



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

Baseline Survey for FABELU Project in Ituri Province

June 2020

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LIST OF ACRONYMS

Abbreviation	Signification
ADRA	Adventist Development and Relief Agency
ANOVA	Analysis of Variance
CAPI	Computer Assisted Personal Interviews
CDF	Congolese Francs
CNP	Congolese National Police
DDS	Dietary Diversity Score
DRC	Democratic Republic of Congo
EVD	Ebola Virus Disease
FABELU	Food Assistance for Ebola-Affected and Food Insecure Populations of Beni and Lubero
FAD	Fonds Africain de Développement
FAO	Food and Agriculture Organization
FCS	Food Consumption Score
FFP	Food for Peace
HDDS	Household Dietary Diversity Score
HH	Household
HZ	Health Zone
IRC	International Rescue Committee
ISSNT-CIS	Institut Supérieur de Statistique et de Nouvelles Technologies/Centre Informatique et Statistique
M&E	Monitoring and Evaluation
MSF	Médecins Sans Frontières
NIS	National Institute of Statistics
NRC	Norwegian Refugee Council
OCHA	Office for the Coordination of Humanitarian Affairs
ODK	Open Data Kit
PADIR	Projet d'Appui au Développement des Infrastructures Rurales
PAM	Programme Alimentaire Mondiale
PNUD	Programme des Nations unies pour le développement
rCSI	Reduced Coping Strategy Index
SPSS	Statistical Package for Social Sciences
STATA	Statistical Analysis
UNICEF	Fonds des Nations unies pour l'enfance
UNWFP	United Nations World Food Program
USAID	United States Agency for International Development
WHO	World Health Organization

ACKNOWLEDGEMENTS

This report covers the baseline survey of the Food Assistance for Ebola-Affected and Food Insecure Populations of Beni and Lubero (FABELU) project in North Kivu and Mambasa in Ituri. The project is implemented by ADRA-RDC and funded by USAID and FFP.

Data collected and analyzed in this baseline study relate to four axes: (i) household demographic and socioeconomic situation, (ii) food security, (iii) access to public infrastructure and market analysis and (iv) Ebola and COVID-19 perception.

The 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) on behalf of ADRA within the framework of the FABELU Project.

This study was conducted by ISSNT-CIS researchers under the coordination of Edson NIYONSABA SEBIGUNDA¹, Célestin KIMANUKA RURIHO² and Promesse KASEREKA KAVULIRENE³.

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

To all investigators who worked selflessly in a risky field and to the reviewers of this report, may you find our gratitude here.

Finally, our gratitude goes to key informants, population of Mambasa and Mandima 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

¹As the director of the CIS-ISSNT, he coordinated the study: tool design, data collection, data analysis, manuscript editing.

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EXECUTIVE SUMMARY

The present study carried out in June 2020 aimed at determining the basic indicators of the project **“Food Assistance for Ebola-Affected and Food Insecure Populations of Beni and Lubero (FABELU)”** in the province of Ituri. The survey of 420 inhabitants randomly selected from households in Mambasa and Mandima Health Zones allowed to:

- Determine the percentage of households whose Food Consumption Score (FCS) is poor, limited and acceptable;
- Detect the prevalence of households suffering from moderate or severe hunger (household hunger scale);
- Compute the Average Reduced Coping Strategy Index (rCSI) (according to sex, gender and type of household);
- Compute the average score for household food ration diversity.
- Perform market analysis;
- Identify community perceptions about Ebola and COVID19.

We used cluster sampling with identical allocation between health zones. For in-depth exploration of the targeted themes, a standard questionnaire was administered using CAPI for individuals aged 18 years old and above. Households were randomly selected.

Among the randomly selected people, 46% were women, 65% of them did not go beyond primary school, 32% reached secondary school and only 3% reached university. The average age of the respondent is 38 years. The average number of people per household is 5 while the main source of income is agriculture (64%). The majority of households (74%) are residents of these regions, 14% being displaced while the remaining 12% are returnees.

Analysis of the data provided the following main results:

1. Households are low income and contract debts to support their needs

The study shows that 66% of the population live with less than US\$ 1 per person per day. A typical household has a monthly income of US\$ 21.10. In addition, 79% of households interviewed have debts and the typical household has a debt of US\$ 10.30, which represents 49% of its monthly income.

2. Food security indicators confirm severe vulnerability for a significant proportion of households

The overall average household Food Consumption Score (FCS) was calculated as “Borderline” with a score of 32.2, and 18% of households are in a situation of great vulnerability with a “poor” FCS (or less than 21). The proportions of households with a “poor” FCS are respectively 20% in Mandima Health zone (HZ) and 16% in Mambasa HZ. The quality (richness and diversity of food composition) and quantity of their food is insufficient. Just over half (51%) have “borderline” FCS and 31% have “acceptable” FCS.

The highest proportions of households in situations of severe vulnerability with a “poor” FCS are recorded in the health areas of Makele (43%), Mayuwano (43%), Banana (30%), Salama (30%) and Some (23%).

Internally displaced and returnee households are relatively more in situation of severe vulnerability than residents. Indeed, the proportion of households with a “poor” FCS is 20% for internally displaced households, 20% for returnees and 17% for residents.

Adult Female No Adult Male (FNM) households seem to be more severely vulnerable (23% of poor FCS) than Adult Male & Adult Female (M&F) households (13% of poor FCS) and Adult Male No Adult Female (MNF) households (8% poor).

Displaced households (20% of poor FCS) and returnees (20% of poor FCS) are relatively more in a situation of serious vulnerability than residents (17%).

The study shows that the reduced average coping strategy index (rCSI) for all the households visited is 19.1. This rCSI average is not significantly different between the two Health Zones and between status of households (IDP, Returnee and Resident). However, there is a significant difference according to the sex of the head of household, the health areas and the types of household. The most vulnerable households are those headed by women and Adult Female No Male Adult (FNM) Households.

The proportions of households that have more difficulty obtaining food and therefore resort to high coping strategies are in Health Areas of Mayuwano (97%), Some (97%), Salama (97%), Banana (90%), Bukulani (80%), Lukaya (70%)⁴.

The Coping strategies most used by households to obtain food in the two Health Zones are:

⁴ The health areas of Mayuwano, Some and Lukaya are in the health zone of Mandima while the others (Salama, Banana, Bukulani) are in the health zone of Mambasa.

- Purchase of less preferred and less expensive foods (92% of households),
- Limit the size of portions at meals (72% of households),
- Reduce the number of meals taken a day (71% of households),
- Borrow food or rely on the help of a friend or a relative (67% of households),
- Restrict the consumption of adults so that children can eat (54% of households).

The household hunger scale (HHS) shows that 21% of households in the Mambasa Health Zone compared to 26% in the Mandima Health Zone show severe hunger. This is around 58,765 inhabitants who suffer from severe hunger in the 2 Health Zones visited. In addition, internally displaced and returnee households experience more food deprivation than resident households (severe and moderate hunger).

Adult Female No Adult Male (FNM) households experience food deprivation and a higher proportion of severe hunger (31%) than Adult Male & Adult Female (F&M) households (23%) and Adult Male No Adult Female (MNF) households (21%).

The study also shows that some health areas are more affected by severe hunger. These are Banana (50%), some (47%), Lukaya (33%), Mayuwano (33%), Salama (30%) health areas⁵.

Across all of the Health Zones in the study, household diets were not generally diverse. Households mainly consume basic foods (cereals and tubers), vegetables and oil. The mean dietary diversity score is 5.09. The Low Food Diversity Score is more observed in Adult Female No Adult Male (FNM) households (52%), in internally displaced households (54%), in returned households (48%) and logically in those falling into the Poor FCS category (83%).

At the Health Zone level, the diet is almost identical and dominated by the consumption of vegetables (6 days per week), staple crops (cereals and tubers) (5 days per week) and oil (6 days per week)

Households with a "Poor" Food Consumption Score eat only vegetables or leaves, staple crops and oil. The very low level of consumption of basic foods (cereals and tubers) among households with a poor FCS is a concern. In short, households with poor FCS are more affected by severe hunger (57%) with poor dietary diversity (83%) and are forced to resort to the most extreme coping strategies (96%).

⁵ Banana and Salama are in the Mambasa Health Zone while Lukaya and Mayuwano are in Mandima Health Zone.

The main sources of basic food products (cereals and tubers) consumed are produced by the household itself and cash purchases at the market. The same also stands for vegetables and fruits.

For all other food groups (meat, fish, poultry, legumes, milk and dairy products, oil, fat, sugar and other sweets), the main source is cash purchase at the market.

3. Access to the market is hindered by distance, poor road network and transport costs

We observe that 83% of the population firstly gets their supplies from the market, 68% of households invest in farming and maintaining home gardens and only 8% obtain food by other methods (donation from friends or family members and food as remuneration for work).

There is a diversity of difficulties or barriers to market access. These main difficulties are linked: in fact, a poor road network would make the distance long and imply a significant average cost for the household. The average cost of transportation to the market is US \$ 4. We note that 86% walk to get to the market and spend an average of 1 hour walking to the market. 50% of the population report to find the distance to the market as being is long or very long.

4. Good knowledge and practices on Ebola virus disease and COVID-19 disease coexist with bad ones

The study found that Ebola virus disease (EVD) is known by many in the seven surveyed Health Zones. Overall, 95% of people know or have heard about Ebola virus disease.

A large proportion of respondents are aware of the signs or symptoms of EVD (79%). 64% know the causes of EVD but only 7% know that EVD can be treated. Results show that about 45% of respondents know the most exposed persons. In addition, 64% of respondents said that they were vulnerable to EVD and 90% considered EVD to be a very dangerous disease in the community.

It was that, 42% of respondents said that they have been hearing regularly (1 to 3 months) that Ebola affected people.

To prevent EVD, respondents first cited hygiene practices (75%). Follow respectively: Avoid unprotected contact (49 %), safe funeral practices (39%), Avoid coming into contact

with wild animals (36%), Vaccination (29%), Avoid regions and high risk activities (28%), Avoid unprotected sexual activity (26%) and others (2%).

About 90% of respondents declared having a health facility nearby. However, 17% do not have easy access to health facilities (long distance). The typical household is located 0.5 km from the nearest health center.

Most people avoid contact with persons with Ebola (72%). Even after recovery, some continue to isolate them fearing to be contaminated (24%).

Ebola virus disease did not only affect health sector, it also affected the region's economy, as indicated 42% of respondents.

The study finds that 81% of people have heard of COVID-19 disease. However, few people know the causes (9%) and signs (29%) of the pandemic. Only 1% of respondents know the mode of treatment. The majority of inhabitants (73%) declared that COVID-19 is a dangerous disease and 40% recognized good hygiene practices as a prevention strategy.

According to statements by 55% of residents in Mambasa HZ and 35% in Mandima HZ, COVID-19 affects their work. Overall, agriculture and food security in the Territory of Mambasa have been affected negatively by COVID-19 as 27% of households reported.

I. INTRODUCTION

1.1 BRIEF PROJECT DESCRIPTION AND CONTEXT

The FABELU Project is implemented in Beni and Lubero territories, North Kivu and Mambasa territory in Ituri Province. The Upper North Kivu and Ituri provinces 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 of persons⁶. 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 groups⁷. Most youth in eastern DRC have lived their childhood, teenage hood and/or adult developmental years in conflicts beginning 1996 until nowadays. As a matter of fact, wars in eastern DRC have increased child labor and other exploitations in addition to the direct involvement of children as soldiers. 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.⁸

Over the past three months, various armed groups have increased attacks and abuses in territories of Beni, Lubero and Mambasa. These areas have also suffered from the Ebola epidemic. The persistence of the Ebola epidemic continues to disrupt agro-pastoral activities, limiting people's access to livelihoods in Beni, Lubero and Mambasa territories in particular and in the , and in the eastern part of the DRC in general⁹. 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%)¹⁰. 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. In the first three months of 2019, the North Kivu province experienced between 31 and 66 % increase in hunger among displaced families and host communities¹¹. In the same province, most displaced families, returnees or host families live with only one meal a per day and spend more than 75% of their income on food. The food consumption score reflecting the quantity and quality of the food—is poor (≤ 28)¹².

⁶ FEWS NET, Democratic Republic of Congo Food Security Outlook Update, February to September 2019

⁷ Iiro Pankakoski, Youth livelihoods and the local conflict in North Kivu, 2017

⁸ USAID, overview of youth development perspectives in the eastern Democratic Republic of Congo, July

⁹ FEWS NET, Democratic Republic of Congo Food Security Outlook, June to January 2020

¹⁰ WHO, Ebola Rapport de situation N°319, July 2019

¹¹ NRC, DR Congo: Imminent hunger crisis threatens Ebola-stricken North Kivu.

¹² OCHA, Emergency operational plan, for Ituri and North Kivu Province, January to June 2019.

To address unmet needs, improve population's conditions, and reduce vulnerability to food insecurity in Ebola-affected and food insecure areas, ADRA with the support from USAID/FFP is providing a 15-month Food Assistance for Ebola-Affected and Food Insecure Populations of Beni, Lubero (FABELU) in North Kivu and Mambasa in Ituri. These areas are chosen due to the high level of vulnerability to the food crisis aggravated by the current EVD epidemic that has negatively impacted the food security situation in these territories.

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

The 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. Specific 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 PURPOSE AND EXPECTED USE OF THE BASELINE REPORT

The baseline will be useful to provide the USAID-funded FABELU project and partners with sufficient and accurate data/information to enable them set a benchmark on which outcomes and objectives of the project will be measured. The baseline will facilitate the monitoring and evaluation of the progress and effectiveness of actions implemented in this project in Ituri, East of the DRC.

1.3 OBJECTIVES OF THE BASELINE

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 (CSI –sex disaggregated by gendered household type)
4. Average household dietary diversity score (HDDS)
5. Total number of households with access to local markets
6. Percentage of beneficiaries who have access to basic public infrastructure
7. Awareness and Perception of Ebola
8. Awareness and Perception of COVID-19 outbreak

1.4 LIMITATIONS OF BASELINE

Due to health restrictions imposed by the context of the COVID-19 pandemic and the fear of the population to regroup for focus-group sessions, the study did not use the qualitative approach. It is limited to the quantitative approach. However, since this is the baseline study, this does not affect the relevance of the information collected. The mid-term and final evaluation studies will take into account both approaches to provide in-depth explanations of the indicators found in relation to the targets.

1.5 LITERATURE REVIEW

In most regions of DRC, the majority of households (88%) are residents, 9% being displaced while the remaining 3% are returnees. 87.5% of households have debts and the typical household has a debt of US\$ 14.71 which represents 83% of its monthly income (US\$ 17.65). Almost all of the households (93%) live with less than US\$ 0.5 per person per day. The overall average household Food Consumption Score (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. The average reduced coping strategy index (rCSI) for the set of households is 14.6 (Marivoet et al., 2019)¹³.

Poor or borderline food consumption compared to the national average is located in Équateur (10% poor consumption and 37% borderline consumption), followed by Kasai Oriental (7% poor consumption and 37% borderline), South Kivu (12% poor consumption and 31% at the limit), and North Kivu (13% poor consumption and 25% at the limit). Poor households with food above the national average live in North Kivu (13%), South Kivu (12%), Katanga (12%), Équateur and Kasai Occidental (10%) (WFP, 2014)¹⁴.

Between 40 and 60 percent of the households are forced to adopt negative coping mechanisms to cope with the situation, while nearly 15 percent went to the extreme, selling

¹³ Marivoet, W., Becquey, E. & Van Campenhout, B. How well does the Food Consumption Score capture diet quantity, quality and adequacy across regions in the Democratic Republic of the Congo (DRC)?, Food Sec. 11, 1029–1049 (2019). <https://doi.org/10.1007/s12571-019-00958-3>

¹⁴ Programme alimentaire mondiale (PAM), 2014 Analyse approfondie de la sécurité alimentaire et de la vulnérabilité (CFSVA) <http://www.wfp.org/food-security> ou en contactant wfp.vaminfo@wfp.org

all their assets. In Tanganyika, the food consumption score (FCS) varied from 39 to 60 percent before the shock, the coping strategy index (CSI) was 20 and the overall GAM rate was 12 percent. After the conflict, the FCS deteriorated to between 54 and over 90 percent, the CSI from 22 to 40 and the Global acute Malnutrition rate to 16 percent. In the Kasai, the FCS reached nearly 84 percent of households, the CSI was at 16.2 and the GAM rate varied between 11 and 14 percent, with a mortality rate for children under five ranging from 1.13 to 2.77% (FAO, 2017)¹⁵.

At the national level, 51% of household food consumption was bought; 42% came from own production, 3% from fishing, hunting, gathering and the remaining 4% was borrowed, received as gifts or in the form of food aid. More than half (52%) of the food consumed by poor households came from their own production. Market purchases are the second most important source of food for poor households (40%), followed by fishing, hunting and gathering (4%) households in relatively wealthy provinces depend mainly on purchases made at the market as a source of food: Sud-Kivu (68%), Nord-Kivu (66%), Bas-Congo (59%), Kasai Occidental (53%). Bandundu is the least dependent province on market purchases (24%), followed by Katanga (33%). (WFP, 2014).

In South Kivu only 5% of the population has an acceptable food consumption score, 26% have borderline FCS and 69% have poor FCS (<28), thus classifying the households surveyed in a situation of severe vulnerability in terms of food security. The coping strategy most used by households are the consumption of less expensive or less preferred foods (96%), the reduction of the quantity of meals (95%), the reduction of the consumption of adults for the benefit of children (95%) and borrowing food or seeking help from friends, neighbors and family (94%) (ACTED, 2018)¹⁶.

Only 17% of the population in rural areas have access to water from an improved source (United Nations, 2013)¹⁷; infrastructure for marketing and conservation of agricultural products is in an advanced state of degradation. Peasants' technical support services are practically absent. This situation has created a paradox in rural areas: agricultural production in fields that cannot find buyers and shortages of food in cities. The food deficit is estimated at more than 30% (FAD, 2011)¹⁸.

Adding to that, Active conflict and insecurity make Ebola epidemic one of the most complex ever faced, with the disease anchored in areas with decades of endemic mistrust

¹⁵ FAO. 2017. The Democratic Republic of the Congo. Response Plan 2017–2018, Rome. 14 pp.

¹⁶ ACTED, Juin, 2018. Rapport d'évaluation des besoins en sécurité alimentaire et nfi axe lubishako1 – lubishako2, territoire de fizi, sud-kivu - https://reliefweb.int/sites/reliefweb.int/files/resources/acted_msa_axe_lubishako1-lubishako2.pdf

¹⁷ United Nations, 2013. République Démocratique du Congo, Plan d'action humanitaire <https://reliefweb.int/sites/reliefweb.int/files/resources/2013DRCHAPFR.pdf>

¹⁸ Fonds Africain de Développement (FAD). Aout, 2011.

Projet d'Appui au Développement des Infrastructures Rurales (PADIR). République Démocratique du Congo.

and violence particularly in Eastern DRC. This epidemic continues unabated, households that were already living with food insecurity are now faced with reduced purchasing and economic power as people's access to their livelihoods are limited (WHO, 2019)¹⁹.

Even without restriction, the Ebola virus has negative short-term and medium-term effects on agro-pastoral activities in the eastern part of the DRC. Even before Ebola virus disease (EVD), people were already suffering from high chronic food insecurity in this region. In fact, 67% of the Ituri population has a high level of food insecurity and 26% of the population in the areas affected by EVD in North Kivu. While hotspot areas such as Beni can import foodstuffs and supplies from neighboring areas to compensate for decreased agro-pastoral activity, people living in the other areas rely on unrestricted access to markets in a survival economy where freedom of movement is essential to access food and survive (Jerving et al., 2019)²⁰.

It has to be noticed that in a study conducted by Fauche et al., in 2015²¹; 2% of population have never heard about EDV, 46.8% men and 39% women have a good knowledge of the EDV. Then 66.3% of the population would choose to call the health department if they were in front of a person with symptoms of EDV, and 98.8% perceive that the EVD is dangerous along with 67.9% are willing to help the Congolese authorities to educate the population to prevent it. The main source of information is television (88.4%).

Regarding COVID19, a survey done by Target SARL²², revealed that only 39% of those questioned considered that COVID-19 is a serious disease against 58% who do not find it serious and 5% who do not comment. Almost half of the people surveyed (46%) said that there were no cases of the sick in their immediate environment and 21% thought that the number of confirmed cases in their province was low. The same population (20%) agreed that COVID-19 is more prevalent abroad and that it is a disease whose impact is exaggerated by the media and politicians (12%). As for the second part, focusing on whether or not measures taken by the Republic President are satisfied, the trend here is rather upward: 70% of those questioned say they are satisfied with the measures taken by the Republic President to stop the pandemic against 16% who are not and 14% without opinion. With the exception of South Kivu (41%), the satisfaction scores on the actions

¹⁹ World Health Organization (WHO), Ebola Rapport de situation N°319, July 2019

²⁰ Jerving, Sara. "Q&A: How the Ebola Declaration Could Threaten Food Security in DRC." Devex. July 18, 2019. Accessed 26 July

²¹ Fauche, Adelin & Mukebayi, Kadimanche & Bakenje, Marlin & Pilipili, Koyange & Bongo, G.N. & Konga, Museu & Songo, Baukaka & Ngombe, Nadège & Mbemba, Théophile & Ngbolua, Koto-Te-Nyiwa. (2015). Knowledge, Attitude and Perception of the Population Related To Ebola Virus Disease in Kinshasa City, Democratic Republic Of The Congo. Journal Of Advancement In Medical And Life Sciences. https://www.researchgate.net/publication/279853040_Knowledge_Attitude_and_Perception_of_the_Population_Related_To_Ebola_Virus_Disease_in_Kinshasa_City_Democratic_Republic_Of_The_Congo

²² Target SARL, 2020. les congolais et la pandémie de COVID19. <https://zoom-eco.net/a-la-une/rdc-39-de-congolais-conscients-de-la-gravite-de-COVID19-etude-de-target-sarl/>

taken by the provincial governments are higher than 50% with a very high score in Haut-Katanga (80%).

And according to Kinshasa Digital (2020)²³; 73% are worried or very worried; 17% can no longer work; 39% would call the toll free number in case of symptoms; 76% see an increase in the prices of essential products. 35% have difficulty finding masks, 29% of coal and flour whether it is corn flower or cassava which are the most consumed in DRC, 28% of Chloroquine, 26% of meat and vegetables.

1.6 SUMMARY OF METHODOLOGY

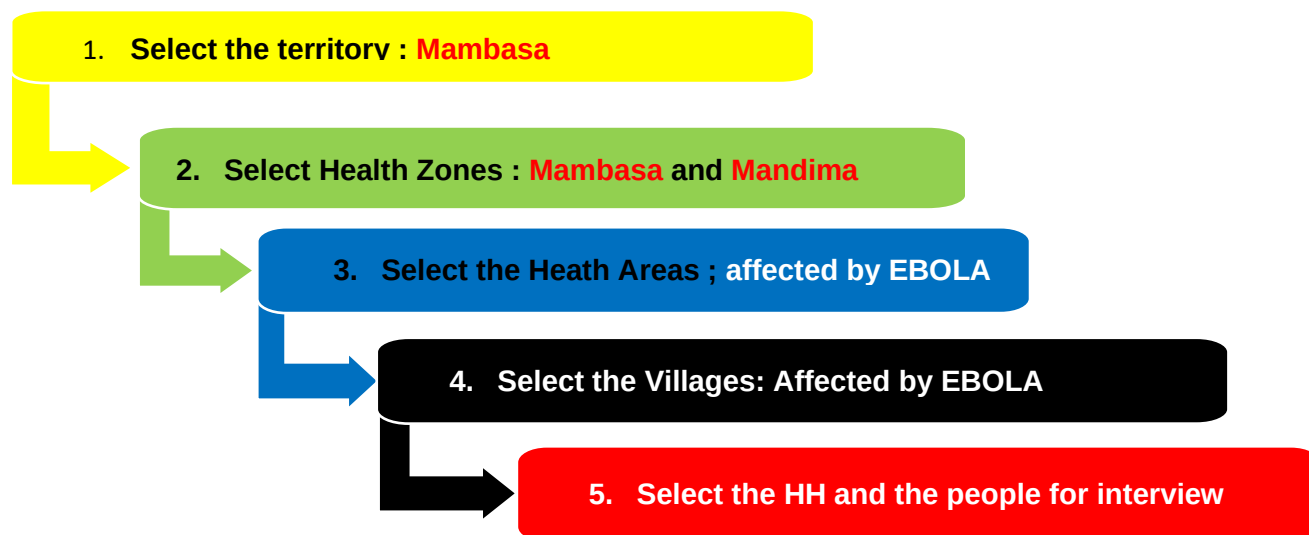
1.6.1 Preliminary work for the survey

Preliminary work which came before data collection consisted respectively in:

- Development of survey tools: adapted questionnaire and training manual,
- Configuration of the questionnaire on tablet under Kobo Collect,
- Recruitment and training for 2 days of investigators and supervisors (see list in Annex 1), and
- The development of an activity schedule and a team deployment plan.

1.6.2 Sampling

The identification of the sample will follow the procedure below:



²³ Kinshasa Digital, 2020. Craintes et réactions face au COVID-19 en RDC, Sondage auprès de la population. <https://www.atibt.org/wp-content/uploads/2020/04/RDC-Sondage-COVID19-Craintes-et-réactions-20200414-02.pdf>

The calculated sample size is 402, rounded to 420 HHs (this was computed at 5% error margin, 95% confidence interval, 50% response distribution, Population size of 7,000 and a 10% contingency for non-response/attrition).

The technique applied is that of “one-stage cluster sampling with identical allocation between health zones”. The 420 households are distributed in 14 clusters. Candidates for the interview were men, women, girls and boys in households. The preference was given to the head of household or his/her spouse. Another adult (over 18 years of age) was interviewed in the absence of the household head. All data were collected using CAPI with the ODK Collect application.

1.6.3 Survey implementation

1.6.3.1 Investigator training

The theoretical and practical training of investigators for quantitative data collection took 2 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;
- Explanation of the security context and instructions, data quality control mechanism and the deployment plan.

1.6.3.2 Sample presentation

The table 1 presents the Baseline sample by Health Zone and health areas.

Table 1. Sampling

Territory	Health Zone	Cluster / Health areas	#HH
Mambasa	Mambasa <i>Population in 2019 :100,565</i>	Banana	30
		Binase	30
		Bukulani	30
		Makoko2	30
		Mambasa	30
		Salama	30
		Tobola	30
	Mandima <i>Population in 2019 : 144,909</i>	Biakako mayi	30
		Biakato mine	30
		Katanga	30
		Lukaya	30
		Makeke	30
		Mayuwano	30
		Some	30
Total			420 HH

1.6.4 Data analysis

Data collected by CAPI using ODK Collect application was compiled in Excel format. Then, exported and analyzed with SPSS 23 and STATA 15.0

For statistical tests, we consider a result as statistically significant when the probability is less or equal to 0.05 ($p \leq 0.05$). 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.

II. FINDINGS

2.1 SOCIO-DEMOGRAPHIC CHARACTERISTICS

2.1.1 Distribution of households by sex and age of respondents

As Figure 1 illustrates, both sexes are validly represented among the respondents. Overall, 53.6% of men were surveyed compared to 46.4% of female.

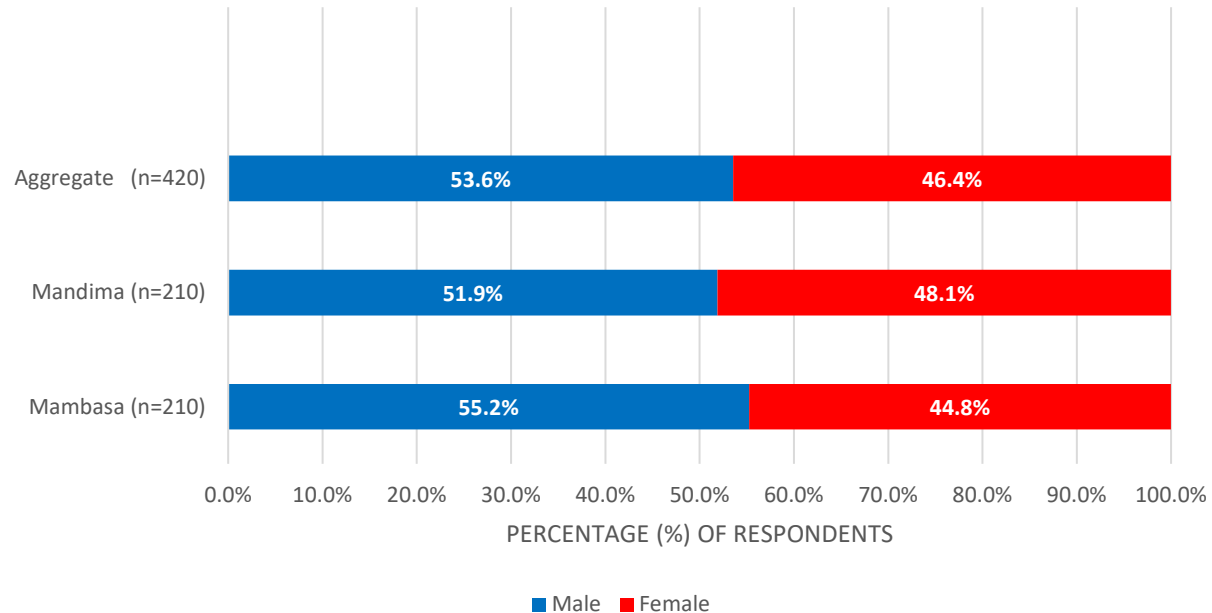


Figure 1. Distribution of households by sex of respondents

The average age of respondents is 38 years old with a standard deviation (SD) of 13.9. Their age varies between 17 and 85 years (Table 2).

Table 2. Age of respondents

Health Zone	Obs.	Mean	Std. Dev.	Min	Max
Mambasa 18-59	194	35.9	10.6	17	58
Mandima 18-59	182	35.0	10.7	17	59
Aggregate 18-59	376	35.5	10.7	17	59
Mambasa 60+	16	65.1	4.7	60	75
Mandima 60+	28	67.3	6.7	60	85
Aggregate 60+	44	66.5	6.1	60	85
Mambasa	210	38.2	12.9	17	75
Mandima	210	39.3	15.0	17	85
Aggregate	420	38.7	13.9	17	85

2.1.2 Level of education

Figure 2 illustrates that, 65.3% of respondents have not gone beyond primary school, 19.8% of them did not attend any school level. Almost 32% are in secondary school and only 3% attended university.

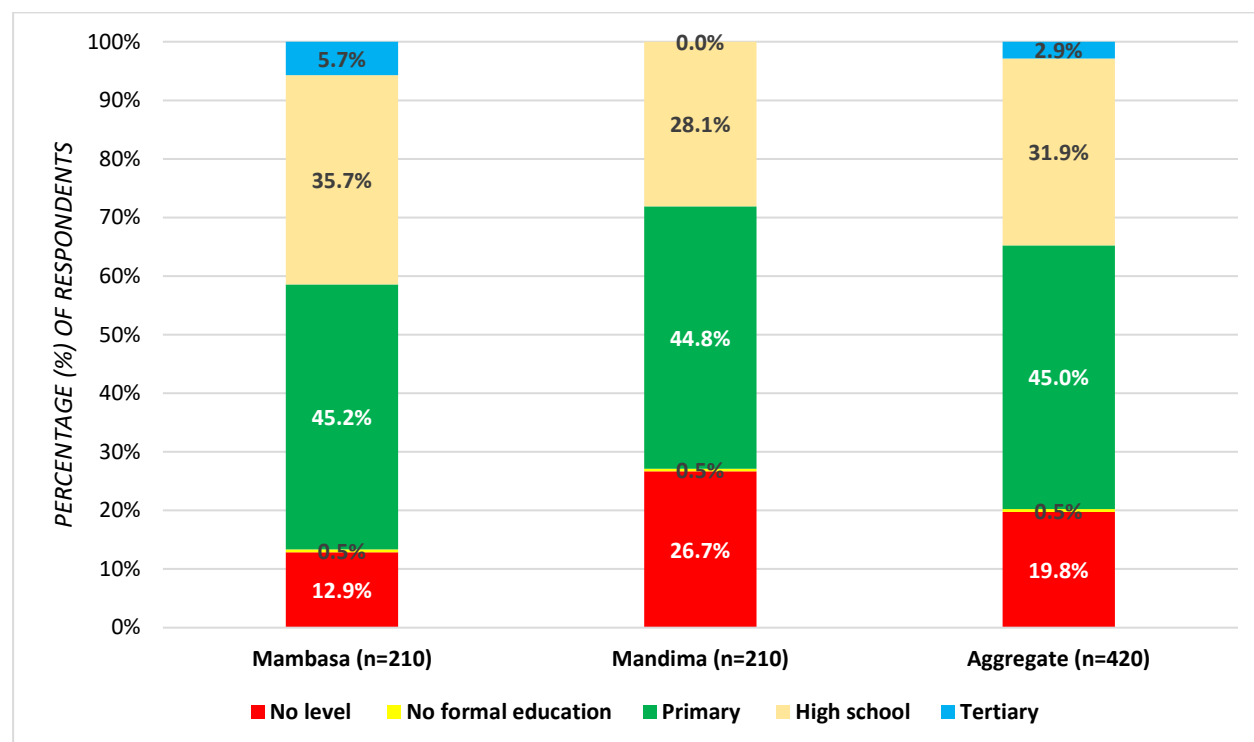


Figure 2. Distribution of education level of respondents

2.1.3 Characteristics of pregnant household members

Among all the members of households surveyed, 84 cases of pregnancy were identified. Overall, their average age is 27, the youngest being 15 and the oldest 46 years old. Among the 84 cases, 16 women are household heads of, 47 are wives of the head of household, 15 are children of the head of household and 6 are sisters of the head of the household.

Table 3. Profile of pregnant persons in the household

Health Zone	Obs.	%	Mean	Std. Dev.	Min	Max
Head of household	16	19%	33.0	5.9	18	42
Wife of the head of household	47	56%	27.1	7.2	17	46
Daughter of the head of household	15	18%	23.0	8.3	15	41
Sister of the head of household	6	7%	21.7	3.7	17	25
Aggregate	84	100%	27.1	7.7	15	46

2.1.4 Household size

The results in table 3 show that the average household size is 5 people with a standard deviation of 2.6. Household sizes differ significantly²⁴ between the two health zones at the 5% error threshold.

Table 4. Household size of respondents

Health Zone	Obs.	Mean	Std. Dev.	Min	Max
Mambasa	210	5.7	2.8	2	19
Mandima	210	5.1	2.4	1	16
Aggregate	420	5.4	2.6	1	19
Difference#0		0.6	0.4	-	-

2.1.5 Household residential status and household gender

Figure 3 reveals that Adult Male & Female Adult (F&M) households represent 79%. In our random draw, we did not observe Child Only No Adult (CNA) households.

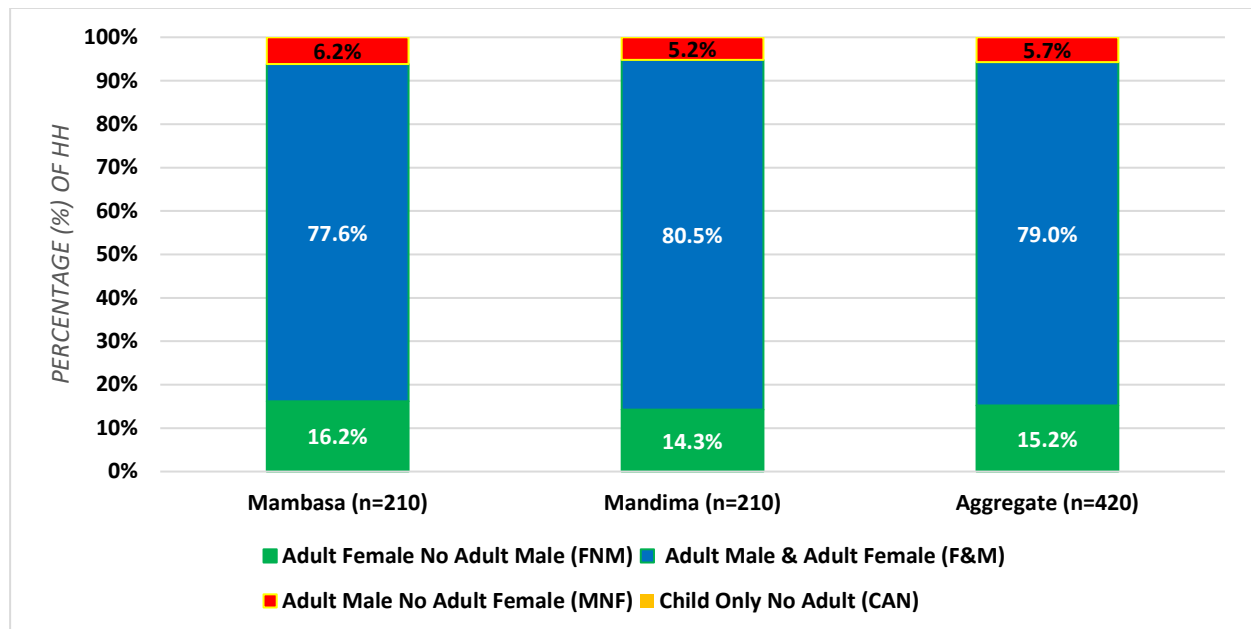


Figure 3. Household gender status

As shown in figure 4, the majority of households (73.6%) are made up of residents. Then comes the internally displaced (14.5%) and finally the returnees with 11.9%. The distribution of households by current residence status differs significantly between the two Health Zones²⁵. We see that there are more returnees and internally displaced people in Mandima compared to Mambasa.

²⁴ $p_v = 0.0128$

²⁵ $p < 0.0001$

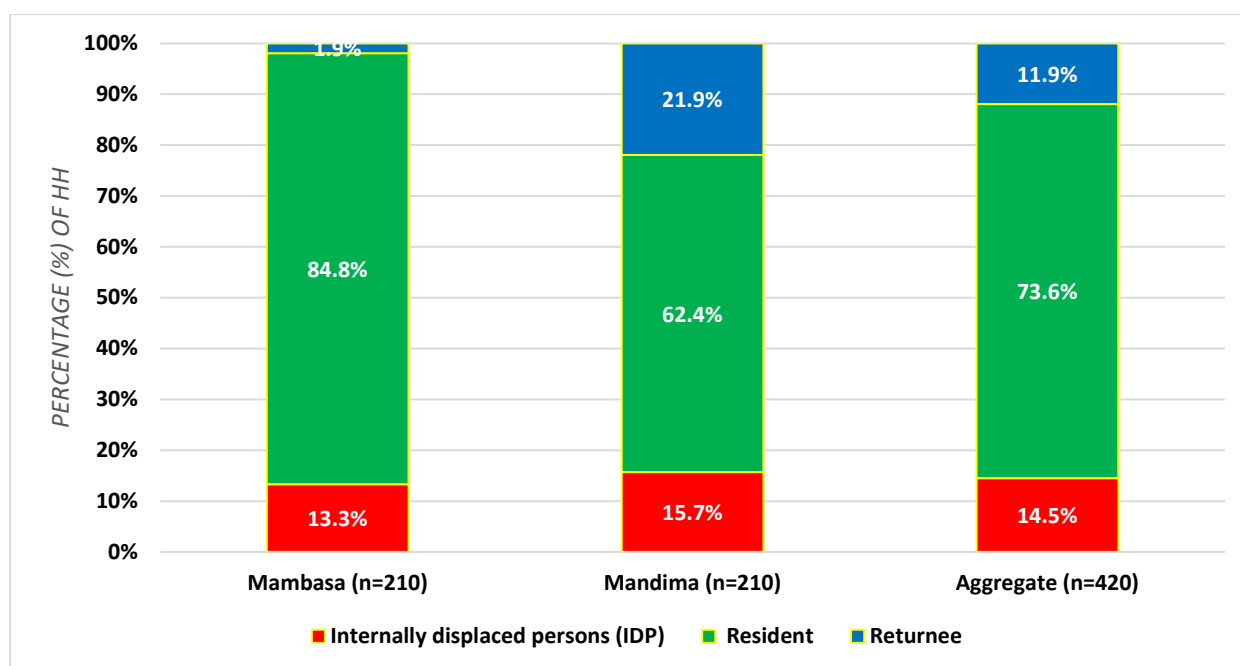


Figure 4. Household status

2.2 OCCUPATION, HOUSEHOLD INCOME AND DEBT

2.2.1 Current main occupation

The main occupation of respondents is agriculture (63.8%), which is necessary for the survival of the majority of households in the two health zones. Then there is the agricultural workforce (7.9%), civil servants (7.9%). We cannot neglect agricultural labor (5%) and small scale business (5%), handicrafts (5.5%), trading (5.5%) and daily labor (5.5%) as also main occupations. All other occupations (beekeeping, grazing, association support, relative support and begging) represent 4.3%.

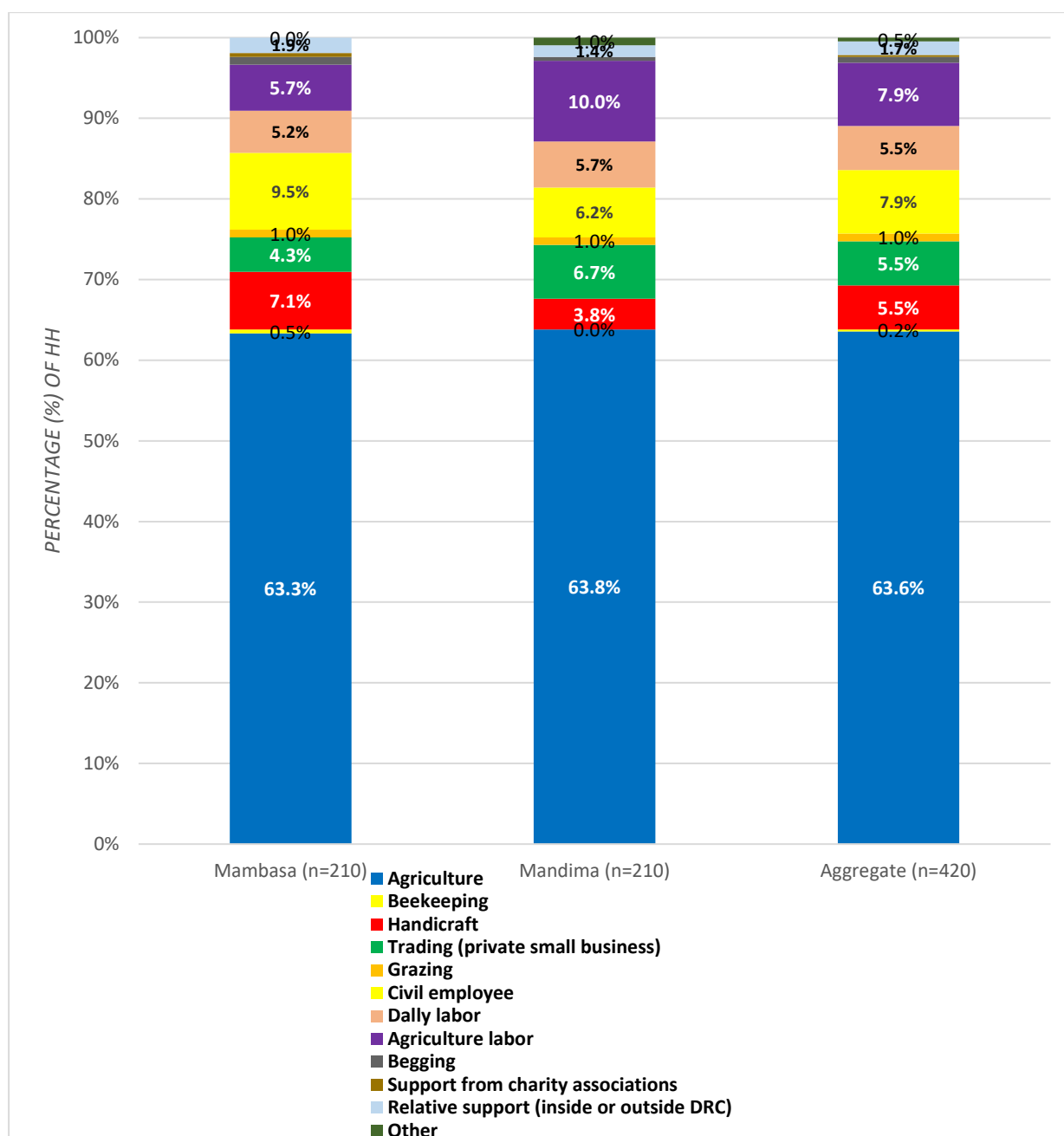


Figure 5. Respond current main occupation for living

2.2.2 Monthly income

The respondent's average monthly income is 67,663.1CDF, or US\$ 35.60 (SD=48.50)²⁶. Since there is a large dispersion, we consider the median income. **Thus, a typical household has a median monthly income of 40,000 CDF (US\$ 21.10).** This income is very low. There is also a significant²⁷ difference of 22,450CDF, or US\$ 11.80, between

²⁶ Exchange rate of US\$ 1 = 1900 CDF

²⁷ $\Pr(|T| > |t|) = 0.0124$

the average incomes of two health zones covered by the study. With US\$ 23.70 per month, the Mambasa health zone has a median income higher than that of Mandima (US\$ 18.40 per month).

Table 5 Household monthly income

Health Zone	N	Average Monthly Income in CDF	Average Monthly Income in US\$	standard deviation	Median income in US\$
Mambasa	210	78888.1	41.50	59.80	23.70
Mandima	210	56438.1	29.70	32.70	18.40
Aggregate	420	67663.1	35.6	48.5	21.1

2.2.3 Income per person per day

It can be observed in the table 6 below that the majority of inhabitants encountered (66%) live far below the poverty line of US\$ 1 per person per day. Two out of three people are in this situation, Mandima health zone having a lower income than Mandima.

Table 6. Income per person per day

Income range in CDF	Income range in \$	n Mambasa	%	n Mandima	%	n aggregate	% of total
0 – 950	0 – 0.50	64	30%	86	41%	150	36%
951 -1900	0.51-1.0	66	31%	58	28%	124	30%
1901 and over	1.01 et plus	80	38%	66	31%	146	35%
Total		210	100%	210	100%	420	100%

2.2.4 Household debt

The study shows that out of the 420 households surveyed, only 90, (or 21.4%) declare to be debt free. The average debt is 56,676.9 CDF or US\$ 29.8 (SD=64.7). Considering the median debt, the debt of the typical household is estimated at 19,500 CDF, or US\$ 10.3. The income of the typical household being US\$ 21.1, the debt represents a proportion 48.8% of income. Households in Mandima are more in difficulty than those in Mambasa.

Table 7. Household level of debt in Mambasa and Mandima HZ

Health Zone	N	Average debt in CDF	Average debt in US\$	Standard deviation	Median debt in US\$
Mambasa	210	52709.8	27.7	68.5	6.8
Mandima	210	60644.1	31.9	60.7	11.3
Aggregate	420	56676.9	29.8	64.7	10.3

2.3 HOUSEHOLD FOOD SECURITY MEASURES

2.3.1 Meals shared by household members

a. Meals taken by children aged 6 to 59 months

We find that 28% of children aged between 6 to 59 months have at most one meal the day before the survey. Among them, there are 8% who usually take at most one meal per day.

Table 8. Distribution of households according to the number of Meals taken by children aged 6-59 months

Meals taken yesterday by household members aged 6 to 59 months			Number of meals USUALLY taken by household members aged 6-59 months		
Number	Frequency	%	Number	Frequency	%
0	37	11%	0	2	1%
1	60	17%	1	23	7%
2	181	53%	2	190	55%
3	60	17%	3	119	35%
4 and over	5	1%	4 and over	9	3%
Total	343	100%	Total	343	100%

b. Meals taken by household members aged 5 years and above

As illustrated in table 9, it can be seen that 35% of households provided zero or one meal for their members aged 5 years and over, the day before the survey. The majority of respondents, 58%, reported usually eating two meals a day.

Table 9. Distribution of households according to the number of Meals taken by members aged 5 years and over

Meals taken yesterday by household members aged 5 years and over			Number of meals USUALLY taken by household members aged 5 years and over		
Number	Frequency	%	Number	Frequency	%
0	18	4%	0	4	1%
1	130	31%	1	43	10%
2	213	51%	2	242	58%
3	56	13%	3	127	30%
4 and over	3	1%	4 and over	4	1%
Total	420	100%	Total	420	100%

2.3.2 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)²⁸. 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. Eight food groups are considered.

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

Table 10. Interpretation of FCS

FCS	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 : Inadequate quantity and quality
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: Inadequate quality
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: Adequate food

2.3.2.1 FCS by Health Zone

The overall average household FCS is Borderline, at 32.2 (SD = 14.3)²⁹. A typical household has an FCS of 29.0³⁰. In all of the households visited, it can be seen that 18% are in a situation of severe vulnerability with a "poor" FCS (or less than 21). The quality and quantity of their food is inadequate. We also find that more than half of them (51%) have borderline FCS and 3 out of 10 households (31%) have acceptable FCS. These

²⁸ USAID Food for Peace, Indicators for Emergency Program Performance Indicator Reference Sheets, February 2019.

²⁹ We note that there is a strong dispersion between households (coefficient of variation = 44% >25%). We prefer to use the median score.

³⁰ This is the median FCS.

results are comparable to the findings of Marivoet et al. (2019)³¹ where the national average consumption score was evaluated at 35.3. The same study found that 14% of households were in a situation of severe vulnerability compared to 18% identified in Mambasa in this study.

The average household FCS is not different between the two Health zones and according to the sex of the Head of household. However, we note that the average FCS is lower³² in internally displaced households (27.7) compared to returnees (28.3) and residents (33.8) as we can read in Appendix 3.1.

In addition, Adult Female No Adult Male (FNM) households have the lowest average FCS (28.0) compared to Adult Male & Adult Female (F&M) households (31.1) and Adult Male No Adult Female (MNF) households (32.3)³³ (details in appendix 3.1)

The highest poor FCS are recorded in the health areas of Makele (43%), Mayuwano (43%), Banana (30%), Salama (30%) and Some (23%). For more details, see the Table in appendix 3.3.

The figure 6 shows that the distribution of households according to the classes of the food consumption score is not significantly different from one Health Zone (HZ) to another³⁴. The proportions of households with a “poor” FCS are respectively 20% in Mandima HZ and 16% in Mambasa HZ. The two health zones have relatively the same proportion of households in a situation of severe vulnerability. In each of two health zones, the proportion of households with “poor” and “borderline” FCS is estimated at 69%.

³¹ Marivoet, W., Becquey, E. & Van Campenhout, B. How well does the Food Consumption Score capture diet quantity, quality and adequacy across regions in the Democratic Republic of the Congo (DRC)? *Food Sec.* 11, 1029–1049 (2019). <https://doi.org/10.1007/s12571-019-00958-3>

³² The difference in FCS average is significantly different depending on the status of the household ($p=0,001$).

³³ The difference in FCS average is significant between households according to their status ($p=0,033$)

³⁴ $p=0,41$

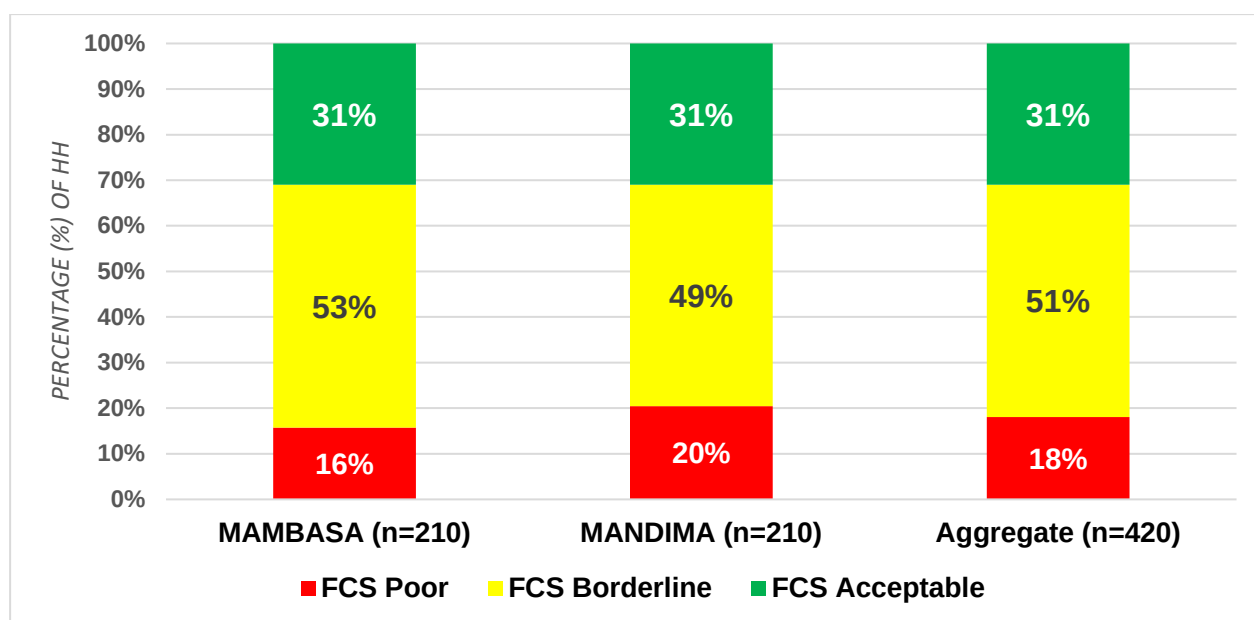


Figure 6. Distribution of FCS by Health Zone

2.3.2.2 FCS by household type

In terms of vulnerability, there is no significant difference between Adult Female No Adult Male households³⁵. However, the proportions of “poor” FCS are 20% in Adult Female No Adult Male households, 18% in Adult Female & Adult Male households and 13% for Adult Male No Adult Female³⁶.

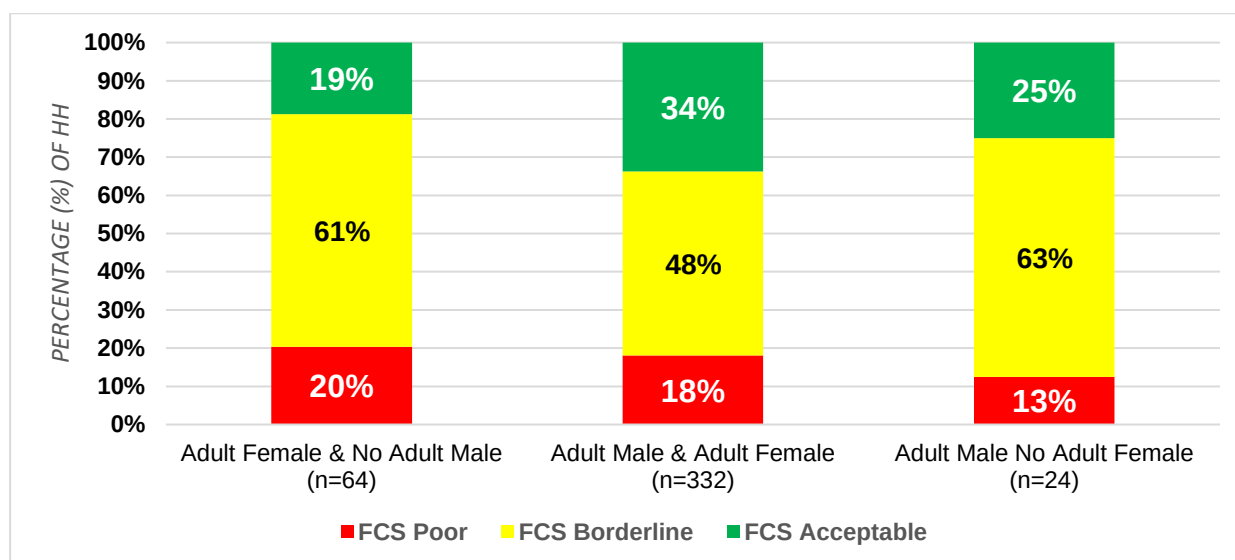


Figure 7. Distribution of Food Consumption score by household type

³⁵ The statistical test shows that the difference is not significant ($p=0.128$)

³⁶ We have presented the distribution for Adult Male & No Adult Female households for information, given their small size. In our sample, we did not find Child Only No Adult (CAN) households.

2.3.2.3 FCS according to household status

Households of IDPs and returnees are relatively more in situations of severe vulnerability (20% “poor” FCS) than residents (17% “poor” FCS)³⁷. The proportion of households with “borderline” FCS are also higher in the households of IDPs and returnees as shown in the following graph.

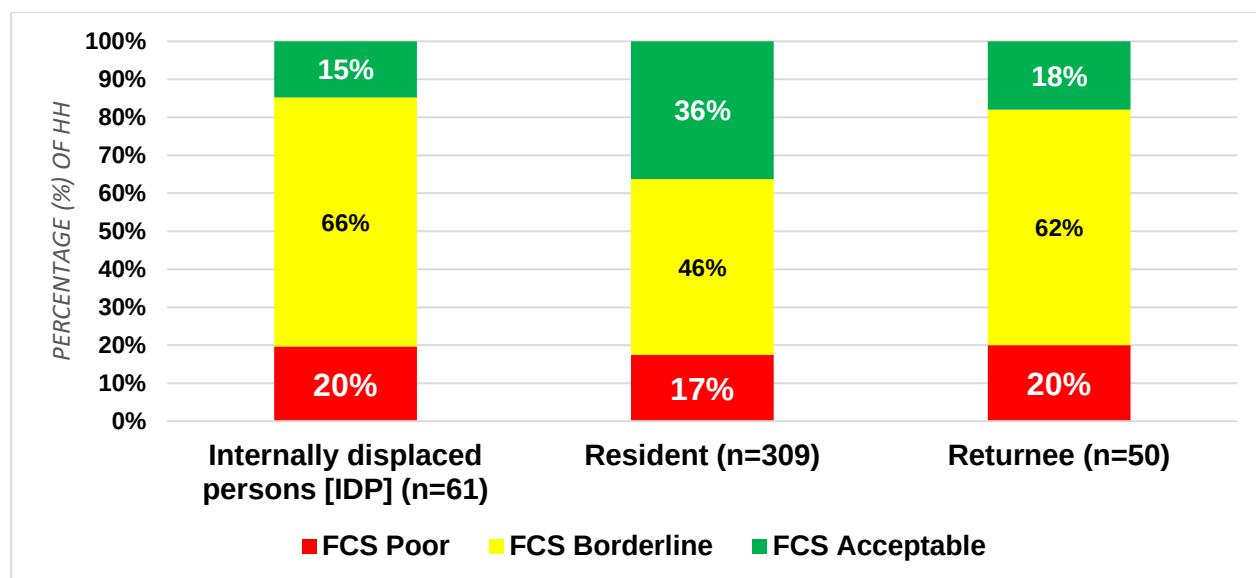


Figure 8. Distribution of FCS according to household status

2.3.2.4 FCS according to whether or not the household received food aid in the past two months

Households that received food aid in the last two months before the survey date have FCSs not significantly different from those of households that did not receive food aid³⁸. The most likely assumption would be that the aid received is insignificant.

³⁷ The statistical test shows that the difference in distribution between internally displaced households and returnees is not significant ($p = 0.102$).

³⁸ The statistical test shows that the difference in the distribution of households with or without food aid is not significant between the FCS classes ($p = 0.971$).

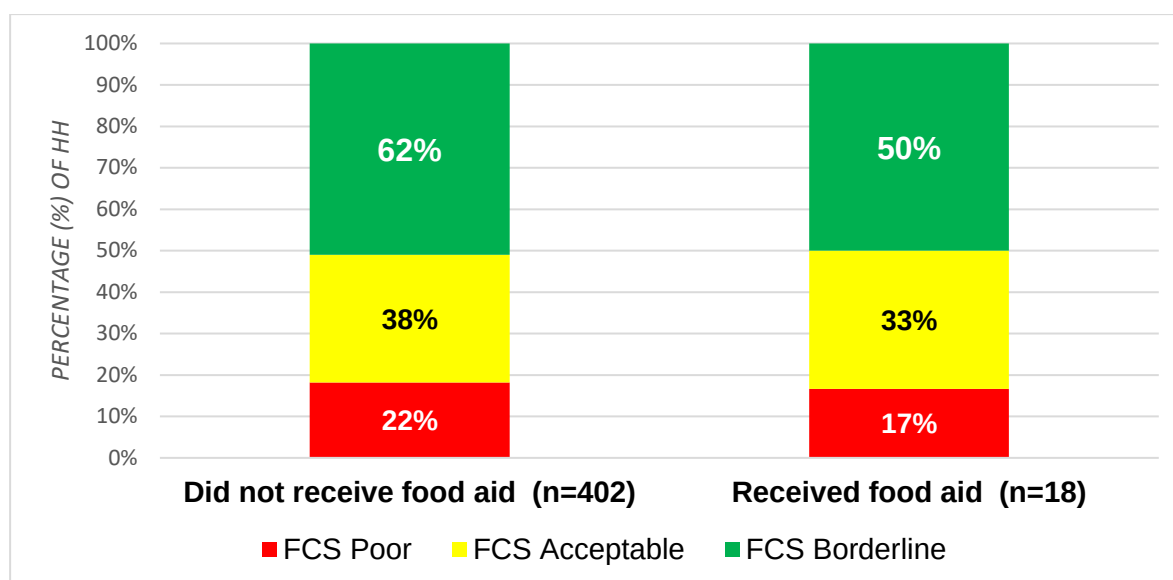


Figure 9. Distribution of FCS according to whether or not the household received food aid

2.3.3 Reduced Coping Strategy Index (rCSI)

2.3.3.1 Elements for computation of the rCSI

The 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 totals³⁹.

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) and high coping (rCSI ≥10).

³⁹ Malick Ndiaye ; Indicateurs de la sécurité alimentaire, PAM, Dakar, June 2014.

2.3.3.2 Comments on findings

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

- The results in Table 11 and Appendix 3.2 show that the rCSI for all the households visited is 19.1. The mean of rCSI found is higher than that of 14.6 identified by Marivoet and al. (2019) at national level. This average rCSI does not differ significantly between the two Health Zones and according to the status of the household. Note that there is a significant difference in rCSI between the Health Areas, according to the sex of the Head of household and according to the type of household;

Table 11. Descriptive statistics of Reduced Coping Strategy Index

Unity	Adult Female & Adult Male (FNM)	Adult Female No Adult Male (FNM)	Adult Male No Adult Female (MNF)	Aggregate
rCSI Mean	18.1	24.5	19.3	19.1
Std. Dev.	13.7	12.9	13.3	13.7
CI at 95%	[16.6-19.5]	[21.2-27.7]	[14.3-25.1]	[17.8-20.5]
rCSI Median	16	23.5	19.5	17
n	332	64	24	420

- As can be seen in the figure 10, overall, 70% of households use high coping strategies. Taking into account the survival strategies adopted, households headed by women are more food insecure than those headed by men. In addition, Adult Female No Adult Male (FNM) households are more food insecure than Adult Female & Adult Male (FNM) households and Adult Male No Adult Female (MNF) households;
- The proportions of households that have more difficulty obtaining food and therefore resort to high coping strategies are the highest in the Health Areas of Mayuwano (97%), Some (97%), Salama (97%), Banana (90%), Bukulani (80%), Lukaya (70%) For more details, see the Table in Appendix 3.2.

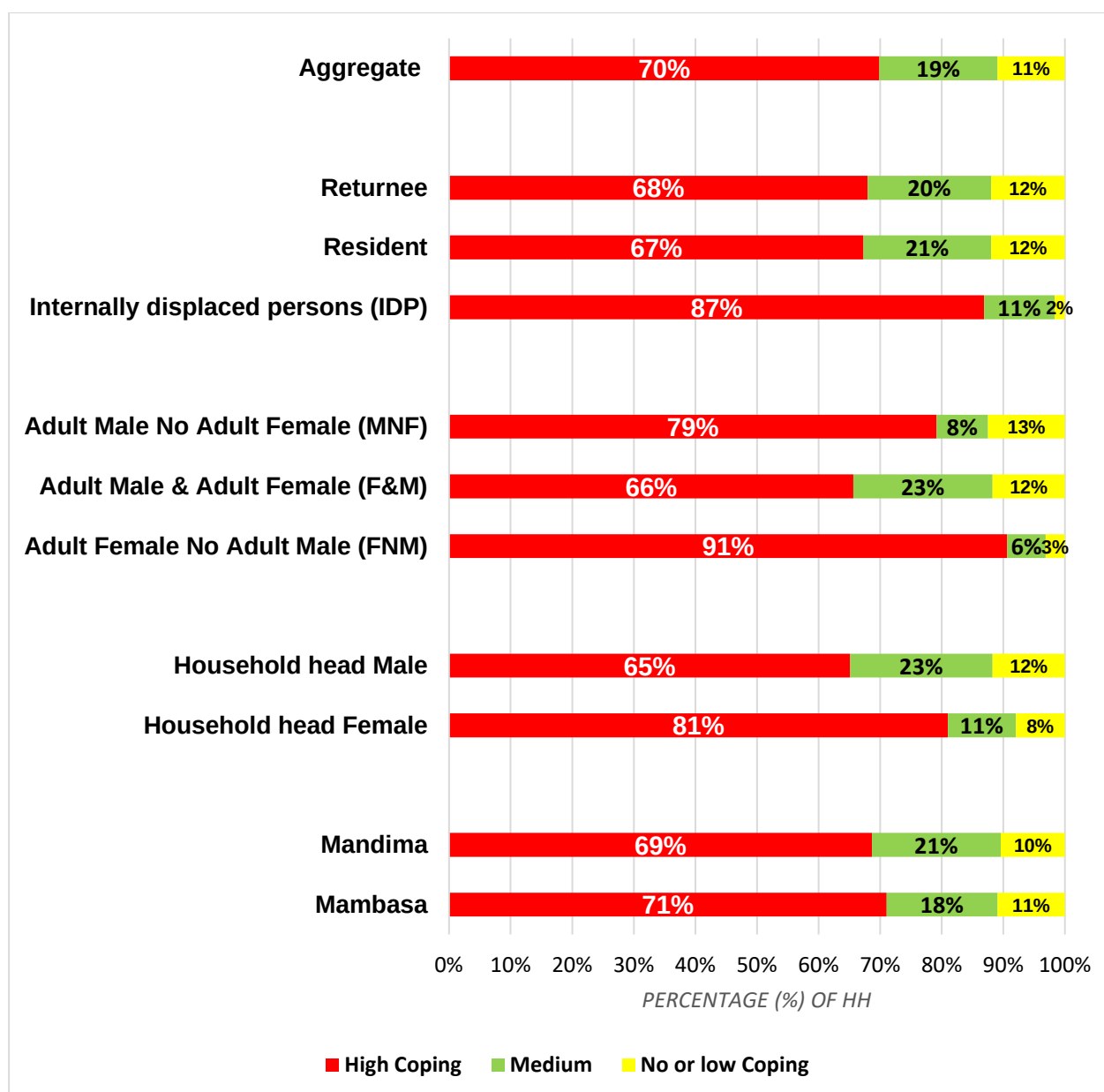


Figure 10. Coping Strategy Index by household category

2.3.3.3 Main coping strategies used

As can be seen in the figure 11, the survival strategies most used by households in case of difficulty obtaining food in the two Health Zones are: relay on less preferred and less expensive foods (92%), Limit portion size to meals (72%), reduce number of meals eaten in a day (71%), borrow food or rely on the help from a friend or relative (67%), Restrict consumption of adults in other for small children to eat (54%). This graph also presents the details by health zone and confirms that the strategies used by households are not significantly different between them. These results are very close to those obtained in the

study conducted in South Kivu by ACTED (2018) ⁴⁰, where the most used strategy (96%) is to rely on less preferred and less expensive foods.

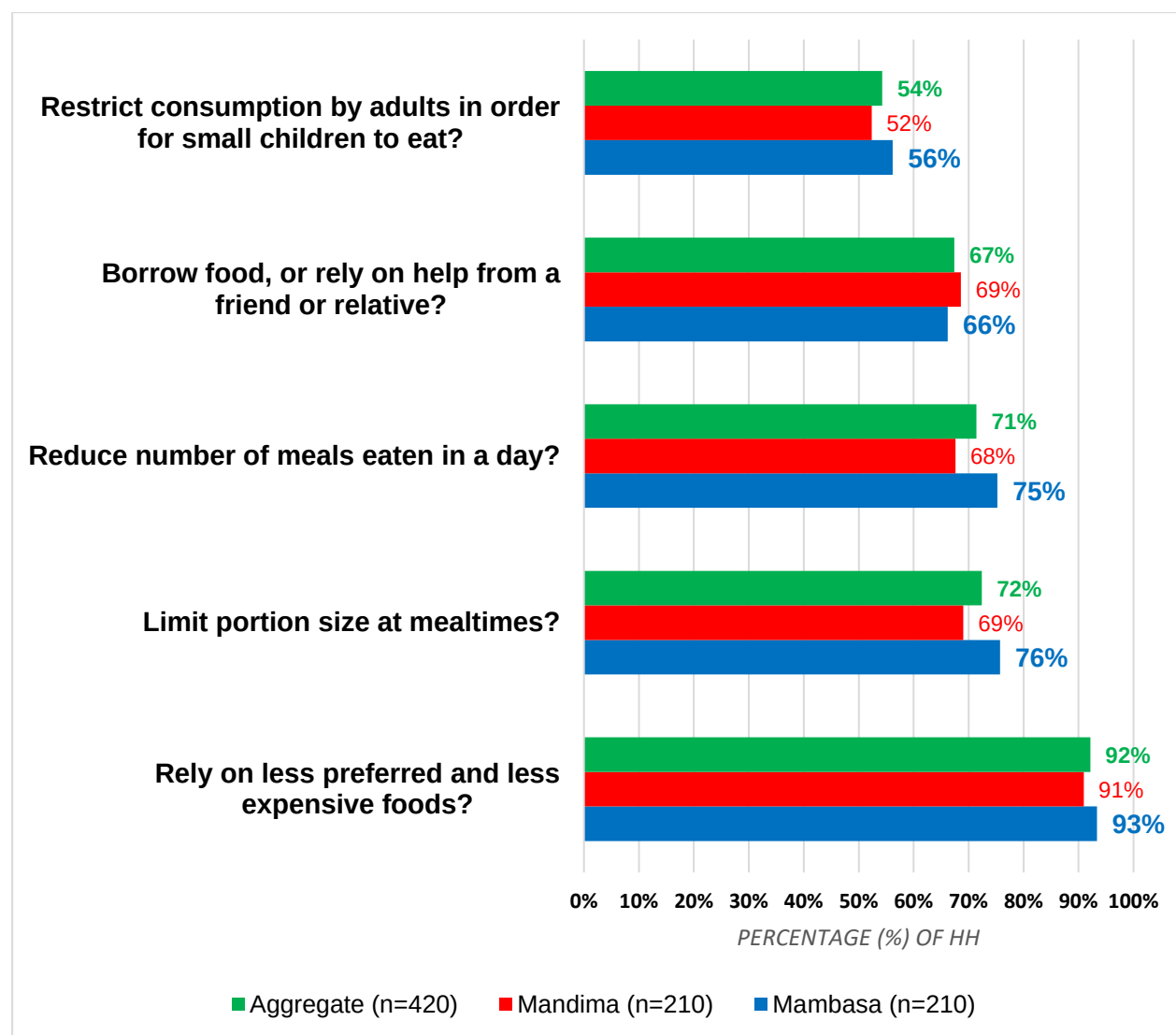


Figure 11. Main strategies used by household

2.3.4 Household Hunger Scale (HHS)

The HHS is an index of food deprivation in households. It focuses on the quantity of food, food access and does not measure the quality of the diet.

The following HHS cut-offs are used to categorize households into three hunger groups, none or light, moderate and severe:

⁴⁰ ACTED, Juin, 2018. Rapport d'évaluation des besoins en sécurité alimentaire et nutritionnelle axe lubishako1 – lubishako2, territoire de fizi, sud-kivu - https://reliefweb.int/sites/reliefweb.int/files/resources/acted_msa_axe_lubishako1-lubishako2.pdf

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

- The results in Table 12 show that in all the health zones concerned by this study, **73% of households are affected by severe or moderate hunger** and only 27% households are characterized by none or light hunger.
- Specifically, we note that in the Mambasa Health Zone, 71% of households manifest severe or moderate hunger and only 28% do not manifest hunger. For the Mandima Health Zone, more than 73% of households are characterized by severe or moderate hunger and only 27% do not manifest hunger⁴¹.
- The study also shows that health areas are disproportionally affected by severe hunger. These are Banana (50%), Some (47%), Lukaya (33%), Mayuwano (33%), Salama (30%) health areas.
- In addition, internally displaced and returnee households experience more food deprivation than resident households (severe and moderate hunger).
- Note, however, that the difference observed in the distribution of households according to the level of hunger is not significant when we consider the sex of the head of household.
- Adult Female No Adult Male Households experience food deprivation and a higher proportion of severe hunger (31%) than Adult Female & Adult Male households (23%) and Adult Male No Adult Female households (21%).

Table 12. Distribution of household according to the level of the HHS

Category	n	None or light hunger	Moderate hunger	Severe hunger	P-value
Health zone					
Mambasa	210	28%	51%	21%	0,5100
Mandima	210	27%	47%	26%	
Health areas					
Biakako Mayi	30	30%	50%	20%	< 0,0001
Biakato Mine	30	37%	47%	17%	
Katanga	30	43%	50%	7%	
Lukaya	30	23%	43%	33%	
Makeke	30	40%	33%	27%	
Mayuwano	30	10%	57%	33%	
Some	30	3%	50%	47%	
Banana	30	0%	50%	50%	

⁴¹ The distributions of households according to the level of severity of hunger do not differ significantly between the two Health Zones of the study ($p = 0.510$)

Category	n	None or light hunger	Moderate hunger	Severe hunger	P-value
Binase	30	43%	37%	20%	
Bukulani	30	7%	67%	27%	
Makoko2	30	47%	43%	10%	
Mambasa	30	40%	50%	10%	
Salama	30	17%	53%	30%	
Tobola	30	40%	57%	3%	
Household head Gender					
Female	139	20%	52%	28%	0,0590
Male	281	31%	48%	22%	
Household type					
Adult Female No Adult Male (FNM)	64	13%	56%	31%	0,0420
Adult Male & Adult Female (F&M)	332	30%	47%	23%	
Adult Male No Adult Female (MNF)	24	21%	58%	21%	
Status of the household in the current location					
Internally Displaced Persons (IDP)	61	11%	70%	18%	< 0,0001
Resident	309	32%	45%	23%	
Returnee	50	14%	50%	36%	
Aggregate	420	27%	49%	24%	

We note that 21% of households in the Mambasa HZ and 26% of households in the Mandima HZ are severely hungry. It is therefore around 58,765 inhabitants in the 2 Health Zones surveyed.

2.3.5 Household Dietary Diversity Score (HDDS)

2.3.5.1 Meaning and measure

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

Dietary diversity scores are calculated by counting the number of food groups consumed in the household during a 7-day reference period. For this study, we have considered 8 food groups, namely: (1). Main staples (cereals and tubers); (2) Vegetables; (3) Fruits; (4) Proteins (meats, fish); (5) Legumes; (6) Dairy products; (7) Oil and fats; (8) Sugar.

The sum obtained as DDS is classified into 3 groups: 1. Weak DDS: <4; 2. Medium DDS: 5-6; 3. Acceptable DSS: >6.

2.3.5.2 Discussion of the results of the HDDS

Overall, the proportion of households with a low or average Dietary Diversity Score represents 82%. Household diets are not generally diversified. Households mainly consume basic foods (cereals and tubers), vegetables and oil. The mean dietary diversity score is 5.09 (95% CI: 4.95-5.22).

As can be seen in the table 13, the low DDS is more observed in Adult Female No Adult Male households (52%), in internally displaced households (54%), returned households (48%) and logically those with poor FCS (83%). The DDS is not significantly different between the two health zones surveyed.

Table 13. HDDS distribution and comparison

Categories	n	Weak DDS	Medium DDS	Acceptable DDS	P-value
Health zone					
Mambasa	210	34%	46%	20%	0,1750
Mandima	210	41%	45%	14%	
Household head Gender					
Female	139	45%	39%	16%	0,0570
Male	281	33%	49%	18%	
Household type					
Adult Female No Adult Male (FNM)	64	52%	42%	6%	< 0,0001
Adult Male & Adult Female (F&M)	332	37%	44%	19%	
Adult Male No Adult Female (MNF)	24	4%	79%	17%	
Status of the household in the current location					
Internally Displaced Persons (IDP)	61	54%	41%	5%	< 0,0001
Resident	309	32%	46%	22%	
Returnee	50	48%	50%	2%	
FCS					
FCS Acceptable	130	2%	55%	43%	< 0,0001
FCS borderline	214	43%	50%	7%	
FCS Poor	76	83%	17%	0%	
Aggregate	420	37%	45%	17%	

At the Health Zone level, the diet is almost identical and dominated by the consumption of vegetables (6 days per week), staple foods: cereals and tubers (5 days per week) and oil (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 deserves attention (2 days per week on average). The consumption of animal proteins and sugar is almost zero. Consumption of different food groups is not significantly different between households depending on whether or not it is headed by a woman, or between IDPs, returnees and Residents.

Adult Male No Adult Female Households consume less vegetables and green leaves than the other two types of household considered according to the gender of its members (See appendix 3.6. for details on the average number of days of consumption of each type of food by category).

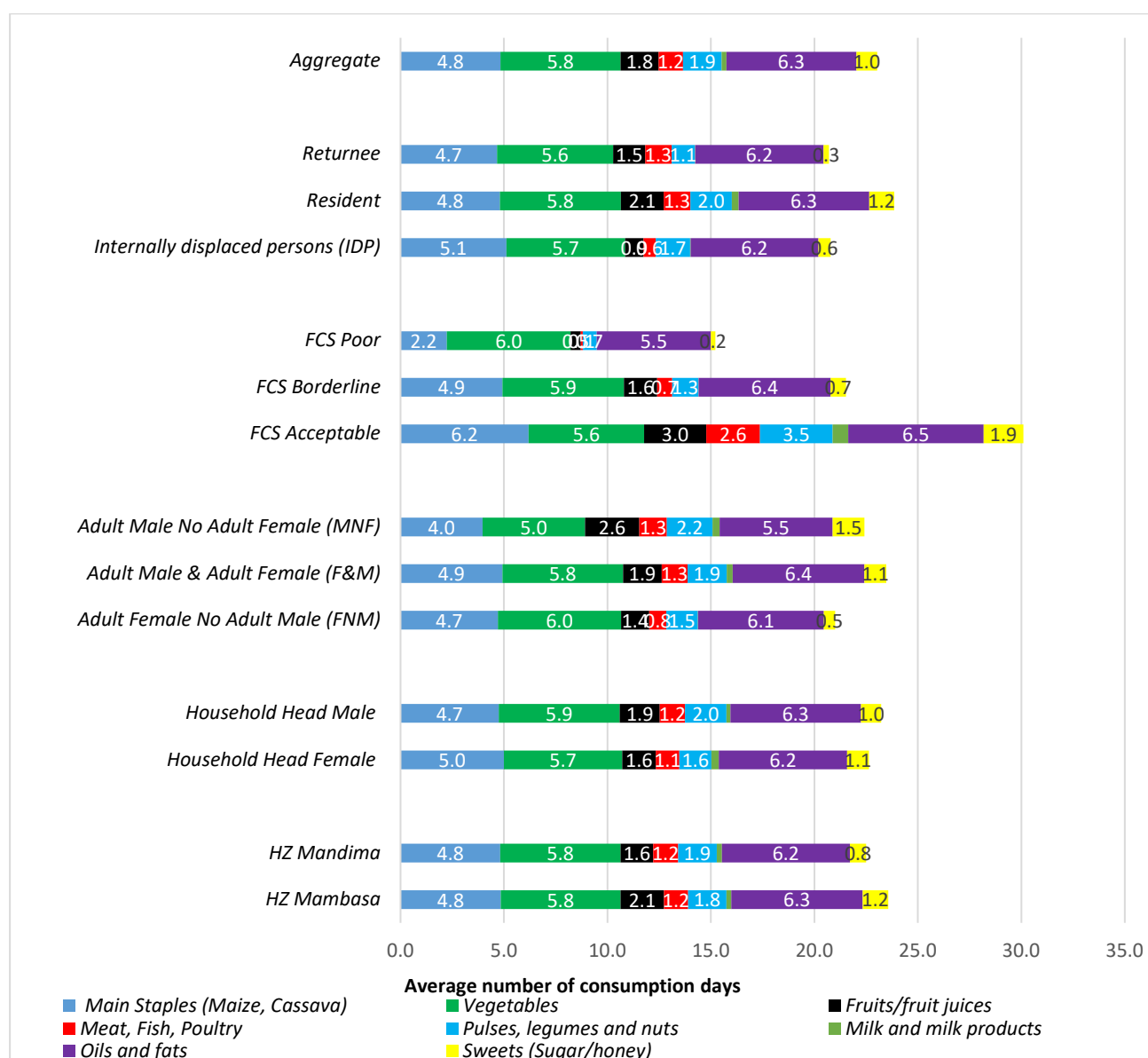


Figure 12. Cumulative average number of consumption of 8 different food groups according to different categories of households

Source of food groups consumed in households

- The main sources of basic food products (cereals and tubers) consumed in the household are household produce and cash purchases at the market. The same is true of vegetables and fruits.
- For all other food groups (meats, fish, poultry, legumes, milk and dairy products, oil, fat, sugar and other sweets), the main source is cash purchase at the market.
- One of the main sources of fruit is picking.

Table 14. Source of product groups consumed in households

Source of food	Cereals and tubers		Vegetables		Fruits		Meat, Fish, Poultry		Legumes		Milk and milk products		Oils and fats		Sugar, honey and sweets	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Household produced	193	48%	251	60%	82	38%	14	6%	95	33%	3	8%	114	28%	18	13%
Purchased in cash	144	35%	107	26%	40	19%	170	77%	143	49%	30	83%	228	55%	91	67%
Bought on credit	17	4%	7	2%	2	1%	18	8%	17	6%	1	3%	15	4%	9	7%
Receipt as payment / Work for food	10	2%	7	2%	1	0%	2	1%	4	1%	0	0%	11	3%	0	0%
Hunting / gathering / fishing	13	3%	26	6%	82	38%	11	5%	5	2%	0	0%	8	2%	6	4%
Food aid (State, NGO)	0	0%	0	0%	0	0%	0	0%	1	0%	0	0%	0	0%	0	0%
Loan / gifts, Donations (friends / relatives)	24	6%	19	5%	7	3%	5	2%	20	7%	1	3%	29	7%	10	7%
Begging	2	0%	2	0%	0	0%	0	0%	3	1%	1	3%	2	0%	1	1%
Exchange / Barter	3	1%	0	0%	0	0%	1	0%	4	1%	0	0%	4	1%	0	0%
Total	406	100%	419	100%	215	100%	221	100%	292	100%	36	100%	411	100%	135	100%

Crossing food security indicators

As we can observe in table 15, 16 and 17, there is a logical gradation of the different food security indicators. We crossed the FCS levels with the different levels of the three food security indicators, namely the HHS, the rCSI and the DDS to assess the consistency of the results obtained.

• Household Hunger Scale (HHS) by FCS

The study shows that households with poor FCS are more affected by severe hunger (57%). Households that have an acceptable FCS logically have less food deprivation (60%). The proportion of households characterized by moderate hunger is higher (62%) for those with borderline FCS. In their previous study, Jerving et al. (2019)⁴² already showed that the large part of the population (67%) of Ituri already had a high level of food insecurity long time before the arrival of EVD. The same proportion was 26% for the population of North Kivu located in the areas affected by EVD.

Table 15. Crossing FCS and HHS

FCS	N	HHS: Severe hunger	HHS: Moderate hunger	HHS: None or light hunger
FCS Acceptable	130	5%	35%	60%
FCS Borderline	214	23%	62%	14%
FCS Poor	76	57%	37%	7%
Aggregate	420	24%	49%	27%

• Reduced Coping Strategy Index (rCSI) by FCS

As can be seen in table 16, households with a poor FCS are forced to resort to the most extreme coping strategies illustrated by a high rCSI. In fact, we find that 96% of households with poor FCS use high adaptation strategies against 39% of those with an acceptable FCS.

Table 16. Crossing FCS and rCSI

FCS	N	CSI: High Coping	CSI: Medium	CSI: No or low Coping
FCS Acceptable	130	39%	35%	25%
FCS Borderline	214	80%	15%	5%
FCS Poor	76	96%	3%	1%
Aggregate	420	70%	19%	10%

⁴² Jerving, Sara. "Q&A: How the Ebola Declaration Could Threaten Food Security in DRC." Devex. July 18, 2019. Accessed 26 July

- **Household Dietary Diversity Score (HDDS)**

Table 17 shows that a higher proportion (83%) of households with a poor FCS have low SDS (composed mainly of cereals, tubers and green vegetables) compared to those with an acceptable FCS. The majority (43%) of the latter (borderline DDS) have a much more varied diet consisting of 8 different types of food.

Table 17. Crossing FCS and HDDS

FCS	N	DDS: Weak	DDS : Medium	DDS: Acceptable
FCS Acceptable	130	2%	55%	43%
FCS Borderline	214	43%	50%	7%
FCS Poor	76	83%	17%	0%
Aggregate	420	37%	45%	17%

Comparison of FCS from the base study conducted in Ituri to that of North-Kivu

Having used the same methodology, we compare in the figure 13 the FCS in the different health zones of the FABELU project in North Kivu with those concerned by this study. We can see that the two HZ of Mambasa and Mandima have accumulations of poor and limited FCS of 69%. The combination of poor and borderline FCS greater than 60% is observed in the Kalunguta (75%), Kayna (65%) and Alimbongo (63%) HZ.

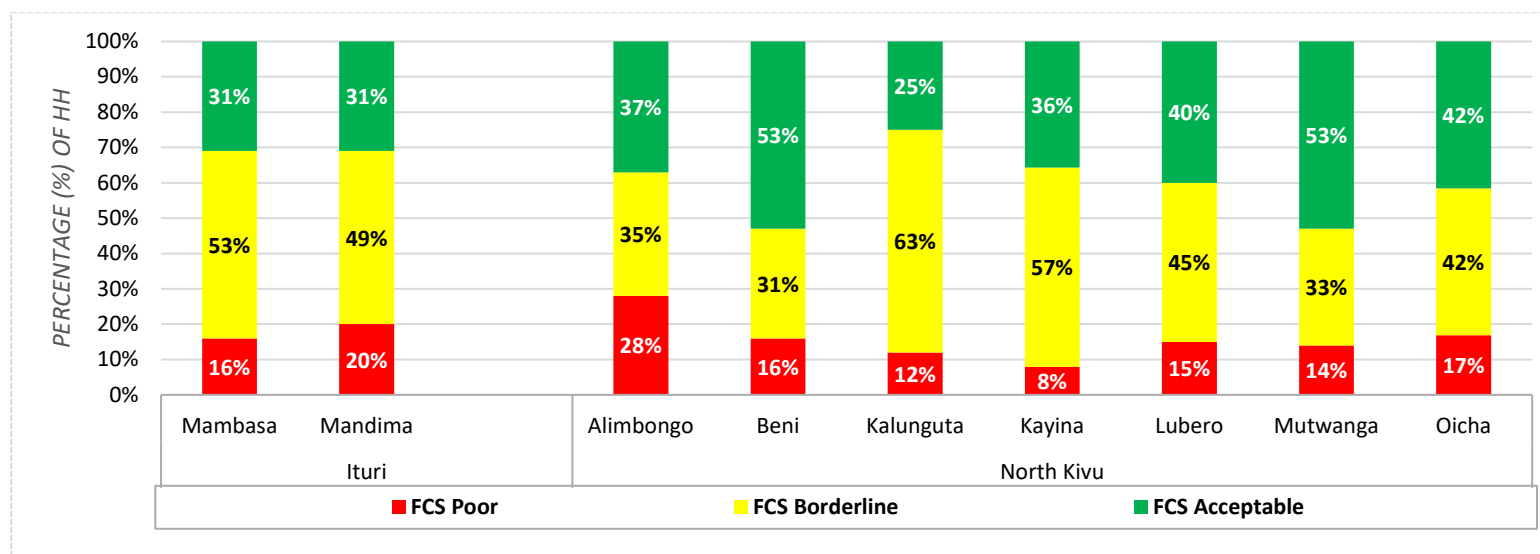


Figure 13. Comparison of FCSs from Health Zones of Project Ituri and North Kivu

Determination of summary indicators for the FABELU project (See Appendix 3.5)

- **Food Consumption Score (FCS):** For all the Health Zones visited in the study of the FABELU project (in North Kivu and Ituri), households with a Poor FCS represent 16%, those who have a Borderline FCS represent 46% and finally those who have an Acceptable FCS are 38%.
- **Reduced Coping Strategy Index (rCSI):**, we observe 70% of households with high coping, 21% with medium and 9% who have low coping.
- **Household Hunger:** The summary of household hunger indicators shows that 19% are severely hungry, 51% are moderately hungry and 30% have no or low hunger.

2.4 ACCESS TO PUBLIC INFRASTRUCTURE AND MARKET STUDY

2.4.1 Evolution of the price of basic necessities in Mambasa

The data presented in **appendix 3.4** are means of monthly prices collected in Mambasa markets. Prices are collected between 11 a.m. and 2 p.m. For each product, 5 samples are weighed.

The Price Index presented in the figure 14 is calculated on the 14 products. We observe an increase in prices in the month of August and November 2019 for several products, followed by a stagnation of January to April.

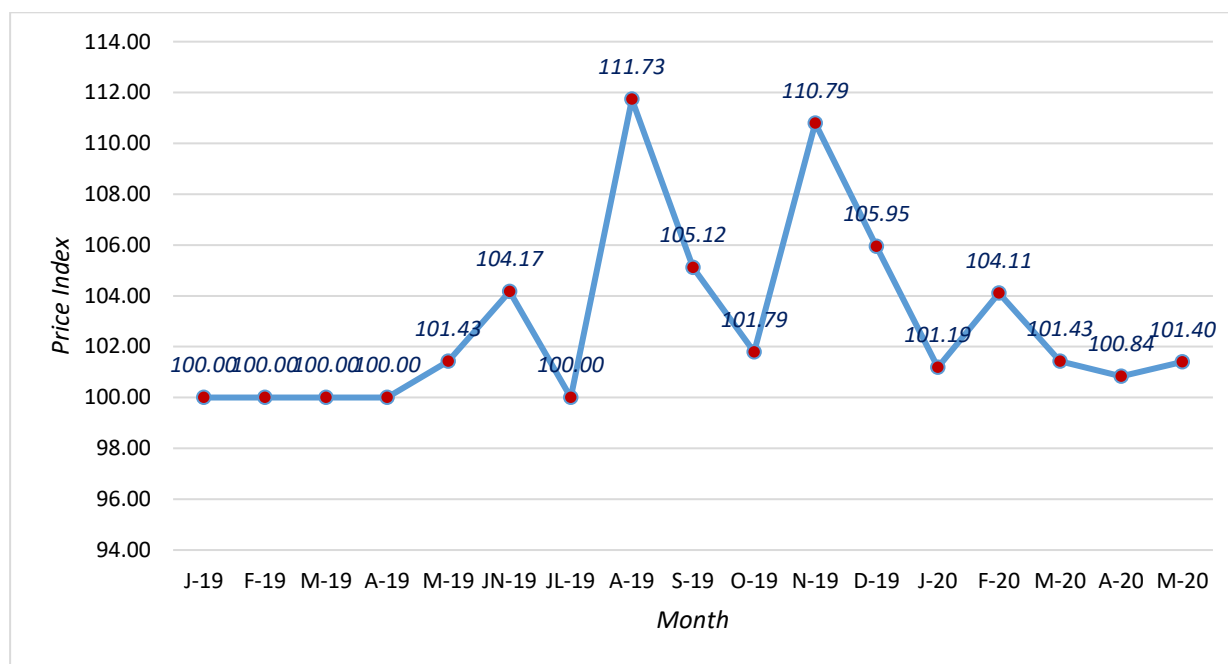


Figure 14. Evolution of price index of basics products (base 100 in January 2019)

Table 18. Price index for 14 essential products in Mambasa territory from January 2019 to May 2020 (Price in Congolese Franc)

Items	J-19	F-19	M-19	A-19	M-19	JN-19	JL-19	A-19	S-19	O-19	N-19	D-19	J-20	F-20	M-20	A-20	M-20
1. Cassava flour (kg)	100	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	125,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0
2. Peeled dry corn (kg)	100	100,0	100,0	100,0	100,0	100,0	100,0	100,0	125,0	100,0	100,0	100,0	100,0	100,0	120,0	100,0	100,0
3. Cassava leaves (Sombe) (bunch)	100	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	200,0	100,0	100,0	100,0	100,0	100,0	100,0
4. Sweet banana (diet)	100	100,0	100,0	100,0	100,0	100,0	100,0	150,0	100,0	100,0	100,0	100,0	116,7	100,0	100,0	100,0	100,0
5. Natural Fruit Juice (bottle of 33cl)	100	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	140,0	100,0	100,0	100,0	100,0	100,0	100,0
6. Boneless beef meat (kg)	100	100,0	100,0	100,0	100,0	100,0	100,0	114,3	100,0	100,0	100,0	100,0	100,0	112,5	100,0	100,0	100,0
7. Fresh Tilapia fish (kg)	100	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	111,1	100,0	100,0	100,0	100,0	100,0	100,0
8. Local live chicken (piece)	100	100,0	100,0	100,0	100,0	100,0	100,0	100,0	113,3	100,0	100,0	100,0	100,0	100,0	100,0	111,8	100,0
9. Multicolored beans (kg)	100	100,0	100,0	100,0	100,0	125,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	120,0	100,0	100,0	100,0
10. Fresh tomatoes (kg)	100	100,0	100,0	100,0	120,0	100,0	100,0	100,0	100,0	100,0	100,0	133,3	100,0	100,0	100,0	100,0	100,0
11. Coconut (piece)	100	100,0	100,0	100,0	100,0	100,0	100,0	200,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0
12. Fresh milk (liter)	100	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	150,0	100,0	100,0	100,0	100,0	100,0
13. Palm oils (bottle of 72cl)	100	100,0	100,0	100,0	100,0	133,3	100,0	100,0	100,0	100,0	100,0	100,0	100,0	125,0	100,0	100,0	100,0
14. Sugar (kg)	100	100,0	100,0	100,0	100,0	100,0	100,0	100,0	133,3	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0
Mean Index	100,0	100,0	100,0	100,0	101,4	104,2	100,0	111,7	105,1	101,8	110,8	106,0	101,2	104,1	101,4	100,8	100,0

Source: Calculated from the table in Appendix 3.

2.4.2 Period of the year when households do not have enough food

The results grouped in Table 19 show that in all of the two Health Zones concerned by this study, a significant proportion of households declared that they did not have enough food in the month of February to April. The situation is much more difficult for households in March and April

Table 19. Proportion of households by month during which households do not have enough food to support families

Health areas	n	JN-19	JL-19	A-19	S-19	O-19	N-19	D-19	J-20	F-20	M-20	A-20	M-20
Biakako Mayi	23	13%	9%	13%	17%	26%	26%	26%	30%	52%	61%	52%	22%
Biakato Mine	21	10%	10%	14%	10%	24%	24%	38%	33%	48%	76%	62%	29%
Katanga	20	0%	5%	5%	15%	20%	40%	40%	30%	45%	60%	35%	15%
Lukaya	23	22%	26%	22%	26%	26%	39%	35%	30%	83%	74%	65%	57%
Makeke	21	5%	10%	10%	19%	24%	24%	29%	43%	52%	48%	67%	57%
Mayuwano	27	44%	37%	37%	33%	44%	52%	56%	44%	59%	63%	70%	67%
Some	26	50%	50%	54%	54%	46%	54%	54%	62%	58%	65%	77%	69%
HZ Mandima	161	22%	22%	24%	26%	31%	38%	40%	40%	57%	64%	62%	47%
Banana	27	41%	37%	52%	44%	56%	63%	59%	48%	48%	41%	41%	41%
Binase	18	6%	6%	11%	22%	11%	17%	33%	33%	50%	39%	50%	50%
Bukulani	25	24%	28%	28%	24%	20%	20%	36%	48%	64%	60%	72%	48%
Makoko2	22	14%	14%	27%	23%	18%	18%	23%	23%	18%	45%	55%	55%
Mambasa	21	5%	0%	10%	10%	5%	10%	10%	33%	48%	48%	48%	10%
Salama	26	23%	46%	27%	54%	38%	46%	50%	58%	46%	38%	31%	15%
Tobola	14	14%	7%	14%	29%	43%	50%	36%	29%	21%	29%	29%	0%
HZ Mambasa	153	20%	22%	26%	31%	28%	33%	37%	41%	44%	44%	47%	33%
Aggregate	314	21%	22%	25%	28%	30%	35%	39%	40%	51%	54%	55%	40%

2.4.3 Method of obtaining food

Looking at Figure 15, it is clear that the majority of the population obtains its provisions from the market (83%) and 68% rely on the production of fields and gardens. Only 8% obtain food by other methods (donation from friends or family member, food as remuneration for work).

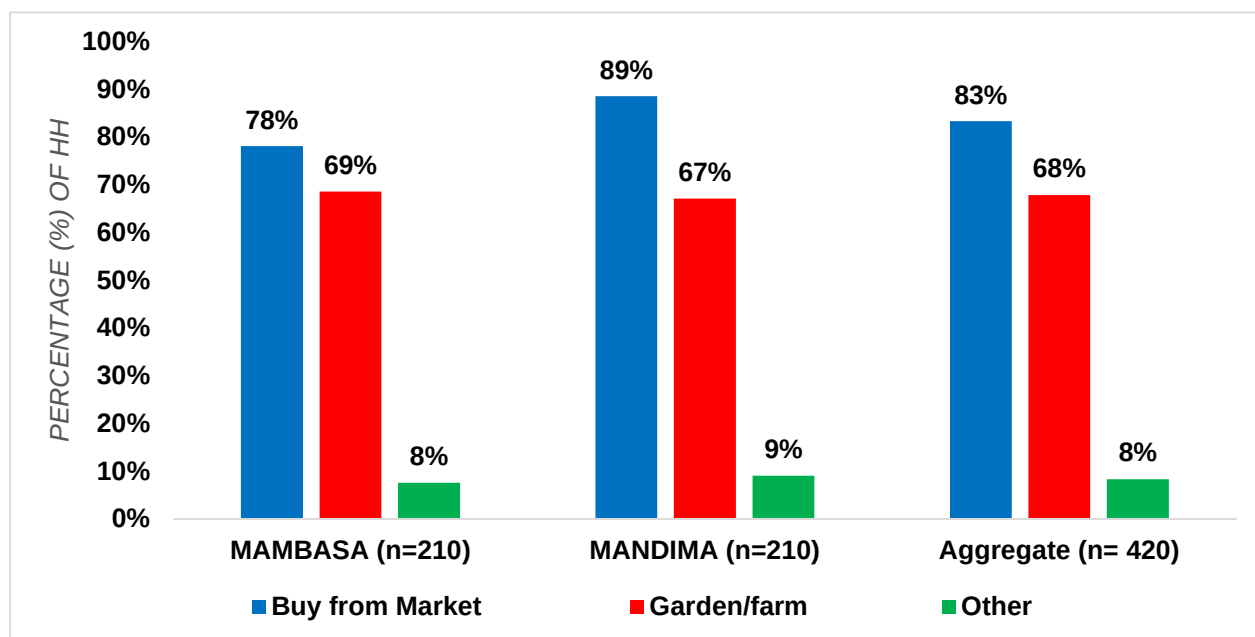


Figure 15. *Methods of obtaining food used by households*

2.4.4 Frequency of market attendance

Majority of households go to the market weekly (51%), monthly (29%) and daily (20%). This disparity in terms of market attendance is largely due to the distance to reach the market, the cost of transport and the condition of the road network.

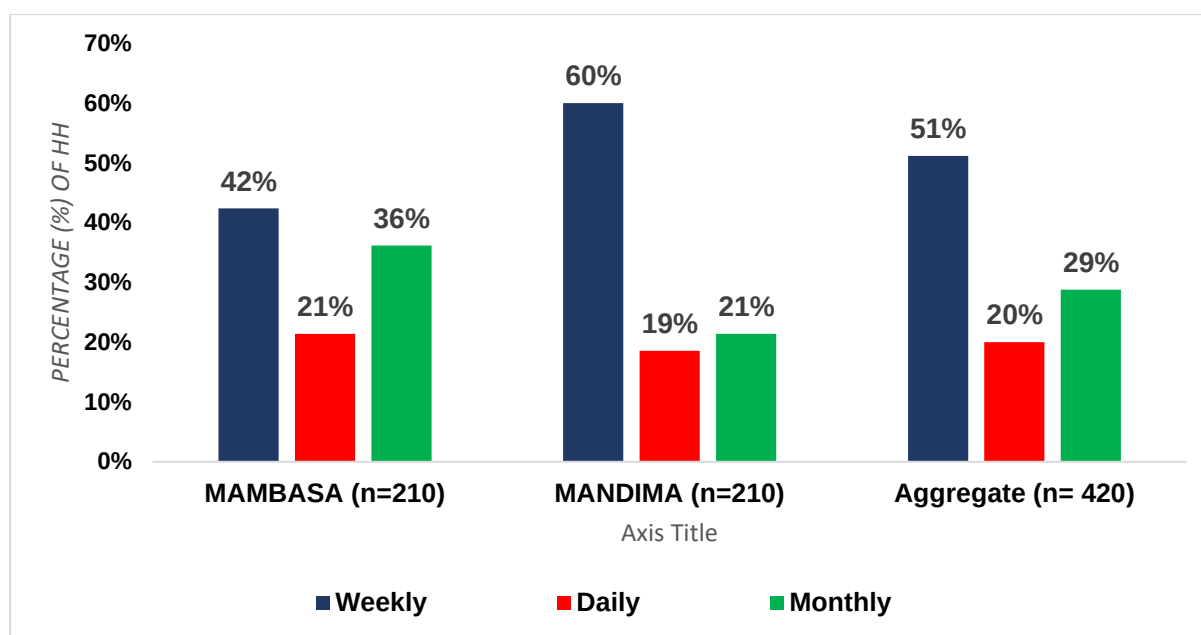


Figure 16. Frequency of market attendance

2.4.5 Means used for transportation

Table 20 shows that the majority (86%) walk to the market. Only 12% use private transportation (bicycle, motorcycle, car, etc.) and 10% use public transportation. The proportion of people walking is high in the Mandima area (98%) compared to 75% in Mambasa.

Table 20. Means of transport used to get to the market

Items	Mambasa (n=210)		Mandima (n=210)		Aggregate (420)	
	Frequency	%	Frequency	%	Frequency	%
Walking	157	75%	206	98%	363	86%
Bike, motorcycle, car (private transport)	40	19%	11	5%	51	12%
Bike, motorcycle, car (public or public transport)	41	20%	2	1%	43	10%

2.4.6 Public transportation cost

The table 21 shows that the average cost of public transport to get to the market is US\$ 3.78 in the Mambasa health zone, and US\$ 1.71 in the Mandima health zone. A typical person pays US\$ 3.16 in the health zone of Mambasa and US\$ 1.71 in that of Mandima.

Table 21 Transportation cost to go to market

Health Zone	Mean cost in \$	SD	Median cost in \$	Min in \$	Max in \$
Mambasa	3,78	2,16	3,16	0,26	7,89
Mandima	1,71	1,3	1,71	0,79	2,63
Aggregate	3,68	2,16	3,16	0,26	7,89

2.4.7 Assessment of the market access distance

From figure 17, 50% of study participants believe that the distance to reach the nearest market is long or very long. Only 25% consider it average and 25% consider this distance short or very short.

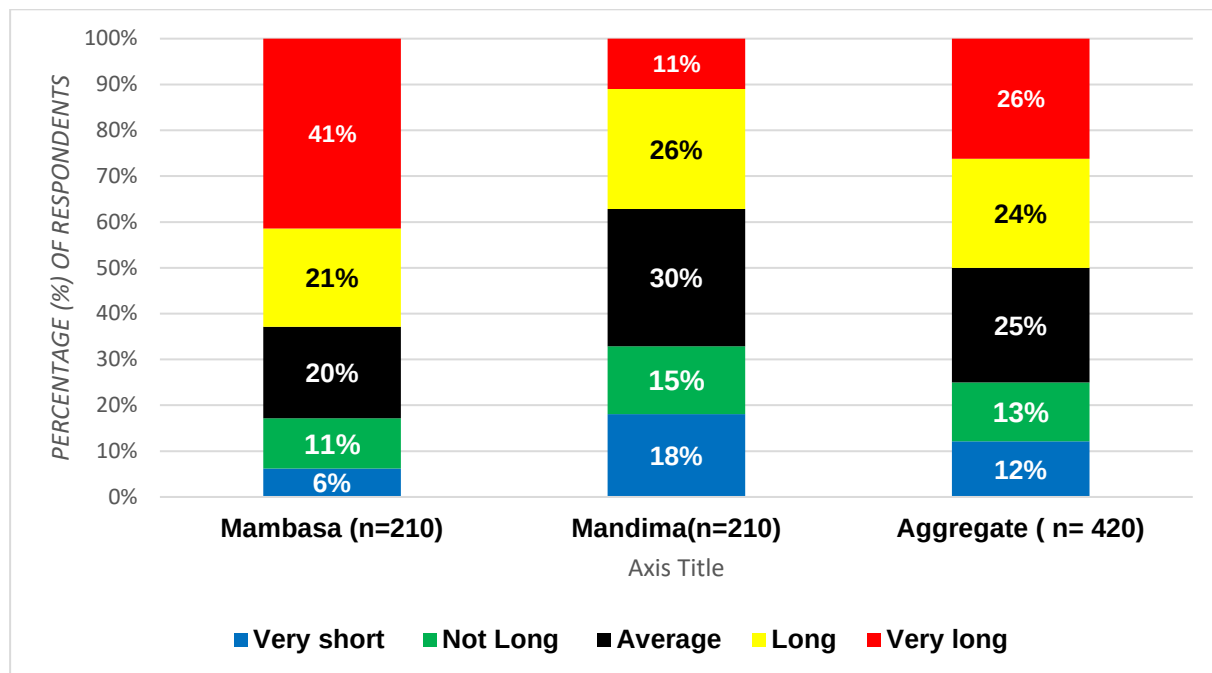


Figure 17. Market access distance appreciation

2.4.8 Market access barriers

Access to market in Mambasa and Mandima territories is difficult. 58% of respondents say they have difficulty reaching the market. These difficulties are more accentuated in Mambasa HZ (66%) compared to that of Mandima HZ (50%).

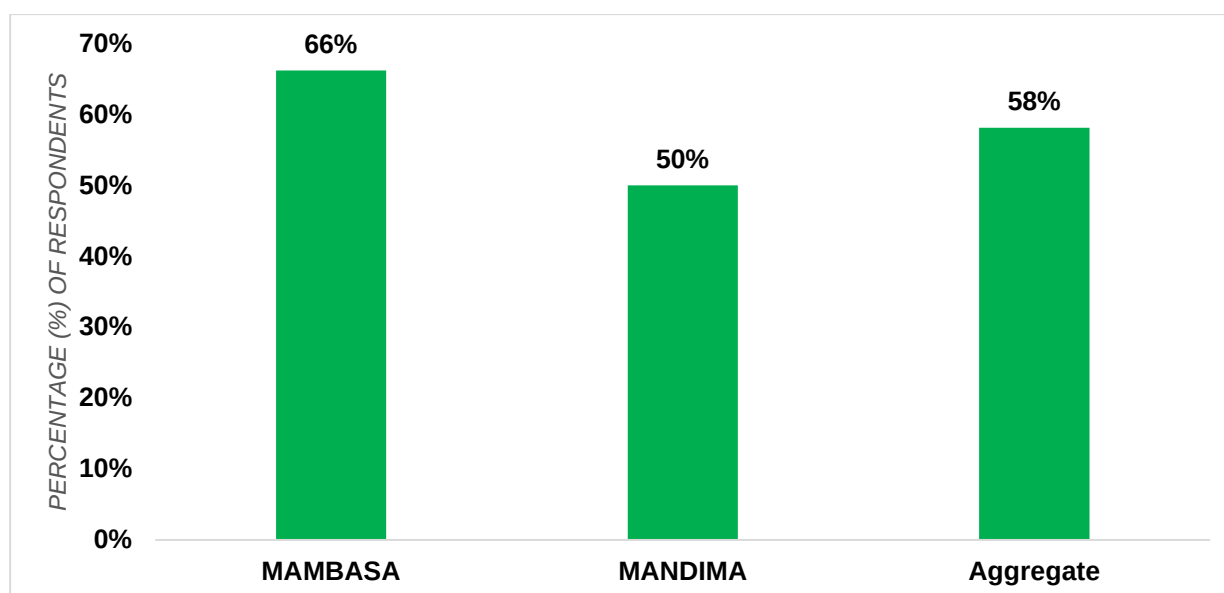


Figure 18. Distribution of respondents who find it difficult to get to the market

2.4.9 Access to market indicators

2.4.9.1 Time to get to the market

The average time to reach the nearest market is 80 minutes in Mambasa health zone and 36 minutes in the Mandima. Typically, an individual travels 45 minutes in Mambasa HZ and 30 minutes in the Mandima HZ.

Table 22. Time to reach the market

Health Zone	Average time in minutes	SD	Median time in minutes
Mambasa	80	88	45
Mandima	36	30	30
Aggregate	58	70	30

2.4.9.2 Difficulties in accessing the market

The most important challenge respondents face in access to the market relates to the distance to be covered (43%). Then comes the difficulty of having the money to reach the market (42%). There is also the difficulty of the poor road network (26%). These main difficulties are linked: indeed, a poor road network would make long distance and imply a significant average cost for the household. According to the respondents met in the two health zones, the most important routes are:

1. Malutu-Mambasa on the Mangina-Mambasa axis and
2. Mambasa-Nduye-Dingbo.

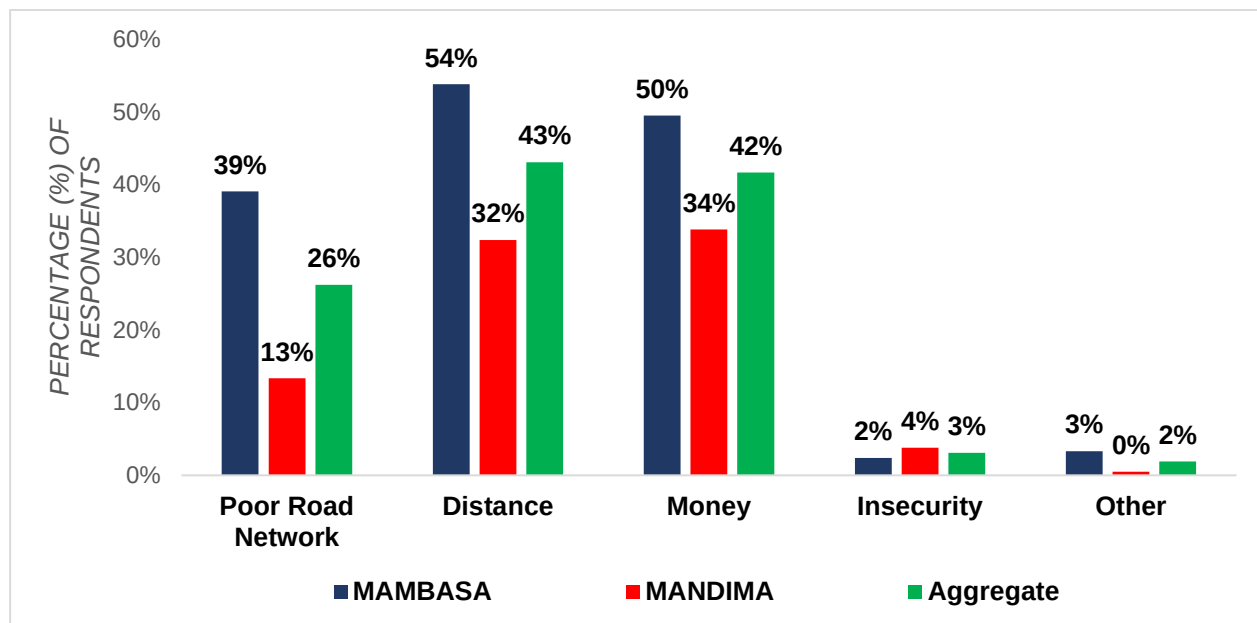


Figure 19. Types of difficulty encountered by locals to get to the market

2.4.9.3 Access to market information

The figure 20 show that 88% of respondents get information from friends or family members for any market information. A small proportion use the radio for all market information.

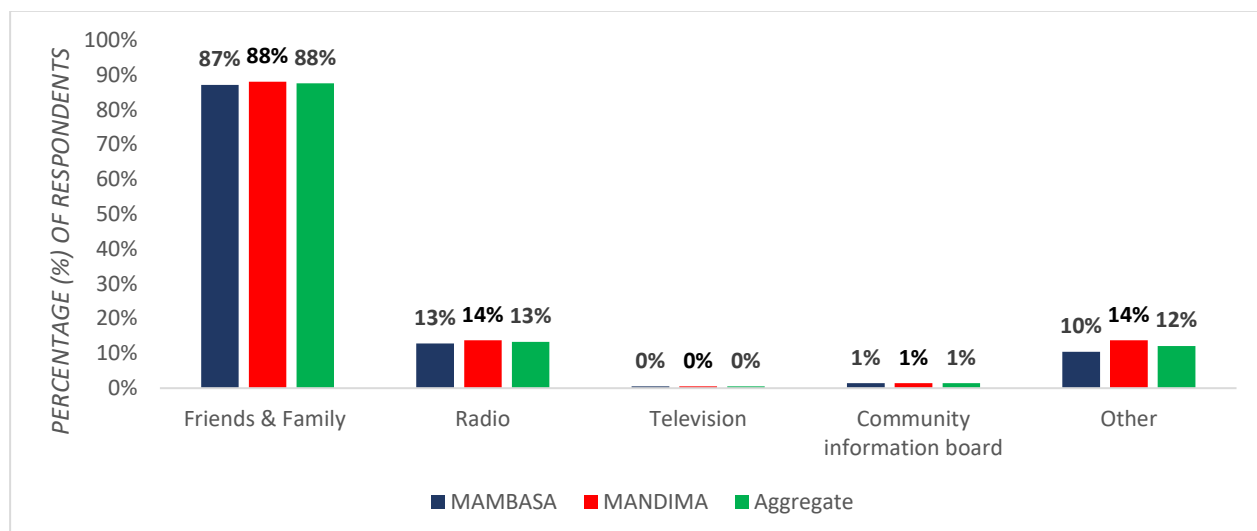


Figure 20. Access to market information

The other means of access to the market information cited by the inhabitants met are mainly received during the visit to the market, or by occasional sources.

2.5 COMMUNITY PERCEPTIONS ON EBOLA

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

When asked if the respondent has ever heard of Ebola Virus Disease (EVD), the results grouped in figure 21 show that 95% of respondents know or have heard of Ebola virus disease. This corresponds, respectively, to 97% and 93% in Mambasa and Mandima health zones. Compared to the results of Fauche et al. (2015)⁴³ in their study conducted in the city of Kinshasa where only 2% of respondents were aware of EVD, the population of Mambasa in Ituri is better informed of the existence of EVD than they were 5 years ago.

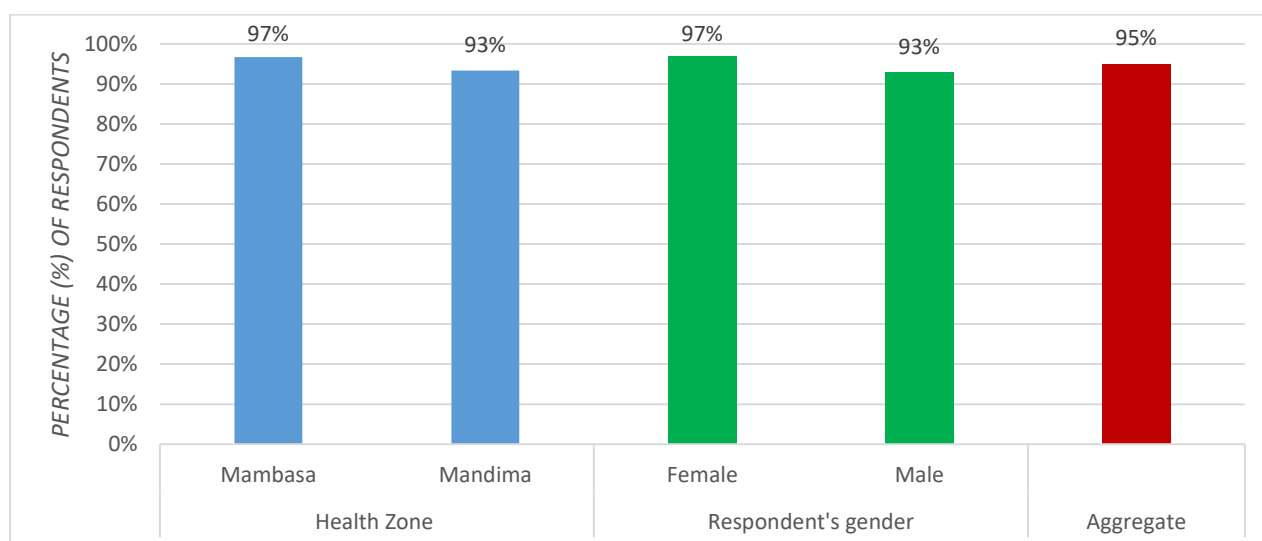


Figure 21. Proportion of respondents who have ever heard of Ebola Virus Disease

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

We find that the community has knowledge about the causes of Ebola virus disease (64%) and 79% of people can identify the signs. However, the treatment method remains ignored by the large part of the population (only 7% are aware) regardless of the Health Zone.

⁴³ Fauche, Adelin & Mukebayi, Kadimanche & Bakenje, Marlin & Pilipili, Koyange & Bongo, G.N. & Konga, Museu & Songo, Baukaka & Ngombe, Nadège & Mbemba, Théophile & Ngbolua, Koto-Te-Nyiwa. (2015). Knowledge, Attitude and Perception of the Population Related To Ebola Virus Disease in Kinshasa City, Democratic Republic Of The Congo. Journal Of Advancement In Medical And Life Sciences. https://www.researchgate.net/publication/279853040_Knowledge_Attitude_and_Perception_of_the_Population_Related_To_Ebola_Virus_Disease_in_Kinshasa_City_Democratic_Republic_Of_The_Congo

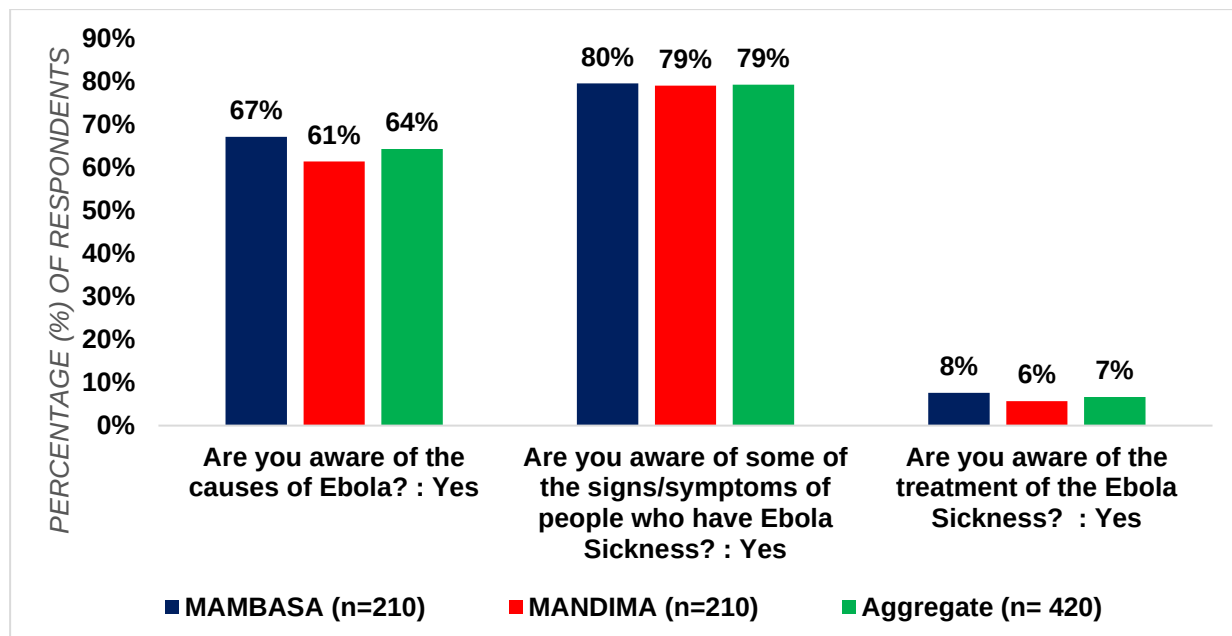


Figure 22. Proportion of respondents who know the causes, signs and treatment of Ebola Virus Disease

2.5.3 Identifying the causes of EVD

Among the causes of EVD, the best known by the community are unprotected contact with the blood, body fluids or tissues of an infected person with symptoms of EVD (52%), direct contact (44%), direct contact (44%).

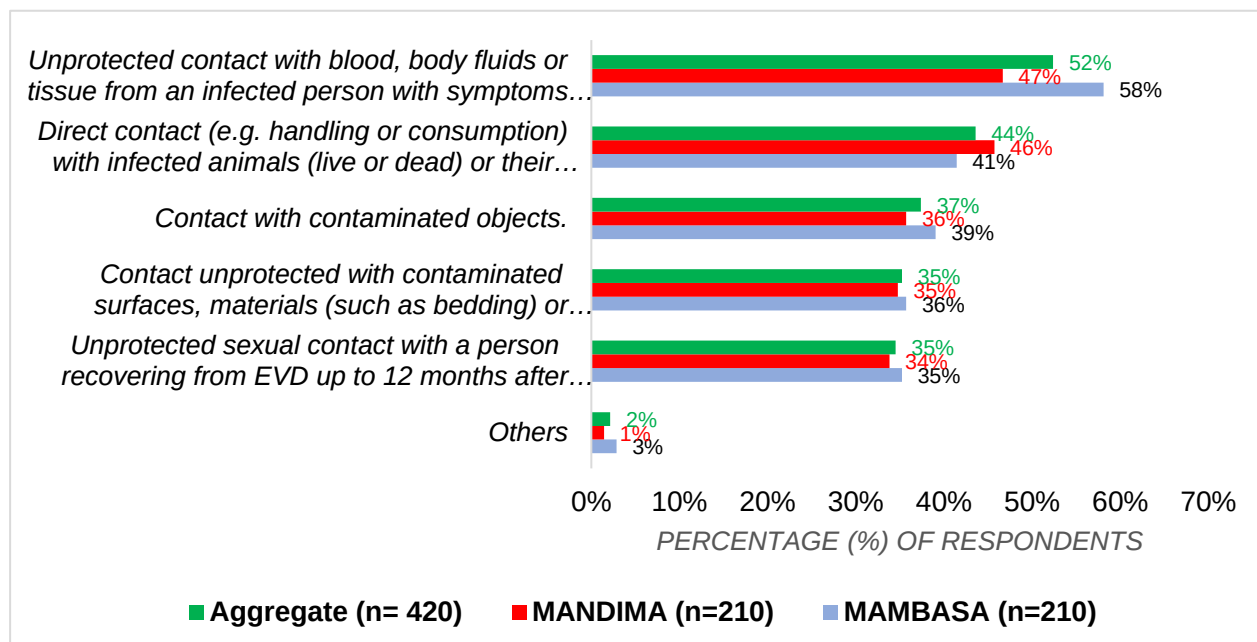


Figure 23. Knowledge of EVD causes

2.5.4 EVD considerations in community

The study shows that 90% of respondents say that EVD is a dangerous disease, 64% think they are vulnerable to EVD and almost 45% know the type of people who can contract EVD. These considerations on EVD are similar between the two Health Zones.

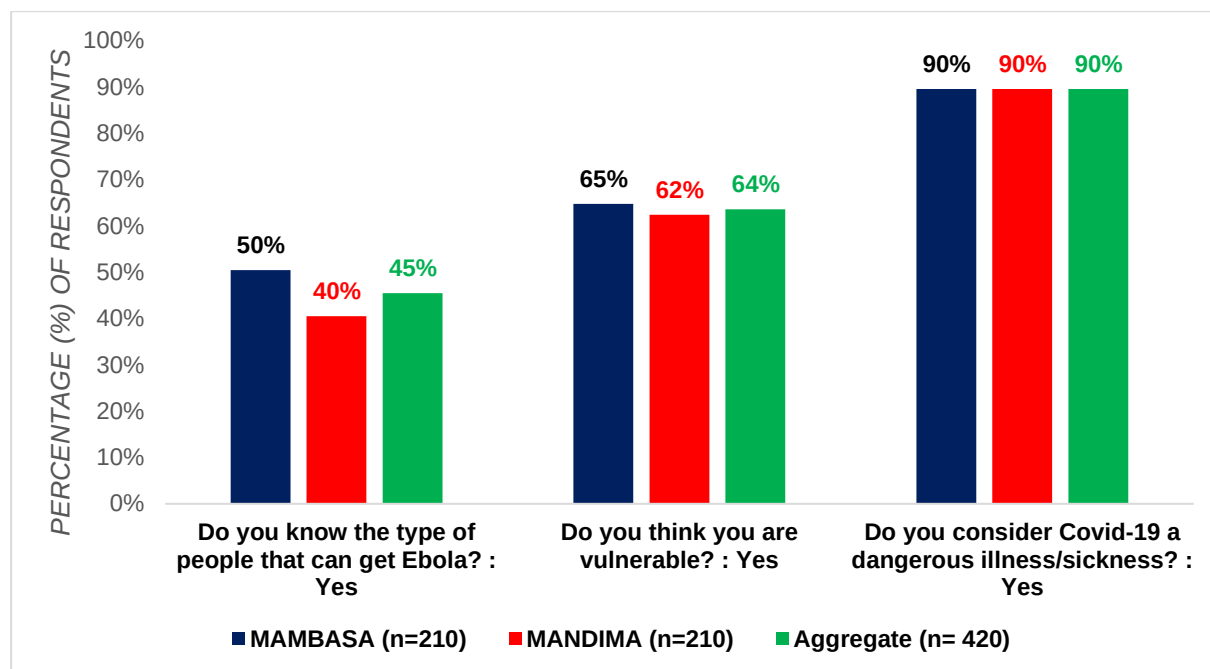


Figure 24. EVD Considerations in community

2.5.5 Regularity in the listening of EVD signs

As it can be seen in the figure 25, 42% of respondents say that they are often informed about the signs of EVD, 43% are rarely informed. We note that the proportion of those who never heard of the signs of EVD remains significant (10%). To this proportion must also be added those who do not feel concerned.

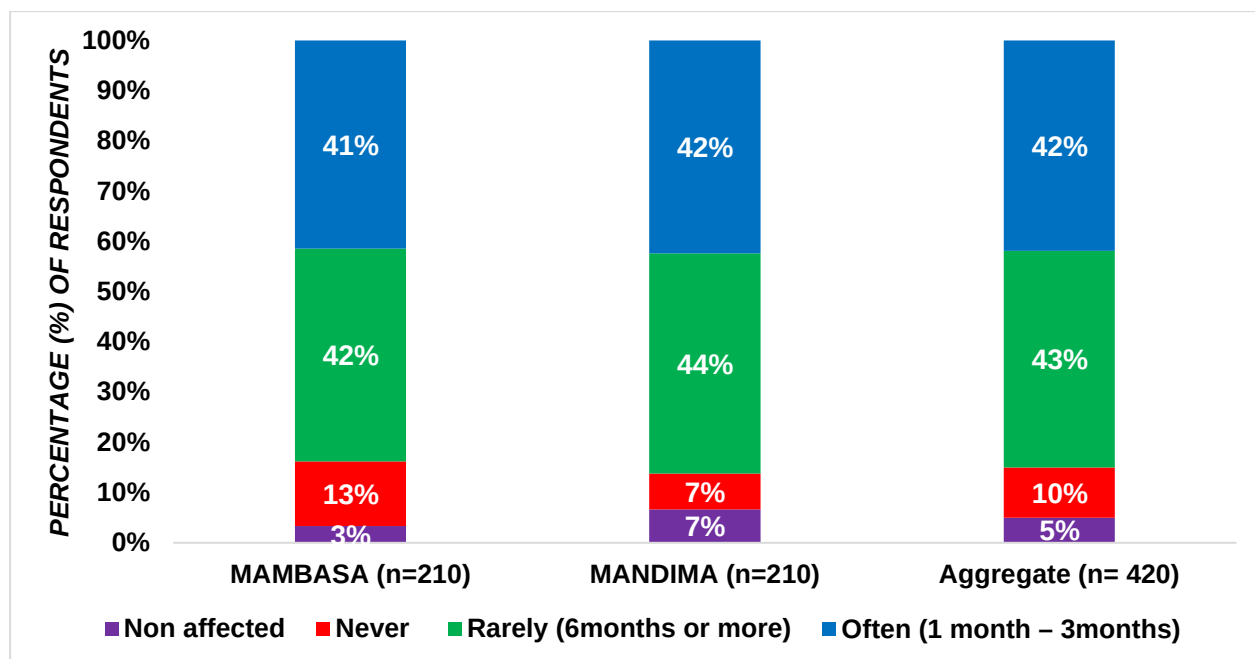


Figure 25. Regularity of listening to signs of EVD

2.5.6 Knowledge of Signs and Symptoms of Ebola

Among the symptoms of EVD, the community spontaneously cites fever (65%), vomiting (64%), hemorrhage (64%), diarrhea (61%) and headache with (56%). It is in Mandima HZ that a larger proportion (70%) cite hemorrhage compared to 58% recorded in Mambasa HZ. The other signs of EVD are cited in similar proportions in the two Health Zones.

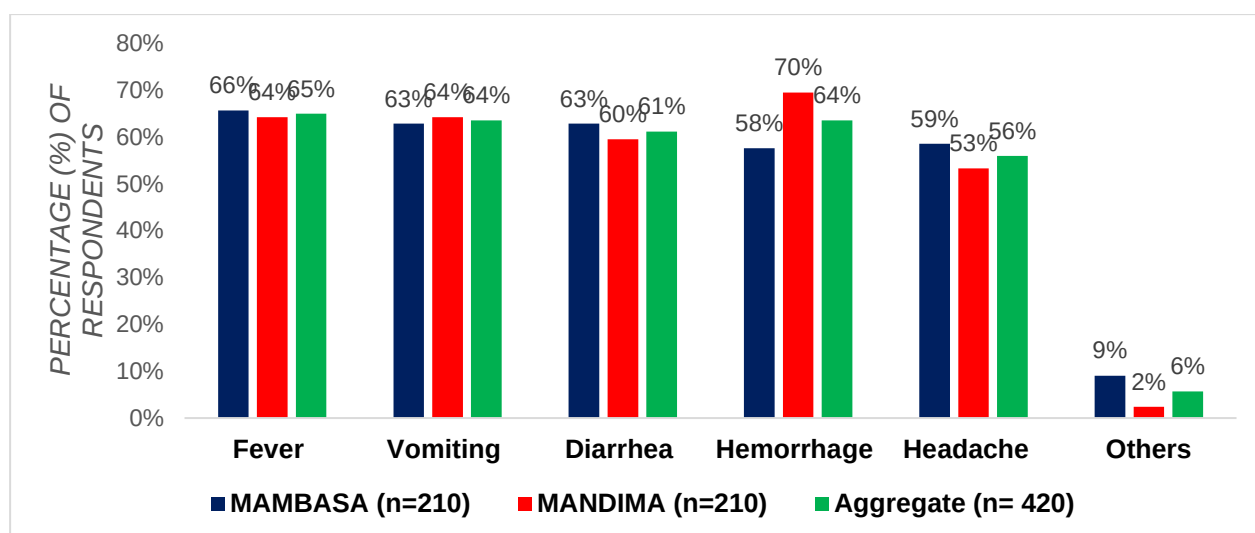


Figure 26. Proportion of respondents based on known symptoms of EVD

2.5.7 Prevention of EVD

In terms of prevention, we find that the exercise of good hygiene practices is the best known practice by the community (75%), followed by the practice of avoiding unprotected direct contact (49%), the proportion remains weak for other measures which seem to be overlooked by a large proportion of the community.

Table 23. Known ways of preventing EVD according to health zones

Known means of prevention	Mambasa (n=210)		Mandima (n=210)		Aggregate (420)	
	Frequency	%	Frequency	%	Frequency	%
Practice good hygiene practices	157	75%	156	74%	313	75%
Avoid unprotected direct contact	104	50%	100	48%	204	49%
Follow safe funeral practices	74	35%	88	42%	162	39%
Avoid coming into contact with wild animals	69	33%	81	39%	150	36%
Vaccination	61	29%	62	30%	123	29%
Avoid high risk areas and activities	54	26%	63	30%	117	28%
Avoid unprotected sexual activity	59	28%	52	25%	111	26%
Other means of prevention	7	3%	2	1%	9	2%

2.5.8 Assessment of access to Health Structure in the community

According to figure 27, 90% of the households visited declare that there is a health facility (FOSA) close to their living environment. We find that 83% of respondents say that their household has easy access to a local health facility. The proportions of households with easy access to the health structure of their environment are not significantly different between the two health zones.

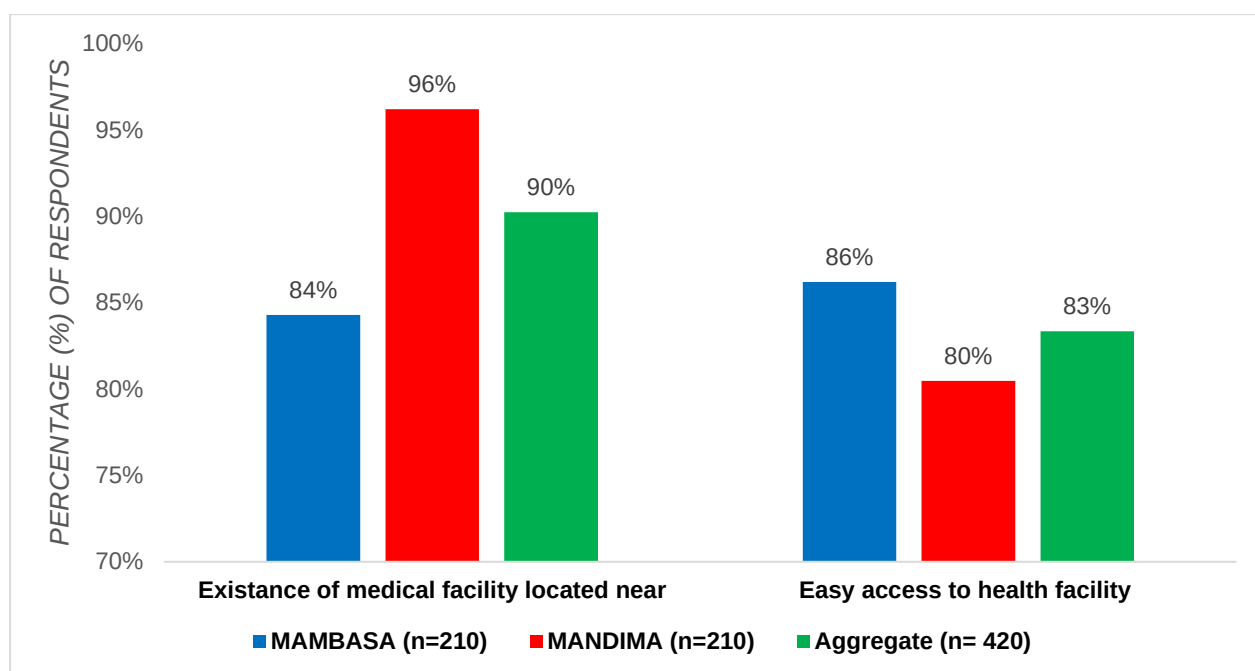


Figure 27. Existence and ease of access to health facilities in the area

2.5.9 Assessment of the distance to be walked to reach a health facility

The study reveals that the average distance to reach a health facility is 1.5 km in Mambasa health zone and 0.6 km in Mandima. Given the large dispersion, we consider the median distances. Thus, a typical person travels 1 km in Mambasa HZ and 0.5 km in Mandima HZ to reach a health facility.

Table 24. Average and median distances to reach a health facility

Health Zone	Average distance in km	SD	Median distance in km
Mambasa	1,5	2,1	1
Mandima	0,6	0,5	0,5
Aggregate	1,1	1,6	0,5

2.5.10 Perception of people with Ebola in the community

From Table 25, it appears that 72% of respondents say they are not ready to make contact with a person with EVD. This percentage is reduced when moving from a person with a person who has been cured of EVD. We go from 72% to 24%. We also observe that the attitude "no contact" with Ebola patients considered by 67% of respondents goes to 18% for "no contact" with people who are cured of Ebola.

Table 25. Community perception of Ebola patients

	Mambasa (n=210)		Mandima (n=210)		Ensemble (420)	
	Frequency	%	Frequency	%	Frequency	%
How do you see/relate to people who have Ebola sickness?						
Not affected	7	3%	14	7%	21	5%
No contact	146	70%	158	75%	304	72%
With distrust / discrimination	25	12%	21	10%	46	11%
Good relations	15	7%	12	6%	27	6%
Other	17	8%	5	2%	22	5%
How does the community see and relate to people who have Ebola?						
Not affected	7	3%	14	7%	21	5%
No contact	140	67%	143	68%	283	67%
With distrust / discrimination	32	15%	39	19%	71	17%
Good relations	13	6%	8	4%	21	5%
Very good relations	1	0%	0	0%	1	0%
Other	17	8%	6	3%	23	5%
How do you see/relate to people who have recovered from Ebola?						
Not affected	7	3%	14	7%	21	5%
No contact	48	23%	51	24%	99	24%
With distrust / discrimination	36	17%	41	20%	77	18%
Good relations	89	42%	69	33%	158	38%
Very good relations	12	6%	27	13%	39	9%
Other	18	9%	8	4%	26	6%
How does the community see and relate to people who have recovered from Ebola?						
Not affected	7	3%	14	7%	21	5%
No contact	38	18%	39	19%	77	18%
With distrust / discrimination	31	15%	43	20%	74	18%
Good relations	108	51%	90	43%	198	47%
Very good relations	10	5%	16	8%	26	6%
Other	16	8%	8	4%	24	6%

2.5.11 Effects of Ebola on Economic activities

We observe that 42% of people questioned say that EVD has indeed affected their work and 39% declare that EVD has had an effect on agriculture and food security in their community.

Table 26. Effects of EVD on economic activities

	MAMBASA (n=210)		MANDIMA (n=210)		Aggregate (n= 420)	
	Frequency	%	Frequency	%	Frequency	%
Say Ebola has affected the work of people in the community	79	38%	98	47%	177	42%
Declare that Ebola has affected agriculture and food security in your community	71	34%	94	45%	165	39%

2.6 COMMUNITY PERCEPTION OF COVID-19

2.6.1 Knowledge of COVID-19 by health zone and gender of respondents

According to the results shown in the graph below (figure 28), we note that 8 out of 10 respondents know or have already heard of COVID-19 (81%). This proportion is 75% in Mandima HZ and 88% in that of Mambasa. The study shows that the proportion of people who have heard or know about EVD do not differ significantly by gender of the respondent. There has been an improvement in public awareness compared to the results of the survey carried out by Target SARL⁴⁴.

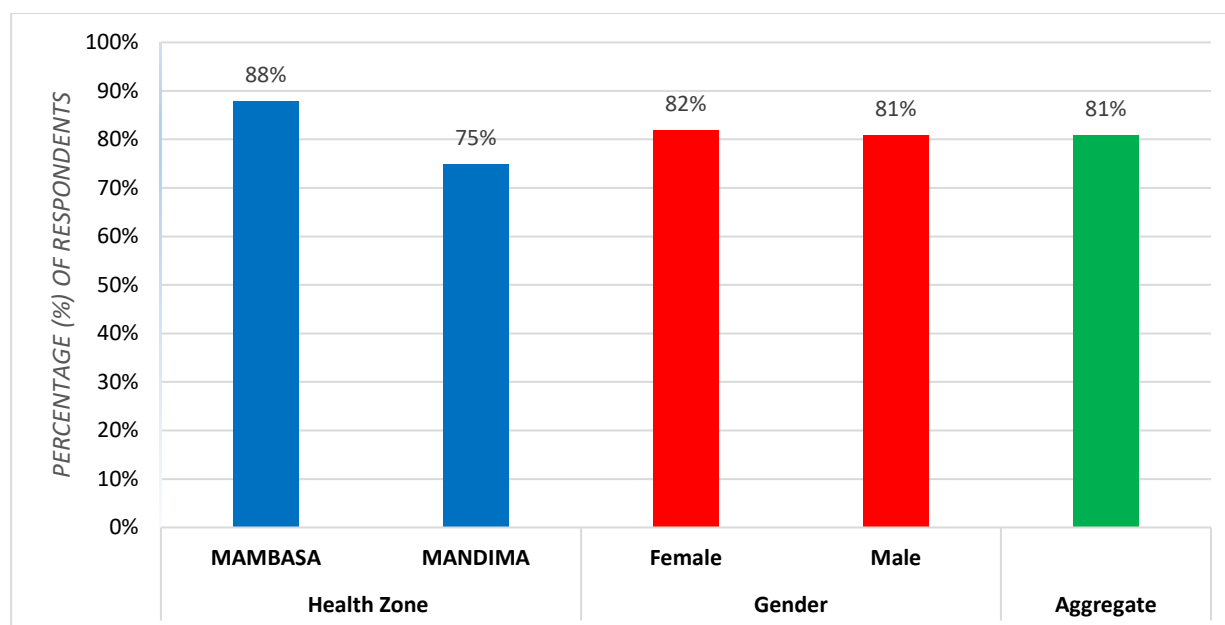


Figure 28. Proportion of respondents who have heard of COVID-19

⁴⁴ Target SARL, 2020. Les congolais et la pandémie de COVID-19. <https://zoom-eco.net/a-la-une/rdc-39-de-congolais-consients-de-la-gravite-de-COVID-19-etude-de-target-sarl/>

2.6.2 Level of knowledge of the causes, signs and treatment of COVID-19

From figure 29, we note that there is still a deficit in terms of knowledge of the causes of the COVID-19 virus with a rate of 9%, while in terms of knowledge of the signs the rate is 29%. Knowledge of the treatment method remains ignored by the community.

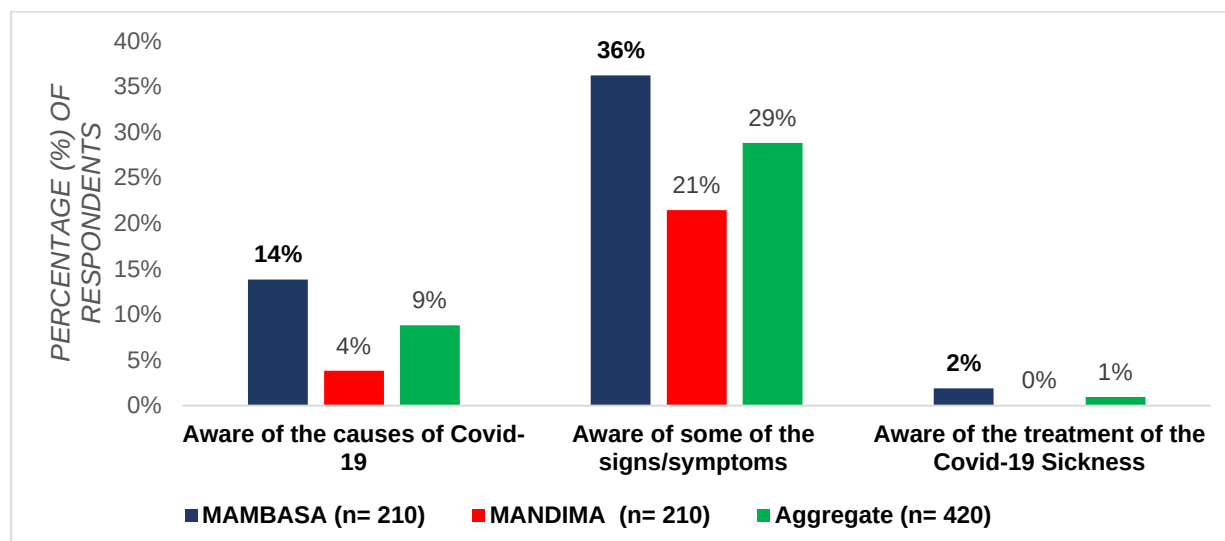


Figure 29. Proportion of respondents who know the causes, signs and treatment of COVID-19

2.6.3 COVID-19 considerations

We find that 7 out of 10 respondents declare that COVID-19 is a dangerous disease (73%). In addition, 4 out of 10 people recognize that they are economically vulnerable because of the COVID-19 pandemic (42%) and 2 out of 10 people say they know the type of people who could contract COVID-19 disease (20%).

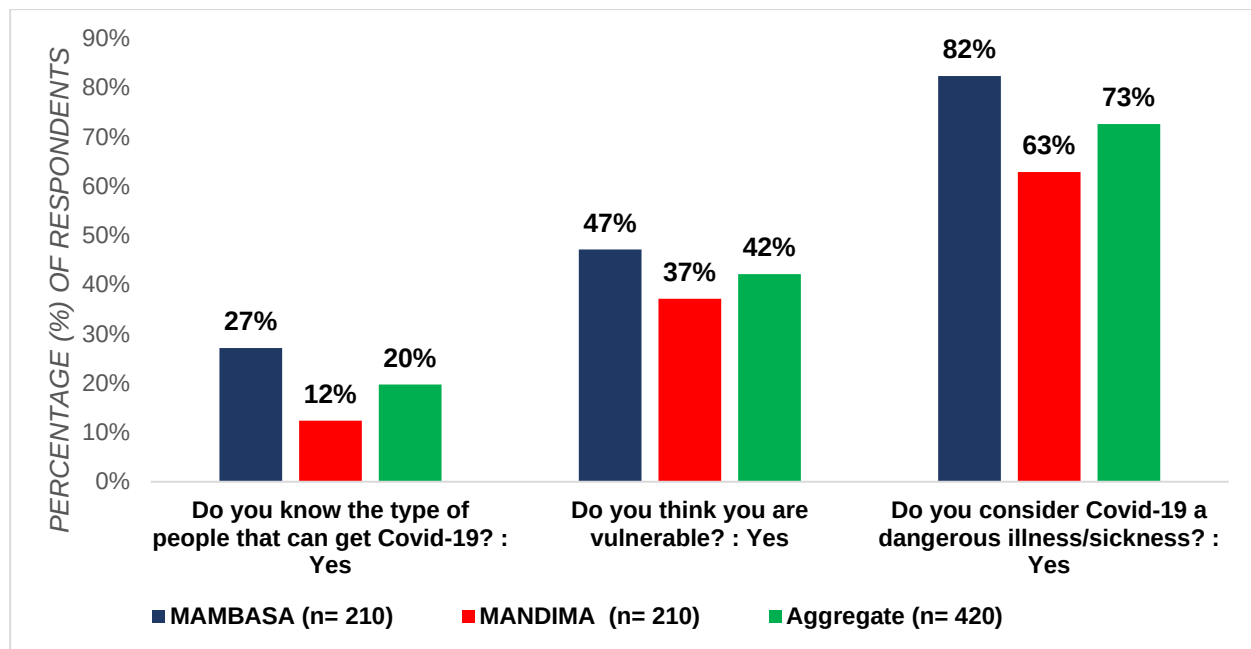


Figure 30. Proportion of respondents according to different COVID-19 considerations

2.6.4 Knowledge of Signs and Symptoms of COVID-19

The study shows that overall, less than $\frac{1}{4}$ of those interviewed are aware of the signs or symptoms of COVID-19. However, we note that the residents of Mambasa HZ have relatively more information on the COVID-19 pandemic than those of Mandima HZ.

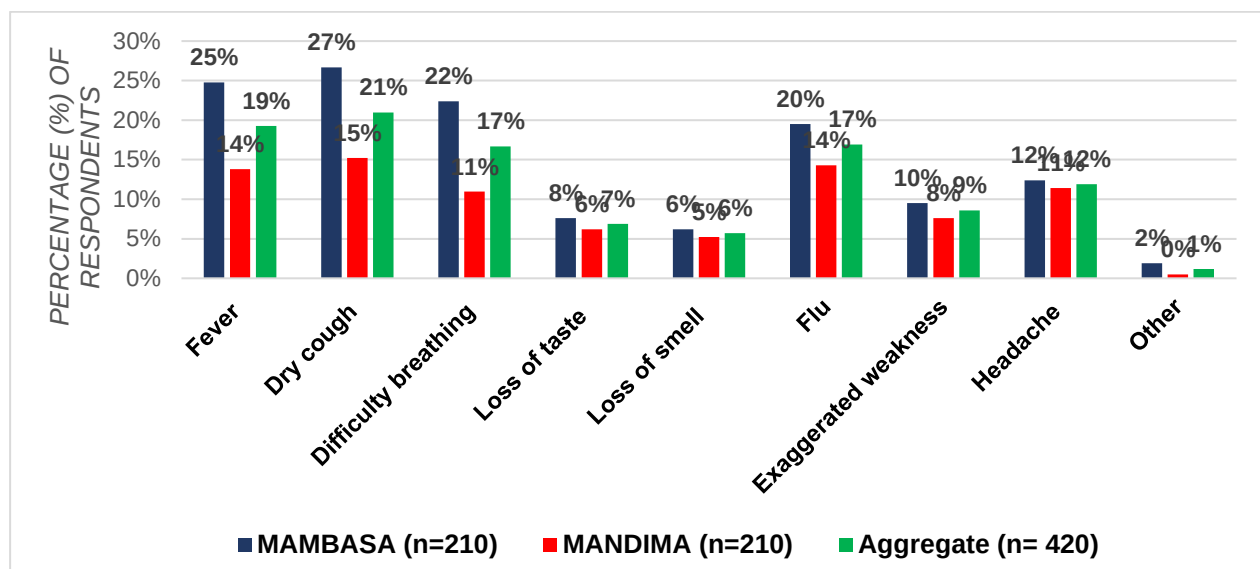


Figure 31. COVID-19 symptoms knowledge distribution

2.6.5 Prevention of COVID-19

With regard to the prevention of COVID-19, it should be said that the practice of good hygiene practices remains the best known by the community although known by less than half of the population (40%). In addition to this measure, almost 3 out of 10 people believe that unprotected direct contact should be avoided (28%). Details by HZ are shown in the table below.

Table 27. Means of prevention of COVID-19 known by the population

Known means of prevention	Mambasa (n=210)		Mandima (n=210)		Aggregate (n=420)	
	Frequency	%	Frequency	%	Frequency	%
Practice good hygiene practices	97	46%	72	34%	169	40%
Avoid unprotected direct contact	68	32%	48	23%	116	28%
Avoid high risk areas and activities	40	19%	20	10%	60	14%
Follow safe funeral practices	24	11%	15	7%	39	9%
Avoid unprotected sexual activity	18	9%	12	6%	30	7%
Avoid coming into contact with wild animals	12	6%	9	4%	21	5%
Vaccination	7	3%	6	3%	13	3%

2.6.6 Perception of people with COVID-19 in the community

As for people reached contact will not exist for 62% while this proportion will increase to 49% for people recovered from COVID-19. This implies that, compared to EVD, the community will avoid contact more with someone who has been healed or released from COVID-19 than from Ebola (46% for COVID-19 versus 24% for EVD).

Table 28. Community perception of COVID-19 patients

	Mambasa (n=210)		Mandima (n=210)		Aggregate (n= 420)	
	Frequency	%	Frequency	%	Frequency	%
How do you see/relate to people who have COVID-19 sickness?						
Not affected	26	12%	52	25%	78	19%
No contact	129	61%	130	62%	259	62%
With distrust / discrimination	9	4%	2	1%	11	3%
Good relations	2	1%	0	0%	2	0%
Other	44	21%	26	12%	70	17%
How does the community see and relate to people who have COVID-19						
Not affected	26	12%	52	25%	78	19%
No contact	128	61%	128	61%	256	61%
With distrust / discrimination	11	5%	4	2%	15	4%
Good relations	3	1%	0	0%	3	1%
Other	42	20%	26	12%	68	16%
How do you see/relate to people who have recovered from COVID-19?						

Not affected	26	12%	52	25%	78	19%
No contact	89	42%	106	50%	195	46%
With distrust / discrimination	26	12%	19	9%	45	11%
Good relations	21	10%	3	1%	24	6%
Very good relations	4	2%	2	1%	6	1%
Other	44	21%	28	13%	72	17%
How does the community see and relate to people who have recovered from COVID-19?						
Not affected	26	12%	52	25%	78	19%
No contact	83	40%	91	43%	174	41%
With distrust / discrimination	24	11%	15	7%	39	9%
Good relations	30	14%	21	10%	51	12%
Very good relations	5	2%	2	1%	7	2%
Other	42	20%	29	14%	71	17%

2.6.7 Effects of COVID-19 on Economic activities

It emerges from the table 29 that COVID-19 has impacted work in the community according to the declaration of 55% of the inhabitants in Mambasa HZ and 35% in Mandima HZ.

Regarding its effect on agricultural activities and food security, it should be noted that almost 3 out of 10 people (27%) affirm that COVID-19 had an effect on agriculture and food security in Mambasa territory.

Table 29. Effects of COVID-19 on economic activities according to the inhabitants interviewed

Economic effects	Mambasa (n=210)		Mandima (n=210)		Aggregate (n =420)	
	Frequency	%	Frequency	%	Frequency	%
Do you think COVID-19 has affected the work of people in the community	116	55%	74	35%	190	45%
Has COVID-19 affected agriculture and food security in your community?	65	31%	47	22%	112	27%

III. LESSONS LEARNED

The main lessons learned from this baseline study are:

- The insecurity experienced by the inhabitants makes them feel abandoned and leads to a kind of mistrust towards humanitarian workers and even towards government services (organizations). Action on concrete activities with immediate impact, particularly the rehabilitation of agricultural service roads, national road networks and other basic infrastructure, could change the perceptions of the population and help the administrative and political authorities to improve public policy in favor of population.
- The population is informed of the Ebola virus epidemic and currently of the COVID-19 pandemic (COVID-19).

IV. CONCLUSION AND MAIN RECOMMENDATIONS

The present descriptive and cross-sectional study shows the following results:

The main targeted population for this study, 73.6% are residents, 14.5% of internally displaced persons and 11.9% of returnees has agriculture as the main source of income (63.6%) and 66% of them live with less than \$ 1 per person per day (below the poverty threshold).

To meet household needs, 89% of households resort to debt. In the case of difficulties of obtaining food, 7 out of 10 households resort to high coping strategies, the most used of which are: Count on less preferred and less expensive foods (92%), Limit portion size to meals (72 %), Reduce the number of meals taken in a day (71%), Borrow food or count on the help of a friend or relative (67%), Restrict the consumption of adults so that little ones can eat (54%).

The overall average Food Consumption Score of households is 32.2, and 18% 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 situations of severe vulnerability (poor FCS) and limits are in similar proportions in the two health zones surveyed.

The study also shows that some health areas are more affected by severe hunger than others. These are Banana, Some, Lukaya, Mayuwano and Salama health areas

The computation of the household hunger index (HHI) shows 21% of households in Mambasa HZ and 26% of households in Mandima HZ. It is therefore around 58,765 inhabitants in the 2 Health Zones visited during the survey.

The proportions of households that have more difficulty obtaining food and therefore resort to high coping strategies are highest in the Health Areas of Mayuwano, Some, Salama, Banana, Bukulani, Lukaya.

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

The Low Food Diversity Score is more observed in Adult Female No Adult Male households, in internally displaced households, returned households and logically among those with poor FCS.

Households with a "Poor" Food Consumption Score (which represent 18%) eat only vegetables or leaves, staple foods and oil. The very low level of consumption of basic foods (cereals and tubers) and animal proteins among households with a poor FCS should appeal to decision-makers at all levels.

Locals encounter various difficulties in getting to the market. The main difficulties are linked to a poor road conditions in the areas, which makes the distance longer and therefore involves a significant average cost for the household.

The knowledge about Ebola virus disease is good, although some residents are unaware of the causes, signs, treatments and prevention of this serious disease (There is a mixture with bad and good practices regarding this serious disease). Good approaches and good practices, prejudice and discrimination against persons with EVD, even after recovery continues to be observed in the community.

From an economic point of view, EVD has not only impacted the health and human sector, but also the economy of the region especially on the dysfunction of economic activities and particularly agricultural activities, which nevertheless constitute the main source of income for household. It is therefore important to emphasize that EVD has affected food security in the two Health Zones surveyed.

Regarding COVID-19, although the majority of the population (81%) has already heard of this pandemic, very few know the causes, symptoms and means of prevention. Over one quarter of the population said that COVID-19 has affected agriculture and food security in their communities in a certain way.

Recommendations

In view of these conclusions, urgent actions could be envisaged:

- Provide food assistance to groups that are vulnerable to food insecurity by prioritizing the health areas most affected by food insecurity (Makele, Mayuwano, Banana, Salama and Some).
- Identify the most vulnerable households who could benefit from the assistance. (among IDPs), returnees and even among residents).
- Organize the reinforcement of capacities of households to participate in production (for example agricultural activities, livestock rearing, small scale businesses, crafting and other artistic works) by facilitating access to cultivable land, seeds, livestock, production tools, technical supervision, etc.
- Provide guidance on assistance to vulnerable households according to their specific needs or the groups to be assisted. These will be either general food

distributions, cash system or voucher to combine with the possibility of helping locals to carry out their usual livelihood activities.

- Rehabilitate basic infrastructure such as roads to facilitate access to markets and products 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 on the barrier, hygiene and prevention measures for Ebola virus disease and the COVID-19 pandemic (COVID-19).
- Organize restitution workshops and conferences at the level of each Health Zone so that the population take ownership of the results of the study (survey).

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APPENDIX

Appendix 1. Survey Staff

Coordination

N°	NAMES	Sex	Function
1	Edson NIYONSABA SEBIGUNDA	M	Coordinator
2	Célestin KIMANUKA RURIHO	M	Assistant Coordinator and supervisor
3	Promesse KASEREKA KAVULIRENE	M	Assistant Coordinator and supervisor

Appendix 2. Survey Questionnaire

 USAID FROM THE AMERICAN PEOPLE	Food Assistance for Ebola-Affected and Food Insecure Populations of Beni, Leburo and Ituri (FABELU) Baseline Survey June 2020	
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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, Leburo and Ituri. 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 _____)

IDENTIFICATION	
Questionnaire ID : _____	
Territory: _____	/_/_/
Health Zone: _____	/_/_/_/
City / Village: _____	
GPS Coordinate of Household	Latitude _____, Longitude _____ Alt _____ Accuracy _____
INTERVIEW	
Name of Enumerator: _____	Phone No. of Enumerator: _____
DATE of Interview (day/month/year)	/_/_/_/ /_/_/_/ /_/_/_/
Household phone number	Phone No. 1: _____ Phone No. 2: _____

A. 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	Status (Pregnant or not)
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: _____		

B. SOURCE OF INCOME

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

C. 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?	Jun 19 /___/ July 20 19 /___/ Aug 19 /___/ Sept 19 /___/ Oct 19 /___/ Nov 19 /___/	Dec 20 /___/ Jan 20 /___/ Feb 20 /___/ March 20 /___/ April 20 /___/ May 20 /___/	Do not read the list of the months but tick the months in which there were not enough food

D. 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	1	
		Sometimes		
		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	1	
		Sometimes		
		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				

E. 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:	Frequency (# days)	Severity Weight	Weighted Score = Frequency X weight
	Relative Frequency Score			
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		

F. FOOD CONSUMPTION SCORE (FCS) AND HOUSEHOLD DIETARY DIVERSITY SCORE (HDDS):

23a - 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			

23b. 24 hour and 7 day reminder

1. Yesterday, how many meals were taken by household members aged 6-59 months	
2. Yesterday, how many meals were taken by household members aged 5 years or older	
3. Usually, how many daily meals do household members aged 6-59 months	
4. Usually, how many daily meals do household members aged 5 years or older	

G. 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?.....		

H. MARKET INFORMATION

Sn	QUESTIONS AND FILTERS	CODING RESPONSES	Notes
32	Where do you get your market 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.....		

I. MARKET PRICES.

Sn	QUESTIONS AND FILTERS	CODING RESPONSES	Notes
34	Which food items do you normally buy from the market? (Kindly List)		
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					
2. Maize					
3. Vegetables					
4. Fruits					
5. Fruit juices					
6. Meat					
7. Fish					
8. Poultry					
9. Pulses					
10. Legumes					
11. Nuts					
12. Milk					
13. Other Milk products					
14. Oils and fats					
15. Sweets (Sugar/honey)					
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 food commodities for your household?	☐ 1. Yes ☐ 2. No	
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?.....		

J. 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.....		

K. 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, kindly list them.....	1. Unprotected contact with blood, body fluids or tissue from an 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. 3. Contact with contaminated objects. 4. Contact 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, 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		

L. 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.		
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	

M. 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?.....		

56	How does the community see and relate to people who have Ebola.....		
57	How do you see/relate to people who have recovered from Ebola?		
58	How does the community see and relate to people who have recovered from Ebola?.....		

N. 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?		

O. KNOWLEDGE AWARENESS OF COVID19

Sn	QUESTIONS AND FILTERS	CODING RESPONSES	Notes
62	Do you know or have heard of COVID19?	☐ 1. Yes ☐ 2. No	
62a.	If yes, Describe COVID-19 in your own words.....		
62b.	How did COVID-19 get to your community?		
63	How long have you heard/known of COVID19?	☐ 1= Less than 1 Month ☐ 2=1-3Months ☐ 3=4 -6 Months ☐ 4=More than 6 Months	
64	Is COVID-19 a common sickness?	☐ 1= Very Common ☐ 2=Common ☐ 3= Somehow ☐ 4= Not common ☐ 5= I don't know	
65	Do you know the type of people that can get COVID19?	☐ 1. Yes ☐ 2. No	
65a	If yes, List.....		
65b.	Do you think you are vulnerable?	☐ 1. Yes ☐ 2. No	
66	Do you consider COVID-19 a dangerous illness/sickness?	☐ 1. Yes ☐ 2. No	
66a	5a.If yes/no, state reason.....		

P. KNOWLEDGE ON CAUSES OF COVID19

Sn	QUESTIONS AND FILTERS	CODING RESPONSES	Notes
67	Are you aware of the causes of COVID19?	☐ 1. Yes ☐ 2. No	
67a	If yes, kindly list them.....		
68	How often do you hear that people are sick with COVID19?	☐ 1= Never ☐ 2=Rarely (6months or more) ☐ 3= Often (1 month – 3months)	
69	Do you have a relative or know anyone that had / has COVID19?	☐ 1. Yes ☐ 2. No	
69a	If yes, state relation within affected person		

Q. KNOWLEDGE OF SIGNS AND SYMPTOMS OF COVID19

Sn	QUESTIONS AND FILTERS	CODING RESPONSES	Notes
70	Are you aware of some of the signs/symptoms of people who have COVID-19 Sickness?	☐ 1=Yes ☐ 2=No	
70a.	If yes, State all the signs you are aware of	☐ 1=Fever ☐ 2=Dry cough ☐ 3=Headache ☐ 4=Difficulty breathing ☐ 5=Loss of taste ☐ 6=Loss of smell ☐ 7=Flu ☐ 8= Exaggerated weakness ☐ 9=Others	
71	Do you have any idea how you can protect yourself from getting sick with COVID19?	☐ 1=Yes ☐ 2=No	
72	If yes, state the various ways of preventing COVID19.	☐ 1=Practice good hygiene practices ☐ 2= Avoid unprotected direct contact ☐ 3= Avoid high-risk regions and activities ☐ 4= Avoid unprotected sexual activity ☐ 5= Follow safe funeral practices ☐ 6= Avoid coming into contact with wild animals ☐ 7= Vaccination ☐ 8= Other	
73	Have you received any training from anyone/organization on COVID19?	☐ 1=Yes ☐ 2=No	(all aspects of COVID19)
73a	If yes, State the name of Organizations who gave this training?.....		
73b	If yes (Q73 above), has the training been useful?	☐ 1=Yes ☐ 2=No	

R. KNOWLEDGE ON POSSIBLE TREATMENTS/CURE

Sn	QUESTIONS AND FILTERS	CODING RESPONSES	Notes
74	Are you aware of the treatment of the COVID-19 Sickness?	☐ 1=Yes ☐ 2=No	
74a	If yes, State all the ways of treating COVID-19 that you know of.....		
74b.	Do you think the following control measures work?		
	1. Quick identification and isolation of cases.	☐ 1=Yes ☐ 2=No	
	2. Identification and follow-up of contacts	☐ 1=Yes ☐ 2=No	
	3. Control measures in hospital settings.	☐ 1=Yes ☐ 2=No	
75	Is there a medical facility located near you?	☐ 1=Yes ☐ 2=No	
76	What is the distance of the nearest facility to you (km)		
77	Do you have easy access to this facility when you fall sick?	☐ 1=Yes ☐ 2=No	
77a	If no, state the reasons.....		
78	How do you see/relate to people who have COVID-19 sickness?.....	☐ 1= No contact ☐ 2=With distrust / discrimination ☐ 3=Good relationships ☐ 4=Very good relationships ☐ 5=Other Specify	
79	How does the community see and relate to people who have COVID19.....	☐ 1= No contact ☐ 2=With distrust / discrimination ☐ 3=Good relationships ☐ 4=Very good relationships ☐ 5=Other Specify	
80	How do you see/relate to people who have recovered from COVID19?	☐ 1= No contact ☐ 2=With distrust / discrimination ☐ 3=Good relationships ☐ 4=Very good relationships ☐ 5=Other Specify	
81	How does the community see and relate to people who have recovered from COVID19?.....	☐ 1= No contact ☐ 2=With distrust / discrimination ☐ 3=Good relationships ☐ 4=Very good relationships ☐ 5=Other Specify	

S. EFFECTS OF COVID-19 ON ECONOMIC ACTIVITIES

Sn	QUESTIONS AND FILTERS	CODING RESPONSES	Notes
82	How has COVID-19 affected the people of the community?		
83	Do you think COVID-19 has affected the work of people within the community	☐ 1=Yes ☐ 2=No	
83a	Explain the reason in Q83 above		
84	Has COVID-19 affected agriculture and food security in your community?	☐ 1=Yes ☐ 2=No	
84a	Explain the reason in Q84 above?		

THANK YOU FOR YOUR TIME AND CONTRIBUTION TO THIS SURVEY...

Appendix 3. Details of results tables

Appendix 3.1 Average food consumption score by category

Category	N	Mean	SD	VC	Median	p-value
Health Zone						
Mambasa	210	32,6	14,0	43%	29,5	0,654
Mandima	210	31,9	14,7	46%	28,5	
Household type (HH)						
Adult Female No Adult Male (FNM)	64	28,0	10,3	37%	26,8	0,033
Adult Male & Adult Female (F&M)	332	33,1	14,9	45%	29,5	
Adult Male No Adult Female (MNF)	24	32,3	12,8	40%	29,5	
Household status in its current location						
Internally Displaced Persons (IDP)	61	27,7	10,8	39%	25,5	0,001
Resident	309	33,8	15,3	45%	30,0	
Returnee	50	28,3	9,4	33%	27,0	
Gender of head of household						
Feminine	139	31,6	14,8	47%	28,5	0,511
Male	281	32,6	14,1	43%	29,5	
Aggregate	420	32,2	14,3	44%	29,0	

Appendix 3.2. The reduced Coping Strategy Index by category

Category	n	Mean	SD	Median	P-value	High Coping	Medium Coping	No or low Coping
Health Zone								
Mambasa	210	19,4	13,7	18	0,746	71%	18%	11%
Mandima	210	18,9	13,7	17		69%	21%	10%
Health areas								
Biakako Mayi,	30	17,2	13,6	15,5	<0,0001	53%	40%	7%
Biakato Mine,	30	15,4	13,7	13,0		60%	23%	17%
Katanga,	30	10,6	8,6	8,0		47%	33%	20%
Lukaya,	30	20,5	13,8	18,0		70%	27%	3%
Makeke	30	14,7	12,3	13,5		60%	17%	23%
Mayuwano,	30	25,7	11,7	24,5		97%	0%	3%
Some,	30	28,3	13,6	25,5		97%	3%	0%
Banana	30	27,7	14,2	22,5		90%	10%	0%
Binase	30	13,8	11,9	11,5		57%	20%	23%
Bukulani	30	22,4	13,2	20,5		80%	20%	0%

Category	n	Mean	SD	Median	P-value	High Coping	Medium Coping	No or low Coping
Makoko2	30	16,4	12,4	15,5		60%	27%	13%
Mambasa	30	13,8	11,6	11,0		60%	20%	20%
Salama	30	30,1	12,1	29,5		97%	3%	0%
Tobola	30	11,3	7,7	11,0		57%	27%	16%
Gender of head of household								
Feminine	139	22,2	13,4	20	0,001	81%	12%	8%
Male	281	17,6	13,6	15		65%	23%	12%
Household type (HH)								
Adult Female No Adult Male (FNM)	64	24,5	12,9	23,5	0,003	91%	6%	3%
Adult Male & Adult Female (F&M)	332	18,1	13,7	16		66%	23%	12%
Adult Male No Adult Female (MNF)	24	19,3	13,3	19,5		79%	8%	13%
Household status in its current location								
Internally Displaced Persons (IDP)	61	22,9	12,6	23	0,057	87%	11%	2%
Resident	309	18,7	14,2	16		67%	21%	12%
Returnee	50	17,4	11,3	16,5		68%	20%	12%
Aggregate	420	19,1	13,7	17		70%	19%	11%

Appendix 3.3. FCS by Heath areas

Health areas	n	FCS Acceptable	FCS Borderline	FCS Poor
Biakako Mayi,	30	40%	50%	10%
Biakato Mine,	30	50%	33%	17%
Katanga,	30	40%	57%	3%
Lukaya,	30	33%	63%	3%
Makeke	30	33%	23%	43%
Mayuwano,	30	7%	50%	43%
AS Some,	30	13%	63%	23%
Banana	30	20%	50%	30%
Binase	30	60%	33%	7%
Bukulani	30	13%	77%	10%
Makoko2	30	40%	47%	13%
Mambasa	30	23%	63%	13%
Salama	30	27%	43%	30%
Tobola	30	33%	60%	7%
Aggregate	420	31%	51%	18%

Appendix 3.4. Price of 14 basic necessities in the territory of Mambasa from January 2019 to May 2020 in CDF

	J-19	F-19	M-19	A-19	M-19	JN19	JL-19	A-19	S-19	O-19	N-19	D-19	J-20	F-20	M-20	A-20	M-20	Average price
1. Cassava flour (kg)	400	400	400	400	400	400	400	400	400	500	500	500	500	500	500	500	500	447
2. Peeled dry corn (kg)	800	800	800	800	800	800	800	800	1000	1000	1000	1000	1000	1000	1200	1200	1200	941
3. Cassava leaves (Sombe) (bunch)	250	250	250	250	250	250	250	250	250	250	500	500	500	500	500	500	500	353
4. Sweet banana (diet)	4000	4000	4000	4000	4000	4000	4000	6000	6000	6000	6000	6000	7000	7000	7000	7000	8000	5529
5. Natural Fruit Juice (bottle of 33cl)	500	500	500	500	500	500	500	500	500	500	700	700	700	700	700	700	700	582
6. Boneless beef meat (kg)	7000	7000	7000	7000	7000	7000	7000	8000	8000	8000	8000	8000	8000	9000	9000	9000	9000	7824
7. Fresh Tilapia fish (kg)	9000	9000	9000	9000	9000	9000	9000	9000	9000	9000	10000	10000	10000	10000	10000	10000	10000	9412
8. Local live chicken (piece)	15000	15000	15000	15000	15000	15000	15000	15000	17000	17000	17000	17000	17000	17000	17000	19000	20000	16353
9. Multicolored beans (kg)	2000	2000	2000	2000	2000	2500	2500	2500	2500	2500	2500	2500	2500	3000	3000	3000	3000	2471
10. Fresh tomatoes (kg)	2500	2500	2500	2500	3000	3000	3000	3000	3000	3000	3000	4000	4000	4000	4000	4000	4000	3235
11. Coconut (piece)	500	500	500	500	500	500	500	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	794
12. Fresh milk (liter)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	3000	3000	3000	3000	3000	3000	2353
13. Palm oils (bottle of 72cl)	600	600	600	600	600	800	800	800	800	800	800	800	800	1000	1000	1000	1000	788
14. Sugar (kg)	1500	1500	1500	1500	1500	1500	1500	1500	2000	2000	2000	2000	2000	2000	2000	2000	2000	1765

Source : Economy service in Mambasa territory

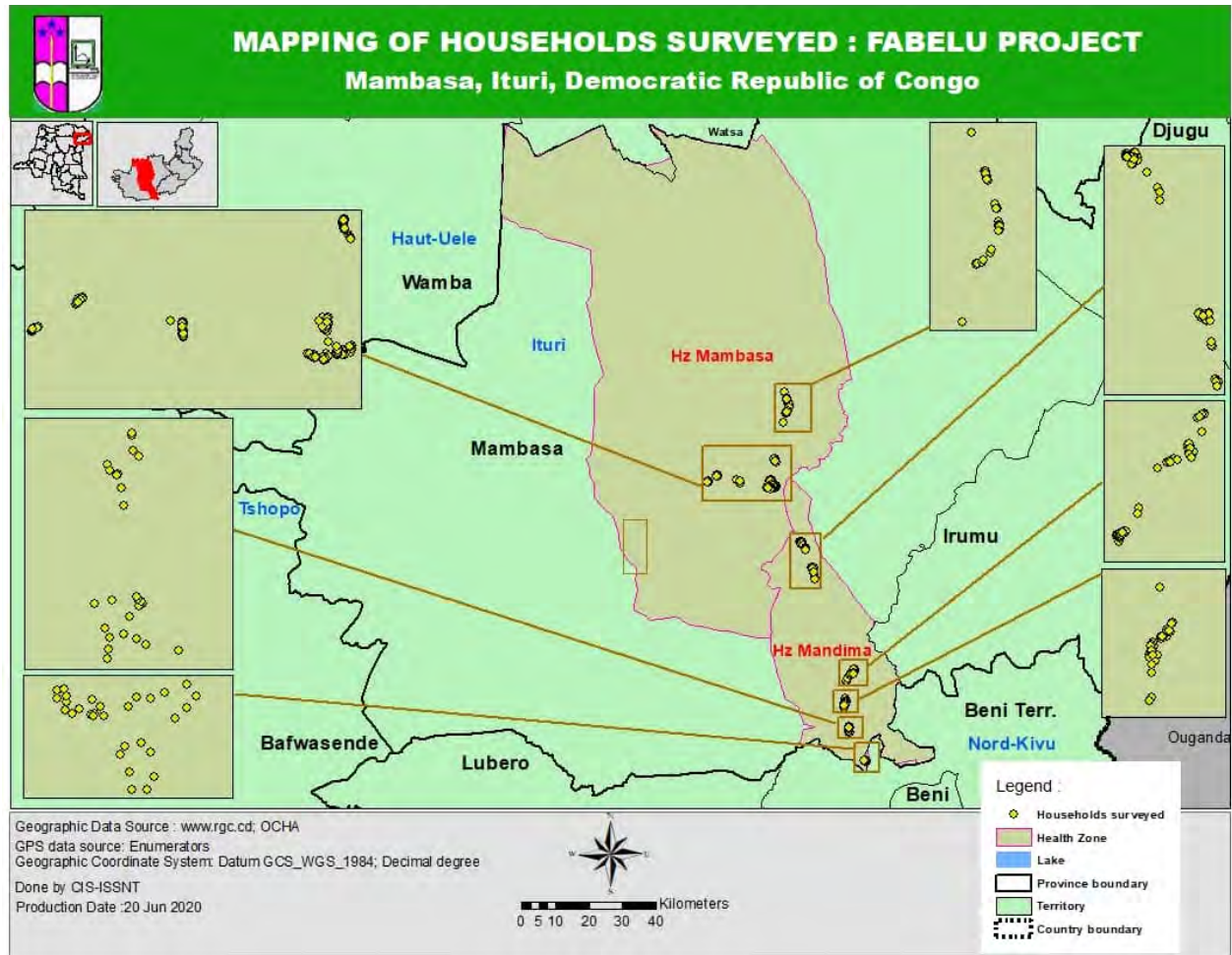
Appendix 3.5.Comparison of food security indicators by health zone of FABELU project

Indicators	Modalities	Mambasa (n=210)	Mandima (210)	Alimbongo (n=60)	Beni (n=90)	Kalunguta (n=60)	Kayna (n=90)	Lubero (n=60)	Mutwanga (n=60)	Oicha (n=60)	Aggregate Project FABELU (n=900)
FCS	Poor	16%	20%	28%	16%	12%	8%	15%	7%	17%	16%
	Borderline	53%	49%	35%	31%	63%	57%	45%	20%	42%	46%
	Acceptable	31%	31%	37%	53%	25%	36%	40%	73%	42%	38%
rCSI	High coping	71%	69%	82%	71%	95%	66%	57%	37%	78%	70%
	Moderate coping	18%	20%	17%	26%	5%	28%	28%	42%	7%	21%
	No or low coping	10%	10%	2%	3%	0%	7%	15%	22%	15%	9%
HHS	Serve hunger	21%	26%	13%	18%	20%	8%	12%	10%	33%	19%
	Moderate hunger	51%	47%	53%	51%	73%	53%	47%	43%	45%	51%
	Low or no hunger	28%	27%	33%	31%	7%	39%	42%	47%	22%	30%

Appendix 3.6 Average number of days of consumption of each type of food by category

Category	Cereals and tubers	Vegetables	Fruit/ Fruit juices	Meat, Fish and Poultry	Legumes and nuts	Other Milk products	Oils and fats	Sweets (Sugar/honey)
HS Mambasa	4.8	5.8	2.1	1.2	1.8	0.2	6.3	1.2
HZ Mandima	4.8	5.8	1.6	1.2	1.9	0.2	6.2	0.8
Female Head of Household	5.0	5.7	1.6	1.1	1.6	0.4	6.2	1.1
Male Head of Household	4.7	5.9	1.9	1.2	2.0	0.2	6.3	1.0
Adult Female No Adult Male (FNM)	4.7	6.0	1.4	0.8	1.5	0.0	6.1	0.5
Adult Male & Adult Female (F&M)	4.9	5.8	1.9	1.3	1.9	0.3	6.4	1.1
Adult Male No Adult Female (MNF)	4.0	5.0	2.6	1.3	2.2	0.3	5.5	1.5
FCS Acceptable	6.2	5.6	3.0	2.6	3.5	0.8	6.5	1.9
FCS Borderline	4.9	5.9	1.6	0.7	1.3	0.0	6.4	0.7
FCS Poor	2.2	6.0	0.5	0.1	0.7	0.0	5.5	0.2
Internally Displaced Persons (IDP)	5.1	5.7	0.9	0.6	1.7	0.0	6.2	0.6
Resident	4.8	5.8	2.1	1.3	2.0	0.3	6.3	1.2
Returnee	4.7	5.6	1.5	1.3	1.1	0.0	6.2	0.3
Aggregate	4.8	5.8	1.8	1.2	1.9	0.2	6.3	1.0

Appendix 4. Mapping of HH survey





FABELU PROJECT BASELINE STUDY

The study was conducted
by CIS/ISSNT from DRC



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