Emergency Food Security Assessment

Sierra Leone

June 2015

Data collected in March - April 2015

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Acronyms

ACF: Action Contre la Faim
CARI: Consolidated Approach for Reporting Indicators of Food Security
CFSA: Crop And Food Security Assessment
CFSVA: Comprehensive Food Security and Vulnerability Analysis
CSI: Coping Strategy Index
DERC: District Ebola Response Center
EFSA: Emergency Food Security Assessment
EVD: Ebola Virus Disease
FAO: Food and Agriculture Organisation
FCS: Food Consumption Score
FEWSNet: Famine Early Warning System Network
HDI: Human Development Index
MAFFS: Ministry of Agriculture, Forestry and Food Security
MPI: Multidimensional Poverty Index
MoHS: Ministry of Health and Sanitation
MoEST: Ministry of Education, Science and Technology
mVAM: mobile Vulnerability Analysis and Mapping
NGO: Non-Governmental Organisation
NERC: National Ebola Response Center
SCI: Save the Children International
SLL: Sierra Leonean Leone
SNAP: Sustainable Nutrition and Agriculture Programme
UNDP: United Nations Development Programme
UNICEF: United Nations Children Funds
VAM: Vulnerability Assessment and Mapping
WB: World Bank
WFP: World Food Programme
WHO: World Health Organisation
WVI: World Vision International

Acknowledgments

The preparation of this rapid emergency food security assessment was initiated in January 2015, when the Ebola Virus Disease outbreak was affecting –directly or not- the entire country in *real time*. Simultaneously, the need to update the information on food security as a result of the outbreak was crucial for the Government of Sierra Leone and the humanitarian community in order to support recovery efforts. In a country where food insecurity is chronic despite a fast economic growth and where the Ebola outbreak has had the highest case incidence of the three most affected countries, the food security situation was expected to further deteriorate, jeopardising the lives of over a million people.

This assessment was a joint effort between the Ministry of Agriculture, Forestry and Food Security (MAFFS), the World Food Programme (WFP), the Food and Agriculture Organization (FAO), Action Contre la Faim (ACF), Sustainable Nutrition and Agriculture Programme (SNAP)-ACDI/VOCA, CARE, Save the Children and World Vision, each of them having an important role in the field during the data collection. WFP expresses its gratitude to each of them for their invaluable technical and logistical support.

Appreciation also goes to the WFP Vulnerability Assessment and Mapping (VAM) colleagues in the country office, in the regional bureau and in headquarters for their engagement, technical skills and invaluable insights during the data collection, analysis and report finalisation.

Last but not least, WFP expresses its deepest gratitude to the 2,197 households and 172 communities who were willing to open their homes and minds to the survey teams without any fear of stigma and discrimination during what was such a dramatic period in their lives. The understanding that has been gained through this assessment will help the humanitarian community to support their recovery.

Gon Myers

WFP Representative, Sierra Leone

Executive Summary

This evaluation has been carried out to assess the food security situation in both the affected and non-affected communities in the aftermath of the Ebola Virus Disease (EVD) outbreak, and it took place just a couple of months after the country began to experience a decline in the incidence of new cases.

However, the findings of the survey suggest that the international and local trade disruptions and the ban on public gatherings imposed by the Government to contain the spread of the virus adding to the fear of both contracting the virus and of social discrimination, have affected the livelihoods of Sierra Leoneans at the detriment of their food security situation without distinction. As such, during the lean season (May-August) millions of people could face serious difficulties to access food if some form of assistance does not reach them in time.

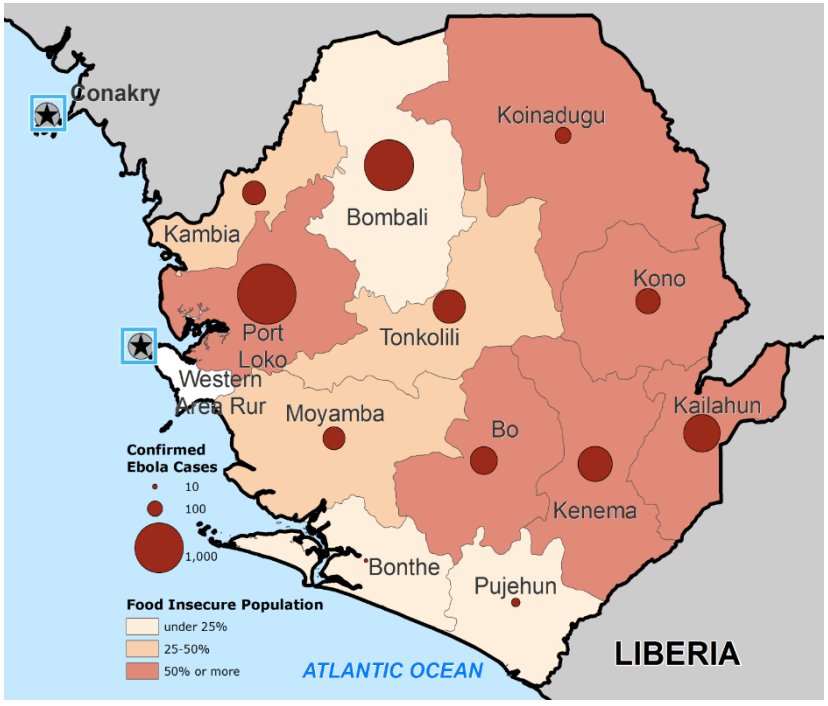
How many people are food-insecure?

The food security situation is chronically poor in Sierra Leone. At the time of the survey it was affecting 2,580,000 people, corresponding to 43 percent of the population, of which 7 percent (420,000 people) are severely food insecure. This situation implies:

- a poor food consumption, based on cereals, oil and some vegetables and a few more commodities for almost half of the population (i.e.: 45 percent of the households);
- the adoption of more frequent and more severe detrimental coping strategies that deplete households' assets and erode the most vulnerable livelihoods. In particular, 8 percent of households use stress strategies (like borrowing money or selling household assets), 19 percent use crisis strategies (like selling productive assets) and a strikingly high 32 percent use emergency strategies (mostly begging); and
- a high economic vulnerability which translates into an excessive share of households total expenditures account for by food purchases. For example, for 45 percent of the households food represents more than 65 percent of total expenditures, leaving little space to other needs.

Who are the food-insecure people?

The most affected categories are: (i) farmers of food crops who saw their rice production fall by 39 percent compared to the previous year, (ii) agricultural wage labourers who suffered from a decline in income of 12 percent and have also been affected by a drop in employment opportunities, and (iii) traders who have been affected by market disruption. Moreover, those households relying on unstable jobs such as coal burning, wood cutting, or on aid and gifts have also been severely affected. Globally all the livelihoods characterised by uncertainty are more vulnerable to food insecurity.



Where do the food-insecure people live?

Food insecurity is not distributed evenly across in the country: there are important differences between the districts. The highest concentration of food insecurity (moderate and severe) is found in the districts of Kailahun, Kenema, Bo, Port

Loko and Kono, with respectively 74 percent, 58 percent, 57 percent, 55 percent and 54 percent of households affected. The situation is particularly worrying in the district of Kailahun, not only for the highest prevalence of both moderate and severe food insecurity in the country (59 percent and 16 percent respectively), but especially since this has surged significantly since 2011 when only 13 percent of the households were food insecure.

Why are they food-insecure?

Poverty and the exposure to international food price volatility[1] are the underlying causes of vulnerability in Sierra Leone. The EVD outbreak has further eroded the livelihoods of both affected and non-affected communities. The ban on public gatherings, coupled with a fear of contracting the virus as well as discrimination and stigmatization, has isolated many households who depended on trade, external labour, and agricultural products to survive and has also diminished their purchasing power.

How can we support the households?

Given the situation it is recommended to:

- Provide support to severely food insecure households through direct food assistance and in the form of unconditional Cash Based Transfers (CBTs) during the lean season where markets are fully functional.
- Give priority to the most food insecure districts: Kailahun, Kenema, Bo, Port Loko and Kono, and to those livelihoods based on irregular incomes, such as the daily workers significantly impacted by EVD, woodcutters and coal producers, palm oil extractors and those relying on aid and gifts.
- Target small farmers who lost more than 50 percent of their harvest and petty traders should also be targeted.
- Include small holder farmers who lost more than 20 percent of their produce in food for work and/or CBT activities.
- Proceed with seed protection for the incoming agricultural campaign.
- Ensure that school feeding recommences as well as relevant take home rations.
- Communities affected by EVD and those who lost their livelihoods should be considered in the school feeding programme.[2]
- Continue monitoring the food security situation closely in the incoming months. The situation should be assessed again after the next harvest.

[1] The country remains highly dependent on food imports, exposing households to price shocks such as those in 2008.
[2] National Ebola Recovery Strategy for Sierra Leone envisage School Feeding as a key priority.

1. Context, Objectives and Methodology

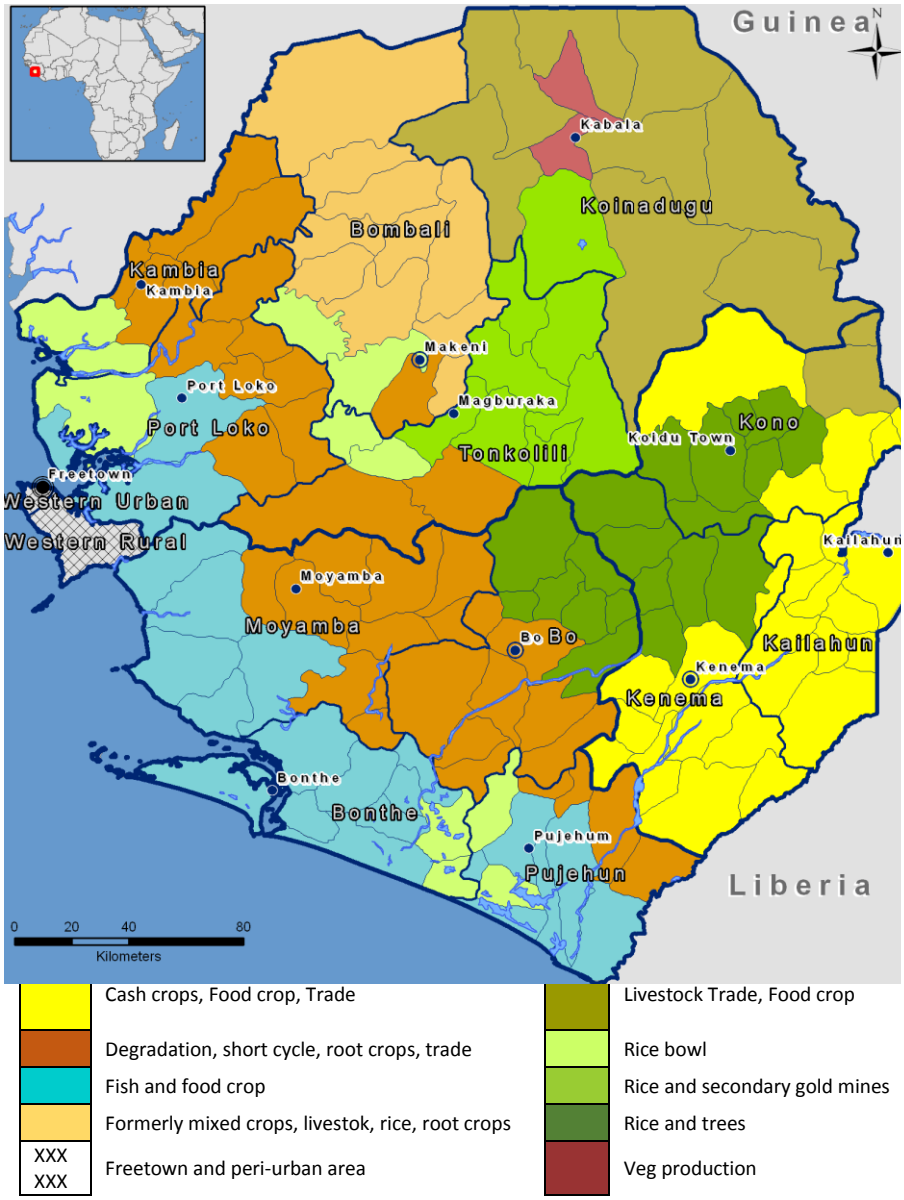
1.1 Context and justification

Sierra Leone is a low-income country, ranked 183 out of 187 in the Human Development Index (HDI) despite rapid economic growth in the past decade and some progress in human development, whose score increased steadily from 0.255 in 1980 to 0.374 in 2013[3]. Among its over 6 million population, 77 percent are considered poor according to the Multidimensional Poverty Index (MPI)[4], with a life expectancy at birth of 46 years and an average years of schooling of 2.9[5]. The population is vulnerable to seasonal hunger, with up to 2.5 million (45 percent) people living in food insecurity from May to August, which also coincides with the peak of the rainy season.

The government and FEWSNET have mapped ten livelihood zones where people share similar options for obtaining food and income. However, the majority of the rural population lives on subsistence farming, on upland and lowland farms, where heavy rains from April to November negatively affect soil fertility[6]. As a result of poor yields, even in rural areas, three quarters of the population rely on markets for access to food.

The 2014 agricultural season was very similar to that in 2013 in terms of rainfall pattern and use of agricultural inputs. However, the 2014 harvest was significantly impacted by Ebola containment measures resulting in a reduction in farm labour and associated activities such as planting and weeding [7]and an estimated loss of 2.09 million tonnes of cereals.[8]

Map 1: Sierra Leone livelihood zones (source: FEWS Net)



[3] HDI 2014, UNDP, http://hdr.undp.org/en/data

[4] The MPI is an international measure of acute poverty covering over 100 developing countries developed by the University of Oxford and UNDP. It complements traditional income-based poverty measures by capturing the severe deprivations that each person faces at the same time with respect to education, health and living standards. For more information: http://www.ophi.org.uk/multidimensional-poverty-index/mpi-2015/mpi-data/

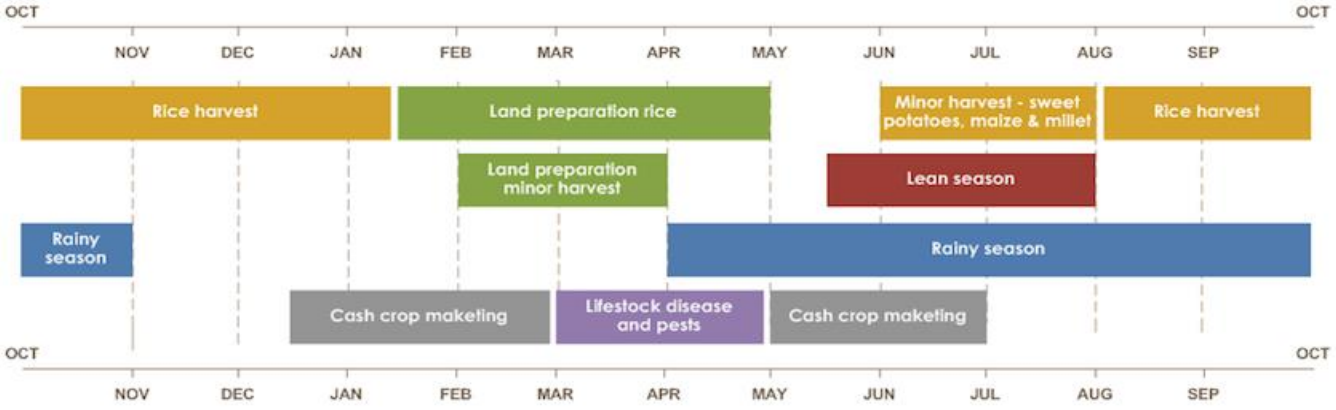
[5] HDI 2014, UNDP, http://hdr.undp.org/en/data

[6] CFSVA 2011 http://www.wfp.org/content/sierra-leone-state-food-security-and-nutrition-2011

[7] FAO/WFP Crop And Food Security Assessment Sierra Leone, 17 December 2014

[8] This includes cassava a cereal equivalent and rice in milled terms.

Chart 1: Seasonal calendar in Sierra Leone



Source: FEWSNet

In March 2014 rapidly evolving cases of EVD were notified in Guinea. The epidemic crossed the border into Sierra Leone in May 2014, and quickly spread throughout the country, with the highest concentration initially in Kailahun and Kenema districts. In August 2014, the World Health Organization (WHO) declared an international public health emergency. Since the onset of the outbreak, there have been about 13,000 cases in Sierra Leone only, out of which more than 3,900 were fatal.[9]

The epidemic started spreading when crops were being planted and it expanded during the crop maintenance period and critical harvesting period for staple crops (rice, maize and cassava).[10]

In order to contain the epidemic, the Government closed all but three land border crossings, restricted public gatherings (including schools and labour organisations) and quarantined communities heavily affected by Ebola. This had a considerable impact on people's ability to carry out their normal livelihoods and on trading activities. In July 2014 a State of Emergency was declared, further restricting trade through the closure of periodic markets – mostly located in sparsely populated areas. Additional trade restrictions, imposing a halt on any trading activity after 6 pm and on weekends were out in force since December. A ban on public gatherings affected farmers' labour organizations, which rely on exchange labour in the form of large groups of farmers moving from one farm to another. This is feared to have reduced productivity and production. All sectors of the economy from petty traders to the construction sector or mining industries significantly slowed down during the epidemic.[11]

In February, a joint MAFFS/FAO/WFP market assessment found that poor households in many areas, irrespective of whether their communities were exposed to EVD or not, would be more vulnerable to food insecurity as the lean season (May – August) was approaching, due to a decline in purchasing power.[12]

A number of sources (including the CFSAM)[13] established that market disruptions affected food access. The mVAM, a monthly food security monitoring system set up by the WFP through a mobile survey (SMS), showed that:

- Higher levels of coping strategies were found in the districts most hit by the epidemic, even after case incidence had decreased, particularly in Kailahun. Food security had however generally improved by the end of the harvest period (Dec). Rural households were more vulnerable to food insecurity than urban ones.
- Wage rates had been pushed down by the economic crisis, affecting households' purchasing power.
- Traders reported a substantial decrease in demand of food items.

[9] WHO Sitrep: http://apps.who.int/ebola/ebola-situation-reports.
[10] FAO/WFP Crop and Food Security Assessment Mission (CFSAM) – Sierra Leone, 17 December 2014.
[11] The Economic Impact of the 2014 Ebola Epidemic-World Bank Sep.17, 2014.
[12] FAO, WFP, MAFSS Joint Market Mission, Feb 2015.
[13] FAO/WFP Crop and Food Security Assessment (CFSAM) – Sierra Leone, 17 December 2014.

Key questions remained however unanswered, due to the nature of the assessments that had been conducted remotely– mostly through telephone surveys – which required an infield evaluation to identify vulnerable groups not easily reached through mobile phones to assess:

- Whether Ebola affected areas were more vulnerable to food insecurity than others, due to quarantines and
- Whether income generation and food security had been affected by the closure of markets.

This assessment was launched in March 2015, at a time when the downward trend in new Ebola cases was being confirmed, stabilizing below 100 cases per week. Despite Sierra Leone still not being free of Ebola, the declining trend of new Ebola cases, coupled with an increased awareness of preventive measures, has made a resumption of household surveys possible, without fear of spreading the epidemic further.

1.2 Objectives of the Assessment

The main objective of the assessment is to identify and quantify food insecurity in key districts, and by livelihood zone. Specific objectives are to:

- Assess whether Ebola affected areas are more food insecure than others;
- Understand how the closure of periodic markets affected income, stocks and food security;
- Estimate the perception on students' enrolment at school reopening.

1.3 Methodology

1.3.1 Partnership

This rapid Emergency Food Security Assessment (EFSA) is the result of a joint effort between the WFP and the members of the Food Security Working Group, chaired by the FAO. Institutions participating in the assessment include the MAFFS, ACF, Sustainable Nutrition and Agriculture Programme (SNAP)-ACDI/VOCA, CARE, Save the Children and World Vision.

1.3.2 Sampling

Sierra Leone is administratively divided into three provinces; divided into 12 districts and 149 chiefdoms, and the Western area housing the capital Freetown. A total of 2.580 households were sampled of which a total of 2,197 responded to the survey (corresponding to an 85 percent response rate).

For analysis purposes, the communities in the country were divided into two groups: "Ebola affected communities" and "Ebola unaffected" which were sampled separately, using distinct sources. The survey was purposive[14] in nature, although it sought to provide a maximum probability of representation through random selection.

Stratum identification

Unaffected Group

Each district is considered a stratum. The survey targeted all rural districts except Western Area Rural. Selected districts included in the unaffected group were Bo, Bombali, Bonthe, Kambia, Kenema, Koinadugu, Kono, Moyamba, and Port Loko. Unfortunately, it was not possible to collect data in the unaffected communities of Kailahun and Pujehun due to logistics constraints.

[14] The purposive sampling does not involve random selection: the researcher decides which group to interview. For more information: EFSA handbook second edition pp. 97-106, WFP 2009. http://www.wfp.org/content/emergency-food-security-assessment-handbook

Affected Group

All rural districts except Western Area Rural were strata from which affected communities were selected. There was no stratification by livelihood zone in this group due to the small amount of affected communities in some districts.

1.3.2 Selection of Chiefdoms, Communities and households

Unaffected Group

The National Census of 2004 was used for the identification of chiefdoms, adding the FEWSNet's livelihood zone classification.

Chiefdoms: In each district five chiefdoms were randomly selected. In each of them the livelihood zone classification has been applied, to ensure that the stratification was proportional to the importance of the livelihood in each district.

Communities: In each chiefdom two sections (administrative fourth level) were randomly selected. The census did not provide the name of villages within each section, providing an enumeration code instead. The time required to obtain the list of the villages in each enumeration code was longer than the two weeks available for the preparation of the survey. Enumerators were thus instructed to interview households in the section's main village. In some cases, these villages had been directly affected by Ebola (two communities in Port Loko and two in Kono). While they are randomly selected and thus provide a fairly representative picture of the situation of food security in the district, they are considered in the analysis in the affected group in order to maintain a clear distinction between the two categories.

Households: In each community 15 households were selected using in-field random sampling without listing.

Affected Group

In most districts, four communities were randomly selected within the list of affected communities in the WFP and NGO databases. In districts with over 1.000 EVD cases (Port Loko and Bombali), six communities were selected.

1.3.3 Planned sample Size

Table 1: planned survey sample

District	Number of Ebola cases	Partners	Chiefdoms randomly chosen within livelihood groups	No. villages per chiefdom	Non-affected villages RANDOM (2 per chiefdom)	Affected villages	Household/ village	TOTAL Household/ district
Koinadugu	106	SNAP	5	2	10	4	15	210
Bombali	1.035	Care	5	2	10	6	15	240
Tonkolili	454	SNAP	5	2	10	4	15	210
Kambia	182	Care	5	2	10	4	15	210
Port Loko	1.407	WFP	5	2	10	6	15	240
Kono	253	WFP	5	2	10	4	15	210
Kenema	503	WFP	5	2	10	4	15	210
Kailahun	565	SCI	5	2	10	4	15	210
Moyamba	208	ACF	5	2	10	4	15	210
Bo	314	WFP	5	2	10	4	15	210
Bonthe	5	WVI	5	2	10	4	15	210
Pujehun	31	SCI	5	2	10	4	15	210
TOTAL assessment sample		12 districts to assess			120	52		2.580 hhs to interview
					172 communities to interview			

Unaffected communities in Pujehun and Kailahun were reached to a smaller extent, and a smaller sample per community (10 instead of 15) was used in some villages in Koinadugu and Tonkolili due to logistical difficulties of the partner carrying out the survey. Overall 2,197 households and 172 communities have been interviewed.

1.3.4 Training

Seven organizations took part in the survey, in a coordination effort to provide comparable results. Each NGO used its field staff, based in their operational area(s). For this reason, rather than organizing one training for all the enumerators, which would have been costly and time consuming for all participants, it was decided to train one trainer per organization, who would then be in charge of training the enumerators and coordinating the survey in their respective district(s).

The training of trainers was led by the WFP and the Ministry of Agriculture's Policy Evaluation Monitoring and Statistics Department, who also jointly carried out the Comprehensive Food Security and Vulnerability Analysis (CFSVA) in 2011.

1.3.5 Data collection tools

Two questionnaires were used to collect the data, one at household level and the other at community level. Both information collected were quantitative.

1) The household questionnaire focused on the following topics:

- Household demography and access to school
- Housing water and energy access
- Livelihood
- Consumption Strategies
- Expenditure patterns
- Credit and Debt
- Agriculture and agricultural labour
- Coping mechanism and
- Households' needs.

2) The key informants questionnaire was addressed to groups of elders, teachers, heads of villages and focused mostly on the following topics:

- Community size
- Ebola status (whether or not directly affected by Ebola)
- Access to public infrastructure (markets, schools, health care) and
- Prices of agricultural commodities at farmgate[15].

Data were collected using paper questionnaires.

1.3.6 Data collection

The data collection took place from 22 March to 10 April 2015. It was initially planned to start on the 20th but it was delayed by the "stay at home" policy, a state of emergency measure that required all residents to stay at home for three days (in addition to the Easter Holiday). Some of the partners, including the WFP, chose to delay the data collection due to the necessity of using all available human resources to support the stay at home measure, while others chose to start as planned.

[15] The price at the farmgate is the price of the product available at the farm.

1.3.7 Data entry, analysis and validation

Each partner responsible for its districts has independently carried out the data entry using Microsoft Access.

WFP has carried out the analysis, both in Freetown, at the Dakar regional bureau as well as at Headquarters, using SPSS. It has also been responsible for the database management and the data cleaning.

The validation has taken place in April: WFP had individual workshops with each partner to review and endorse the data.

1.3.8 Limitations

This survey must be interpreted bearing important caveats in mind:

1. Assuming, as demonstrated by the CFSVA, that the share of food insecure people is 45 percent, the sample size per district (150) should be sufficient to ensure that the results are representative at the district level with 10 percent precision and a 95 percent confidence interval. The reader however, should bear in mind that the results exclude residents of very small villages surrounding the main section villages.
2. In Kailahun and Pujehun enumerators did not visit the unaffected communities because of logistical issues, hence there is no estimate of food security indicator in these districts, but only an estimate of food security for affected communities in these districts.
3. The division of affected and unaffected areas for the sampling was based on the available information of number of cases and may not reflect accurately the reality.

2. Results

Despite the sampling of the survey having been done by creating two groups of communities (the one affected by EVD and the other not affected), results of the analysis show that the differences between these two groups are not significant: probably the preventive measures such as the restrictions of movements as well as the fear of contracting the disease have affected the whole country without distinction. Therefore the results are presented highlighting differences between geographical districts and/or livelihoods, except for the results on the agriculture sector, where some differences between the two categories can be highlighted. The evaluation has been done using the CFSVA carried out in 2011 as a baseline, as well as by comparing the situation before and after the Ebola crisis.

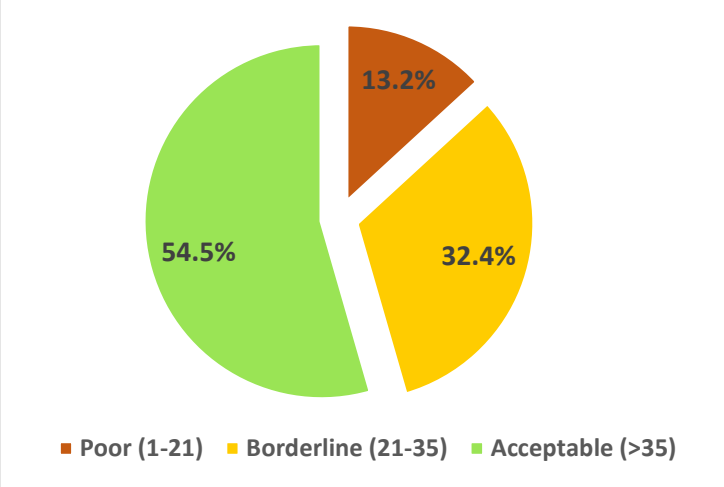
2.1 Food consumption

Almost a half of households have inadequate food consumption

The food consumption has been measured through the Food Consumption Score (FCS), an indicator that represents the dietary diversity, energy, macro and micro content value of the food consumed by the household in the seven days prior the survey[16]. In Sierra Leone the cut-off points to describe the food consumption patterns are:

0-21: poor
22-35: borderline
>35: acceptable

Chart 2: Food consumption groups



Food consumption is inadequate (borderline + poor) for about 45 percent of households, 13 percent of which have very poor food consumption.

Overall the prevalence of inadequate food consumption has not changed since 2010, constantly affecting 45 percent of households. However, the CFSVA was conducted during the lean season (in June-July 2010) when usually the share of households unable to access sufficient food surges. Hence we can assume that the food consumption for the poor households will worsen further in the following months.

There are important differences among the districts: Kailahun stands out with a very important prevalence of poor food consumption, which affects overall more than half of its population (56 percent), compared to 2010 when only 3.7 percent of households had a poor food consumption. In this district only one household out of ten currently meet its food needs.

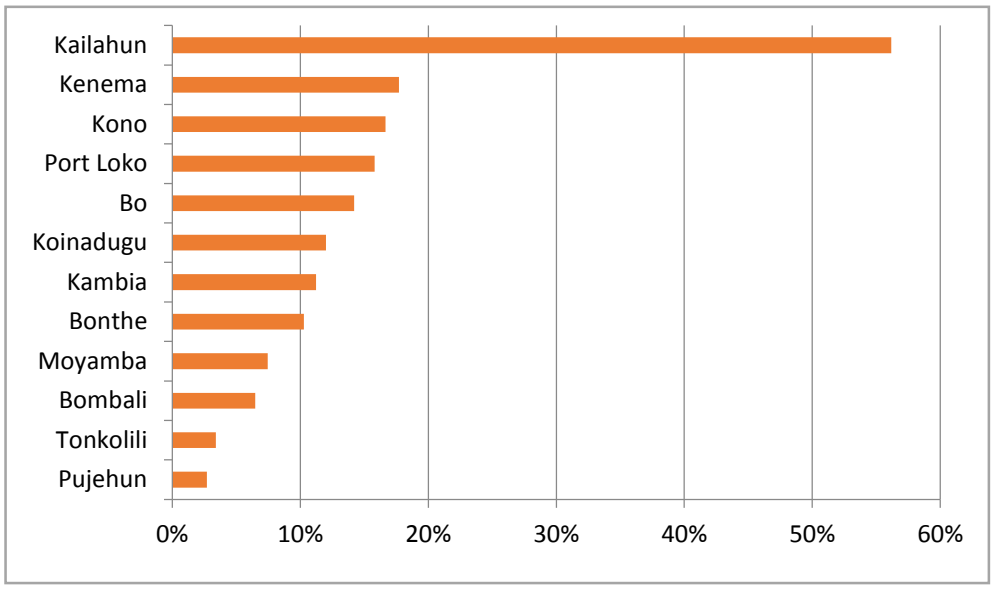
Table 2: Food consumption groups

Food consumption	Prevalence	Number of people
Poor (1-21)	13.2%	792,000
Borderline (21-35)	32.4%	1,944,000
Acceptable (>35)	54.5%	3,270,000

[16] For more information on the FCS methodology: http://documents.wfp.org/stellent/groups/public/documents/manual_guide_proced/wfp197216.pdf

In the communities directly affected by Ebola outbreak, food consumption is slightly worse than in those non-affected (16 percent of households have a severe food consumption against 12 percent).

Chart 3: Prevalence of poor food consumption at district level



2.1.1 Diet composition

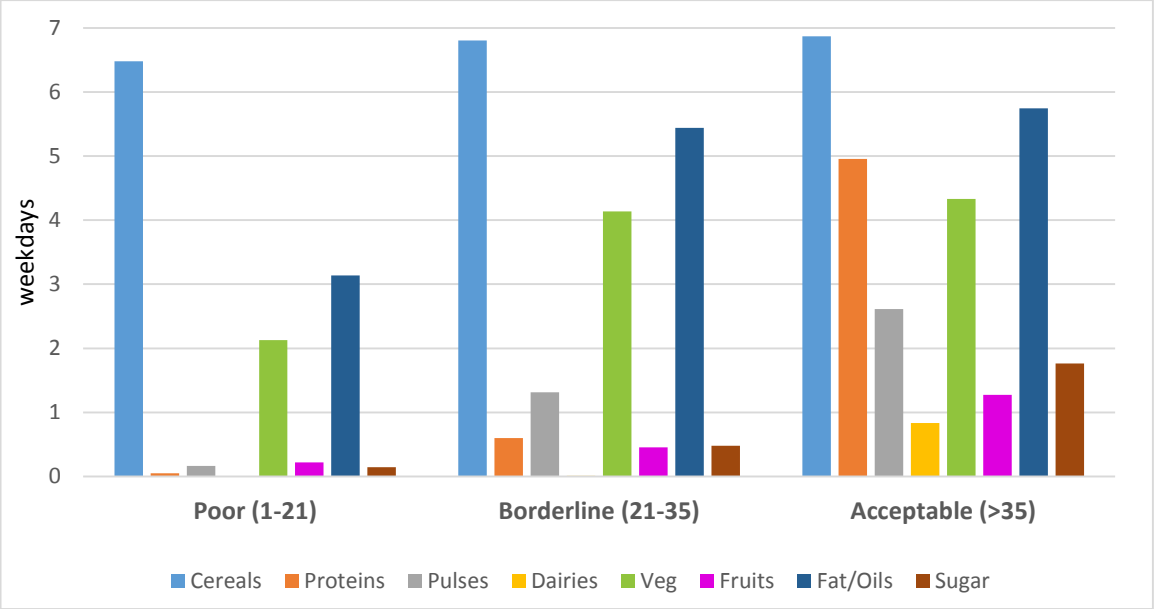
The diet composition significantly varies across the three groups

The food intake is almost exclusively limited to cereals, vegetables and oil for the **poor food consumption group**, who barely consume pulses, sugar or fruit and never have animal proteins or dairy products.

Those characterised by **borderline food consumption** have a more frequent intake of cereals, oil and vegetables compared to the poor ones, eat some pulses, and for less than a day per week they have some sugar and animal proteins.

Households characterised by an **acceptable food consumption** have a much more diverse diet: they add to the staple food group animal protein five days per week, and they are the only ones consuming dairy products, despite this occurring only once a week.

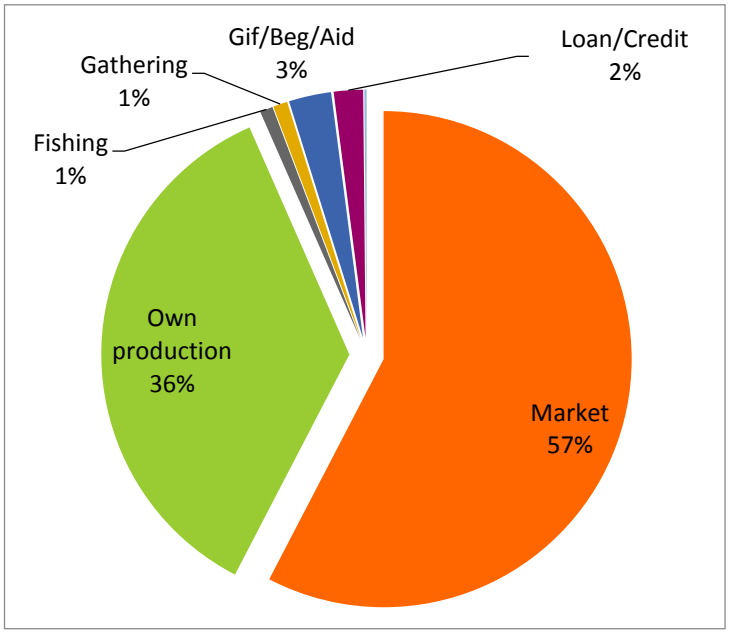
Chart 4: Composition of the average diet per food consumption group



2.1.2 Sources of food

Households are highly dependent on markets to access to food

Chart 5: Sources of food



The most important source of food is by far the market: just two-three months after the harvest more than half of the food was purchased in cash, showing the importance of both the market functionality and of price stability in ensuring food security.

Given the EVD restrictions, agricultural productivity was reduced and thus many farming households were dependent on the markets for food. It is expected that households' dependency on markets will increase going into the lean season too.

2.2 Coping Strategies

2.2.1 Food strategies

Coping strategies are more frequent and severe

The Coping Strategy Index (CSI)[17] is a WFP indicator that measures the frequency and severity of the coping strategies households employ when faced with food shortages. The reduced CSI inquires five detrimental alimentary behaviours adopted during the seven days prior to the survey: the consumption of less preferred and less expensive food, the borrowing of food, the reduction of portion size, the restriction of adults' consumption in favour of children and reduction of meals per day. The higher the score, the more frequent and severe these strategies are, therefore the more vulnerable the household is.

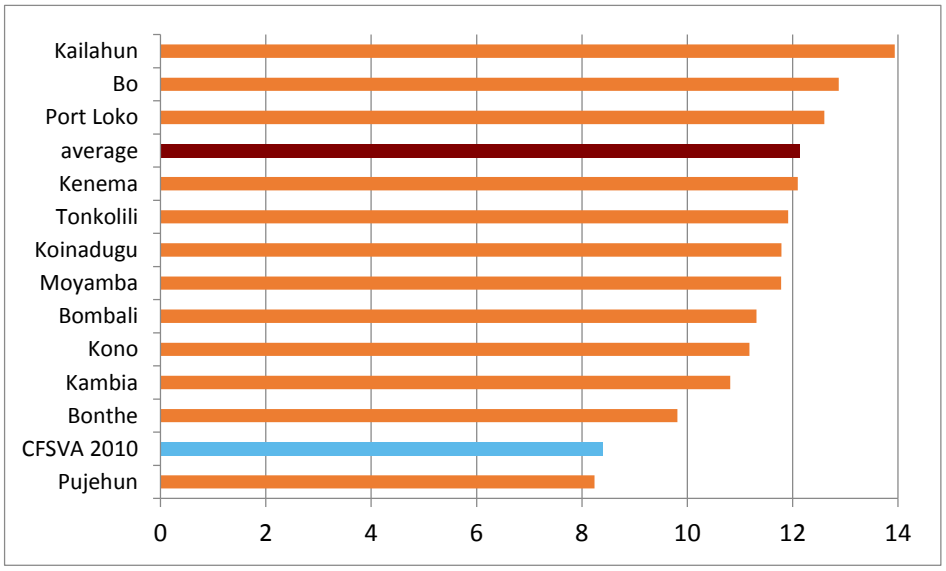
Table 3: Trend of the CSI reduced (average)

	2010	2015	Evolution
Pujehun	7	8	19%
Bonthe	6	10	35%
Kambia	7	11	35%
Kono	12	11	-11%
Bombali	12	11	-7%
Moyamba	10	12	19%
Koinadugu	11	12	6%
Tonkolili	10	12	19%
Kenema	6	12	48%
average	*8*	*12*	*31%*
Port Loko	6	13	53%
Bo	16	13	-20%
Kailahun	9	14	37%

Households recur more often to the coping strategies compared to 2010. The reduced CSI has deteriorated: on a national level it has passed from an average of 8,4 to 12,1, and in districts such as Port Loko, Kenema and Kailahun the CSI increase is remarkable (+53 percent, +48 percent and +37 percent respectively).

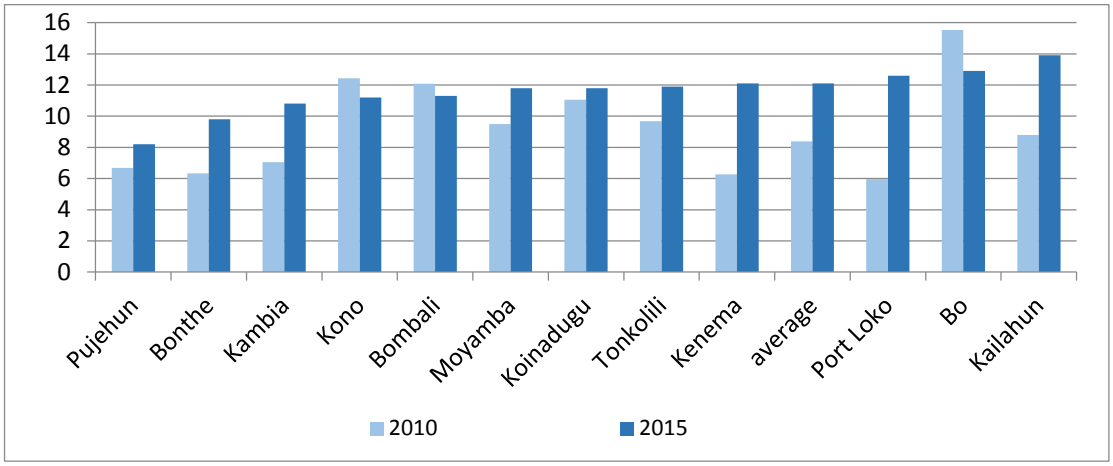
The most common strategies used to cope with food shortages are to reduce meal portions and eat less preferred food. The trend in these districts is alarming and shows an increase in vulnerability of the inhabitants.

Chart 6: CSI reduced per district



[17] For more details on the CSI methodology:
http://home.wfp.org/stellent/groups/public/documents/manual_guide_proced/wfp211058.pdf

Chart 7: Evolution of the reduced CSI per district



2.2.2 Livelihood strategies

Half of the households have recurred to strategies to face shock

In order to assess the status of the households' assets since the December 2014, respondents have been classified into four categories, following the severity of the behaviours adopted vis-à-vis the family assets. Overall, 41 percent of households did not use any coping strategies, while 8 percent of them used stress strategies (like borrowing money or selling household assets), 19 percent used crisis strategies (like selling productive assets) and a strikingly high 32 percent used emergency strategies (mostly begging). Coping levels were the highest in Kailahun district, known for its production and export of cash crops. Particularly in this district, agricultural workers who are usually employed by wealthy land-owning farmers were left unemployed due to EVD restrictions thus forcing many to sell off crucial assets. This has deteriorated their food security situation with consequences likely to be seen during the coming lean season.

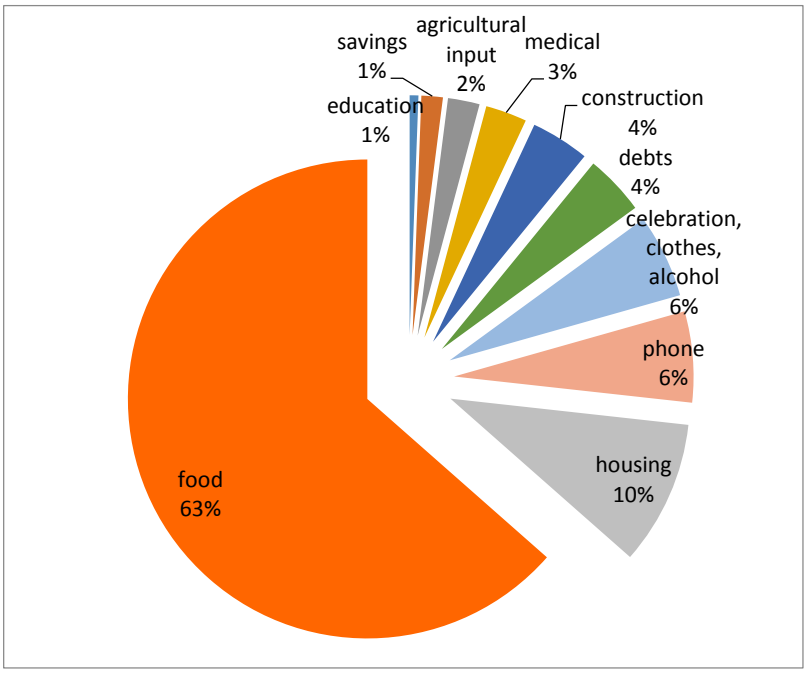
Table 4: Prevalence of non-food strategies

Categories of households	Households adopting strategies (number)	Households adopting strategies (%)
Insurance strategies/No coping	900	41%
Stress strategies	188	8%
Crisis strategies	408	19%
Emergency strategies	701	32%
Total	**2.197**	**100%**

2.3 Expenditures

The average monthly expenditure per person is 89.155 SLL (about 20 USD[18]), which is less than one dollar per day per person. The median value is even lower being at 69.000 SLL (about 16 USD), meaning that half of the interviewed households spend less than 16 USD per month per person to survive. In the districts of Pujehun and Kailahun this share is as low as 42.500 SLL and 54.000 SLL (about 9,8 and 12,4 USD respectively).

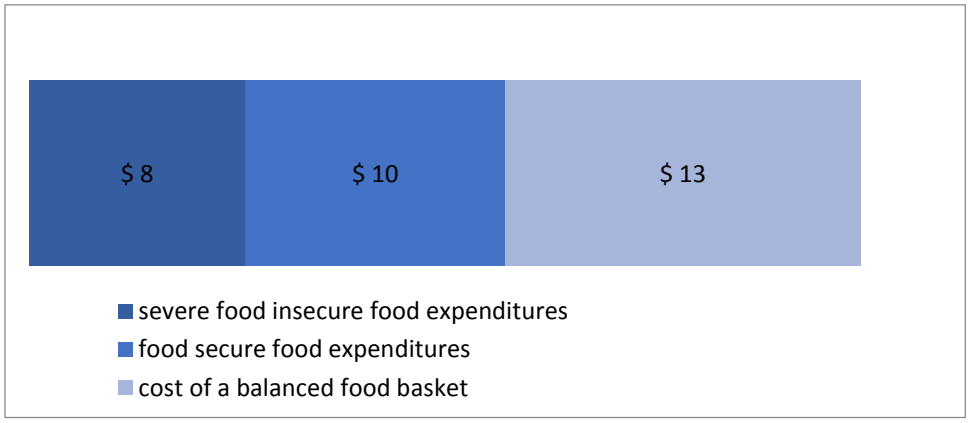
Chart 8: Household's expenditure pattern



The severe food insecure households have the lowest monthly level of expenditures per capita: only 56.000 SLL (13 USD). Considering that food represents on average 63 percent of the total expenditures and that the cost of a balanced food basket of conventional local food items (composed of rice, dried beans, palm oil, vegetables, fish, cassava flour, groundnuts and fresh cassava) is slightly more than 13 USD per month/per person[19], the average household is not able to cover its basic food needs.

If we then consider that half of the severe food insecure households spend 35.000 SLL (about 8,1 USD) to purchase food, it is evident that they cannot afford to have a healthy and balanced diet. Even half of the households belonging to the food secure category do not purchase a balanced food basket.

Chart 9: Cost of a balanced food basket and food expenditures of severe food insecure and food insecure households (USD)



Apart from food, which represents an overall 60 percent of the household's charges, main expenses consist of transportation, phone and detergents. Medical and educational charges only represent respectively 2,6 and 1 percent of the total. Despite some small variations, the pattern of households' expenditures has remained similar to that in 2010.

[18] The exchange rate applied is 1 USD = 4.319 SLL (June 2015).

[19] This estimation has been made by WFP in 2013, following a survey carried out in Freetown. The price of a balanced food basket has probably changed in two years time, however it still gives an indicative dimension of its cost.

2.3.1 Share of food expenditures

Food expenditures represent more than 65 percent of the total for almost half (45 percent) of households

Almost three-quarters of households allocate more than 50 percent of their total expenditures on food. The more difficult the household's situation is, the larger the share of food expenditure in the budget. As such, almost half of households (45 percent) spend more than 65 percent of their expenditure on food. This share remains high for up to a third of Sierra Leonean households: 29 percent of them spend between 50 and 65 percent of their total expenditure to purchase food. This underlies the households' very weak capacity to address other critical expenses such as medical and schooling.

Chart 10: Share of households' food expenditures

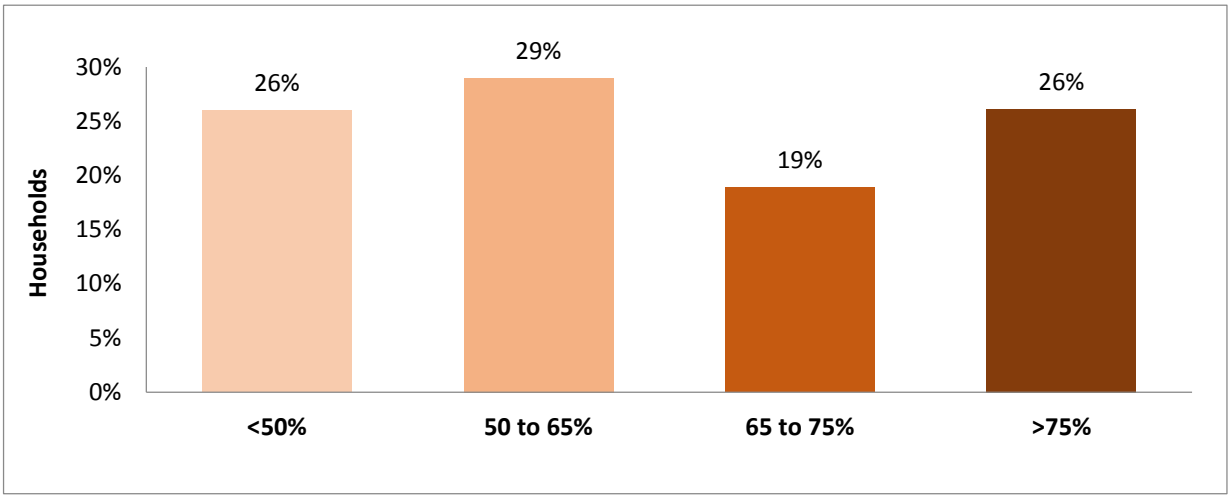
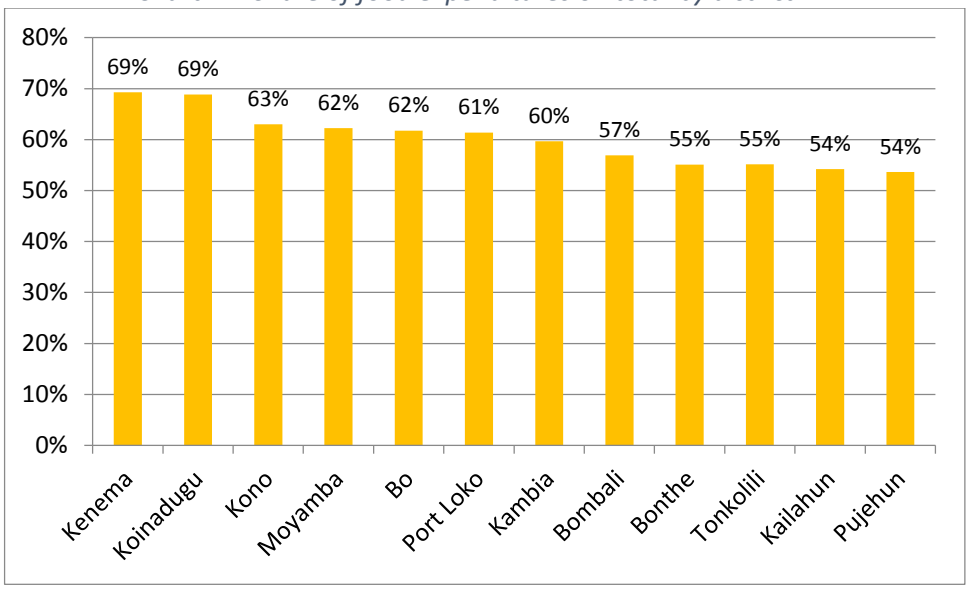


Chart 11: Share of food expenditures on total by district



2.4 Status of Food Security

Food security remains high and affects new districts

The status of food security has been assessed using the Consolidated Approach for Reporting Indicators of food security[20] (CARI), which classifies the households into four categories, from the most to the least food secure. This classification is based on the current status of the household's food security (measured through the FCS) and on its ability to survive (measured through the share of food expenses on the total and through the asset depletion indicator).

As a result of the description of these three indicators in the former paragraphs, 2,580,000 people, corresponding to 43 percent of the population, are food insecure, 7 percent of which are severely food insecure. These prevalences are in line with those in 2010, however a comparison would not be accurate, given that the methodology used to represent food security has evolved.[21]

Table 5: Prevalence of food security and number of affected people

	Percent of households	Number of people affected
Severely food insecure	7%	420,000
Moderately Food insecure	36%	2,160,000
Marginally Food insecure	42%	2,520,000
Food secure	15%	900,000

Table 6: CARI Console

		Food secure	Marginally Food insecure	Moderately Food insecure	Severely food insecure
Current status	Food Consumption	54%	-	32%	13%
Coping capacities	Asset depletion	41%	8%	19%	32%
	Economic vulnerability (% of food expenditures on total)	26%	29%	19%	26%
Food security share		15%	42%	36%	7%
National prevalence of food insecurity				**43%**	

[20] For more information on CARI: https://resources.vam.wfp.org/sites/default/files/CARI%20Factsheet_2.pdf

[21] In 2010 the FCS was used as proxy indicator for food security.

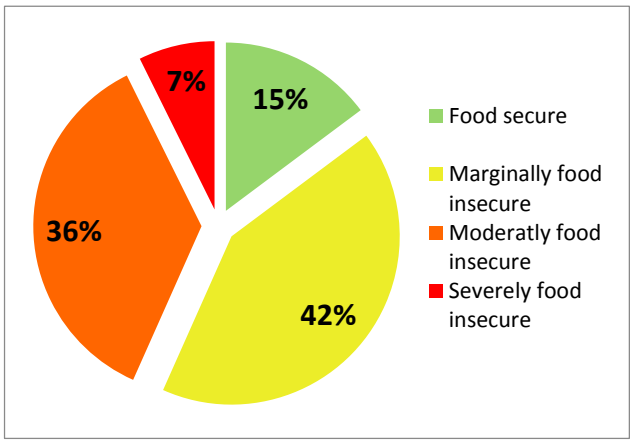
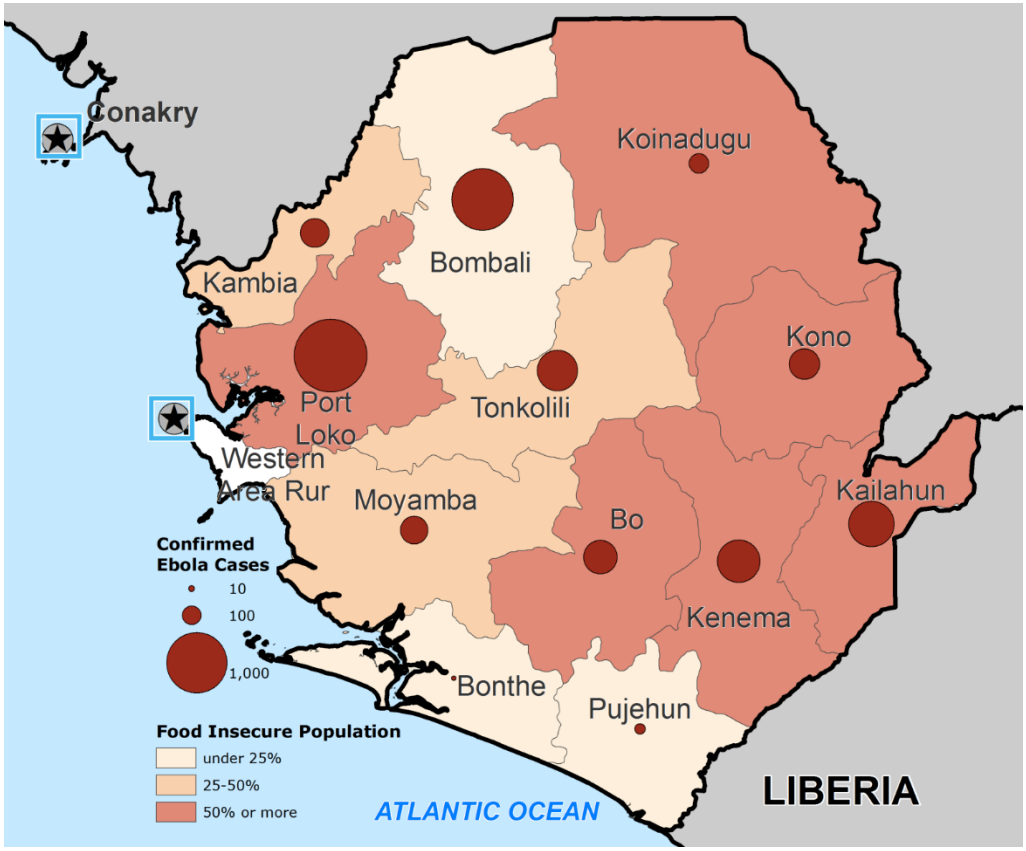


Chart 12: Classification of households' food security

At district level, households in Kailahun live with very poor food security and the situation has seriously deteriorated since 2010. Kailahun is indeed the district at the border with Liberia and Guinea, the closest to the initial epicentre of the EVD outbreak (Gueckedou-Guinea), situated between the three countries, and characterised by both cash and food crop farming. Despite the district having benefited from high international prices for cocoa and coffee in the past years, markets have been disrupted by the long quarantines that lasted several months.

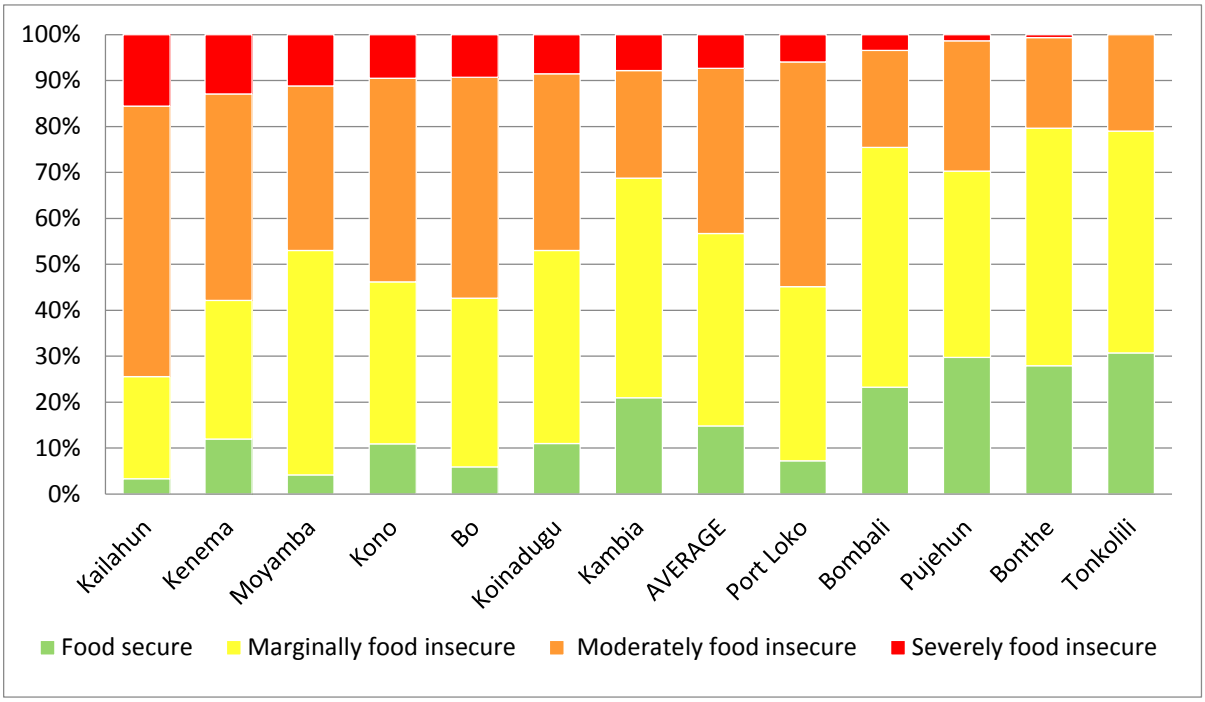
Very poor food security also affects Kenema, Bo and Port Loko districts. Port Loko is one of the main business hubs which was severely affected by the restrictions. Kenema being a cash crop producer, labourers are affected by restrictions and quarantines and similarly, production and trading was significantly impacted. While Bo serves as a business route for the south-west part of the country, which was also drastically affected by the restrictions.

Map 2: Prevalence of food insecurity and of confirmed Ebola cases



Source: WFP

Chart 13: Food security prevalence at district level



2.5 Food security groups

Severely food insecure: These households consume only one meal per day, which is poor and non-varied. Half of these households monthly per capita expenditures are about 56.000 SLL (less than 13 USD). 52 percent of food comes from the market against 38 percent of own production. Most of them live of woodcutting and coal burning, remittances and gifts. The housing conditions are very poor: one in three uses the bush for toilet; they also almost never have a flush toilet.

Moderately food insecure: This group is characterised by a poor food consumption: on average they eat two meals per day. The monthly median expenditures of this group is 68.000 SLL (about 15,5 USD). 53 percent of the food comes from the market, against 42 percent of own production. Many households among those living on wood cutting and coal burning, on mining and unskilled labour belong to this category. The housing conditions are also poor: the proportion of those using the bush as a toilet is one household out of four; they almost never have a flush toilet.

Marginally food secure: These households consume two meals per day, and they have a borderline food consumption. The median monthly expenditures of this group correspond to 71.000 SLL (about 16 USD). 60 percent of their food comes from the market and 33 percent by own production. A high proportion of those living on unskilled agricultural labor and on cash crops, trade and vegetables/fruit sale belong to this category. One household out of five uses the bush for toilet.

Food secure: Households belonging to this group eat on average two meals per day and they have an acceptable food consumption. Half of these households expenditures correspond to about 77.000 SLL (less than 18 USD). They rely mostly on markets to satisfy the bulk of their needs (64 percent of their food comes from the market against 27 percent of own production). Typical sources of income of most food secure people are the skilled and unskilled labour and salaries. Hygiene conditions are better off: only one household out of six uses the bush as a toilet.

2.6 Income

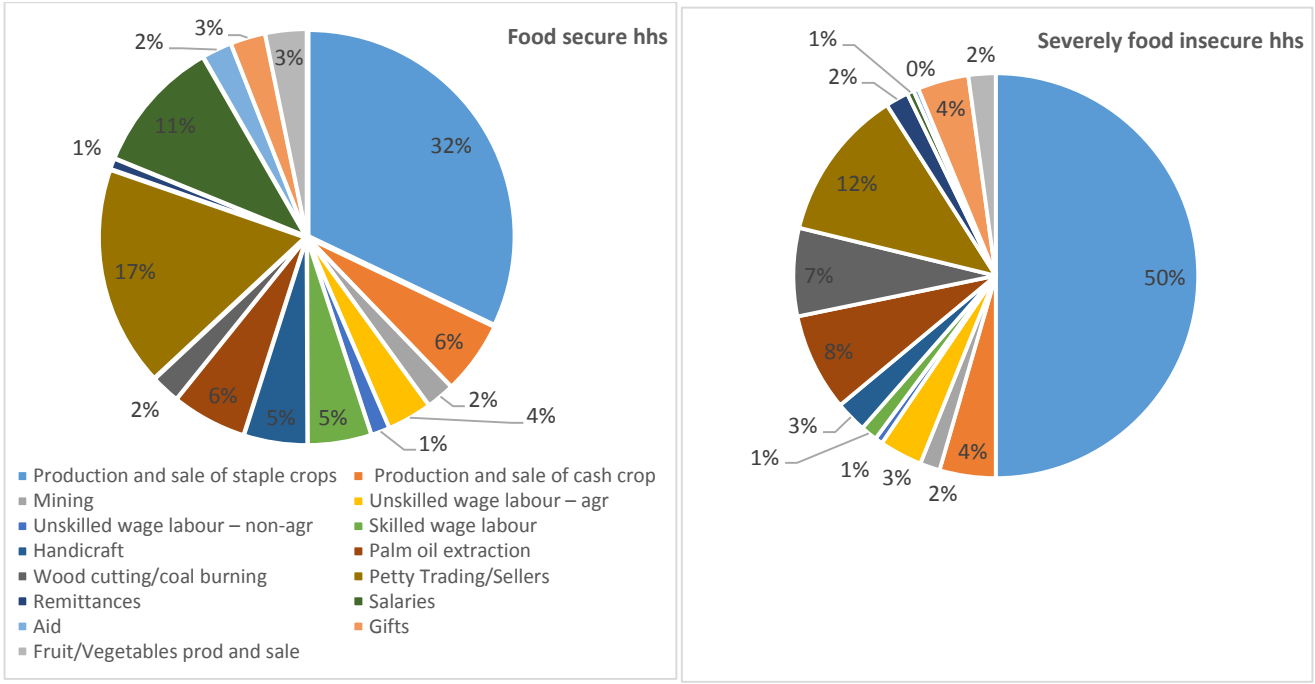
Food insecure households have less diversified income sources than food secure

The income sources have not changed since the Ebola outbreak, as the limitation of movement and the quarantine did not leave much space for new job opportunities. Food crop farming represents the main source of income for the majority of Sierra Leoneans, followed by petty trade and the production and sale of cash crops (cocoa beans and coffee).

On average the severely food insecure households depend largely on the production and sale of staple crops, which represents 50 percent of their income sources, followed by petty trade (12 percent) and palm oil extraction (8 percent). These are all income sources that have been affected by the EVD, as such households depending on these activities are more vulnerable than others.

The share of income sources of the food secure households is much more varied. The main source of income is still the production and sale of staple food, but to a lesser extent (32 percent). Other main sources of income are the trade (17 percent), the salaries (11 percent) and the production and sale of cash crops (6 percent).

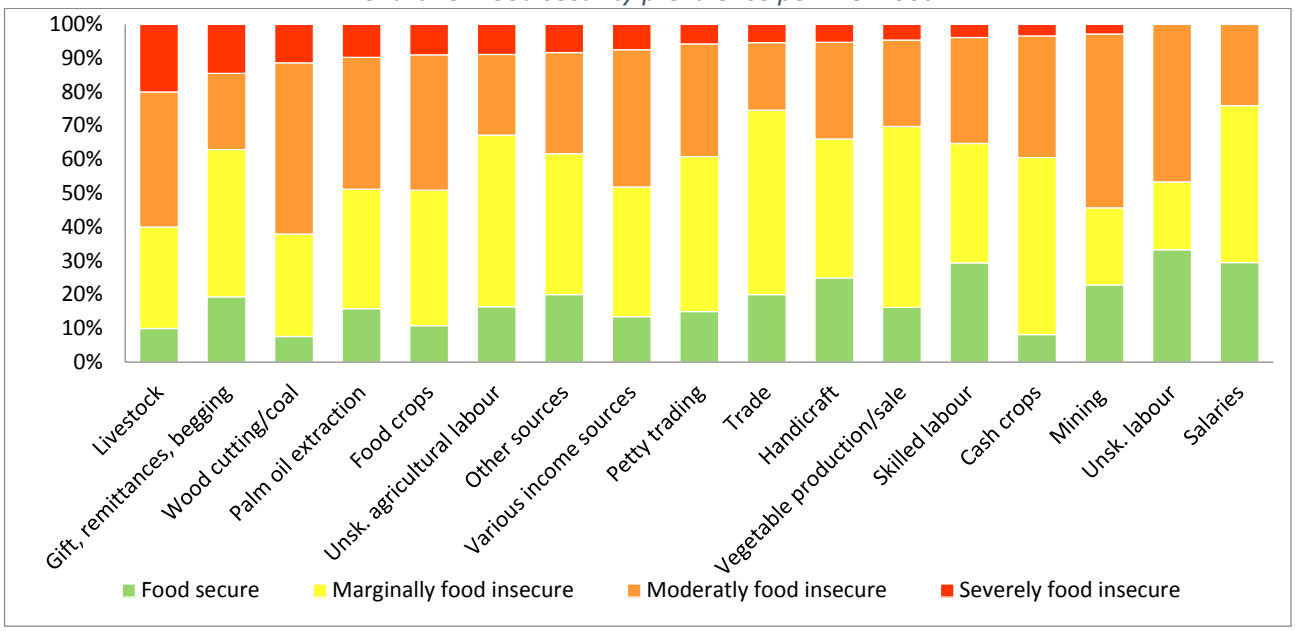
Chart 14: Comparison of the share of main sources of income –food secure and severely food insecure hhs



Food crop farmers have been negatively affected by the EVD epidemic. As a matter of fact, border closures, quarantine measures and other restrictions seriously disrupted the marketing of goods including agricultural commodities. As such, trade activities have declined significantly, particularly in the quarantined districts (CFSAM 2014).

Labour workers also saw their employment opportunities decreased because of the ban on public gatherings, as detailed in the agriculture workforce section. Moreover, the average daily wage decreased by 12 percent since the beginning of the epidemic, and plunged as low as 16 percent in the affected communities (against 9 percent in the non-affected communities). This is a direct effect of the containment measures.

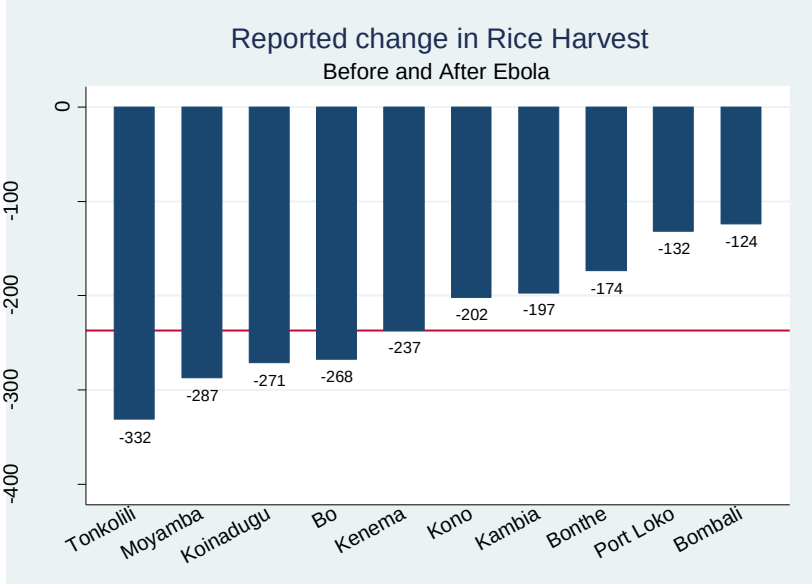
Chart 15: Food security prevalence per livelihood



2.7 Agricultural production

2.7.1 Harvest

Chart 16: Rice quantity loss per district



Agriculture is the most affected sector by the Ebola crisis. Every district has seen a significant decrease in rice production compared to the previous year harvest. On average districts harvested 39 percent (237 kg) less rice in 2014 compared to the previous year. In Moyamba farmers harvested only 40 percent of the previous year's production.

Farmers in Tonkolili, Koinadugu and Bo also experienced important drops in rice production. This has occurred despite the increased quantities of agriculture inputs used (especially in Kambia and Bombali) compared to the previous campaign. The decrease in rice production is due to the reduction of the farm workforce caused by the Ebola containment measures.

2.7.2 Rice stock

At the time of the survey 24 percent fewer households had rice stocks compared to the previous year. For half of these households the stock is 40 percent lower than the previous year's one, given the lower quantity harvested.

The rice stocks among those households who have some left is lower than at the same time in 2014 and would barely last three months for the food secure households and two months and a half for the severely food insecure ones.

2.7.3 Farm Workforce: household, exchange and hired labour

Exchange and hired agricultural labour have diminished compared to the previous harvest

In Sierra Leone it is common for (semi)subsistence farmers to organise labour groups within their immediate community in order to look after the different plots. These labour groups are usually composed of (male) workers belonging to different farm households, in many cases living in the same village[22]. However, to contain the epidemic, the government imposed a ban on all public gathering, including on exchange labour, on which farms typically rely at the peak of the collection period.

The number of household members working in their own farms has not changed after the outbreak, only a slight increase has been remarked, probably due to the lack of possibility to move which forced labourers to remain and work in their own fields.

However, the number of exchange workers (those who are part of labour groups) has dropped by 24 percent per household after the outbreak. In Tonkolili, the ban lead to a drop by 12% wage labourers compared to the

[22] Farm viability of (semi)subsistence smallholders in Sierra Leone, Saravia Matus & Gomez y Paloma, African Journal of Agricultural and Resource Economics, Vol 9 No 3, pages 165-182.

previous harvest. Households did not substitute exchange labour with more household members, probably leaving some unharvested rice in the fields. This may have contributed to the decrease in the agricultural production.

Hired labour during the harvest has also decreased: the number of workers per household dropped by 29 percent compared to the 2013 harvest. The most frequent reductions took place in Tonkolili and Moyamba, with almost 10 workers less per household.

Chart 17: Trends of exchange labour after EVD outbreak

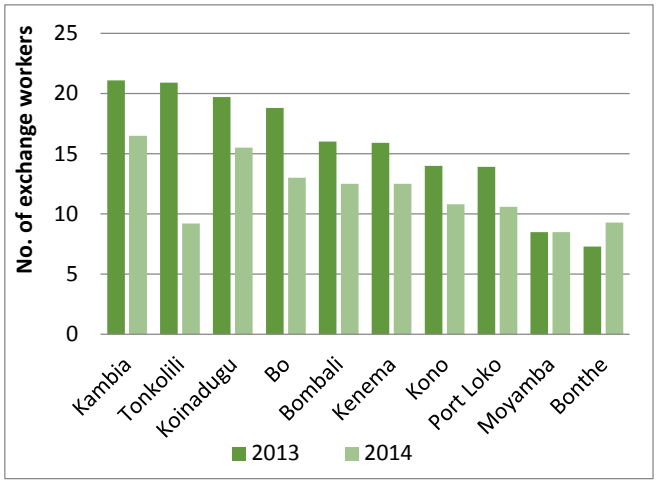
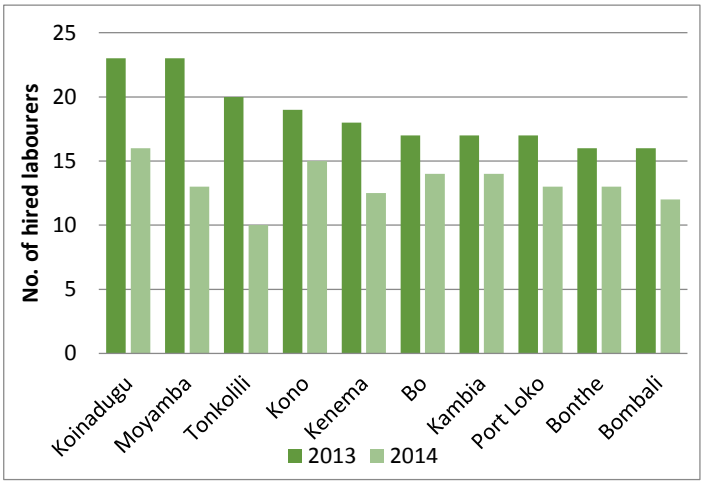


Chart 18: Trends of hired labour after EVD outbreak



2.7.4 Perspectives on the forthcoming agricultural season

Food crop farmers are expected to plant slightly less in 2015 compared to 2014, due to households' lower food/seeds stocks.

Chart 19: Quantity of Rice used for planting in 2014 and 2015 by District

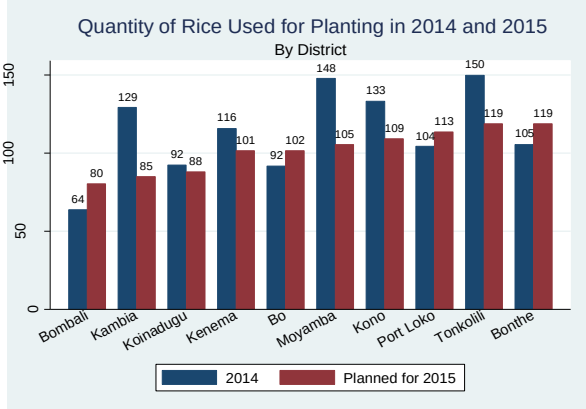
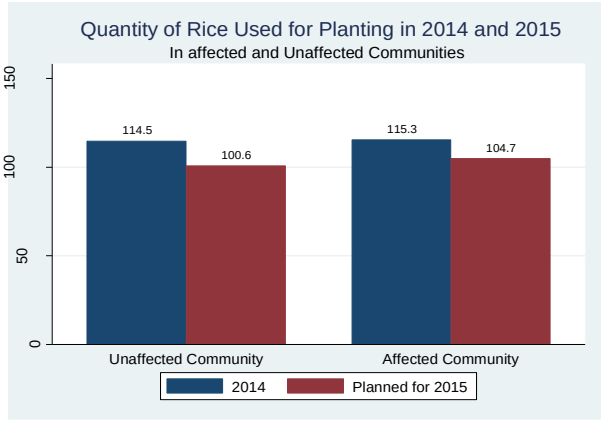


Chart 20: Quantity of Rice used for planting in 2014 and 2015 in affected and unaffected communities



2.8 Perspectives on schooling

The Ebola outbreak forced the closure of schools for eight months with schools finally reopening in March. At the time of the survey households planned to send students back to school at the same levels as before the outbreak. This suggests a strong willingness to resume the previous life, after one year of isolation and fear of stigmatization.

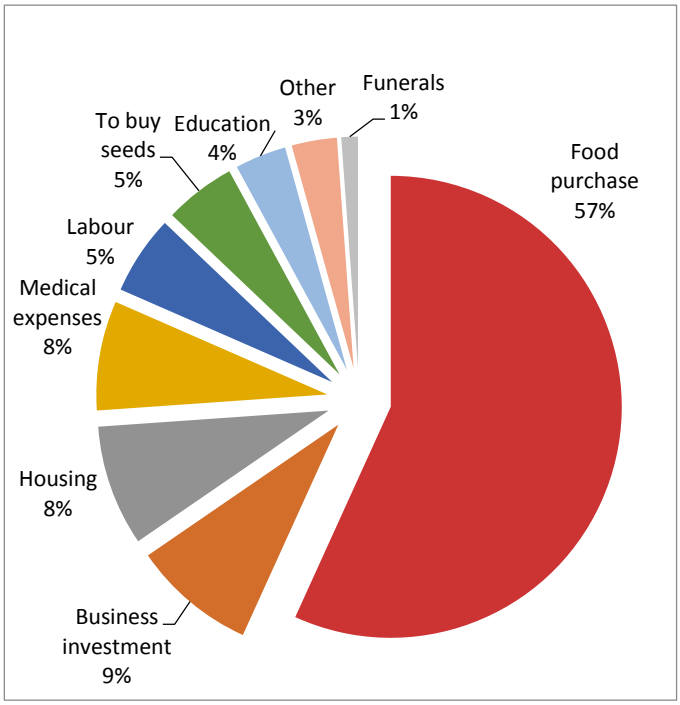
2.9 Credit

More than the half of the credit is used to buy food

Three-quarters (76 percent) of households have borrowed money in the past 12 months, of which more than half of them have used this money to purchase food. This is a significant increase compared to 2011 CFSVA, which showed that only one third of the households borrowed money to purchase food.

In the three months before the survey one fourth of the households had borrowed money at least once, with no difference between Ebola affected and non-affected communities/area.

Chart 20: Share of household's credit use



2.10 Households' Needs

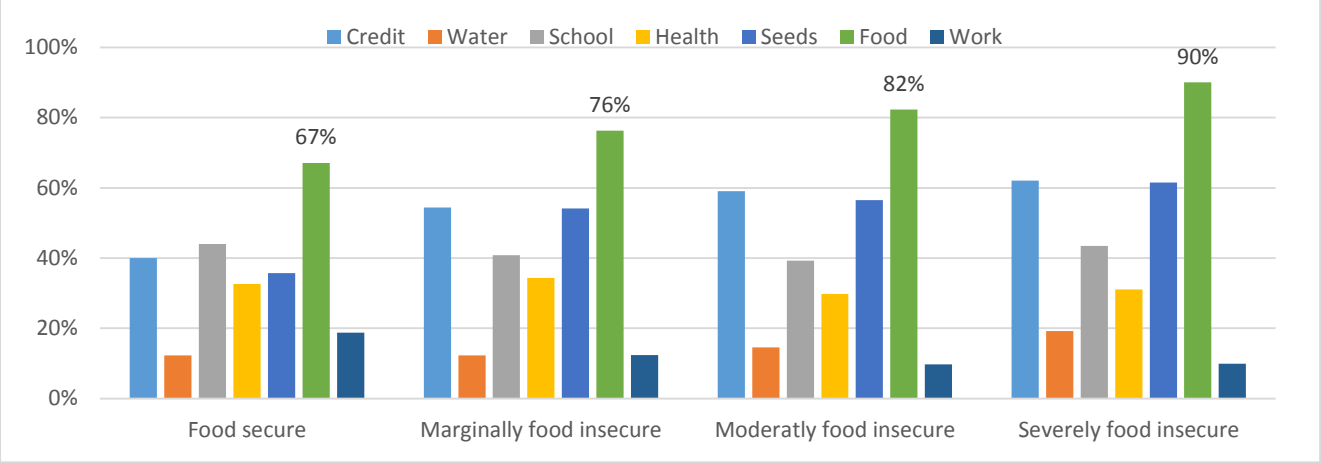
One household out of four needs food. One household out of five needs credit

Households face difficulties in accessing food: food and credit constitute their main needs irrespective of their level of food security. This shows the importance of improving food and credit accessibility, especially at the onset of the lean season.

In particular, almost all the severely food insecure households (corresponding to 90 percent) list food as their main priorities, followed by credit (62 percent) and seeds for the incoming agricultural season.

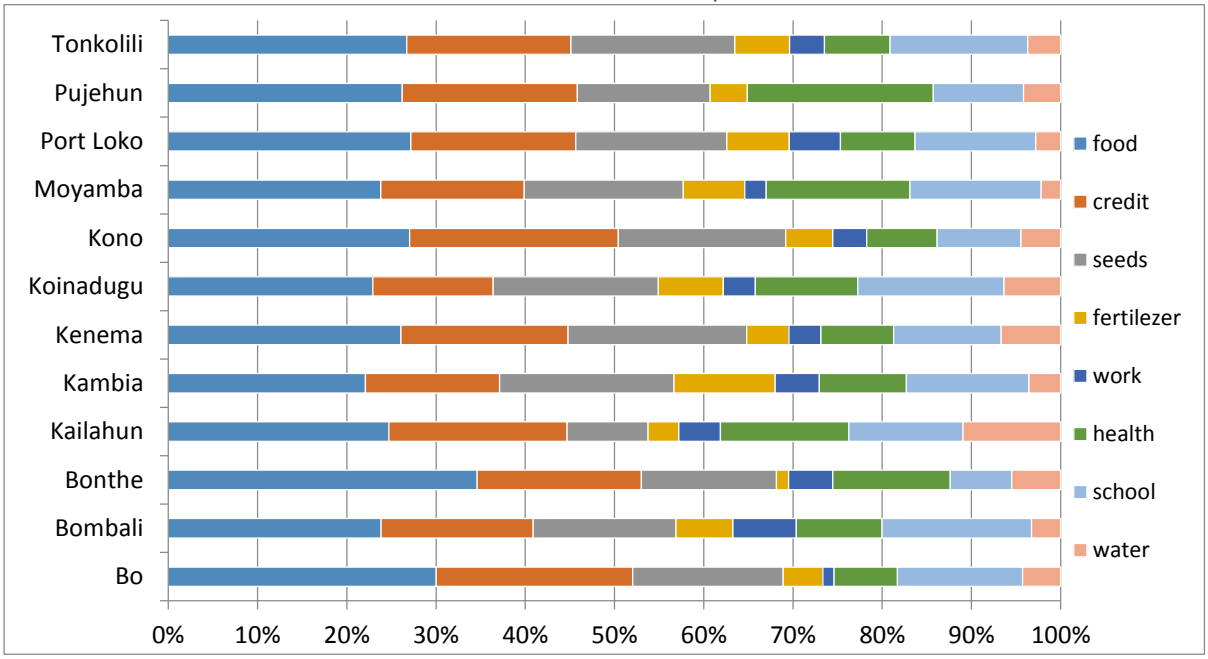
The food secure households on the contrary put the school and the access to credit as the main needs immediately after the food.

Chart 21: Households needs per food secure group



Another important requirement concerns the need for seeds for the incoming agricultural campaign. Access to healthcare, to work and water are also important needs mentioned by households. Food remains an important request across all the districts of Sierra Leone, no matter the livelihood.

Chart 22: Households' needs per district



3. Conclusions

The Ebola outbreak had multiple impacts on Sierra Leoneans households: the entire country has been affected psychologically, economically and socially.

The government's measures to contain the spread of the virus have forced households to stay in their respective village for extended periods of time. Moreover, the fear triggered by Ebola affected the entire population: both the communities directly affected by the epidemic and those with low or no exposure to the epidemic. Similarly, the food insecurity proportions did not follow the geographical spread of Ebola, yet it has deteriorated without distinction in both the EVD affected and unaffected communities. As such, we cannot establish a direct link between the level of Ebola exposure and the severity of food insecurity.

The quarantines did not prevent food from reaching the markets or consumers at national level[23] households have nonetheless experienced an erosion of their means to satisfy the bulk of their food needs both through the purchase of food and through their own stocks.

The containment measures such as the ban on public gathering actively contributed to a decrease of employment of both exchange and hired labourers in the agricultural sector by respectively 24 percent and 29 percent compared to the situation pre-Ebola. Wage levels of agricultural labourers have also decreased by 12 percent and up to 16 percent in the affected communities. The households depending on trading have also been affected as a result of the fear and of the restrictions on movements.

Moreover, the quantity of harvested rice has decreased by 39 percent in 2014 compared to the previous year, especially in the districts of Tonkolili, Moyamba, Koinadugu and Bo, as a result of the lack of agricultural workforce in the farms. As a consequence there is fear that less seeds will be available for planting during the forthcoming campaign.

As a result of unmet food needs, of households' assets depletion and a high economic vulnerability, the food security situation remains very poor, affecting 45 percent of the population and 7 percent of it in a severe manner. In the district of Kailahun the prevalence of food insecurity (moderate and severe) is as much as 74 percent high, jeopardising in particular subsistence farmers. Alarming levels of food insecurity also affect the districts of Bo, Kenema, Port Loko and Kono, where more than half of the households are food insecure.

The risk of compounding the situation further is tangible if food assistance does not continue to reach the most food insecure during the lean season, targeting most vulnerable livelihoods particularly in the districts of Kailahun, Bo, Kenema, Port Loko and Kono.

[23] The World Bank, Statistic Sierra Leone and Innovations for Poverty Action, January 2015, the Socio-Economic Impacts of Ebola in Sierra Leone.

4. Recommendations

In light of the findings of the rapid assessment it is recommended to adopt measures to recover from the epidemic and target both affected and non-affected areas, given the impact that EVD had on the whole country. In particular, it is recommended to:

- Provide support to severely food insecure households through direct food assistance and in the form of unconditional Cash Based Transfers (CBTs) during the lean season where markets are fully functional.
- Give priority to the most food insecure districts: Kailahun, Kenema, Bo, Port Loko and Kono, and to those livelihoods based on irregular incomes, such as the daily workers significantly impacted by EVD, woodcutters and coal producers, palm oil extractors and those relying on aid and gifts.
- Target small farmers who lost more than 50 percent of their harvest and petty traders should also be targeted.
- Include small holder farmers who lost more than 20 percent of their produce in food for work and/or CBT activities.
- Proceed with seed protection for the incoming agricultural campaign.
- Ensure that school feeding recommences as well as relevant take home rations.
- Communities affected by EVD and those who lost their livelihoods should be considered in the school feeding programme.[24]
- Continue monitoring the food security situation closely in the incoming months. The situation should be assessed again after the next harvest.

[24] National Ebola Recovery Strategy for Sierra Leone envisage School Feeding as a key priority.

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food security analysis