table 10. Reduced Coping Strategy Index by Category

Category	n	rCSI		P-Value	High coping	Medium	No or low coping
		Mean	Standard Deviation				
Territory							
Beni	270	16,2	10,6	<0,0001	70%	20%	9%
Lubero	210	12,6	6,5		68%	25%	8%
Health Zone							
Alimbongo	60	13,9	5,9	<0,0001	82%	17%	2%
Beni	90	15,5	10		71%	26%	3%
Kalunguta	60	19,8	6,7		95%	5%	0%
Kayna	90	12,5	6,4		66%	28%	7%
Lubero	60	11,3	7,1		57%	28%	15%
Mutwanga	60	9,8	8,7		37%	42%	22%
Oicha	60	20,1	12,9		78%	7%	15%
Status of household in the current location							
IDP and Return	59	21	12,4	<0,0001	85%	14%	2%
Resident	421	13,7	8,3		67%	24%	10%
Household (HH) Gender							
Adult Female No Adult Male (FNM)	56	14,3	8,2	0,861	73%	25%	2%
Adult Male & Adult Female (F&M)	412	14,7	9,3		69%	22%	9%
Adult Male No Adult Female (MNF)	12	13,4	12,1		67%	17%	17%
Ménages ayant reçu une aide alimentaire ?							
No	441	14,7	9,3	0,742	69%	23%	8%
Yes	39	14,2	8,4		74%	18%	8%
Aggregate	480	14,6	9,2		69%	22%	9%

Main strategies used

From Figure 11, the most used coping strategy by households in difficulty of obtaining food are: Rely on less preferred and less expensive foods (95% of households), Limit portion size at mealtimes (76% of households), Borrow food, or rely on help from friends or relatives (76% of households) and reduce number of meals eaten in a day (71% of households). Details by Health Zone are presented in Appendix table 4.4.

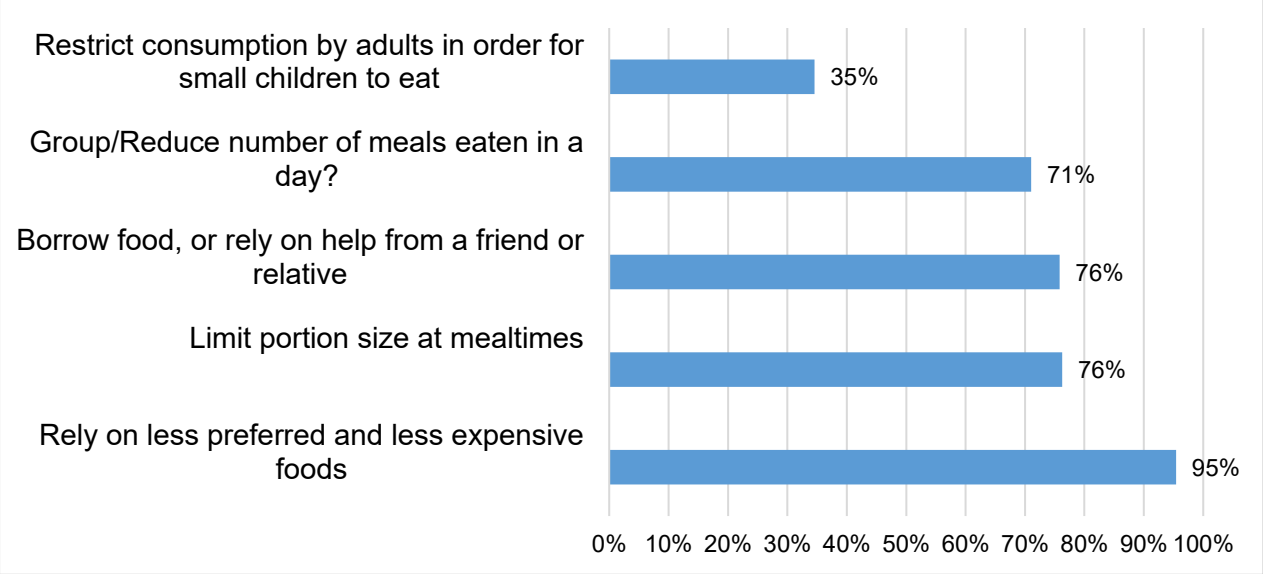

Figure 11. Main strategies used by household

3.3 Household Hunger Scale (HHS)

The HHS is an index of food deprivation in households. It focuses on the quantity of food, food access but does not measure the quality of the diet.
The following thresholds of HHS are used to categorize households into three hunger groups – None or light, Moderate and Severe:[19]

0-1 score: None or light hunger
2-3 scores: Moderate hunger
4-6 scores: Severe hunger

- The results in Table 11 show that 20% of the households in Beni territory versus 10% households in Lubero Territory show severe hunger.[20]

[19]Terri Ballard, Jennifer Coates, Anne Swindale, Megan Deitchler, Indice domestique de la faim : Définitionn de l'indicateur et guide de mesure, USAID, Août 2011.
[20] The distributions of households according to the level of severity of hunger differ significantly between the two Study Territories (p = 0.0034)

- The study also shows that households in the Oicha, Kalunguta and Beni health zones have more experiences of deprivation (severe hunger in households) than other health zones.
- In addition, internally displaced and returnee households experience more food deprivation than resident households.
- However, the difference observed in the distribution of households by level of hunger is not significant according to the Household (HH) Gender.
- The distributions of hunger indices in households by health area presented in appendix table 4.5 show that severe food deprivation is more recorded in households in the health areas of Mbau and Pakanza (HZ Oicha), Bundji and Ngongolio (HZ Beni) and Lisasa (HZ Kalunguta).

Table 11. Distribution of Household Hunger Scale (HHS)

Category	n	Severe hunger	Moderate hunger	None or light hunger	P-Value
Territory					
Beni	270	20%	53%	27%	0,0034
Lubero	210	10%	51%	38%	
Health Zone					
Alimbongo	60	13%	53%	33%	< 0,0001
Beni	90	18%	51%	31%	
Kalunguta	60	20%	73%	7%	
Kayna	90	8%	53%	39%	
Lubero	60	12%	47%	42%	
Mutwanga	60	10%	43%	47%	
Oicha	60	33%	45%	22%	
Household (HH) Gender					
Adult Female No Adult Male (FNM)	56	20%	59%	21%	0,2900
Adult Male & Adult Female (F&M)	412	16%	52%	33%	
Adult Male No Adult Female (MNF)	12	8%	42%	50%	
Status of the household in the current location					
IDP and Return	59	31%	51%	19%	0,0016
Resident	421	14%	52%	34%	
Total	480	16%	52%	32%	

3.4 Diet Diversity Score

The Diet Diversity Score measures how many food groups (out of 8) are consumed during a seven-day reporting period. Households that within a seven-day period consumed foods from **four or fewer** food groups out of eight are classified as having low dietary diversity.

Across the studied territories, household diets are not generally diverse. Households frequently consume **staple foods** (cereals and tubers), **vegetables and oil.**

Diet diversity by health zone

In terms of health zones, the diet is almost identical, with a high consumption of oil in Mutwanga (6.5 days per week) and Oicha (6.1 days per week) [Figure 12]. There is a remarkable consumption of legumes in Mutwanga (4.1 days per week). The Kalunguta Health Zone has the lowest consumption of animal protein (0.9 days per week). The lowest frequencies were observed in the Health Zone of Alimbongo and Kayna, however Kayna has the highest consumption of cereals and tubers (6.6 days per week).

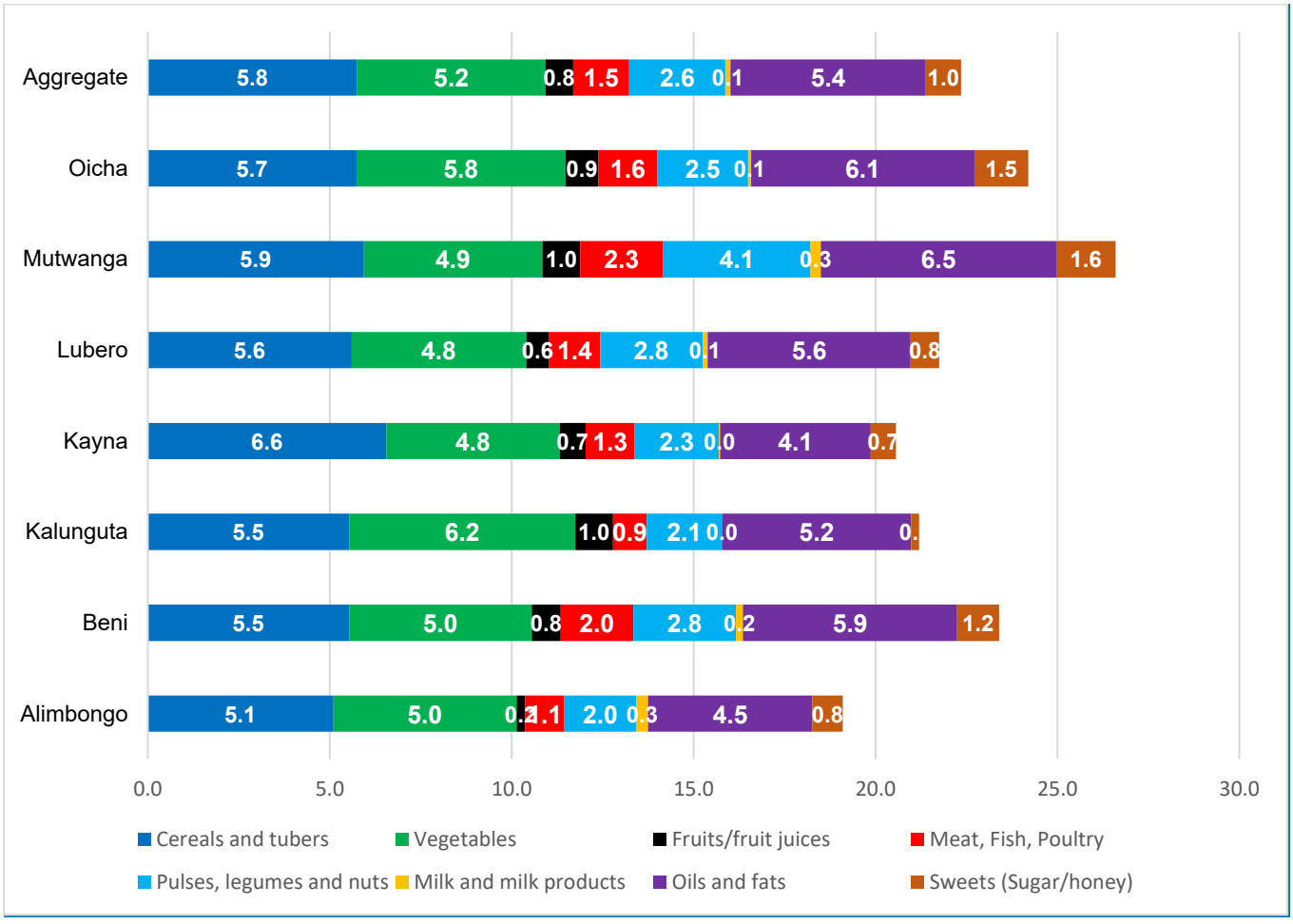

Figure 12. Consumption of 8 different food groups according to Health Zones

Diet diversity score per category of households

Households with a "Poor" Food Consumption Score consume only leaves, staple foods and oil. The very low level of consumption of basic foods (cereals and tubers) among households with a poor FCS is a concern to be addressed.

The consumption of different food groups is not significantly different among HH Genders, or between IDPs and Returnees and Residents. On the other hand, we observe differences in consumption of vegetables and oil between the two territories Beni and Lubero.

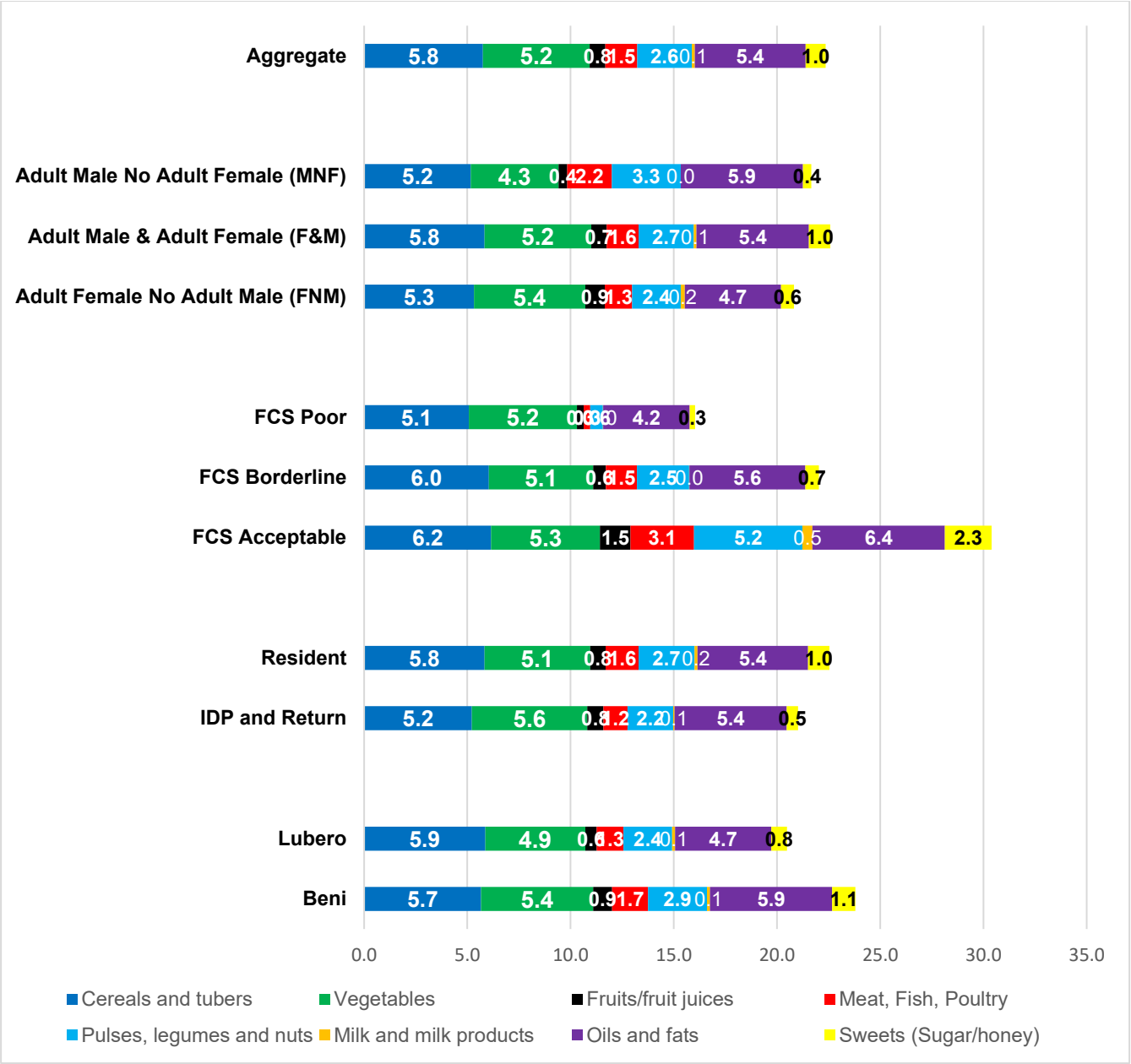

Figure 13. Consumption of 8 different food groups according to different categories of households

Cross-checking of some food security indicators and discussions

• As it can be seen in the following table, households with a "poor" food consumption score use more High coping (91%) compared to those who have Borderline FCS (73%) and Acceptable (59%).
• This score is also observed when comparing the level of severity of hunger in households. Households with a "Poor" Food Consumption Score are more characterized by severe hunger (38%) compared to those who have borderline FCS (with 16%) and acceptable FCS (with 8%).Table 12. Comparison of FCS, rCSI and HSS.

Table 12. Cross--Tab of some food security indicators

SCA	n	rCSI High coping	rCSI medium	rCSI No or low coping	HHS Moderate hunger	HHS None or light hunger	HHS Severe hunger
Acceptable	210	59%	28%	14%	47%	45%	8%
Borderline	202	73%	21%	6%	59%	24%	16%
Poor	68	91%	9%	0%	47%	15%	38%
Total	480	69%	22%	9%	52%	32%	16%

The December 2016 Food Security Assessment report published in March 2017 shows that:[21]

- The populations of two territories are becoming increasingly poor. This can be seen in the increase in the proportion of households with a poor FCS and a borderline FC.

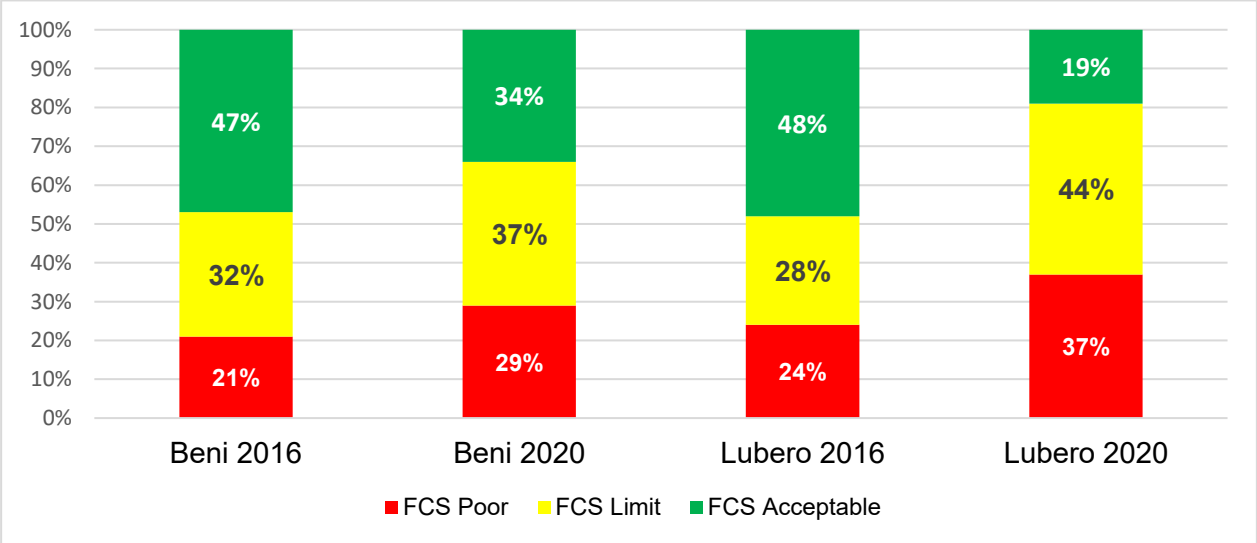

Figure 14. Comparison of FCS 2016-2020

[21] WFP, Evaluation approfondie de la sécurité alimentaire, Mars 2017

- The mean reduced coping Strategy (rCSI) index has also increased as shown in the following table. This confirms that households are increasingly using short-term food-based coping strategies in situations where they do not have enough food or money to buy food. This confirms that the level of food insecurity is increasing.

Table13. Comparison of rCSI in 2016 and 2020

Territory	rrCSI in 2016	rrCSI in 2020
Beni	10,7	16,2
Lubero	8,9	12,6

- For households with a poor FCS, the diet in 2016 was dominated by leaves (5.1), staple foods (cereals and tubers: 5.2) and oil (4.2). In 2020, we find the same diet dominate in households with a poor FCS, namely: leaves (3.0), staple foods (cereals and tubers: 5.4) and oil (4.9)

3.5 Market Analysis

We have observed price changes in terms of peaks and troughs of a sample of basic necessities over the past year. Given the high dispersion observed in these regions, we have chosen the maximum and minimum median prices which are presented in Table 14.

Table 14.Variation in prices observed by households for products consumed in the past year.

Product	n	Percentage of households (n=480)	Minimum median price in CDF	Minimum median price in $	Maximum median price in CDF	Maximum median price in $	Difference in $
Sweet Banana (kg)	89	19%	2500	1,47	5000	2,94	1,47
Cassava flour (kg)	366	76%	600	0,35	1000	0,59	0,24
Cheese (piece=1kg)	1	0%	32000	18,82	32000	18,82	0,00
Multicolored beans (kg)	228	48%	900	0,53	1200	0,71	0,18
Palm oils (Bottle of 72cl)	338	70%	800	0,47	1050	0,62	0,15
Natural Fruit Juice (bottle of 33cl)	12	3%	500	0,29	750	0,44	0,15
Fresh milk (liter)	16	3%	1250	0,74	1600	0,94	0,21
Cassava leaves (Sombe) (bunch)	273	57%	250	0,15	500	0,29	0,15
Peeled dry corn(kg)	148	31%	600	0,35	900	0,53	0,18
Fresh Tilapia fish (kg)	275	57%	2500	1,47	4000	2,35	0,88
Local live chicken (piece)	19	4%	8300	4,88	12000	7,06	2,18
Sugar (kg)	79	16%	1500	0,88	1700	1,00	0,12
Fresh tomatoes (kg)	69	14%	200	0,12	500	0,29	0,18
Boneless beef meat (kg)	252	53%	6000	3,53	7000	4,12	0,59

Respondents also gave months when prices of products bought in their households were the lowest or the highest. Table 15 presents the most frequently cited months in which the lowest and peak prices were recorded for common household food products.

Table 15. Months when prices were considered the lowest or highest by respondents.

Product	Lowest Prices Month	Highest price month
Swet banana (kg)	July, May	December, September
Cassava flour (kg)	January, February	December, October
Cheese (piece=1kg)	January	February
Multicolored beans (kg)	January, July	October, December
Palm oils (bottle of 72cl)	January, February	December, November
Natural Fruit Juice (bottle of 33cl)	August, January	November, January
Fresh milk (liter)	January, June	January , December
Cassava leaves (Sombe) (bunch)	January , March	December, November
Peeled dry corn (kg)	January, February	December, January
Fresh Tilapia fish (kg)	January, March	January, December
Local live chicken (piece)	June, September	August, December
Sugar (kg)	January, November	January , December
Fresh tomatoes (kg)	March , August	September, December
Boneless beef meat (kg)	January, March	January , December

Evolution of the prices of a sample of basic products in Butembo

The data presented in appendix 4.7 are means of monthly prices collected in three markets of the City of Butembo. Prices are collected between 11 a.m. and 2 p.m. For each product, 5 samples are weighed.

The summary price index presented in the following figure, is calculated on the 8 products with base 100 in January 2019. We observe an increase in prices in the month of August 2019 especially for the cassava flour, the hulled corn and multicolored bean.

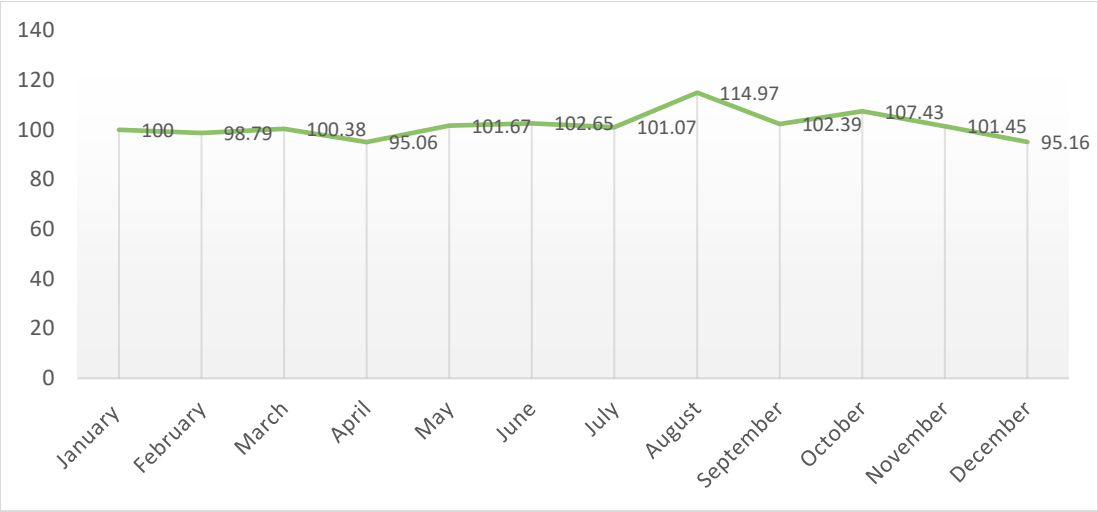

Figure 15. Evolution of the price summary index of 8 essential products (base 100 in January 2019)

Source: Provincial Inspection of Agriculture, Livestock and Fisheries/Butembo, 2019

Table 16. Evolution of the price indices of the 8 essential products observed in the city of Butembo in 2019 (Base 100 in January 2019).

Products / Months	January	February	March	April	May	June	July	August	September	October	November	December
1. Cassava flour (kg)	100	102,82	94,82	99,04	100,65	73,39	101,10	141,30	103,08	127,01	99,65	85,14
2. Peeled dry corn (kg)	100	98,62	106,99	98,69	104,19	101,91	106,86	128,79	105,29	107,89	113,96	94,63
3. Boneless beef meat (kg)	100	100,50	99,06	100,84	98,98	100,26	99,62	100,23	100,49	106,93	100,47	99,42
4. Fresh Tilapia fish (kg)	100	103,75	97,17	98,82	100,62	99,84	99,93	100,33	100,59	99,79	99,79	99,49
5. Local live Chicken (piece)	100	100,92	98,55	100,14	99,73	96,83	100,35	102,72	100,82	100,06	100,20	100,07
6. Multicolored beans (kg)	100	86,03	102,45	98,51	108,19	98,46	102,42	132,13	105,89	116,30	105,13	83,33
7. Plam oils (Liter)	100	100,22	99,78	66,89	100,33	148,69	100,22	112,72	100,39	99,81	100,00	98,06
8. Sugar (kg)	100	97,42	104,23	97,53	100,65	101,81	98,10	101,55	102,55	101,61	92,42	101,12
Mean Index	***100***	***98,79***	***100,38***	***95,06***	***101,67***	***102,65***	***101,07***	***114,97***	***102,39***	***107,43***	***101,45***	***95,16***

Source: Provincial Inspection of Agriculture, Livestock and Fisheries/Butembo, 2019

Market access indicators

Method of obtaining food

Looking at this figure, globally the community gets its supplies from the market, 84% and from farms, with 74%. The large proportion in Lubero territory is supplied from the farms, i.e. 82% compared to 67% for Beni territory. Buying on the market remains the main mode of food acquisition in Beni territory for 93% of the inhabitants and 71% of the inhabitants for Lubero territory.

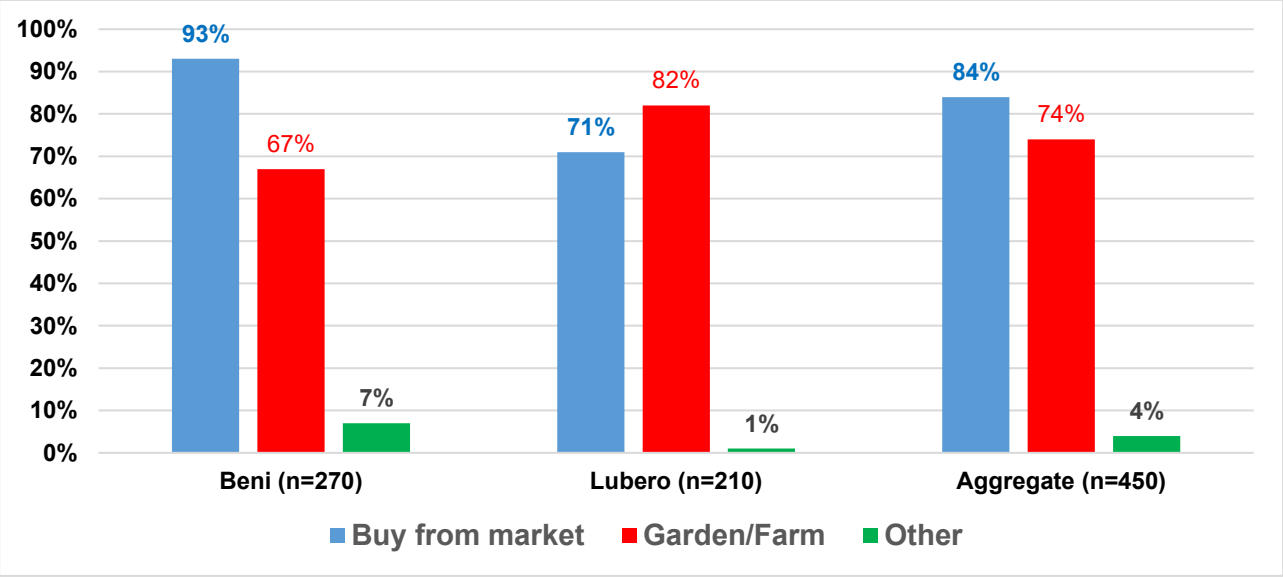

Figure 16. Method of obtaining food by households

Frequency of market attendance

The study shows that overall the market is most often visited weekly for 66% of our respondents. In large agglomerations, daily attendance is higher: 37% of households in Mutwanga, 36% in Beni and 35% in Oicha. In Kalinguta, 40% of households frequent the market once a month.

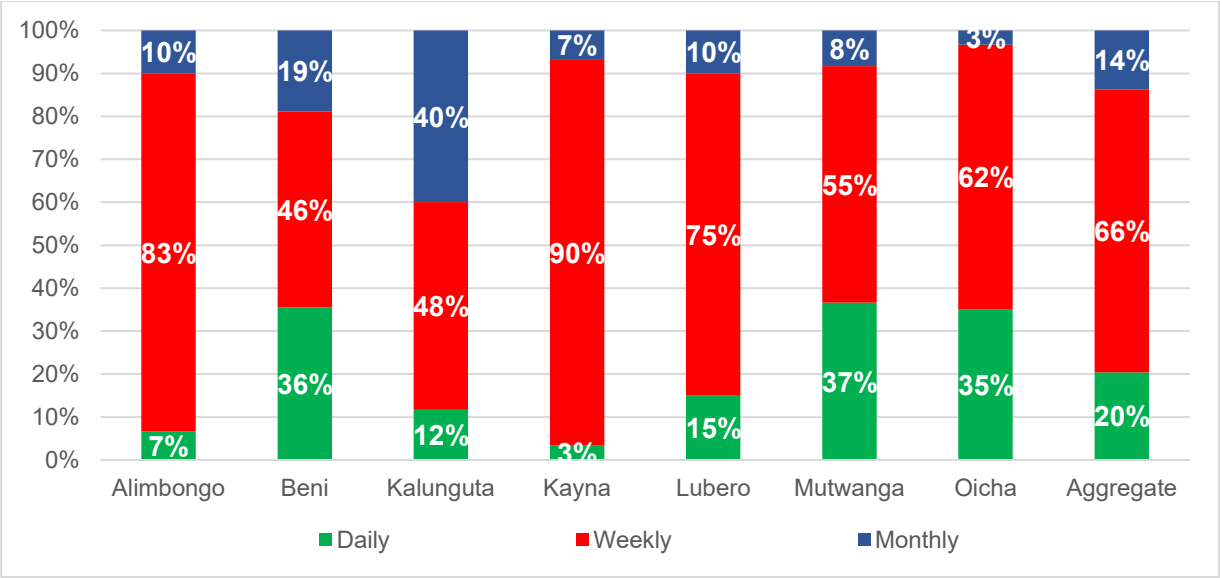

Figure 17. Frequency of market attendance

Distribution by means used for transportation

The following table shows that the majority of the respondents make their feet to go to the market, 97% overall. Only 9% can manage to use paid public transportation. In addition, only 6% use bicycles to get to the market.

Table 17.Means of transportation used to get to the market

	BENI (n=270)		LUBERO (n=210)		Aggregate (n= 480)	
	Frequency	%	Frequency	%	Frequency	%
Foot	258	96%	206	98%	464	97%
Bicycle	21	8%	8	4%	29	6%
Public	34	13%	7	3%	41	9%

The cost of public transportation is $ 0.9 on average; or 1530 FC and the typical transportation price for a typical inhabitant is $ 0.74 overall, or 1258FC. In the 3 other health zones not mentioned (Alimbongo, Kalunguta and Lubero), the residents interviewed did not state that they pay for public transportation to get to the market[22]

Table 18. Cost of public transportation for the market in USD

Health Zone	Mean	St. deviation	Median	Minimum	Maximum
Beni	0,84	0,49	0,74	0,29	1,76
Kayna	1,64	0,86	1,76	0,29	2,94
Mutwanga	0,65	0,20	0,59	0,29	0,88
Oicha	0,35	0,08	0,35	0,29	0,41
Total	0,91	0,62	0,74	0,29	2,94

[22] Median price of transport

The time to reach the market is estimated at 72 minutes (SD = 103),[23]or more than an hour. A typical resident estimate that the time to reach the market closest to their home is 35 minutes[24].

Table 19.Time to reach nearest market (in minutes)

Health Zone	Mean	St. deviation	Median
Alimbongo	83	75	38
Beni	49	48	35
Kalunguta	117	77	120
Kayna	115	192	120
Lubero	65	60	33
Mutwanga	44	50	30
Oicha	18	12	15
Agregate	**72**	**103**	**35**

Distance appreciation for the market

The distance to be traveled is assessed differently depending on the health zone. We find that 51% of our respondents find the distance to the market to be "very long or long". The distances to the market are considered “very long or long” by the inhabitants of the Kalunguta (93%), Kayna (61%) and Lubero (51%) health zones. The short distances to reach the market are observed by the population of the Oicha Health Zone (75%).

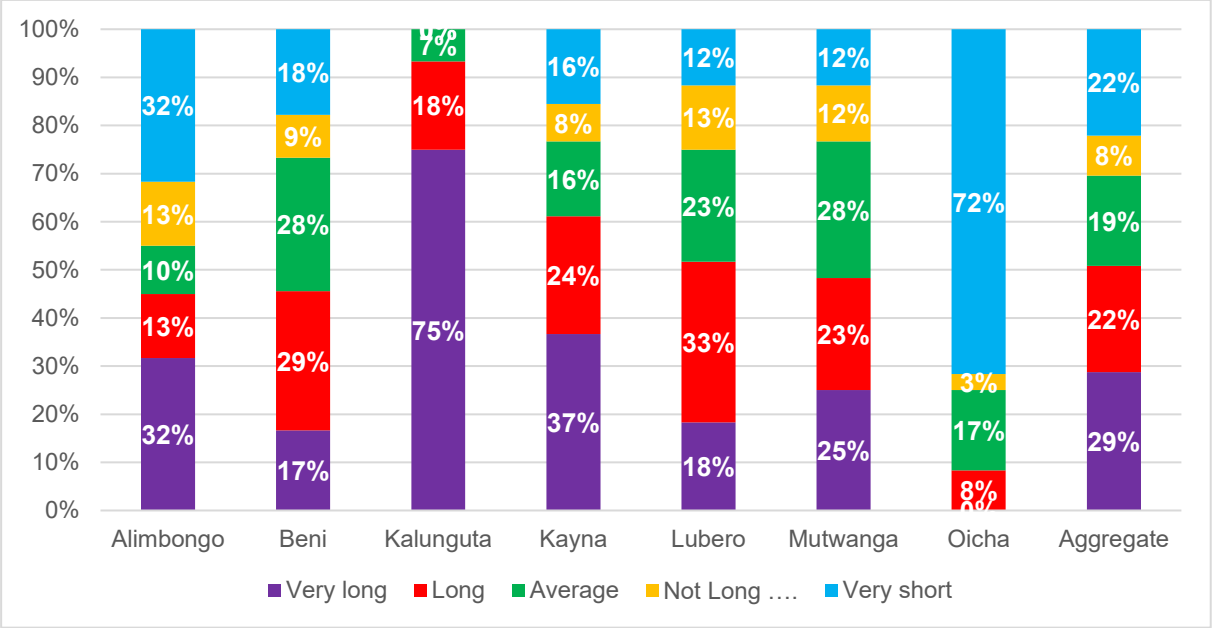

Figure 18. Residents’ appreciation of the distance to access the market

[23]There is therefore a very large dispersion in the estimate of the time taken to reach the market.
[24] Median value

Market access barrier

Overall, 59% of study participants believe they face difficulties accessing the market. As can be seen from the graph, the proportions of residents who report that they experience difficulties accessing the local market do not differ significantly between the two territories.[25]

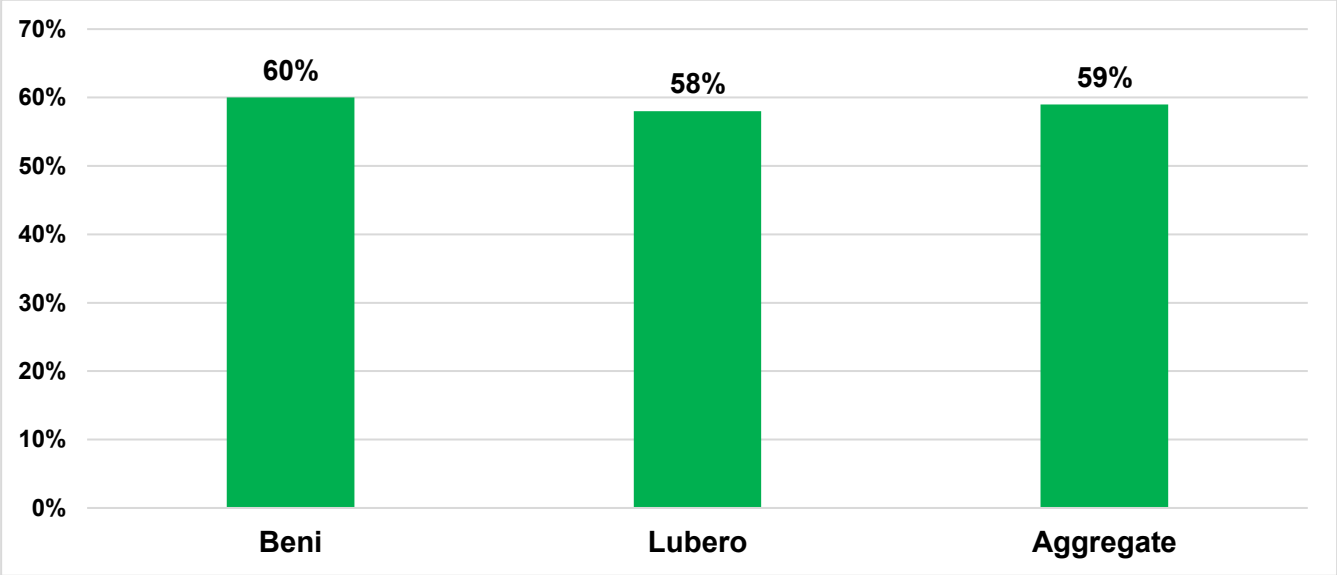

Figure 19. HH who have challenges going to and from their local market

These difficulties are diverse but the most preponderant being the distance which separates the household from the market for 45% of inhabitants, followed by poverty due to the lack of financial means for 30% of inhabitants and a poor state of the road network for 20% inhabitants as illustrated in the following graph.

[25] p=0,599

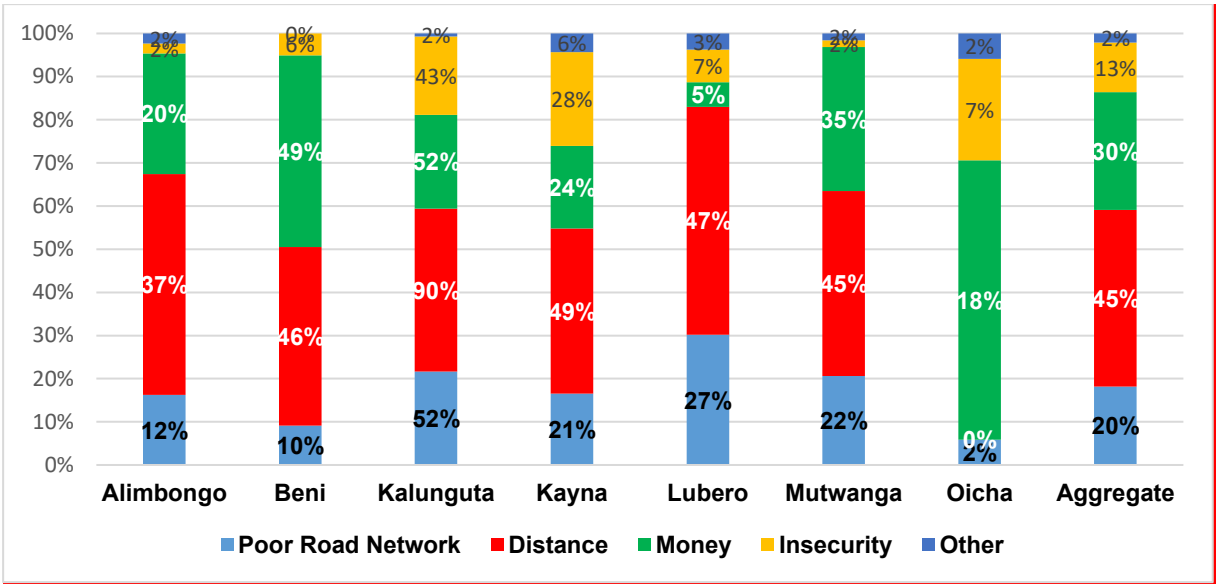

Figure 20. Market access barrier

Access to market information

Verbal communication with friends and family, 73% of all respondents, is the most common way for the community to access market information. Radio and television occupy a small proportion for 17% of inhabitants taken together. Other means represent by 31% of inhabitants.

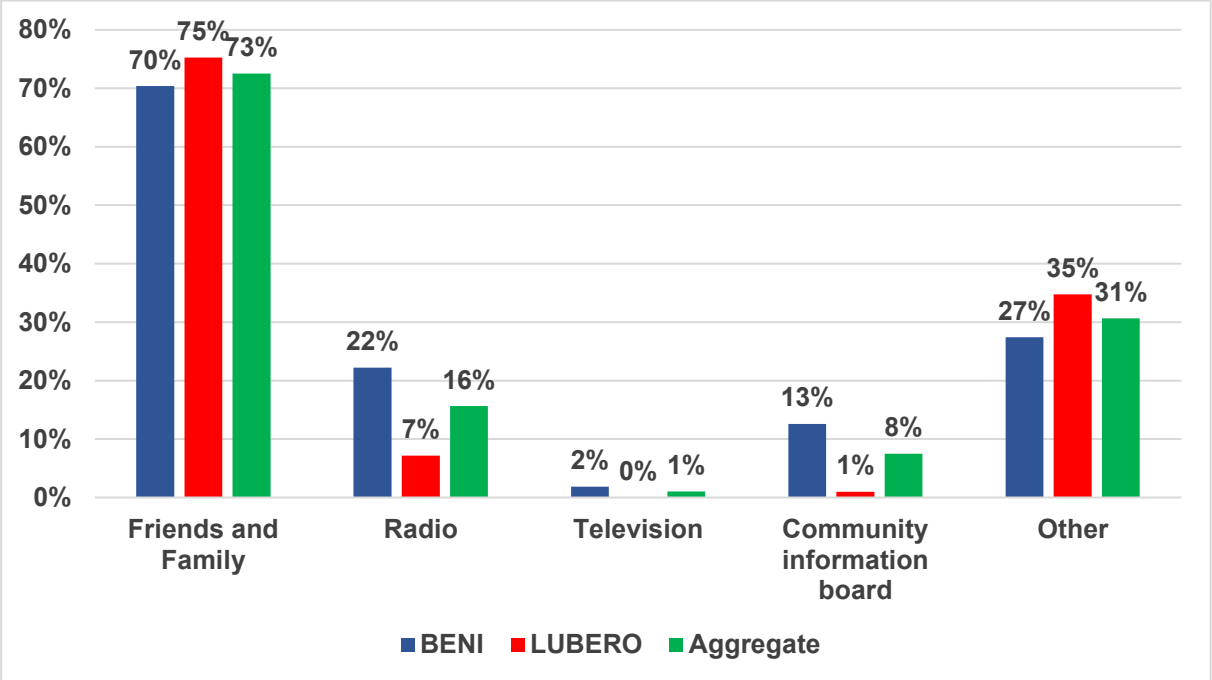

Figure 21. Means used to access market information

3.6 Community perception of Ebola

3.6.1 Knowledge of Ebola virus disease by health zone and gender of respondents

From this presentation it emerges that Ebola virus disease (EVD) is known by a large number of people in the seven surveyed health zones. Overall, 95% of people know or have waited to hear about Ebola virus disease. This proportion is maximum in the Health Zones of the territory of Beni which is most affected by EVD.

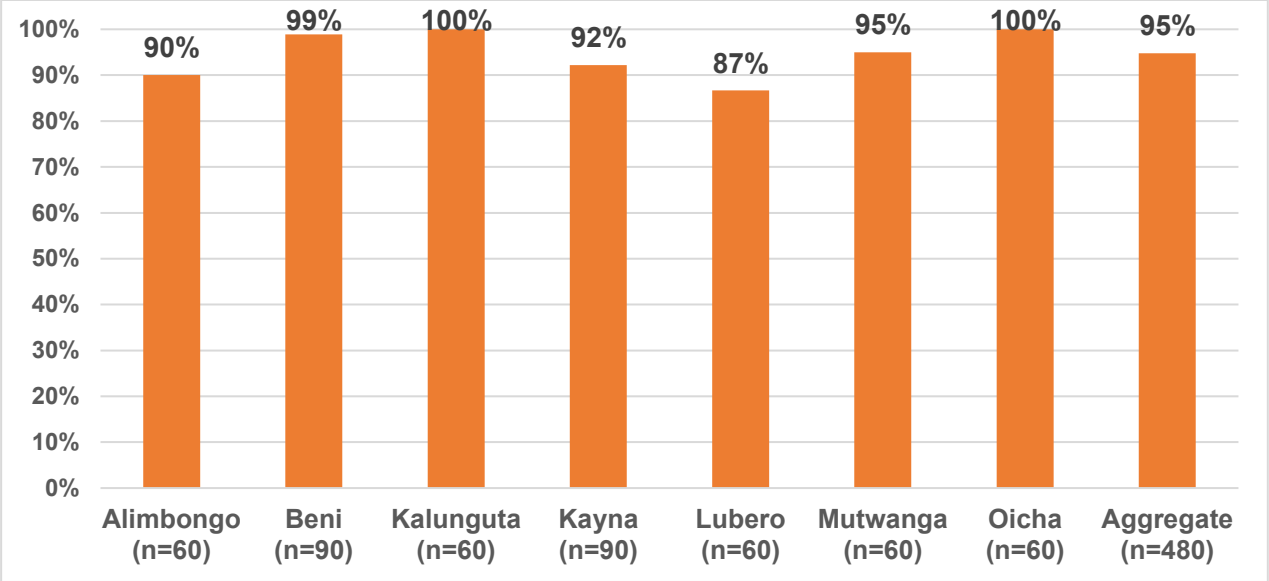

Figure 22. Assessment of the level of knowledge of Ebola virus disease by health zone

As shown in Figure 23, EVD is equally well known by men and women. The small difference observed remains not statistically significant.

Ideas about Ebola virus disease remain shared in the community.

For some, EVD is an imaginary disease, a make-up story with political motivation. For others EVD is real and a serious disease, a very dangerous virus which is transmitted from one person to another, from animals to people, a disease where unhygienic people are most exposed, a deadly disease, a dirty hands disease. Ebola originated from people coming from areas infected with the disease (Butembo, Beni and Mangina), it comes from the consumption of wild animals.

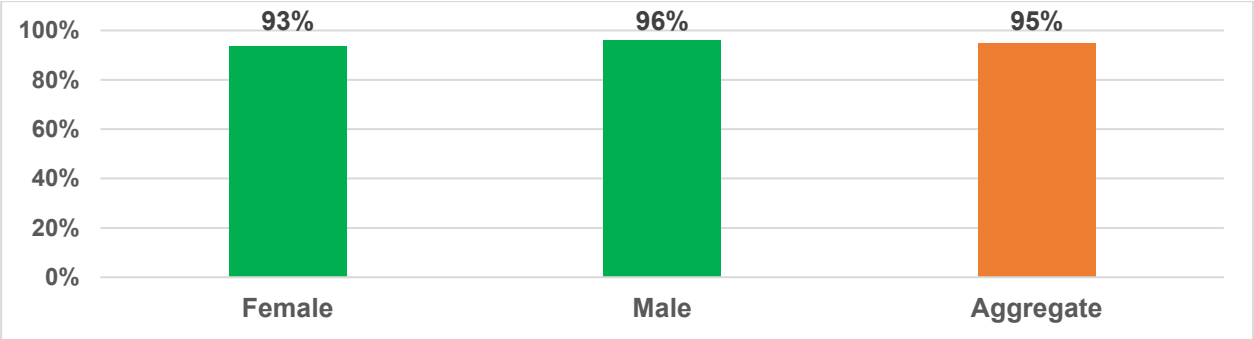

Figure 23. Level of knowledge of Ebola virus disease by gender

3.6.2 Level of knowledge of the causes, signs and treatment of Ebola Virus Disease

The study shows that overall, a large proportion (85%) of respondents are aware of the signs or symptoms of EVD. About 60% know the causes of EVD but only 11% know the treatments for EVD.

The levels of knowledge of the causes, signs / symptoms and treatments are better among the inhabitants of the Beni Territory compared to those of the Lubero Territory.[26]

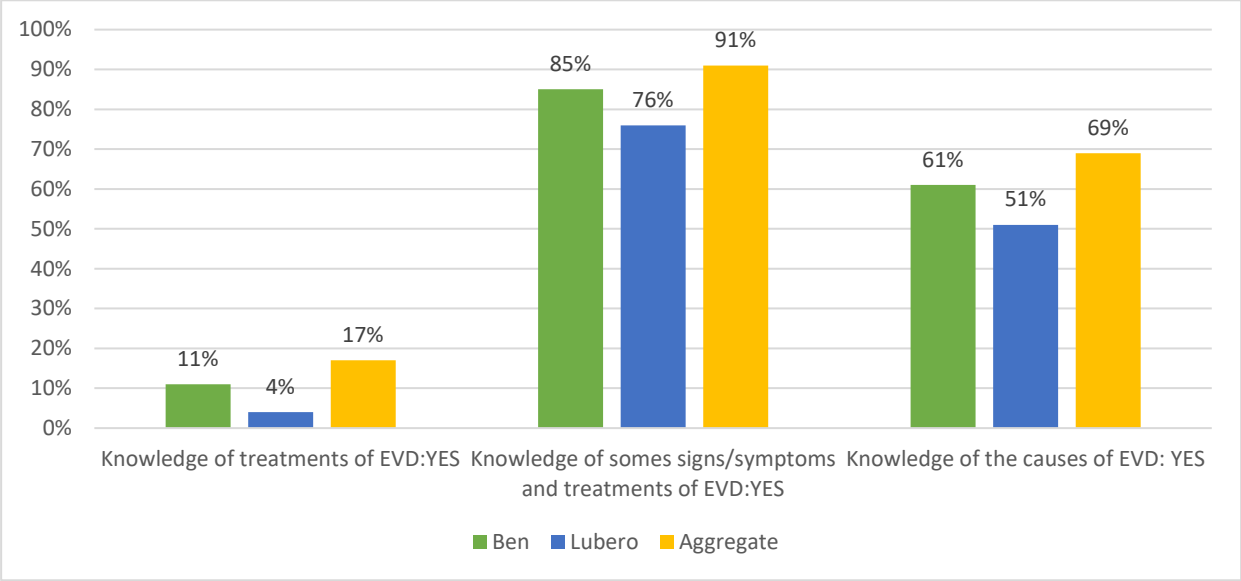

Figure 24. Level of Knowledge of the causes, signs and treatments of EVD

It appears from the figure below that the biggest known cause is unprotected contact with the blood, body fluids or tissues of an infected person, this is supported by 60% of the the total respondents and 90% of the respondents in the territory of Beni which is most

[26] In each case the difference in distribution is significant (p<0,0001)

affected by this epidemic. Contact with contaminated objects comes second as the cause with almost 48% and 61% in the Beni territory.

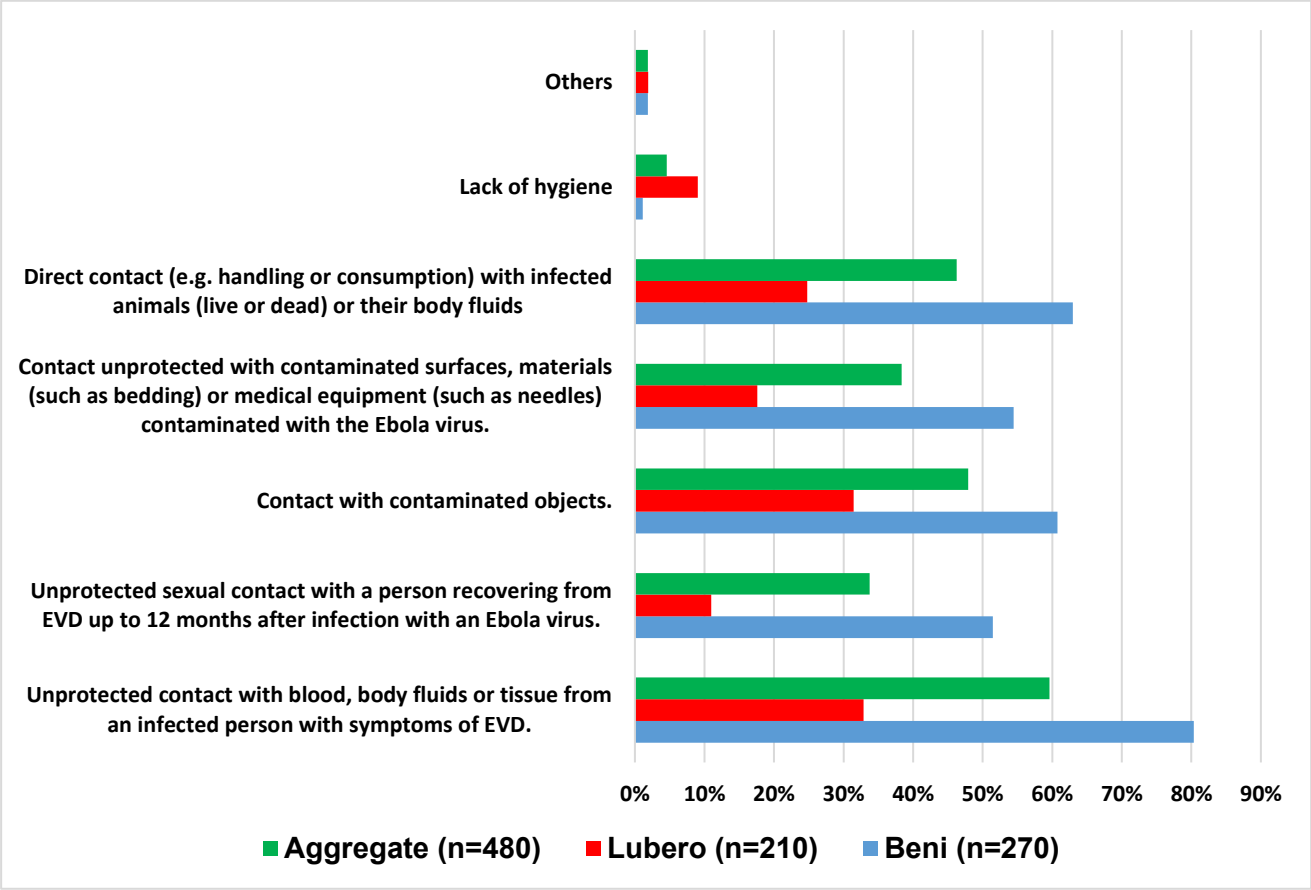

Figure 25. Distribution of the sample according to the causes of EVD

3.6.3 EVD considerations

As we can see in Figure 26, half (51%) of those surveyed said that they know the type of people who can be affected by Ebola. In addition, almost 8 out of 10 respondents (79%) said that they are vulnerable to EVD. Next, 89% respondents consider EVD to be a very dangerous disease in the community. The considerations differ significantly between the inhabitants of these two territories.

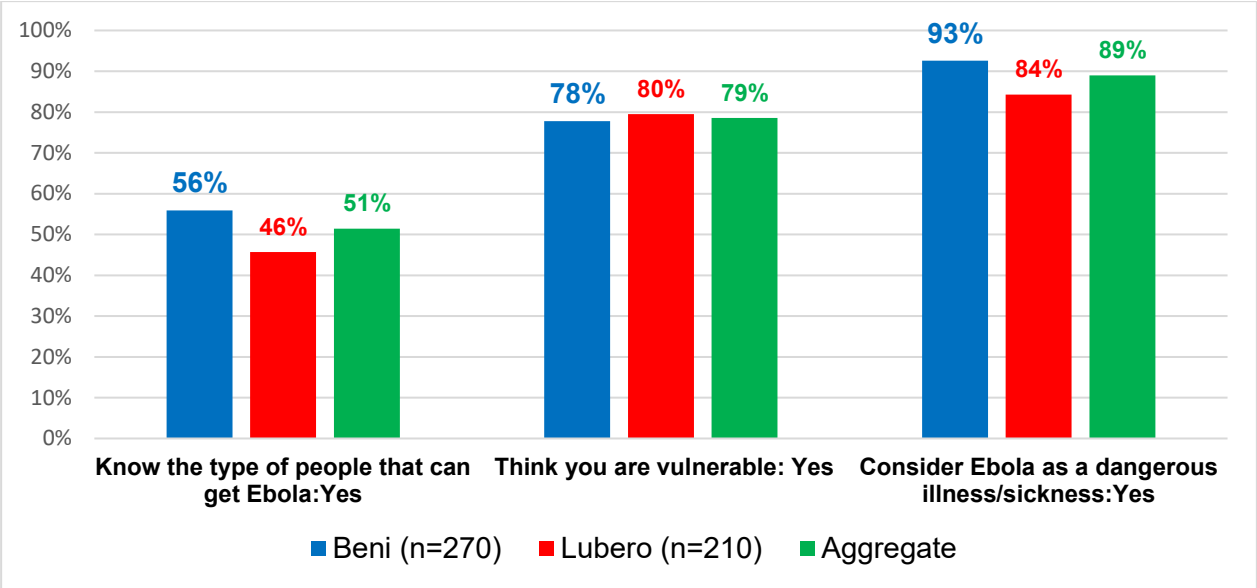

Figure 26. EVD considerations by respondents by territory

3.6.4 Knowledge of Signs and Symptoms of Ebola

The study shows that 41% of respondents said that they regularly hear about the infection of Ebola. It's mainly in Health Zones of Oicha, Beni and Mutwanga where people often hear about Ebola affection.

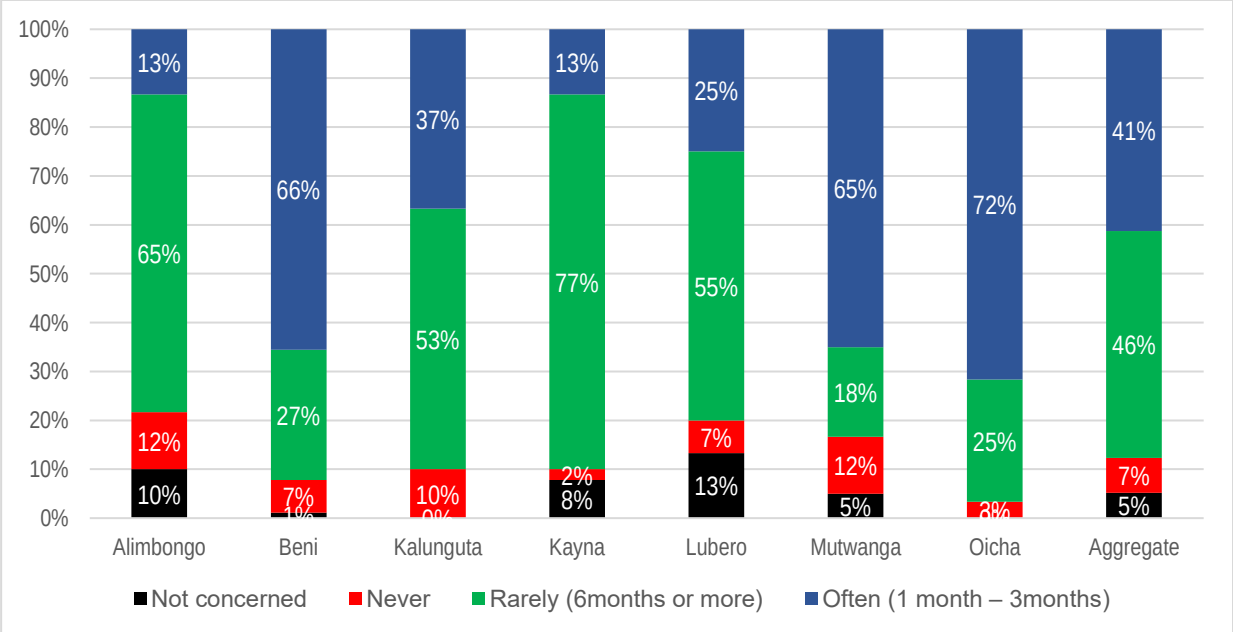

Figure 27. Frequency of hearing that people are affected with Ebola

Fever is best known as a sign of EVD in the studied territories and health zones, with at least 72% of people, followed by diarrhoea 70%, vomiting (65%), haemorrhage (65%) and headaches (58%).

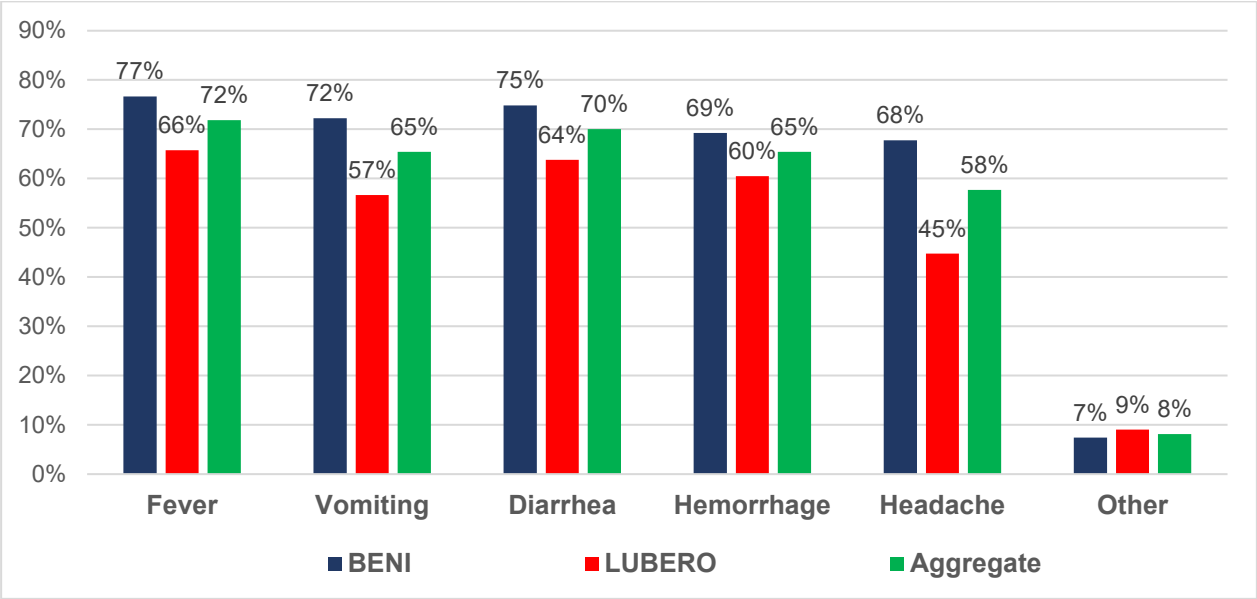

Figure 28. Knowledge of the signs of EVD

3.6.5 Prevention of EVD

Table 20 shows that hygienic practice is the highest ranked practice of preventing EVD with 81%. Avoid unprotected contact followed with 55% (57% in Beni territory and 52% in Lubero). Overall, inhabitants of Beni territory have better control of the various prevention methods than those of Lubero.

Table 20.Different ways to prevent EVD

	BENI (n=270)		LUBERO (n=210)		Aggregate (n= 480)	
	Frequency	%	Frequency	%	Frequency	%
Practice good hygiene practices	215	80%	173	82%	388	81%
Avoid unprotected direct contact	155	57%	109	52%	264	55%
Vaccination	108	40%	94	45%	202	42%
Avoid coming into contact with wild animals	138	51%	50	24%	188	39%
Avoid high-risk regions and activities	115	43%	30	14%	145	30%
Avoid unprotected sexual activity	99	37%	25	12%	124	26%
Follow safe funeral practices	127	47%	20	10%	147	31%
Other	4	1%	19	9%	23	5%

The study also shows that control measures are working normally with identification and isolation of cases being the most effective in Beni (89%) and Lubero (78%) [Table 21]

Table 21. Operation of control measures

	BENI (n=270)		LUBERO (n=210)		Aggregate (n= 480)	
	Frequency	%	Frequency	%	Frequency	%
Quick identification and isolation of cases.	239	89%	163	78%	402	84%
Control measures in hospital settings	235	87%	177	84%	412	86%
Identification and follow-up of contacts	234	87%	163	78%	397	83%
Safe burials	230	85%	163	78%	393	82%

3.6.6 Assessment of access to Health Structure in the community

The study shows that the community members have access to health structures with 84% our respondents responding in the affirmative. Nonetheless, 19% do not have easy access to health facilities.

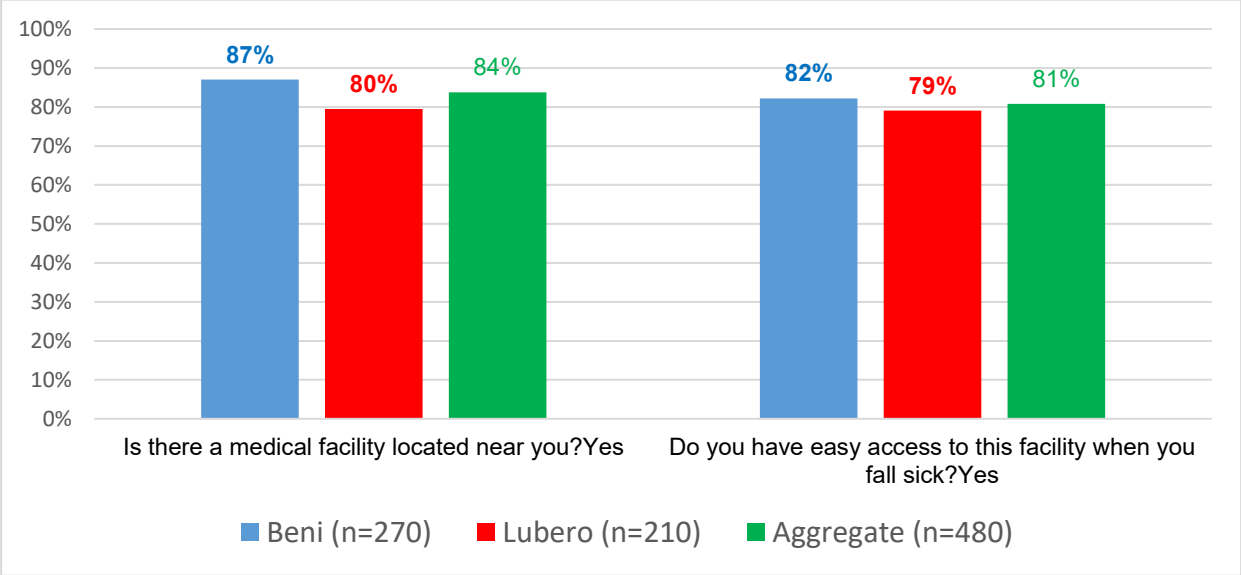

Figure 29. Access to health structure in community

Table 22 shows that the nearest structure is less than 1 km away and the furthest is 2 km. Mostly, the household are located 1 km away from the health facilities.

Table 22.Distance between household position and nearest Health structure

Health Zone	Mean Distance in km	Std. Dev.	Median distance in km
Alimbongo	2,04	2,142	1,5
Beni	1,35	1,383	1,0
Kalunguta	1,49	1,287	1,0
Kayna	1,58	2,161	1,0
Lubero	1,51	1,031	1,0
Mutwanga	0,96	0,786	1,0
Oicha	0,77	0,496	1,0

3.6.7 Perception of people with Ebola in the community

Most people cut all contact with people affected by EVD. Even after recovery, some continue to isolate contaminated people for the fear of being affected.

Table 23. Contact with people with EVD

	BENI (n=270)		LUBERO (n=210)		Aggregate (n= 480)	
	Frequency	%	Frequency	%	Frequency	%
No contact	195	72%	158	75%	353	74%
With distrust / discrimination	48	18%	24	11%	72	15%
Good relationships	16	6%	5	2%	21	4%
Other	7	3%	2	1%	9	2%
How does the community see and relate to people who have Ebola						
No contact	181	67%	126	60%	307	64%
With distrust / discrimination	59	22%	55	26%	114	24%
Good relationships	17	6%	7	3%	24	5%
Very good relationships	0	0%	1	0%	1	0%
Other	9	3%	0	0%	9	2%
How do you see/relate to people who have recovered from Ebola?						
No contact	31	11%	39	19%	70	15%
With distrust / discrimination	78	29%	49	23%	127	26%
Good relationships	128	47%	97	46%	225	47%
Very good relationships	15	6%	2	1%	17	4%
Other	14	5%	2	1%	16	3%
How does the community see and relate to people who have recovered from Ebola?						
No contact	20	7%	39	19%	59	12%

Good relationships	140	52%	109	52%	249	52%
With distrust / discrimination	85	31%	28	13%	113	24%
Very good relationships	6	2%	12	6%	18	4%
Other	15	6%	1	0%	16	3%

3.6.8 Effects of Ebola on Economic activities

50% of the participants in the study in Beni territory affirm that EVD had an impact not only on household food security but also on the level of economic activities, this proportion is 38% compared to 35% in the territory of Lubero and 44% compared to 43% in the whole study.
(Table 24). The same is true of its impact on food security in the two territories. The territory of Beni is nevertheless the most affected.

Table 24.Effects of EVD on economic activities

	BENI (n=270)		LUBERO (n=210)		Aggregate (n= 480)	
	frequency	%	frequency	%	frequency	%
Do you think Ebola has affected the work of people within the community: YES	134	50%	79	38%	213	44%
Has Ebola affected agriculture and food security in your community? YES	135	50%	73	35%	208	43%

IV.CONCLUSION

The present study is descriptive and cross-sectional conducted in January 2020 and mainly aimed to assess food security by organizing a cluster survey of 480 inhabitants of households randomly selected in seven health zones (Alimbongo, Kayna, Lubero, Beni, Kalunguta, Mutwanga and Oicha) in the territory of Béni and from Lubero.
The study shows the following results:

The main target population for the study, 88% of whom are residents, is farming, and 93% of them live on less than $ 0.5 per person per day (far below the poverty line).

To survive, apart from the indebtment which concerns (88% of households), more than 7 out of 10 households' resort to coping strategies. The most used in case of difficulty in obtaining food are: Rely on less preferred and less expensive foods, Limit portion size at mealtimes, Borrow food, or rely on help from a friend or relative and Reduce number of meals eaten in a day.

The overall average Food Consumption Score of households is 35.3, and 14% of households are in a situation of severe vulnerability with a "poor" FCS (or less than 21). The quality and quantity of their food is inadequate. Households in situation of severe vulnerability (poor FCS) are in greater proportion in the Health Zones of Alimbongo, Kalunguta, Oicha, and Lubero.

About 12% of internally displaced and returnee households are relatively more in situations of severe vulnerability than residents

The study shows that the Reduced Coping Strategy Index for the set of households visited is 14.6. Taking into account the survival strategies adopted, households in Beni territory are more food insecure than those in Lubero, households in the Oicha and Kalunguta health zones are finding it more and more difficult to obtain food. IDPs and returnees are more forced to use extreme survival strategies to obtain food compared to resident households.

Health areas whose households find it extremely difficult to obtain food are: Kasingiri (HZ Alimbongo), Ngongolio (HZ Beni), Kanyihunga and Lisasa (HZ Kalunguta) and Mbau (HZ Oicha).

The computation of the household hunger Scale shows that 20% of households in Beni territory against 10% households in Lubero territory show severe hunger.

Another aspect of food security is that across the study territories, household diets are not generally diverse. Households frequently consume staple foods (cereals and tubers), vegetables and oil.

Households with a "Poor" Food Consumption Score (which account for 14%) only consume leaves, staple foods and oil. The very low level of consumption of staple foods (cereals and tubers) and animal proteins among households with poor FCS should appeal to decision-makers at all levels.

Knowledge of Ebola virus disease is good, although some residents are unaware of the causes, signs, treatments and prevention of this serious disease. Good knowledge coexists with bad ones. Good approaches and good practices, prejudice and discrimination against the person with EVD, even after recovery continues to be observed in the community.

EVD has affected agricultural and economic activities. As agriculture is the main source of income, it is therefore important to emphasize that EVD has effects on food security in the two territories.

Recommendations

In view of the conclusion, urgent action could be envisaged:

- Provide food assistance for groups that are vulnerable to food insecurity by prioritizing health areas most affected by food insecurity (Alimbongo, Kalunguta, Oicha and Lubero).
- Identify the most vulnerable households who could benefit from the assistance. (within IDPs, returnees and even among residents)
- Organize the reinforcement of capacities of the households to take part in the production (for example agricultural activities, breeding, small scale businesses, craft industry) by facilitating access to cultivable lands, seeds, breed stock, production tools, technical supervision, etc.,
- Provide guidance to projects for assistance to vulnerable households according to their specific needs or groups to be assisted. It should be either general food distribution, the system of assistance, cash or voucher to combine with the possibility of helping locals to conduct their usual livelihood activities
- Rehabilitate basic infrastructure like roads to facilitate access to markets, production and marketing in order to increase the income level of the inhabitants.

- Organize a more complete survey on access to basic infrastructure (schools, market, health facilities, etc.)
- Continue to raise public awareness of hygiene and prevention measures for Ebola virus disease.
- Organize restitution workshops at territorial level so that the populations of territories involved will take ownership of results of this study

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V. APPENDIX

Appendix 1 Survey Staff

Coordination

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2	Célestin KIMANUKA RURIHO	M	Assistant Coordinator
3	Promesse KASEREKA KAVULIRENE	M	Assistant Coordinator

List of Supervisors

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2	Claudine MUKOKO KYAKIMWA	F	Supervisor

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2	ASENGO ASUMANI ASE	12	KIHITA MUKIRANIA Darlene
3	Daniel KASEREKA NGAMBAVUNDU	13	KISUMBA Gentille ANITA
4	JOHN KATSUVA KIKEMBA	14	Obed KAMBALE MBAKWIRAVYO
5	KAHINDO KALEGHIRE Rebecca	15	Pasmy PALUKU SIMISI
6	KAKULE KIVYAMUNDA MAPENDO	16	Rachel KYAKIMWA Joëlle
7	KAMBALE KAKENDI Patrick	17	RICHARD KAKULE KIRIMBA
8	KAMBALE KASILAMO Sylvain	18	Roger MUSUBAO KAGHOMA
9	KASOKI TSONGO	19	Shimita KAMBALE KAVULIRENE
10	KASEREKA KAMWAGHA Erick	20	Sifa KASOKI KISIMBIRI

Appendix 2 Survey Questionnaire

USAID FROM THE AMERICAN PEOPLE	Food Assistance for Ebola-Affected and Food Insecure Populations of Beni and Leburo (FABELU) **)Baseline Survey)** Jan 2020	ADRA

INFORMED CONSENT

Hello. My name is _____ and I work for ADRA DRC. We are conducting a survey about the FABELU project, Food Assistance for Ebola-Affected and Food Insecure Populations of Beni and Leburo. The information we collect will be used for planning, implementation and evaluation of the project. You have been selected to be interviewed for this survey and we would very much appreciate your participation. The survey usually takes about 20 to 25 minutes. Your participation is voluntary, and you may end the survey at any time or decide not to answer a particular question. Your answers will be kept confidential. Do you agree to participate in the survey?

0 = No If No, STOP here. /__/

1 = Yes If Yes, proceed with the interview. (Ask for possible reasons_____)

Survey start time:.....

IDENTIFICATION	
Questionnaire ID : _____	
Territory:	/ /
Health Zone: _____	/ / /
City / Village:	
INTERVIEW	
Name of Enumerator: _____	Phone No. of Enumerator: _____
DATE of Interview *(day/month/year)*	/__/__//__/__//__/__/
Household phone number	Phone No. 1: _____ Phone No. 2: _____

1. HOUSEHOLD DEMOGRAPHY

Sn	QUESTIONS AND FILTERS	CODING RESPONSES	Notes
1	Name of respondent		
2	Age of respondents (in years)	/__/__/	
3	Sex of respondent	☐ 1. Male ☐ 2. Female	
3a.	Level of Education	☐ 1. Primary ☐ 2. High School	

		☐ 3. Tertiary ☐ 4. No Formal Education ☐ 5. Other Specify	
4	Household (HH) Size		
5	**Name of Household member**	**Sex**	**Age**
5a			
5b			
5c			
5d			
5e			
5f			
6	Household (HH) Gender	☐ 1. Adult Male No Adult Female (MNF) ☐ 2. Adult Female No Adult Male (FNM) ☐ 3. Adult Male & Adult Female (F&M) ☐ 4. Child Only No Adult (CAN)	
7	What is the status of your household in your current location?	☐ 1. IDP ☐ 2. Returnee ☐ 3. Resident	
8	If you are an IDP, where did you come from?	Territory: _____ Health Zone: _____ Village: _____	
9	If you are a returnee, where did you displace?	Territory: _____ Health Zone: _____ Village: _____	

A. SOURCE OF INCOME

Sn	QUESTIONS AND FILTERS	CODING RESPONSES	Notes
10	What is your current main occupation for living?	☐ Farming ☐ Agricultural labor ☐ Grazing ☐ Beekeeping ☐ Fishing ☐ Trading (private small business) ☐ Handicraft ☐ Civil employee ☐ Daily labor ☐ Relative support (inside or outside DRC)	*(unique answer)*

		☐ Support from charity associations ☐ Begging ☐ Other, _____	
11	What is your current monthly income level (from all sources)?	/_____/ (Francs / month)	
12	What is the level of debt in your household?	_____Francs total	

B. FOOD SECURITY

Sn	QUESTIONS AND FILTERS	CODING RESPONSES		Notes
13	Has your household received any food support in the last two months?	☐ 1. Yes ☐ 2. No		
14	If yes, what is the name of the agency that supported your household?			
15	Has your household received any livelihood support in the last two months?	☐ 1. Yes ☐ 2. No		
16	If yes, what is the name of the agency that supported your household?			
17	Now I would like to ask you about your household's food supply during different months of the year. In the past 12 months, were there months in which you did not have enough food to meet your family's needs?	☐ 1. Yes ☐ 2. No		*If no, go to Q19*
18	If yes, which were the months in which you did not have enough food to meet your family's needs?	Jan 19 /__/	July19 /__/	*Do not read the list of the months but tick the months in which there were not enough food*
		Feb 19 /__/	Aug19 /__/	
		March 19 /__/	Sept19 /__/	
		April19 /__/	Oct19 /__/	
		May19 /__/	Nov19 /__/	
		June19 /__/	Dec19 /__/	

C. HOUSEHOLD HUNGER SCALE

Sn	QUESTIONS AND FILTERS	Frequency	Weight	Value
19	In the past month, was there ever no food to eat of any kind in your house because of lack of resources to get food? If yes, how often?	Never	0	
		Rarely		
		Sometimes	*1*	
		Often	*2*	
20	In the past month, did you or any household member go to sleep at night hungry because there was no enough food? If yes, how often?	Never	0	
		Rarely		
		Sometimes	*1*	
		Often	*2*	

21	In the past month, did you or any household member go a whole day and night without eating anything at all because there was not enough food? If yes, how often?	Never	0	
		Rarely	*1*	
		Sometimes		
		Often	*2*	
HHS Score				

D. REDUCED COPING STRATEGY INDEX:

22	**In the past 7 days, if there have been times when you did not have enough food or money to buy food, how often has your household had to:** **Relative Frequency Score**	**Frequency (# days)**	**Severity Weight**	**Weighted Score = Frequency X weight**
a	Rely on less preferred and less expensive foods?		**1**	
b	Borrow food, or rely on help from a friend or relative?		**2**	
c	Limit portion size at mealtimes?		**1**	
d	Restrict consumption by adults in order for small children to eat?		**3**	
f	Reduce number of meals eaten in a day?		**1**	
	TOTAL HOUSEHOLD SCORE—Reduced CSI	**Sum down the totals for each individual strategy**		

E. Food Consumption Score (FCS) and Household Dietary Diversity Score (HDDS):

23 - How many members are there in your household and were home in the last 7 days? ☐

Focus on food eaten INSIDE the house		**Did your household eat the following item in the last 24 hours** 0 = No 1 = Yes	**Number of days eaten in previous 7 days?** 0 =Not eaten 1 = 1 day 2 = 2 days 3 = 3 days 4 = 4 days 5 = 5 days 6 = 6 days 7 = 7 days	**Weight**	**weighted score = frequency x weight**	**What was the main source of the food in the last 7 days?** 1=Produced by the household 2 =Hunting/gathering/fishing 3 =Bought using cash 4 =Bought on credit 5 =Borrowed/gifts (friends/ relatives) 6 =Begging 7=Swap 8 =Food assistance 9 =Received as payment 99=Not applicable
1	Main Staples (Maize, Cassava, …)	☐	☐	2		☐
2	Vegetables	☐	☐	1		☐

3	Fruits/fruit juices	☐	☐	1		☐
4	Meat, Fish, Poultry	☐	☐	4		☐
5	Pulses, legumes and nuts	☐	☐	3		☐
6	Milk and milk products	☐	☐	4		☐
7	Oils and fats	☐	☐	0.5		☐
8	Sweets (Sugar/honey)	☐	☐	0.5		☐
	Total Household Food Consumption score		Sum down the total for each HH FCS			

F. Access to Public Infrastructure

Sn	QUESTIONS AND FILTERS	CODING RESPONSES	Notes
24	Where do you get your food items?	☐ 1. Buy from Market ☐ 2. Garden/farm? ☐ 3. Other (specify)	
25	How many markets do you have within your locality?		
26	What is the distance to the nearest market from you? (Km)		**(Distance in Km)**
27	How often do you go to the market?	☐ 1. Daily ☐ 2. Weekly ☐ 3. Monthly	
28	What is the means of transport to and from the market	☐ 1. foot ☐ 2. Bicycle ☐ 3. Public ☐ 4 Other…. Specify	
28a	If other, kindly state?.....		
28b	If public bus or other how much do you have to pay before getting to the Market (Congolese Francs)		**(Congolese Francs)**
29	How long does it take you to get to the nearest market? (time in minutes)		**(time in Minutes)**
30	Will you say the duration above is too long in getting to the market?	☐ 1. Very long ☐ 2. Long ☐ 3. Average ☐ 4 Not Long ….	

		☐ 5 Very short	
31	Do you have any challenges going to and from your local market?	☐ 1. Yes ☐ 2. No	
31a	If yes what are this Challenges	☐ 1. Poor Road Network ☐ 2. Distance ☐ 3. Money ☐ 4 Other…. Specify	
31b	What do you think can be done improve your access to the local market?.....		

G. Marketing Information

Sn	QUESTIONS AND FILTERS	CODING RESPONSES	Notes
32	Where do you get your marketing information from?	☐ 1. Friends & Family ☐ 2. Radio ☐ 3. Television ☐ 4. Community information board ☐ 5 Other…. Specify	
32a	If other, state…….		
33	How often do you receive this information	☐ 1. Daily ☐ 2. Weekly ☐ 3. Every two weeks ☐ 4. Monthly ☐ 5. Other…. Specify	
33a	Is the information mostly useful	☐ 1. Very useful ☐ 2. Useful ☐ 3. Somehow useful ☐ 4 Not Useful	
33b	If yes/no, state reason……		

H. Market Prices.

Sn	QUESTIONS AND FILTERS	CODING RESPONSES	Notes
34	Which food items do you normally buy from the market? (Kindly List)	☐ 1. Tubers ☐ 2. Cereals ☐ 3. Vegetables ☐ 4. Legumes ☐ 5. Meat / Poultry ☐ 6. Fish ☐7. Fruit / Fruit Juice	*(multiple*

		☐ 8. Milk / Other dairy products ☐ 9. Oils and fats ☐ 10. Sugar / honey) ☐ 11. Others to be specified	*select)*
35	Do you normally get the type of food/items you want from the market?	☐ 1. Yes ☐ 2. No	
35a	If No, which other options do you explore to get these items?		
35b	Do the food commodity prices change during the year?	☐ 1. Yes ☐ 2. No	
36	How much do you pay for following food items?? (Congolese Francs)		(Unit Price in Congolese Francs)

Food Items	Minimum Prices (Congolese Francs)		Maximum Prices (Congolese Francs)		**Notes**
	Price	Month	Price	Month	
1. Cassava flour (kg)					
2. Peeled dry corn (kg)					
3. Sombe Vegetables (bunch)					
4. Sweet banana (kg)					
5. Naturel Fruit juice (bottle of 33cl)					
6. Boneless beef (kg)					
7. Fresh tilapia fish (kg)					
8. Local live chicken (piece)					
9. Multicolored bean (kg)					
10. Fresh tomatoes (kg)					
11. Coconut (piece)					
12. Fresh milk (liter)					
13. Cheese (1kg/piece)					
14. Palm oils (72cl, bottle of Primus)					
15. Sugar (kg)					
16. Other(specify)					

Sn	**QUESTIONS AND FILTERS**	**CODING RESPONSES**	**Notes**
36a.	Will you say food items are expensive in these markets?	☐1.Very Expensive ☐2.Expensive ☐3. Somehow Not ☐4. Expensive ☐5. Very Cheap	
36b	Are you able to afford enough quantity of the	☐ 1. Yes ☐ 2. No	

	food commodities for your household?		
36c	If no, how does the household cope?		
37	Do you have other vendors selling the same type of food/items you want?	☐ 1. Yes ☐ 2. No	
38	Are their prices almost the same or vary largely?	☐ 1. Price is similar (uniform within market) ☐ 2.Prices Vary greatly	
38a.	If prices vary greatly, kindly state possible reasons?.....		

I. Knowledge on the existence of Ebola

Sn	QUESTIONS AND FILTERS	CODING RESPONSES	Notes
39	Do you know or have heard of Ebola?	☐ 1. Yes ☐ 2. No	
39a.	If yes, Describe Ebola in your own words……..		
39b.	How did Ebola get to your community?		
40	How long have you heard/known of Ebola?	☐ 1= Less than 1 Month ☐ 2=1-3Months ☐ 3=4 -6 Months ☐4=More than 6 Months	
41	Is Ebola a common sickness?	☐1= Very Common ☐2=Common ☐3= Somehow ☐4= Not common ☐5= I don't know	
42	Do you know the type of people that can get Ebola?	☐ 1. Yes ☐ 2. No	
42a	If yes, List…….		
42b.	Do you think you are vulnerable?	☐ 1. Yes ☐ 2. No	
43	Do you consider Ebola a dangerous illness/sickness?	☐ 1. Yes ☐ 2. No	
43a	5a.If yes/no, state reason…….		

J. Knowledge on causes of Ebola

Sn	QUESTIONS AND FILTERS	CODING RESPONSES	Notes
44	Are you aware of the causes of Ebola?	☐ 1. Yes ☐ 2. No	
44a	1a. If yes, k*ind*ly list them……	☐ 1 Unprotected contact with blood, body fluids or tissue from an	*(many possible responses)*

		infected person with symptoms of EVD. ☐ 2 Unprotected sexual contact with a person recovering from EVD up to 12 months after infection with an Ebola virus. ☐ 3Contact with contaminated objects. ☐ 4Contact unprotected with contaminated surfaces, materials (such as bedding) or medical equipment (such as needles) contaminated with the Ebola virus. ☐ 5 Direct contact (e.g. handling or consumption) with infected animals (live or dead) or their body fluids, ☐ 6 Others	
45	How often do you hear that people are sick with Ebola?	☐1= Never ☐ 2=Rarely (6months or more) ☐ 3= Often (1 month – 3months)	
46	Do you have a relative or know anyone that had / has Ebola?	☐ 1. Yes ☐ 2. No	
46a	If yes, state relation within affected person		

K. Knowledge of Signs and Symptoms of Ebola

Sn	QUESTIONS AND FILTERS	CODING RESPONSES	Notes
47	Are you aware of some of the signs/symptoms of people who have Ebola Sickness?	☐ 1=Yes ☐ 2=No	
47a.	If yes, State all the signs you are aware of …..	☐1=Fever ☐2=Vomiting ☐3=Diarrhea ☐4=Hemorrhage ☐5=Headache ☐6=Other(Specify)	
48	Do you have any idea how you can protect yourself from getting sick with Ebola?	☐ 1=Yes ☐ 2=No	
49	If yes, state the various ways of preventing Ebola.	☐ 1Practice good hygiene practices ☐ 2Avoid unprotected direct contact ☐ 3Avoid high-risk regions and activities ☐ 4Avoid unprotected sexual activity ☐ 5Follow safe funeral practices ☐ 6Avoid coming into contact with wild animals ☐ 7Vaccination ☐ 8 Other	*(multiple select)*
50	Have you received any training from anyone/organization on Ebola?	☐ 1=Yes ☐ 2=No	**(all aspects of Ebola)**
50a	If yes, State the name of Organizations who gave this training?.....		

50b	If yes (Q50 above), has the training been useful?	☐ 1=Yes ☐ 2=No	

L. Knowledge on possible treatments/cure

Sn	QUESTIONS AND FILTERS	CODING RESPONSES	Notes
51	Are you aware of the treatment of the Ebola Sickness?	☐ 1=Yes ☐ 2=No	
51a	If yes, State all the ways of treating Ebola that you know of……....		
51b.	Do you think the following control measures work?		
	1. Quick identification and isolation of cases.	☐ 1=Yes ☐ 2=No	
	2. Control measures in hospital settings.	☐ 1=Yes ☐ 2=No	
	3.Identification and follow-up of contacts	☐ 1=Yes ☐ 2=No	
	4.Safe burials (Yes / No)	☐ 1=Yes ☐ 2=No	
52	Is there a medical facility located near you?	☐ 1=Yes ☐ 2=No	
53	What is the distance of the nearest facility to you (km)		
54	Do you have easy access to this facility when you fall sick?	☐ 1=Yes ☐ 2=No	
54a	If no, state the reasons…….		
55	How do you see/relate to people who have Ebola sickness?.....	☐ 1No contact ☐ 2 With distrust / discrimination ☐ 3 Good relationships ☐ 4 Very good relationships ☐ 5 Other Specify	
56	How does the community see and relate to people who have Ebola……	☐ 1No contact ☐ 2 With distrust / discrimination ☐ 3 Good relationships ☐ 4 Very good relationships ☐ 5 Other Specify	
57	How do you see/relate to people who have recovered from Ebola?	☐ 1No contact ☐ 2 With distrust / discrimination ☐ 3 Good relationships ☐ 4 Very good relationships ☐ 5 Other Specify	
58	How does the community see and relate to people who have recovered from Ebola?……	☐ 1No contact ☐ 2 With distrust / discrimination ☐ 3 Good relationships	

		☐ 4 Very good relationships ☐ 5 Other Specify	

M. Effects of Ebola on Economic activities

Sn	QUESTIONS AND FILTERS	CODING RESPONSES	Notes
59	How has Ebola affected the people of the community?		
60	Do you think Ebola has affected the work of people within the community	☐ 1=Yes ☐ 2=No	
60a	Explain the reason in **Q60** above		
61	Has Ebola affected agriculture and food security in your community?	☐ 1=Yes ☐ 2=No	
61a	Explain the reason in **Q61** above?		

GPS Coordinate of Household	Latitude _____, Longitude _____ Alt_____ Accuracy_____

THANK YOU FOR YOUR TIME AND CONTRIBUTION TO THIS SURVEY…

Appendix 3 Evolution of the prices of a sample of food products in the City of Butembo during the Year 2019 (in Congolese Francs)

	January	February	March	April	May	June	July	August	September	October	November	December	Annual mean
1. Cassava flour (kg)	**638**	**656**	622	616	620	455	460	650	670	851	848	722	651
2. Peeled dry corn (kg)	**435**	**429**	459	453	472	481	514	662	697	752	857	811	585
3. Boneless beef meat (kg)	**6566**	**6599**	6537	6592	6525	6542	6517	6532	6564	7019	7052	7011	6671
4. Fresh tilapia fish (kg)	**8568**	**8889**	8637	8535	8588	8574	8568	8596	8647	8629	8611	8567	8617
5. Local live Chicken (Kg)	**8569**	**8648**	8523	8535	8512	8242	8271	8496	8566	8571	8588	8594	8510
6. Multicolored beans (kg)	**759**	**653**	669	659	713	702	719	950	1006	1170	1230	1025	855
7. Plam oils (Liter)	**912**	**914**	912	610	612	910	912	1028	1032	1030	1030	1010	909
8. Sugar (kg)	**1553**	**1513**	1577	1538	1548	1576	1546	1570	1610	1636	1512	1529	1559

Source: Provincial Inspection of Agriculture, Livestock and Fisheries/Butembo, 2019

Appendix 4 Detailed tables of results

Appendix 4.1. Food consumption Score by territory by health zone

Category	Health Zone	Mean FCS	% FCS Poor	% FCS Bordeline	% FCS Acceptable
Territory					
Beni		**37,3**	13%	38%	49%
	Beni	37,6	16%	31%	53%
	Kalunguta	31,0	12%	63%	25%
	Mutwanga	44,3	14%	33%	53%
	Oicha	36,2	16%	42%	42%
Lubero		**32,7**	16%	47%	37%
	Alimbongo	29,7	28%	35%	37%
	Kayna	33,5	8%	57%	35%
	Lubero	34,4	15%	45%	40%
Ensemble		**35,3**	14%	42%	44%

Appendix 4.2. Food Consumption Score by Health Zone

Health area	n	Poor	Borderline	Acceptable
Kalungu	30	0%	37%	63%
Kasingiri	30	57%	33%	10%
HZ Alimbongo	60	28%	35%	37%
Bundji	30	33%	50%	17%
Mabolio	30	3%	13%	83%
Ngongolio	30	10%	30%	60%
HZ Beni	90	16%	31%	53%
Kanyihunga	30	10%	53%	37%
Lisasa	30	13%	73%	13%
HZ Kalunguta	60	12%	63%	25%
Bulotwa	30	3%	70%	27%
Butsiri	30	3%	47%	50%
Vuhoyo	30	17%	53%	30%
HZ Kayna	90	8%	57%	36%
Kasima	30	17%	67%	17%
Lubero	30	13%	23%	63%
HZ Lubero	60	15%	45%	40%
Bulongo	30	7%	27%	67%
Kangahuka	30	7%	13%	80%
HZ Mutawanga	***60***	***7%***	***20%***	***73%***

Mbau	30	20%	63%	17%
Pakanza	30	13%	20%	67%
HZ Oicha	***60***	***17%***	***42%***	***42%***
Ensemble	480	14%	42%	44%

Appendix 4.3. Reduced Coping strategy Index by health zone

Categorie	n	rCSI mean		P-Value	High coping	Medium	No or low coping
		Mean	Sd				
Health area							
Kalungu	30	13,8	7,5	< 0,0001	73%	23%	3%
Kasingiri	30	13,9	3,7		90%	10%	0%
HZ Alimbongo	***60***	*13,9*	*5,9*		*82%*	*17%*	*2%*
Bundji	30	10,6	4,3		57%	43%	0%
Mabolio	30	14,4	10,7		67%	27%	7%
Ngongolio	30	21,4	10,7		90%	7%	3%
HZ Beni	***90***	*15,5*	*10,0*		*71%*	*26%*	*3%*
Kanyihunga	30	20,7	6,5		97%	3%	0%
Lisasa	30	19,0	6,8		93%	7%	0%
HZ Kalunguta	*60*	*19,8*	*6,7*		*95%*	*5%*	*0%*
Bulotwa	30	11,9	6,0		67%	23%	10%
Butsiri	30	11,3	6,2		57%	37%	7%
Vuhoyo	30	14,4	6,8		73%	23%	3%
HZ Kayna	*90*	*12,5*	*6,4*		*66%*	*28%*	*7%*
Kasima	30	10,9	8,0		63%	17%	20%
Lubero	30	11,7	6,2		50%	40%	10%
HZ Lubero	*60*	*11,3*	*7,1*		*57%*	*28%*	*15%*
Bulongo	30	7,3	5,7		27%	47%	27%
Kangahuka	30	12,3	10,5		47%	37%	17%
HZ Mutawanga	*60*	*9,8*	*8,7*		*37%*	*42%*	*22%*
Mbau	30	22,9	13,0		87%	3%	10%
Pakanza	30	17,4	12,4		70%	10%	20%
HZ Oicha	*60*	*20,1*	*12,9*		*78%*	*7%*	*15%*
Aggregate	**480**	**14,6**	**9,2**		**69%**	**22%**	**9%**

Appendix 4.4. Principal coping strategies used by households by health zone

Strategy	Alimbongo (n=60)	Beni (n=90)	Kalunguta (n=60)	Kayna (n=90)	Lubero (n=60)	Mutwanga (n=60)	Oicha (n=60)	Aggregate (n=480)
Rely on less preferred and less expensive foods	97%	94%	98%	98%	93%	92%	95%	95%
Limit portion size at mealtimes	88%	79%	88%	77%	67%	55%	78%	76%
Borrow food, or rely on help from a friend or relative	90%	76%	93%	81%	68%	57%	63%	76%
Reduce number of meals eaten in a day?	82%	79%	90%	70%	70%	33%	70%	71%
Restrict consumption by adults in order for small children to eat	28%	36%	52%	31%	25%	17%	55%	35%

Appendix 4.5. Repartition of Household Hunger Score by health zone

Health area	n	Severe hunger	Moderate hunger	None or light hunger
Kalungu	30	10%	47%	43%
Kasingiri	30	17%	60%	23%
HZ Alimbongo	***60***	***13%***	***53%***	***33%***
Bundji	30	23%	40%	37%
Mabolio	30	10%	40%	50%
Ngongolio	30	20%	73%	7%
HZ Beni	***90***	***18%***	***51%***	***31%***
Kanyihunga	30	13%	87%	0%
Lisasa	30	27%	60%	13%
HZ Kalunguta	***60***	***20%***	***73%***	***7%***
Bulotwa	30	10%	40%	50%
Butsiri	30	7%	53%	40%
Vuhoyo	30	7%	67%	27%
HZ Kayna	***90***	***8%***	***53%***	***39%***

Health area	n	Severe hunger	Moderate hunger	None or light hunger
Kasima	30	7%	57%	37%
Lubero	30	17%	37%	47%
HZ Lubero	***60***	***12%***	***47%***	***42%***
Bulongo	30	3%	17%	80%
Kangahuka	30	17%	70%	13%
HZ Mutawanga	***60***	***10%***	***43%***	***47%***
Mbau	30	43%	43%	13%
Pakanza	30	23%	47%	30%
HZ Oicha	***60***	***33%***	***45%***	***22%***
Aggregate	480	16%	52%	32%

Appendix 4.6. Average number of people by Health zone

Health Zone	n	Mean	Sd	Cv	Median
Alimbongo	60	6,9	2,9	42%	6,5
Beni	90	4,9	1,7	36%	5
Kalunguta	60	5,5	1,9	35%	5
Kayna	90	5,8	2,5	42%	5
Lubero	60	5,8	2,0	35%	6
Mutwanga	60	5,0	2,2	45%	5
Oicha	60	7,1	4,0	56%	6
Total	**480**	**5,8**	**2,6**	**45%**	**5**

Appendix 4.7. Oil and sugar consumption

Number of consumption days	oil		Sugar	
	Frequency	Percentage	Frequency	Percentage
0	18	4%	325	68%
1	7	1%	49	10%
2	37	8%	40	8%
3	44	9%	12	3%
4	48	10%	17	4%
5	43	9%	13	3%
6	25	5%	2	0%
7	258	54%	22	5%
Total	480	100%	480	100%

Appendix 5 Training and fieldwork images


L

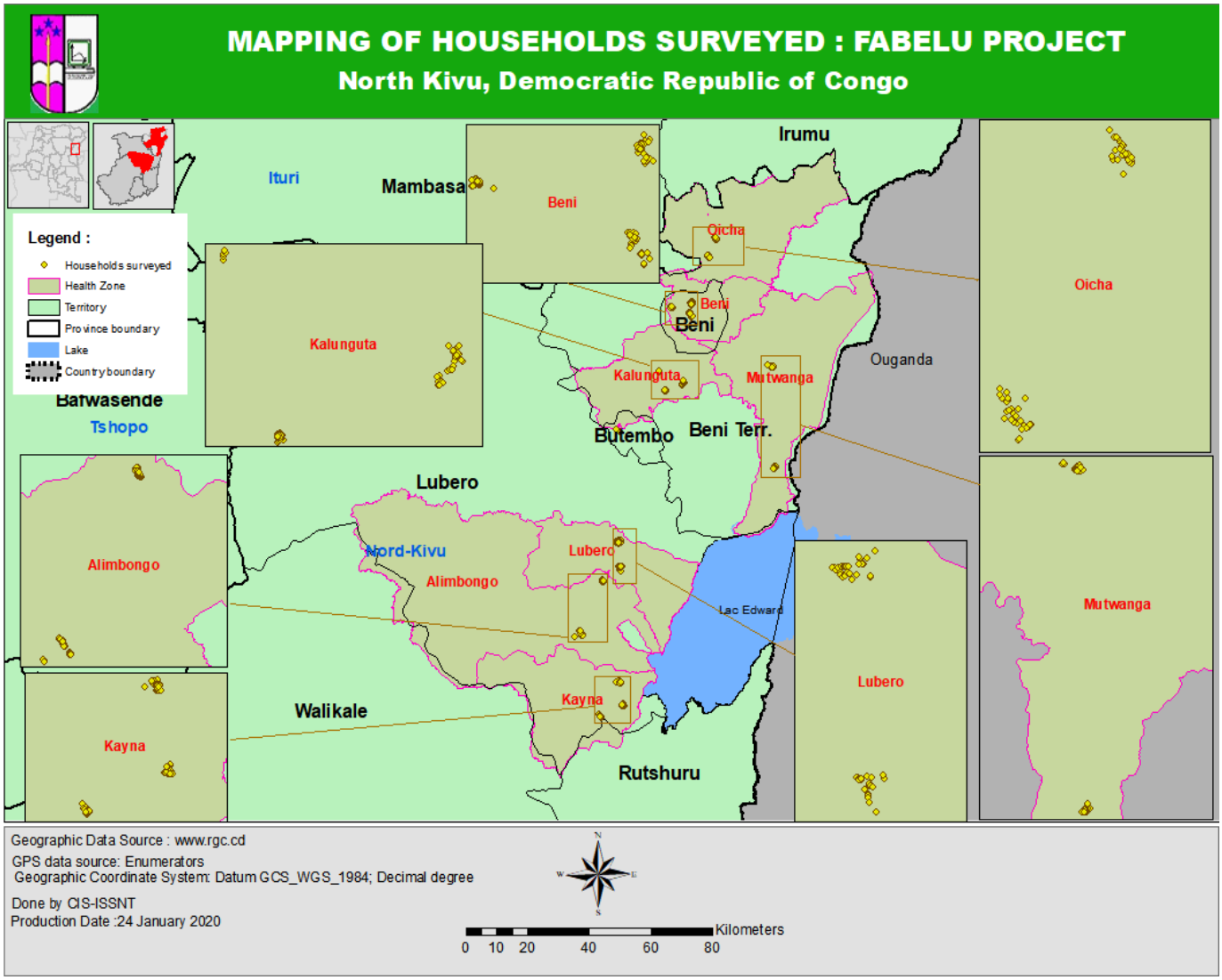
Legend : traveling to different health zone and areas

Legend : administration of questionnaire by several enumerators



Legend : administration of questionnaire by several enumerators

Appendix 6 Mapping of HH survey



FABELU PROJECT BASELINE STUDY

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The study was conducted by CIS/ISSNT from DRC

REPUBLIQUE DEMOCRATIQUE DU CONGO (RDC)

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Centre **I**nformatique et **S**tatistique
« C.I.S »