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Evaluation of the Level of Food Security in Households in the Health Area of Lwiro, Health Zone of MITI-MURHESA in 2022

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Abstract:

Study framework: health area of Lwiro in the health zone of Miti-Murhesa, in DR Congo. **General objective:** The general objective of the present work was to contribute in ameliorating household food security in order to reduce sanitary risks linked to food insecurity in the health area of Lwiro, health zone of Miti-Murhesa in Democratic Republic of Congo. **Material and method:** In order to fulfill the specific objectives of this work, we appealed to the technique of simple random sampling on 358 households. Sampling was done using a questionnaire. MS Excel and SPSS were used for data analyses and treatment. **Results:** After data analyses and treatment it was observed that, most of those who were investigated had no level of instruction, that is 31,2% with the size of the household less that 7 people, and 17,3% had a low food diversification score that is ¼, that means haven consumed a group of food amongst the 4 main groups of food during the week that preceded the investigations. **Conclusion:** Food insecurity is at its best in the health zone of Miti-Murhesa. This is a reason to recommend to the population of this health zone to diversify their feeding, in order to ameliorate their level of food security and their nutritional state.

Keywords: *Food security, household.*

Introduction

Problem Statement

Food security is achieved when all people, at all times, have economic, social and physical access to sufficient, safe and nutritious food, which meets their nutritional needs to enable them to lead an active and healthy life (Nations Unies, 2021).

The FAO estimates that around 870 million people were undernourished between 2010 and 2012, or 12.5% of the world's population, or nearly one out of eight people. The overwhelming majority of them, 852 million, live in developing countries, where it is now estimated that 14.9% of the population is affected by this problem (KONE M. C. T, 2012).

925 million people currently do not have enough to eat, which is more than the populations of the United States, Canada and the European Union combined. Knowing that the world population is expected to reach 9 billion in 2050, considerable progress must be made in agricultural productivity and competitiveness, in order to guarantee food security (AIEA: Agence Internationale de l'Energie Atomique, 2014).

The mission of the Swiss National Fund (SNF) is twofold : to improve internal food security and fight hunger by providing basic food to children and the low-income population, but also to provide support for the agricultural sector (CAIRN.INFO, 2014).

Haiti's undernourishment rate of 49.3% in 2016-2018 was almost identical to that of 2009-2011 (49.5%). We can conclude that almost half of the population is not able to regularly meet their minimum caloric needs. The main factors of food insecurity in Haiti are the high rate of poverty and low agricultural productivity due to frequent natural disasters, a high level of environmental degradation and a heavy dependence on rain-fed agriculture (CONCERN Woldwide, 2015).

Food security in sub-Saharan Africa is under threat. For many Africans, the ability to access sufficient, nutritious and safe food capable of meeting their dietary needs has been diminished by a succession of natural disasters and epidemics; cyclones Idai and Kenneth, the clouds of locusts in East Africa or the droughts in southern and eastern Africa are some examples. The COVID-19 pandemic is just the latest disaster to swell the ranks of the 240,000 million people who suffer from hunger in the region. In some countries, more than 70% of the population experiences problems accessing food (BLOGS. Pritha Miltra et Seung Mo Choi, 2020).

According to figures from the report released between October and November 2020, 6.5 million people in South Sudan faced severe food insecurity and are in need of emergency assistance. This number is expected to increase to 7.24 million between April and July 2021. Around 1.4 million children aged 6 months to 5 years are expected to suffer from acute malnutrition in 2021 and will need life-saving treatment. This includes 313,000 children suffering from severe acute malnutrition and more than 1 million children suffering from moderate acute malnutrition (FAO, 2020).

The Democratic Republic of Congo (DRC) has tremendous resources: nearly 80 million hectares of arable land and 4 million of irrigable land, but only 1 percent of this land is cultivated. Peasant agriculture occupies 70 percent of the active population. The country's vegetation can support the breeding of around 40 million heads of large livestock and its fishing density is estimated at 700,000 tonnes of fish per year. With this strong potential, the DRC is capable of feeding around two billion people in the world (FAO, 2022).

This brings this country to the conclusion that it is the country with the largest number of people in acute food insecurity in the world, with 27.3 million people (31.6% of the population) in crisis and food emergency situations. . The main causes of food insecurity in the country are protracted conflicts, mainly in the eastern provinces, causing population displacement and disruption of livelihoods, the effects of the covid-19 pandemic associated with measures confinement, the economic decline linked to currency depreciation and the drop in gross domestic product (GDP) growth, as well as natural risks (floods, animal diseases, etc.) (FAO, 2022).

Nearly 15.6 million people (26% of the population) in the DRC were classified as experiencing crisis or worse food insecurity between July and December 2019 (IPC RDC, 2019).

The South Kivu province has experienced a precarious situation of food insecurity for more than 15 years. The various assessments carried out over the years by different actors have clearly shown that the food security situation is deplorable. According to the preliminary results of the 2018 EFSA (Emergency Food Security Assesment) survey, more than half (55%) of the population of South Kivu is food insecure (EFSA: Emergency Food Security Assesment, 2019). The Ministry of Agriculture, Fisheries and

Livestock of South Kivu in its general report on the in-depth assessment of food security in emergency situations shows that the Muti-Murhesa health zone has a prevalence of 47.2% moderate food insecurity, and 37% severe food insecurity in households (WFP, 2020). Considering the above, it begs the question: What is the level of household food security in the LWIRO Health Area?

Work Objectives

General objective

The general objective of this work was to contribute in improving household food security to reduce the health risk linked to food insecurity in the Lwiro health area, Miti-Murhesa Health Zone, in RD Congo.

Specific objectives

- Determine the socio-demographic characteristics of heads of households in the Lwiro health area;
- Determine the dietary diversity score in households in the LWIRO health area.

Delimitation of the Subject

This work focused on the assessment of household food security in the Lwiro Health Area, in the Miti-Murhesa Health Zone, Kabare territory, South Kivu province in the Democratic Republic of Congo from May to October 2022.

Materials and Methods

This is a cross-sectional descriptive study focusing on the assessment of household food security in the Miti-Murhesa health zone, specific case of the Lwiro Health Area, in the Miti-Murhesa health zone, Kabare territory, South Kivu province. In 2021, the average population of the Lwiro health area was estimated at 24,796 inhabitants with 10 villages including: Lwiro (1,144 inhabitants), Kabuga (1,282 inhabitants), Buloli (1,397 inhabitants), Bunyakiri (1,099 inhabitants), Madwedwe (3,734 inhabitants), Kako (1870 inhabitants), Ntane (2638 inhabitants), Kabulungu (865 inhabitants), Mulangala (922 inhabitants) and Chahoboka (9845 inhabitants). The target population of this study was household managers in the Lwiro health area who voluntarily agreed to respond to the study questionnaire.

To draw the sample proportionately from this population, we used the statistical formula of Schwartz (1994):

$$n = Z^2 * p * q/d^2 \qquad (1)$$

Hence: n= Sample size; Z= the difference corresponding to a confidence level of 95% (1.96), i.e. the risk of error of 5%; p= Prevalence of the phenomenon studied 37% (11). q= it is the complement of p which is calculated by 1- p, = 1-0.37= 0.63, d^2= the margin of error or absolute precision 5%, $d^2 = (0.05)^2$ Hence n=358 households.

Table 1. Distribution of the Sample Size According to Villages

Villages	Population 2021	Household	%	n/village
Lwiro	1144	163	5	17
Kabuga	1282	183	5,1	18
Buloli	1397	200	5,6	20
Bunyakiri	1099	157	4,4	16
Madwedwe	3734	533	15	54
Kako	1870	267	7,5	27
Ntane	2638	377	10,6	38
Kabulungu	865	124	3,4	13
Mulangala	922	132	3,7	13
Charoboga	9845	1406	39,7	142
Total	**24796**	**3542**	**100**	**358**

Regarding the sampling technique, we used the simple random sampling technique. To do this, we asked the community relays for lists of households in the health area. Afterwards, we entered these numbers into a box and drew the number of villages constituting our sample. When we arrived on the field, we considered these selected households as target households.

To ease the work, we recruited and trained a team of investigators. The stenograph method helped us determine the direction to follow in the villages. We used a questionnaire to allow better encoding of the data collected. In order to assess household food security, we used the dietary diversity score. This evaluates dietary diversity according to four levels, i.e. dietary diversity is acceptable, that is to say 4/4or100% , ¾ or 75%, average 2/4 or 50% and low ¼ or 25%, this in considering the four major food groups namely: meat, fish and eggs; milk and dairy products; cereals and starchy foods and fruits and vegetables.

Presentation of Results

Socio-Demographic Characteristics

The table below shows the abstract of the Socio-demographic characteristics of the people surveyed.

Table 2. Distribution of Results According to the Socio-Demographic Characteristics of the Surveyed

Variables	Number(n=358)	%
Age in years		
15 to 25	72	20,1
26 to 35	129	36,0
36 to 45	82	22,9
More than 45	75	21,0
Sex		
Female	212	59,2
Male	146	40,8
Profession		
Trader	62	17,3
Farmer	126	35,2
Teacher	51	14,3
Fisher	38	10,6
Without profession	81	22,6
Civil state		
Single	61	17,0
Separated	54	15,1
Married	243	67,9
School level		
None	115	32,1
Primary	99	27,7
Secondary	110	30,7
University	34	9,5
Religion		
Catholic	134	37,4
Muslem	37	10,3
Protestant	140	39,1
Jehovah witness	47	13,1
Household size		
< 7 people	159	44,5
7 people	111	31,0
> 7 people	88	24,5

The results of this table reflect the following: of 358 people surveyed, the age group between 26 and 35 years old was the most represented, the female gender was dominant. The majority of respondents were farmers, most of them being married without education, belonging to the protestant religious faith with a household size of less than 7 people.

Dietary Diversity Score from a Week Preceding the Survey

The results relating the dietary diversity score are presented in the table below.

Table 3. Distribution of the Surveyed According to Their Dietary Diversity Score

Variable	Number (n=358)	%
Dietary diversity score		
Acceptable Score (3/4 ou 4/4)	62	17,3
Faible Score (1/4)	160	44,7
Moyen Score (2/4)	136	38,0

The analysis of Table 3 above shows that, the majority of our respondents had a low dietary diversity score, that is to say that food consumption during the week preceding the

survey concerned only one group. Food out of the four major food groups.

Discussions of the Results

Socio-Demographic Characteristics

This study resulted in a certain number of results, the most important of which deserve a particular look, in comparison with the results identified in the documentary inventory. According to the results of table no. 2, out of 358 people surveyed, among which 212 women or 59.2% and 146 men or 40.8% were the main people of this study. In terms of percentage, our results contradict those found by M.F. Mulumeoderwa, et al. in their study on "the adaptation strategy and food security of households in the highlands of Minebwe in South Kivu" which found that men represented 79% of the respondents while women represented only 21% (Mulumeoderwa M.F et al, 2020).

Regarding marital status, our sample was largely made up of married people, i.e. 67.9%. It follows from this same table that the majority of respondents (32.1%) had no level of education. These data prove that a problem arises regarding the education of the population in the MITI-MURHESA health zone where only 9.5% have a university level of study, contrary to the results found by Jonh K, in his study on « the factors determining the endemicity of cholera in the Uvira health zone » which show that the majority of respondents had a secondary education level, i.e. 60.2% and a small proportion (5%) without a secondary education level instruction (Jonh K, 2021). Most of the respondents (44.5%) had a household size of less than 7 people, 24.5% had a household size of more than 7 and 31.0% had a household size of 7 people. These results corroborate with those found by Célestin S. in his study on "the state of food and nutritional security in the town of Kikwit in 2020 : case of the Ngulunzamba district in the commune of Lukemi" which show that households who had a membership varying between 6 to 10 people were more represented, i.e. 80%. (Celestin S, 2020).

According to the general report of the Ministry of Agriculture DRC (2020), in partnership with WFP, INS, FOOD SECURITY CLUSTER and USAID, household size has a link with dietary diversity. In other words, households with a small size tended to diversify their diet more than those with a large size. Households with a size of 10 people or more have the lowest average dietary diversity score (SADM =4.35) compared to 5.11 for households with a size of three people or less (WFP, 2020).

According to the Food Security Cluster, despite the variability observed throughout the territory of the DRC, it agrees that the average size of households can be extended up to 6 people. This data will serve as a calculation basis for planning, programming and budgeting for emergency and rehabilitation interventions (OCHA, 2020).

Dietary Diversity Score

It appears from Table 3 that 44.7% of respondents had a low dietary diversity score (1 out of 4 or 25%), a sign of food insecurity, compared to 17.3% having an acceptable score (4 out of 4 or 3 out of 4 or even 75 to 100%).

These results contradict those found by Anais D. et al. WFP Cameroon in their national survey on food and nutritional security which shows that 11% of households surveyed had a poor consumption score (1-21) and 66% of households surveyed had an acceptable food consumption score (≥35) in 2020 (PAM, 2021).

Still comparing our results with those found in the former province of Maniema by the Ministry of Agriculture (2016), nearly 33% of households in the province had poor food consumption and 45% with limited food consumption. As for the Food Diversity Score (SDA), the reduced index of survival strategies and the proportion of households taking only one meal per day, the analysis confirms especially in terms of the lowest SDA (average SDA=4.2) and the highest proportion of households living on just one meal per day, 69% (PAM avec le Ministère de l'agriculture, Ollo S et al. (Mai 2016)).

Conclusion and Recommendations

At the end of this study relating the evaluation of the level of household food security in the MITI-MURHESA health zone, specific case of the LWIRO health area, in DR Congo.

To achieve the objectives assigned below: determine the socio-demographic characteristics of household heads and the dietary diversity score in households in the LWIRO health area.

After the collection and analysis of the data collected in the field, we found that the majority of respondents had no level of education, i.e. 31.2%, with a household size of less than 7 people, i.e. 44.5%. The food security situation in the LWIRO Health Area reveals a low dietary diversity score (1/4 or 25%) in 44.7% of households.

At the end of this study, some recommendations should be taken into account such as:

To the political and health authorities of the DRC:

Improve strategies to combat food insecurity in all regions of the country.

Strengthen the capacities of health, agriculture and livestock workers in ruralareas in terms of food and nutrition, so that they can support families in the adoption of good food and nutritional practices.

To the MITI-MURHESA health zone:

Continue communication activities for social behavior change in matters of food security.

To the population of LWIRO Health Area:

Kindly promote dietary diversity in their households and agricultural production, with a view to combating food insecurity.

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