



Ebola and Livelihoods

The effect of the Ebola virus on household livelihoods in Guinea, Liberia, and Sierra Leone

A SPECIAL REPORT BY THE FAMINE EARLY WARNING SYSTEM NETWORK (FEWS NET)

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About FEWS NET

Created in response to the 1984 famines in East and West Africa, the Famine Early Warning Systems Network (FEWS NET) provides early warning and integrated, forward-looking analysis of the many factors that contribute to food insecurity. FEWS NET aims to inform decision makers and contribute to their emergency response planning; support partners in conducting early warning analysis and forecasting; and provide technical assistance to partner-led initiatives.

To learn more about the FEWS NET project, please visit <http://www.fews.net>.

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The outcomes of the workshops and the fieldwork in Sierra Leone are intended to inform USAID livelihoods recovery interventions in the region and should benefit the government and other partners in each of the three countries.

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Acronyms and Abbreviations

ESRP	economic stabilization and recovery plan
EVD	Ebola Virus Disease
FAO	Food and Agriculture Organization of the United Nations
FEWS NET	Famine Early Warning Systems Network
NGO	non-governmental organization
RWEE	Rural Women Economic Empowerment
VSLA	Village Savings and Loans Association
USAID	United States Agency for International Development
WFP	United Nations World Food Program

1. Key Messages

During 2014, the Ebola Virus Disease (EVD) was reported in six countries across West Africa including: Guinea, Sierra Leone, Liberia, Nigeria, Senegal, and Mali. The caseloads in Guinea, Sierra Leone, and Liberia were the greatest, with over 11,000 confirmed deaths and nearly 29,000 suspected, probable, and confirmed cases. Governments in these three countries imposed intra- and international restrictions to human movement to curtail the spread of EVD within their borders. Though relatively effective, the results of the restrictions had indirect consequences on the economic sector in the region and at the household level.

To understand the impact of EVD on household livelihoods and food security, FEWS NET carried out an Ebola and Livelihoods study in all three countries. In Guinea and Liberia, FEWS NET facilitated a two-day workshop with key informants from the government and non-governmental organizations. The study in Sierra Leone was more extensive, consisting of key informant interviews at the community level, across nine of the ten livelihood zones. The studies focused on household livelihood strategies (i.e., access to food, income activities, and expenditure patterns) in three points of time: before, during, and after the EVD epidemic. The results of the studies are highlighted in this report and include the following:

- There are two channels of impact of the EVD crisis: 1) loss of life as a direct result of EVD infection, and 2) behavioral effects, which led to a fear of association with others and a reduction in labor force participation, closures of places of employment, transport disruptions, border and market closures, etc. Overall, the largest economic impact of the crisis were not direct costs related to mortality, morbidity, caregiving, and the associated losses in working days, but those resulting from changes in behavior, either as part of government-imposed aversion measures or driven by fear of household impact.
- Government-imposed control measures which directly affected households living in the three countries, independently of infection by EVD or loss of family members, included: travel and transport restrictions, restrictions on the movement of individuals, restriction to the right of assembly, and establishment of community bylaws.
- The impact of the EVD outbreak on food security was not predominantly driven by limited food availability but rather by reduced food access. The food access problem was mostly the result of the reduction in economic activity both at the regional/national level and at the household level, which had an effect on households' purchasing power. The ban and closure of markets and the restrictions to movement added further to the food access problem.
- The impact of EVD on the household economy must consider the weakness of the local economies, especially in rural areas, before the crisis as well as the impact of EVD itself. All three countries have low per-capita income levels and a large proportion of the population live below the national poverty lines, with little economic buffer from one season to the next.
- Changes in household expenditure patterns related to the restrictions on movements and market closures led to temporary price spikes and slumps as goods became unavailable or unsellable. The cost of transporting goods in some cases has increased by 50 percent (UNDP et al 2015, SC et al. 2015), partly due to the reduction in the availability of transport services and the disruptions arising from having to negotiate quarantines and checkpoints imposed along many routes. The increase of transport prices will have been passed on to the consumer.
- During the Ebola epidemic, households living in affected areas engaged in various strategies to cope with the loss of income and key food sources as a result of losing household members and the overall negative effects of the crisis. Most of the strategies are typically used in times of stress, such as switching expenditure patterns from non-essentials to essentials or increasing livestock sales. Other coping strategies not typically used were also adopted, including: selling and trading of goods door-to-door and engaging in non-professional health work as a contractor (e.g., social mobilizer, burial team member, ambulance driver, etc.).
- Overall, no sources of household food or income appear to have been lost permanently. As such, there is no apparent change in the fundamental pattern of rural livelihoods. However, livelihood patterns and income levels have changed for households that lost working members.

2. Introduction and Methodology

In March 2014, the first official case of Ebola Virus Disease (EVD) was reported in Guinea. The EVD outbreak then spread to six countries: Guinea, Sierra Leone, Liberia, Nigeria, Senegal, and Mali. Of these countries, Guinea, Sierra Leone, and Liberia were hit the hardest, with a total of 28,616 total cases (suspected, probable, and confirmed) and 11,310 deaths. The governments of Liberia, Sierra Leone, and Guinea all responded by declaring a state of emergency to restrict movement from affected areas in an attempt to limit new infections. These restrictions resulted in border closures, bans on large gatherings such as within markets and schools, and curfews and quarantines of the most heavily affected areas. The movement of farmers, laborers, and goods were all significantly impacted. For many farming communities, the epidemic started during the planting season, and continued to grow during crop maintenance and harvesting periods for staple crops including rice, maize, and cassava.

FEWS NET has conducted remote monitoring of food security conditions in Sierra Leone, Liberia, and Guinea since 2014. The impact of the Ebola outbreak on food security and livelihoods was of such concern that FEWS NET opened offices in all three countries in 2015 for active monitoring activities. An understanding of rural livelihoods is one of the key elements that underlies FEWS NET's regular situation analyses. With the end of the EVD outbreak in January 2016, FEWS NET has analyzed how the epidemic influenced household livelihoods in each country, with a particular focus on those living in rural areas. The methodology used consisted of two main steps conducted for each country:

- A broad literature review on the impacts of the EVD crisis on livelihoods in West Africa (Guinea, Liberia, and Sierra Leone) that considered the impacts of EVD on livelihoods and food security. Most of the material dates from mid to late 2014 until the end of 2015.
- Two-day workshops held in Monrovia, Liberia; and Conakry, Guinea, between September 2016 and April 2017 for participants from government ministries, humanitarian agencies, and non-governmental organizations (NGOs) that had direct involvement in the EVD crisis management and response. The workshops were intended to gather critical information about household livelihoods before, during, and in the wake of the Ebola epidemic to support decision making and strengthen partnerships for the food security and livelihoods strategy and response. During these workshops, an Ebola questionnaire was reviewed and explained in plenary by facilitators from the FEWS NET livelihoods team. The first day of each workshop focused on part 1 of the questionnaire (national analysis), while the second day of each workshop was centered on part 2 (analysis by zone and households).
- Community-level interviews focusing on the impact of EVD were conducted throughout Sierra Leone from November 2016 through January 2017. The field exercise was done concurrently with the livelihoods baseline FEWS NET carried out over the same time period. Community leaders from more than 60 villages across nine livelihood zones were interviewed on the effect of EVD in their area. The community-level focus group interviews covered changes in access to food, income, and expenditure patterns before, during, and after the EVD outbreak. It also explored household coping strategies and what the future expectations were.

The results of the Ebola workshops and study are consolidated and documented in this report.

3. Overview of Livelihoods before the Outbreak

Geography is one of the main determining factors for livelihood patterns across Guinea, Liberia, and Sierra Leone. The agricultural sector, comprising food crops, cash crops, tree crops, fishery, livestock, mining, and forestry, represent the backbone of the region's economy. The vast majority of the population depends on these sectors for its livelihood. The major food crops are rice, cassava, maize, millet, sorghum, sweet potato, and groundnut. They are produced by smallholders.

The almost universal food staple is rice and is locally produced (mainly on hills and uplands, followed by floodplains, where rice is planted as the water recedes) or imported. Tuber production is also considerable throughout the region, with cassava making up the bulk of the tuber harvest and yams, sweet potatoes, and Irish potatoes in localized areas making up the rest. Though less preferred than rice as a staple food, cassava is an important buffer food for many poor households in rural areas, and its production is estimated to be increasing each year, to such an extent that it may already be the second most-often-consumed crop. The main tree crop is the oil palm, used for its perennial fruit that can be processed into palm oil and sap, which can be transformed into palm wine. The other main perennial crops are citrus, sugarcane, cocoa, coffee, and coconut.

Though the combination of rice and cassava cultivation is ubiquitous, it is sometimes secondary products that distinguish the regions' livelihood patterns. In the hunting, fishing, and small-scale mining zones the people are actually essentially farmers by vocation, even often nearly self-sufficient in food. But the income from bush meat, fish sales and labor, and mining activities are also considered important enough and distinctive enough to justify making them separate zones.

Across all livelihood zones in the region exist similarities among better-off households. This wealth group consists of the large landowners. They are the main owners of plows, carts, and motorcycles, which they rent out. They are the largest livestock owners, and almost the only cattle owners. They employ their poorer neighbors to perform agricultural labor, work on their boats, and/or as casual laborers. Though similarities exist between better-off households, there are differences, mostly determined by where they live. Their investment in crops for the market largely depends on geography, with some investing in rice or maize; some in cash crops such as cashews, cocoa, and coffee; some in vegetables; and some in large herds of cattle. In certain areas around the region the better-off will engage in gold mining. They typically supply mining equipment and hire laborers. In other areas, the better-off invest in motor boats for fishing and in taxi services, giving work to poorer people and taking part of the profit. Still others hire workers to cut wood in forested areas for use in construction and carpentry.

Common livestock are cattle, sheep, goats, pigs, and poultry. In Liberia and Sierra Leone, the civil war significantly depleted the level of livestock in the country, although numbers have recovered since the end of the war. Cattle husbandry is dominated by the Fula ethnic group, who own the majority of the cattle and often manage cattle owned by other groups. Poultry rearing consists mainly of chickens, with some guinea fowl and Muscovy ducks.

Rural populations in the region's various livelihood zones typically do not suffer from acute food insecurity due to poor harvests, as caused by drought or epidemic pest infestations, for example. Negative events such as rainfall irregularities or flooding or other causes of crop damage, as well as livestock losses mainly through diseases that occur in one place or another annually on the agricultural calendar are real phenomena, but less severe than in the semi-arid countries of West Africa. The road system, which is typically in poor condition and prone to flooding in the rainy season, might have been a greater threat in terms of interruptions to commodity flows, specifically food supplies to markets. Staple food price spikes were certainly more harmful.

Annually, poorer households across the region experience periods of food stress, called the lean season. The lean season is the period before the main harvest when household food stocks are depleted and it is difficult to find money to purchase food on the market. The struggles associated with the lean period are more a symptom of protracted poverty in rural areas where access to land and opportunities to maximize production are inadequate, and income earned from a very wide range of sources other than the households' own farming activities is not regular or may not quite cover expenses for both food and non-food needs.

Generally, poorer agricultural households also share similarities across the three countries in the region. These households typically cultivate smaller plots of land, which limits the amount of food they can produce for consumption and sale. After the harvest, poorer households may sell a small portion of their harvest to cover immediate household needs, reserve a smaller portion for seed and consume the remainder. Even in relatively normal years, the amounts harvested fall short of meeting all of their annual needs. To supplement the food consumed from their own harvests, poorer households must turn to the market. Market purchase of staple food is often the largest expense for poorer households. Better-off households will also purchase food from the market even though they have the capacity to produce ample quantities of food. The main difference between the two households is the types of food purchased and the timing of their purchases. Better-off

households may purchase some staples, but typically do so after the harvest, when prices are lower. Poorer households, on the other hand, purchase staples as their own food stocks run out, which is typically months before the harvest, when prices are higher due to low supply at the market. Better-off households also spend more money on non-staple foods than their poorer neighbors, a luxury that poorer households are unable to access with great frequency.

Poorer households source their food beyond their own fields and the market. In most of the agricultural zones across the region, they may rely on an array of food sources. This is often dictated by geography, but also by seasonality. For example, households living in Sierra Leone's *Coastal Food Crops and Fishing* livelihood zone take advantages of the fishing opportunities to supplement their annual food needs. Those living further inland in the *Koinadugu Food Crops, Livestock, and Trade* also rely on wild foods, including wild fruits, tubers, and bush meat, and in-kind payment for labor performed. All sources of food the poorer households rely on depend on the season. In-kind payments are earned during pre-harvest agricultural labor opportunities. Fishing is mostly performed before and after the ocean storm season, when it is safer for fishermen to go further out to sea. Despite the various sources of food poorer households rely on, the most important remains crop production and market purchases.

Household Sources of Cash

Household economic opportunities across the region are tied to agriculture. Crop production, whether it be food crops such as rice and cassava, or cash crops like coffee and cacao, serves as the economic mainstay for the majority of people. Across the wealth spectrum people earn cash from selling crops or by working on the farms of others. Agriculture labor opportunities are the most common labor income sources for most of the poorer households across the region. This includes land preparation, sowing, weeding, and harvesting of food crops. Perennial cash crops offer ample labor opportunities for the region's poor, including pruning, weeding, harvesting, and other post-harvest activities.

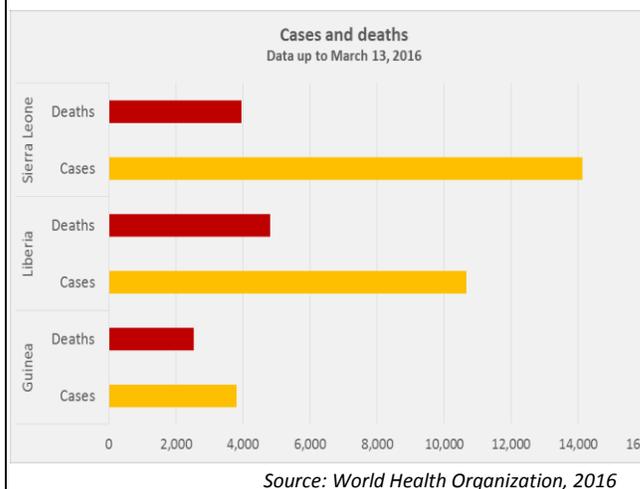
Agriculture is the region's economic mainstay; however, most households will engage in one or more income opportunities which typically are specific to the livelihood zone's geography. Generally poorer households rely on multiple, less stable, sources of income. For example, in Sierra Leone's Bombali Food Crops, Peppers, Tobacco and Livestock livelihood zone, "very poor" households source cash from a variety of activities including selling food and cash crops, chicken sales, agricultural labor, self-employment (selling prepared food and non-food items), and remittances. The type of secondary income activity engagement typically relates to geographic location: those living near forested areas may hunt and sell bush meat or collect and sell palm oil; those residing in areas where gold resources are abundant will engage in small-scale mining or work for foreign mining companies; and households living along the coast or near inland water sources engage in fishing opportunities.

Areas Affected

The breakdown of total cases and total deaths as of May 2016 for the three most affected countries is presented in Figure 1. The majority of these cases and deaths were reported between August and December 2014, after which time case incidence began to decline due to the rapid scale-up of treatment, isolation, and safe burial capacity in each country. However, for several reasons discussed here, EVD did not hit areas of each country in the same way. Figure 2 presents the geographical distribution of Ebola cases from January 2014 to December 2015. At the same time, it has been found that all communities, whether directly affected by EVD or not, became at risk to food insecurity particularly during the lean season due to a decline in purchasing power.

In response to high infection rates, several locations were subject to quarantine. These areas for each country are listed in Annex I. In all three countries, periods of quarantine generally lasted for three weeks to a month, but for certain areas with concentrated and prolonged impacts, quarantine lasted 6 to 12 months. The governments in each country also closed land border crossings and restricted public gatherings, with severe and long-lasting impacts for livelihoods and trading activities throughout the most affected districts.

Figure 1. Ebola cases and Deaths as of March 13, 2016



Market and Border Trade Suspension

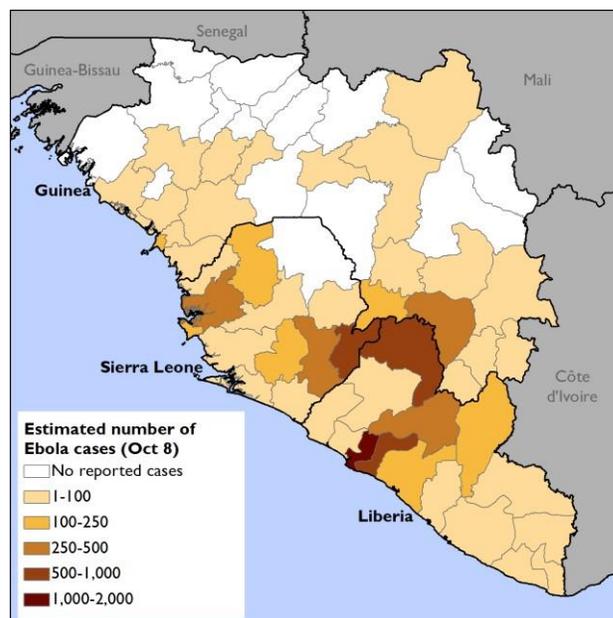
Rural livelihoods depend on markets for buying food and other necessities and for selling surplus or cash crops, livestock, bush products, and minerals. Therefore, rural livelihoods are highly market oriented, particularly for poorer households, which tend not to be self-sufficient in food consumption. The majority of the rural population in Guinea, Sierra Leone, and Liberia rely on subsistence farming, although much of the population also relies on markets for food access, particularly in years with poor yields. Therefore, weekly or monthly market closures can compromise household capacity to both purchase food and to sell other goods to earn money to buy food, with some implications for overall food security. The markets used by community members tend to be situated near small or larger towns, and the weekly (or daily) market serves a large number of surrounding villages. Market closures aimed to reduce human contact within and between individuals in areas impacted both directly and indirectly by the outbreak.

In Guinea, although there were no region-wide market bans, the closure of some sub-prefecture level markets had a wide geographical effect. Market closures in certain areas of Forechia crippled trading activity, while longer-term closures in the southeastern part of the country caused significant difficulty in the trading of key commodities such as rice, cassava, bananas and plantains, sweet potatoes, palm oil, vegetables, coffee, cola-nuts, and bush meat. In Sierra Leone, areas were affected by district-wide market bans, but specific districts and communities independently closed various periodic markets. Markets were closed for up to a year in Bombali District, and for nearly eight months in Porto Loko from October 2014 to April 2015. Even before the outbreak, Port Loko was one of the more food insecure districts in Sierra Leone, so the market closures had a crippling effect on the local economy. In Liberia, one of the national markets located in Monrovia was closed in August 2014, and different local markets were also temporarily closed between April 2014 and May 2015. However, a certain level of agricultural production continued, so households relied on their own production and food aid as opposed to market purchase. Across all three countries, traders did not shift their operations elsewhere when markets were closed for relatively short periods of time. However, in the face of longer closures they did move to other market areas. Areas throughout all three countries, not just those with the highest caseloads, were all impacted either directly or indirectly by market closures.

Cross-border trade was also affected, as most international borders were closed, although the closures were enforced with varying degrees of severity. Trade of cash crops, food crops, fish, and livestock between all three countries and their neighbors was constrained. At the same time, smuggling routes remained open, and traders and travelers did find ways to cross the closed borders. Both imports and exports were restricted, reducing cash income and products available for purchase. The most affected cross-border products in Liberia, for example, were palm oil, imported rice, bush meat, cocoa, minerals, and rubber.

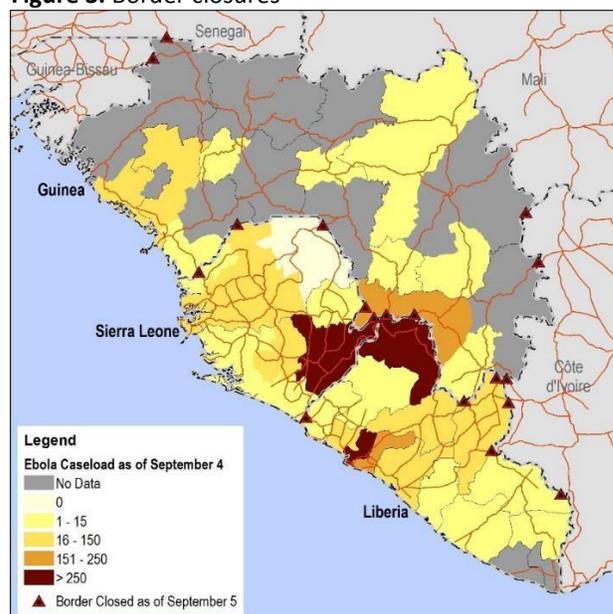
Guinea, Liberia, and Sierra Leone all saw school closures to varying levels. Guinea witnessed a national school closure between October and December 2014; schools in Liberia were closed between August 2014 and March 2015; and schools in Sierra

Figure 2. Geographic scope of the EVD outbreak



Source: WHO

Figure 3. Border closures



Source: WHO, FEWS NET, WFP, Logistics Cluster

Leone were closed between August 2014 and April 2015. The availability of alternative educational services varied and were generally more available via radio, TV, and homeschooling in Sierra Leone as compared to Liberia and Guinea, although this also varied by region within each country.

Effects of the Crisis on Key Economic Sectors

Since the Ebola outbreak, Sierra Leone, Liberia, and Guinea have all experienced disruptions of economic activities across sectors. The largest economic effects of the crisis are not necessarily the direct costs, but those resulting from behavior changes driven by fear that caused lower demand for goods and services and consequently lower levels of domestic income and employment. The pattern of effects of the Ebola crisis was largely the same across the most affected districts. The major impacts were loss of agricultural labor and reduced agricultural production, trade restrictions and reduced incomes from trade, limited or reduced mining activities and labor, and minimal petty trading or self-employment activities due to nonexistent markets and restrictions on movement of people and materials.

Agriculture was hit the hardest in all three countries. Nearly three-quarters of Liberia's rural workforce is engaged in agriculture, and both export of key commodities such as rubber as well as domestic production of food and cash crops were impacted. Limited workforce mobility, market closures, and restricted trade all reduced productivity. The primary food-producing areas located in northwest Liberia were the most affected by the Ebola outbreak, resulting in the abandonment of farms and shortage of farm labor. Quarantines and restrictions on movement constrained the supply of goods and caused prices to increase. In Sierra Leone, bans on labor exchanges led to a large reduction of the agriculture workforce, and in certain areas such as Kenema, agricultural activity halted altogether. In Kailahun, cocoa and coffee production and sales, rice, and cassava production, and sales of fruits and vegetables all suffered largely due to a lack of labor for cultivation and field maintenance. Several of the same overall trends were apparent throughout Guinea, due to abandoned fields and food processing plants; reduction of the agricultural workforce; and trade disruptions, particularly of vegetables, fruits, and wild foods.

After agriculture, the mining, services, and trade and transport sectors, including petty trade and self-employment, were affected, largely due to the market closures and movement restrictions discussed above. In Sierra Leone, particularly in Kenema and Bombali Districts, large mining corporations halted operations and many workers were laid off during the height of the outbreak. Petty traders were not allowed to move within their communities and small business owners were unable to replenish their stocks at larger markets nearby, causing locally produced perishable products to spoil. The services sector in particular is important to the Liberian economy: wholesale and retail traders, commercial and residential construction activities, and government investments in energy and transport dropped significantly during the crisis. Transport costs increased, and artisanal mining fell off. Mining in particular is important in Guinea, and both industrial mining plants and artisanal miners curtailed operations. Across the Ebola-affected countries, the tourism sector has suffered, with sharp reductions in the number of international flights and hotel occupancy, resulting in cuts among hotel and restaurant staff. Many expatriate technicians and business people departed the countries for the duration of the outbreak. Currently, all three countries are working to rebuild their economies to pre-crisis levels.

4. The Impact: The Effect of Ebola on Household Livelihoods

At the household level, the impact of the epidemic on the economic sectors resulted in an overall loss of income from the following income-generating activities: crops and forestry product sales, agricultural labor opportunities, casual labor opportunities, transportation, cross-border trade, small business or self-employment, and petty trade. In the most affected areas, response strategies were developed by households to cope with the loss of income as a result of losing household members and the overall negative effects of the crisis. Considering FEWS NET's livelihoods analytical framework, the impact of EVD at the household level was captured through its impact on sources of food, sources of income, and coping strategies, with a focus on the most affected areas.

Changes in How Households Get Food

In Liberia, households maintained access to their typical sources of food although the level of access was reduced for some sources of food, including in-kind payment, bush meat, and market purchase. Food availability on domestic and local markets was more limited during the crisis, although this was partially replaced by food aid, in-kind payments, and village-level trading strategies. Many households relied more on household production as opposed to market purchase. In addition, in the most affected areas, food aid from humanitarian agencies was a significant source of food while bartering or exchange of food increased.

During the crisis in Sierra Leone, many sources of food that were previously available (including crop production, market purchase, livestock production, in-kind payments, food aid, and wild food) became restricted due to limited market access, reduced farming activity, and movement restrictions that affected the supply of food aid. Production levels decreased overall, and households resorted to backyard gardening, banana production and sale, and increased bartering and trade at the village level, and sometimes ate into their own food stocks. The ban on bush meat eliminated a previously important source of protein, particularly in Bombali. Only certain districts reported the presence of NGOs, including local organizations, WFP, and OXFAM, as important sources of food during the crisis, and overall food aid seemed less prevalent in Sierra Leone than Guinea and Liberia.

Similarly, in Guinea, food production continued but was largely reduced. Grains and tubers remained a primary source of food, and some areas depended more on food aid. Prior to the outbreak, households relied heavily on market purchase, which outweighed own production in some areas. Given market closures, these individuals became heavily reliant on food aid. As in Sierra Leone, the official ban on bush meat trading and consumption eliminated an important source of animal protein for certain communities, particularly in the southeastern part of the country. Livestock production appears to have been affected the least in all cases.

In most areas across the region, food sources have largely returned to the levels before the crisis. However, in certain communities, households are more reliant on food aid and suffer particularly if a working member of the household was lost to the virus.

Impact on Income Earning Activities

In Liberia, households lost access to the normal sources of cash income during the outbreak. Income from crops and forestry product sales (including bush meat), agricultural labor opportunities, casual labor opportunities, and transportation decreased significantly. Formal employment tended to decrease, whereas informal petty trading increased. Micro-loans became largely unavailable and certain households reported needing to sell productive assets for income. In the most affected areas, cash transfer assistance from humanitarian agencies was a significant source of cash income.

In Sierra Leone, there was both a change in the sources of income, as well as a reduction of incomes across multiple activities. Prior to the outbreak, households relied on a variety of income sources, including crop sales, mining, trading, some village-level loans, agricultural and non-agricultural labor, remittances, livestock sales, petty trade, wild food sales, and formal employment. Some of these income sources either disappeared or became more limited during the crisis. Due to changes in agricultural production and restrictions on movement, the supply of food decreased, resulting in higher prices of staple food products.

In Guinea, the structure of income did not change, but income earned from different sources decreased, driven by the reductions in productive activities and trade. Stigmatization also played a role, as certain respondents cited that individuals refused to buy agricultural produce from households affected by Ebola. Agricultural production was reduced in individual cases due to the loss of a main household working member and reductions in hired labor. Fields were left uncultivated,

particularly of wealthier landholders who rely on hired labor. Similar trends were seen for the mining sector, resulting in an overall decrease of income from these sources. Other sources of income, such as non-agricultural labor; petty trade; self-employment; and sales of livestock products, fish, and handicrafts all decreased.

Most normal sources of cash income are again available to households, but income earned from some sources has not rebounded yet to pre-crisis levels. For example, in Sierra Leone's Kailahun-Kenema-Kono Cash Crops, Food Crops, and Trade Livelihood Zone, households previously engaged in hunting animals and selling the meat as an income source. During the EVD crisis these households ceded engage in this activity due to fears of contracting the virus. Post-Ebola community level interviews suggested that some households have returned to this income source, though not to the extent before the crisis. As the memory of the crisis slowly fades and demand for bush meat returns to pre-outbreak levels, income earned from this activity is expected to normalize. Conversely, households that have lost an income-earner are expected to still need assistance in order to make ends meet.

Changes in Household Spending Patterns

The restrictions on movements and market closures led to temporary price spikes and slumps as goods became unavailable or unsellable. Some reported price peaks were large; for example, prices of roots such as potatoes increased by 150 percent in markets around Monrovia in August when markets were closed and quarantine control on areas around the city exacerbated the usual rainy season shortages (UNDP et al. 2015). However, a number of reports also indicate that it was a lack of available cash, not necessarily rising prices, that constrained households' ability to maintain consumption, especially in remote rural areas where access was closed and households were unable to sell their own produce to generate income (e.g., Mercy Corps 2014). This statement was applied to Guinea, for example, where the prices of certain items (local rice, vegetables, and animal products) were reported to have fallen, limited by the population's low purchasing power (WFP/FAO/GoG 2014).

The cost of transporting goods in some cases has increased by 50 percent (UNDP et al 2015, SC et al. 2015), partly due to the reduction in the availability of transport services and the disruptions arising from having to negotiate quarantines and checkpoints imposed along many routes. The increase of transport prices will have been passed on to the consumer. Part of the increase in transport costs also reflected a seasonal increase in prices due to the more difficult road conditions during the rainy season (May–October) (UNDP et al. 2015). Nevertheless, external effects such as the fall in international energy prices benefited the transport sector in all three countries, given the countries' heavy reliance on imported fuel.

Making Ends Meet: Household Coping Strategies

During the Ebola epidemic, households living in affected areas engaged in various strategies to cope with the loss of income and key food sources as a result of losing household members and the overall negative effects of the crisis. Coping strategies reported by workshop participants (Guinea and Liberia) and community key informants (in Sierra Leone) include the following:

- Buy cheaper food (e.g., cassava instead of rice)
- Consuming more cassava from their fields
- Increase the collection of wild foods
- Engage in backyard gardening or small scale livestock raising
- Borrow money or food and purchase food on credit
- Spend less on non-food items
- Sell productive assets such as livestock
- Engage in small businesses (e.g., selling non-prepared food items)
- Seek financial assistance from extended relatives
- Engage in non-professional health work as contractor (e.g., social mobilizer, burial team member, ambulance driver, etc.)
- Migrate to another area, seen most predominantly in Guinea
- Increase bartering and trade at the village level

5. The Response: Livelihood Support Interventions

During the Ebola epidemic, though priority was given to health and medical responses, some interventions were implemented by the government and other national and international organizations to support livelihoods. A list of types of support provided by the government, bilateral agencies, and NGOs is provided in Annex II. Interventions reported during the workshop focused on the largest and therefore are not a complete record of all interventions.

6. The Road to Recovery and Beyond

Participants and key informants were asked to give their views on the current situation and the future. Overall, household livelihoods have been restored to a certain extent; however there is still a need to rebuild community resilience and increase economic opportunities. In affected areas that have received limited support, recovery is slow, especially among EVD survivors, orphans, and dependents who are stigmatized by their communities. One of the most lasting and irreversible effects of the crisis is the loss of parents, caregivers, and household heads to the virus. Some households have lost their primary laborer and have fallen deeper into poverty, and face not only limited economic opportunities but also stigmatization. In some areas, agricultural laborers have been slow to return to work, and there are lingering fears of Ebola infection and a lack of trust as communities recover from the shock. One positive outcome of the outbreak is increased knowledge of EVD and use of proper hygiene practices.

As part of their post-Ebola recovery programs, government and international organizations are continuing to support livelihoods in affected areas. In Guinea, there is a medium-term need to support income-generating activities for women and youth, through the expansion of water management for irrigated horticulture and other micro-projects in agriculture, livestock raising, fishing, food processing, and handicrafts. Efforts directed at the integration of youth into the farming economy are important given the wider concern about the abandonment of farming by young men in favor of migration to find work in towns and at artisanal mining sites.

In Liberia, addressing the slow recovery of livelihoods activities would require developing and implementing enhanced livelihoods recovery interventions. The government-validated economic stabilization and recovery plan (ESRP) has already identified strategic interventions. In particular, under strategic intervention 1 of the ESRP, main rural livelihoods activities are targeted. Therefore, advocating for more funding for this government plan would be a priority of partners. Specific programs for EVD survivors, orphans, widows, and widowers and for families directly affected by the loss of active people is highly recommended by workshop participants.

In Sierra Leone, support is required at the local level, including for capacity building regarding health, sanitation, and disease prevention; improved access to microcredit to start to rebuild agriculture and other enterprises; and support to farmers to purchase inputs such as seeds, tools, and fertilizers. Additionally, livelihoods support to targeted populations affected by the outbreak might include seed money for small businesses, grants or scholarships for orphans to return to school, technical support to farmers, and skills training support to those who lost employment during the outbreak. External intervention will help ensure a strong recovery and see that the most affected households and individuals are not left behind, and should start to transition from immediate relief to long-term and sustainable recovery and development.

Overall, a sense that the situation will continue to improve in the near future was expressed by workshop participants. Following the outbreak, movement restrictions were lifted, markets reopened, and the government provided some direct support to affected households. Aid agencies also provided agricultural inputs to kick-start the sector after nearly a year of inactivity. The outbreak brought attention to the need to strengthen the informal health system and improve communication and disease surveillance and response systems. Many communities are hopeful now that the outbreak is over, and are searching for opportunities to diversify livelihoods and improve food security.

7. Conclusion

The most obvious and lasting effect of the outbreak is the presence of orphans, widows, and widowers, and the continuing burden on poor households who have taken in orphans. Most of the economic activity of Ebola-affected households has resumed, but is hampered by the weak physical state of survivors of the disease where these are main household breadwinners, or by the lack of working members where these have died. On the social front, survivor households in some areas still suffer from stigmatization, accentuated by the fact that they are under continued medical surveillance, and there is a call for re-enforced advocacy against social exclusion and stigmatization. A marked absence of school attendance among the Ebola orphans also remains, which should likely be a priority for action to improve the future prospects of this particularly disadvantaged group.

As the formal aid winds down or ceases entirely, there is a sense that affected households still need help to make the best of their economic possibilities and become properly self-dependent. There is a need to support in the medium term intensified income-generating activities by women and youths. Efforts directed at the integration of youths into the farming economy are seen as particularly important; this reflects a wider concern about the abandonment of farming by young men in favor of migration to find work in the towns and at the artisanal mining sites.

Despite the predictions of food insecurity in the region, most households were able to get by during the crisis. This was a result of the coping strategies implemented at the household and community level in addition to the influx of assistance from the international community. Coming out of the crisis no source of income is expected to have been lost permanently: there is no apparent change in the fundamental pattern of rural incomes for the majority of households that did not lose working members.

Bibliography

Action Against Hunger. 2015. *Ebola in Liberia: Impact on Food Security and Livelihoods*. London, UK: ACF International.

Deutsche Welthunger Hilfe (DWHH). 2014. *Ebola in Sierra Leone: The impacts of the 'Ebola Virus Disease' on the livelihoods of rural communities, agricultural production and food security*. Bonn, Germany: DWHH.

FAO and WFP. 2014. *Crop and food security assessment in Sierra Leone*. Rome, Italy: FAO.

Liberia Food Security Cluster (LFSC). 2014. *Findings from the Joint Rapid Assessment: Impact of EVD on Food Security Situation in Liberia*. Monrovia, Liberia: LFSC.

OIC International. 2016. *Post-Ebola Food Security and Livelihood Assessment in Grand Gedeh and River Gee*. Washington, DC: OIC International.

Save the Children, World Vision International, Plan International, and UNICEF. 2015. *Children's Ebola Recovery Assessment: Sierra Leone*. Available at: http://www.savethechildren.org/atf/cf/%7B9def2ebe-10ae-432c-9bd0-df91d2eba74a%7D/EBOLA_REPORT_CHILDRENS_RECOVERY_ASSESSMENT_SIERRA_LEONE.PDF

United Nations, World Bank, European Union, and African Development Bank. 2015. *Recovering from the Ebola Crisis*. Available at: http://reliefweb.int/sites/reliefweb.int/files/resources/Recovering%20from%20the%20Ebola%20Crisis-Full-Report-Final_Eng-web-version.pdf

The World Bank Group. 2014. *The Economic Impact of the 2014 Ebola Epidemic: Short and Medium Term Estimates for West Africa*. Washington, DC: The World Bank Group.

Ministère de l'Agriculture, WFP, and FAO. 2014. *Note de synthèse: évaluation rapide de l'impact de la maladie à virus Ebola sur l'agriculture et la sécurité alimentaire en Guinée*. Conakry, Guinea: Ministère de l'Agriculture, WFP, and FAO.

WFP, FAO, Government of Guinea (GoG). 2014. *Impact de la maladie à virus Ebola sur l'agriculture et la sécurité alimentaire: République de Guinée*.

Annex 1. Areas Quarantined

LOCATIONS QUARANTINED: GUINEA
Préfecture
Kissidougou
Gueckédou
Macenta
Forécariah
Boké
Tougué
Mali
Labé
Télimélé
Kérouané
Tougué
Dabola
Koubia
Kouroussa
Faranah
Mandiana
LOCATIONS QUARANTINED: LIBERIA
County
Montserrat
Margibi
Lofa
Monrovia
LOCATIONS QUARANTINED: SIERRA LEONE
District
Port Loko
Bombali
Moyamba
Kenema
Kailahun
Bo
Kono

Annex 2. Official Aid for Guinea, Liberia, and Sierra Leone

GUINEA: Formal livelihood support interventions (excluding medical response)				
Type of intervention	Implementing organization(s)	Geographical areas targeted	Targeted population	Approximate duration
Food aid distributions	WFP, CRS, NGOs : APARFE, Plan Guinée, AACG, Red Cross, OCPH, CEAD	Forested Guinea	Ebola victim population	2014 - 2015
Non-food material distributions	FAO, CRS, Guinea government, NGOs : MSF APARFE, AID, AJSDD, AGAR-GT, CEAD, OCPH, Red Cross	Forested Guinea	Ebola victim population	2015 – 2016
Cash distributions	UNICEF, Diaconie, CRS, Guinea governemnt, FAO, MDE, APARFE, CEAD, OCPH, AID, AGAR-GT, TWIN, ALIMA, AJSDD, Red Cross, Sabou Guinée, Enfance du Globe	Forested Guinea	Ebola victim population	2015 – 2016
Food aid	WFP through AFA	Forécariah, Kindia, Coyah, Dubréka, Fria, Boké, Boffa et Conakry	Households : - Widows - Orphans - households in direct physical contact with victims	6 months
Agricultural assistance via the local government agricultural services: inputs and materials (seeds, fertilizer, smaller items)	Guinea government, Japanese government World Bank, FAO, African Union, OIM, Islamic Bank	Forécariah, Kindia, Coyah, Dubréka, Fria, Boké, Boffa, Mamou, Dalaba, Pita	All victims of ebola	9 months
Cash transfers	Guinea government, UNICEF though AFA, Child Fund, AIME, WFP through AGIL, WHO, African Union, UNMMER through CNLE, TdH and ADER	Kindia, Forécariah, Coyah, Dubréka, Boffa, Boké, Labé, Téliimélé, Conakry,	Households : - Widows - Orphans - Households in direct physical contact with victims	2014 to September 2016
Food aid distributions	Plan Guinée , WFP in Faranah, AACG with WFP in Faranah, OCPH, WFP in Kankan, EDG in Siguiri, AGUITEB in Siguiri IBDDG/PAM in Dinguiraye	Kérouané, Kankan, Kouroussa, Siguiri, Faranah, Dabola, Dinguiraye	Ebola orphans	April 2014 to January 2015
Cash transfers	APIC through Child Fund/USAID, FDD through Child Fund/USAID	Faranah, Dabola, Dinguiraye	Orphans and hosting families	July-August 2015
Provision of seeds and agricultural equipment	RGTA DI through FAO, BM et the Guinea government	Kerouané	Affected households	2015
Food and non-food distributions	Associations of nationals	Kérouané, Kankan, Kouroussa, Siguiri, Faranah, Dabola, Dinguiraye	Affected households	2015

GUINEA: Continuing formal livelihood support to rural families				
Type of intervention	Implementing organization(s)	Geographical areas targeted	Targeted population	Approximate duration
Distribution of food coupons et livelihood 'fairs'	OCPH and CRS	N'Zérékoré and Macenta	the infected/affected and traders	Ma 2015 – September 2016
Food aid distributions	WFP	Localities touched by ebola	Orphans and ebola survivors	2015 – July 2016
Cash distributions	Guinea government	All affected prefectures	Survivors	April - August 2016
Material (non-food) distributions	PPLM/TWIN	N'Zérékoré	Women's groups	April - December 2016
Distribution of agricultural inputs and tools	WAAP	Forested Guinea	Ebola victims	2014 – 2016
Schooling for children	PPLM/TWIN	N'Zérékoré centre, Samoé and Yalenzou	Ebola orphans	April 2016 – September 2017.
Conveyance of water	UNICEF through CEAD	Koropara sub-prefecture	The population	March – September 2016
Cash distributions	National Health Security Association (ANSS)	Livelihood zones GN 01, 02, 03	Recovered patients	ANSS : 5 months from August 2015 USAID : projected for 2 years
Material aid (clothes, shoes...)	ANSS	Livelihood zones GN 01, 02, 03	Recovered patients	ANSS : 5 months from August 2015
Food aid distributions	WFP	Kérouané, Kankan, Kouroussa, Siguiri, Faranah, Dabola, Dinguiraye	Women's groups and associations, affected households	2014-2016
Technical support for income-generating activities (market gardening, food processing, sales of agricultural produce...)	IBDDG, APIC, GUIDRE, AFTT, AGUISSA	Kérouané, Kankan, Kouroussa, Siguiri, Faranah, Dabola, Dinguiraye	Village groups/associations for income-generation, women's groups and associations, affected households	2014-2016
Guidance for traders towards better provision to food markets	AGUISSA	Kankan Kouroussa	Traders	<i>Not specified</i>

LIBERIA: Formal livelihood support interventions (excluding medical response)				
Type of intervention	Implementing organization(s)	Geographical areas targeted	Targeted population	Approximate duration
Food aid	WFP via Liberia Red Cross, Christian Aid, ADRA, WHC	Nationwide	1 st – quarantined communities and HHs 2 nd – ETU (Ebola Treatment Units) 3 rd – most affected counties -GD 4 th – southeast and other geographic areas - GD	<i>Not specified</i>
Cash Transfer	Mercy corps, PCI, SCI, WHS, M of Gender (UNICF, WBG, UNDP), Oxfam GB, ACDI/Voca, WFP, FAO, UN Women, ZOA, CARE, CAI, ADRA, Tearfund, ICRC, African Development, FinAID,	ICRC – Montserrado, Margibi, Cape Mount, Lofa, Bomi, Bong, Maryland, Grand Kru,	EVD affected communities, survivors and orphans 166k hhs 800,000 individuals All beneficiaries	September 2014 – December 2016
Agricultural inputs (tools, seeds, etc.)	USAID via Mercy Corps, PCI, ADCI VOCA WHH, SCI	Bong, Lofa, Cape mount, Monserrado, Bomi, Nimba, Margibi	Farmers within EVD affected communities Vulnerable farming communities	March 2015 – February 2017
Community Savings and Loans	FAO, USAID via OICI, ADCI VOCA, BRAC	FAO – Lofa, Nimba, Bong? OICI – Grand Gedeh and River Gee ACDI – Bong and Nimba	Community Savings and Loans organizations in EVD affected areas.	2015 – December 2016

LIBERIA: Continuing formal livelihood support to rural families				
Type of intervention	Implementing organization(s)	Geographical areas targeted	Targeted population	Approximate duration
USAID -value chain activities and agricultural vouchers	CFNA	Lofa, Nimba, Bong	Farmers, entrepreneurs, ag businesses, farming co-ops	2016 - 2020
WFP – Food For Assets	Samaritan Purse, BRAC, Emma Smith Life Recover Foundation, Volunteer of SEAN, SEAN Dexeau, MPARD, Compassion Fund LR	Lofa, Bong, Montserrado, Bassa, River Cess, Margibi, Cape Mount, Nimba	Farming HH and communities Lowland/upland, Vegetables	Aug- Dec 2016 (Phase 1) Jan – July 2017 (Phase2)
WFP – Community Green Reserve	Rural Women Economic Empowerment (RWEE)	RWEE – Sinoe, Grand Gedeh, Maryland, River Gee and Grand Kru	Farming HHs	2014-2016 (Phase1) 2017-2020 (Phase2)
FAO- Agriculture	Rural Women Economic Empowerment (RWEE)	RWEE – Sinoe, Grand Gedeh, Maryland, River Gee and Grand Kru	Farming HHs	2014-2016 (Phase1) 2017-2020 ongoing
UN Women- VSLA	Rural Women Economic Empowerment (RWEE)	RWEE – Sinoe, Grand Gedeh, Maryland, River Gee and Grand Kru	Farming HHs	2014-2016 (Phase 1) 2017-2020 ongoing

SIERRA LEONE: Formal livelihood support interventions (excluding medical response)				
Type of intervention	Implementing organizations	Geographical areas targeted	Targeted population	Approximate duration
Food aid distribution (<i>not sufficient</i>)	WFP, Plan, CIDO, Welthunger	Kailahun district	Ebola affected communities, especially older women and children	<i>Not specified</i>
Community mobilization	MAFFS	Bombali district	Entire district	July 2014 – Jan 2015
Food aid distribution	WFP, CARE, Concern Worldwide, ActionAid	Bombali district	Entire district	July 2014 – Jan 2015
Food aid distribution (dry rations)	WFP	Kenema district	Entire district	2014 – 2015
Food aid distribution	WFP	Port Loko district	78,260 people	February – April 2015

SIERRA LEONE: Continuing formal livelihood support to rural families				
Technical support to farmers	MAFFS	Kailahun	5,000 farmers	2016
Provision of improved crop and seed varieties	MAFFS	Kailahun	5,000 farmers	2016
Cash transfers	Save the Children	Kailahun		2016
Provision of agriculture materials	MAFFS	Kenema	Entire district	2015
Tree crop production support	Welthunger Hilfe	Six chiefdoms in Kenema	--	2015