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Socioeconomic Impact of Ebola using Mobile Phone Survey

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REPUBLIC OF GUINEA

SOCIOECONOMIC IMPACT OF EBOLA

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EXECUTIVE SUMMARY

1. **The Ebola pandemic has been one of the most virulent pandemics in modern times.** By the end of 2015, the epidemic had cost the lives of more than 11,300 people in Guinea, Liberia, and Sierra Leone, including more than 500 frontline health care workers. It unleashed large damage to economic growth in these countries, leading to lost gross domestic product (GDP) of close to US\$2.8 billion and much panic, among both the local population as well as foreign and domestic investors. Guinea, where the Ebola crisis originated in December 2013, was the last to emerge free from Ebola. Liberia was declared free of Ebola in May 2015, Sierra Leone in November 2015, and Guinea on December 29, 2015, by the World Health Organization (WHO). In addition to the severe effects of Ebola, the economic downturn in the three countries has been exacerbated by the sharp decline in global commodity prices. Despite evidence of the effect of Ebola on the macroeconomic and fiscal environment, there was a scarcity of just-in time data on the household impact.

2. **After good growth performance between 2011 and 2013, Guinea's economy has suffered a number of setbacks, including the Ebola crisis and a sharp drop in new investment in the mining sector.** From a macroeconomic standpoint, real GDP growth dropped to 1.1 percent in 2014 and 0.1 percent in 2015 respectively. The services and mining sectors were adversely affected by Ebola in 2015. The mining sector is estimated to have contracted substantially in 2015 due to a combination of investor aversion because of Ebola, declining international metal prices, and Guinea's uncertain policy regime in this sector. The epidemic and renewed political unrest in the run-up to the October presidential elections in 2015 also resulted in declining activity in the services sector. On a positive note, electricity production has improved following the start of operations of the new Kaleta hydroelectricity power plant by mid-2015.

3. **As part of the international effort to understand and manage the Ebola crisis and to obtain microeconomic data, the World Bank partnered with Guinea's National Institute of Statistics (INS) to conduct a mobile phone survey to measure the socioeconomic impact of Ebola on households, following in the footsteps of similar mobile surveys conducted in Liberia and Sierra Leone in 2015.** From September 7 to 21, 2015, Guinea's INS conducted a mobile phone survey on 2467 households, with over 60 quantitative and qualitative questions, to assess the impact of the pandemic on incomes, the labor market, education, health, agriculture, and quality of life. The sampling frame, the list of all possible units from which selected households were drawn, was an existing list of phone numbers. Using this sample drawn from the list of subscribers of the local telecommunications giant—Orange—the survey was able to reach households using random digit dialling (RDD) among the 70 percent of the population that own mobile phones, covering all provinces and ethnic groups in the country. It is important to note that Orange is the biggest mobile telephone network in Guinea, with over 5,300,000 customers and a market share of nearly 60 percent in value terms (on December 31, 2015).

4. **Two strata were used based on classification from the Epidemiological Report on Ebola Outbreak (January 20, 2015).** The first stratum (or zone) covers areas severely affected by Ebola, including the forested area where Ebola first started, the border areas with Sierra Leone, and Conakry and its neighboring areas. The second zone includes areas not directly affected by Ebola, especially the northern parts of the country. The later zone formed the control group for the analysis. A sample of 2,500 households was selected throughout the country. In the severely affected area, 1,500 households were selected compared to 1,000 households in the area less or not at all affected by Ebola. Two important limitations of the study were the inability to reach the 30 percent of very poor who do not

have cell phones, coupled with the challenges of undertaking a mobile survey versus a face to face survey.

5. **The study finds that the pandemic had ripple effects on the economic fabric and that the economic effects of Ebola have outlasted the epidemiological ones.** The main findings of the survey are:

- **Overall impact.** All parts of Guinea were economically impacted by Ebola, with greater impact in the southeast and the areas around Conakry. A quarter of respondents in the severely affected areas reported experiencing proven cases of Ebola in their neighborhood or village. One in twenty respondents in the less affected areas reported experiencing proven cases of Ebola in their neighborhood or village.
- **Likelihood of Ebola.** The probability of a household to experience Ebola increased significantly with poverty and being headed by a woman, while factors such as household size and population density, and the community standard of living may explain the occurrence of Ebola in neighborhoods. The bottom 40 percent of households in terms of wealth were more likely to contract Ebola compared with the richest 60 percent of households.
- **Employment and incomes.** Urban employment has deteriorated with Ebola outbreak. The unemployment rate appears higher in urban areas severely affected by Ebola than in urban areas less affected, at nearly 17 percent and 12 percent, respectively. In parallel, there has been a decline in rural incomes, with a disproportionate impact on women.
- **Agriculture.** Agriculture production remained resilient during the crisis. Compared to 2013, agricultural production in 2015 increased for 41 percent of households. Two possible explanations are the food security interventions of the government and the lack of migration of poor farmers who continued farming during the crisis.
- **Food security.** The increase in rice price was reported by 33 percent of Guinean households from severely affected areas against 13 percent of households from less affected areas. Food consumption declined significantly, with 30 percent households in Conakry and 23 percent in the other severely affected areas changing their food habits, compared to 17 percent in the less affected areas. It appears likely that the increasing pressure on food prices resulting from disruptions in production and trade limitations were offset by the diminishing effect of low domestic demand due to lower incomes.
- **Education.** Close to 7 percent of households withdrew their children from school, with the large majority citing Ebola as the main factor.
- **Health.** The survey showed that about 11 percent of households in the areas severely affected by Ebola were afraid to go to health facilities because of fear of contacting the pandemic, compared to only 2 percent of those living in less affected areas. However, in spite of Ebola, almost all individuals who needed treatment for malaria and diarrhea still visited a health facility.
- **Knowledge.** In Guinea, almost all households reported having heard of Ebola, regardless of whether they were severely affected or less affected by the pandemic.
- **Comparisons with Liberia and Sierra Leone.** There were a number of similar patterns, although magnitudes vary. First, in all three countries, Ebola had a pernicious effect on employment and incomes. Second, food consumption declined, with many households reducing the number of meals eaten in a day. Third, there was school drop-out, with a substantial share of households that include at least one school-aged child reporting that they are not in school due to Ebola. Ebola was cited by a substantial share of households as the reason for withdrawing their children from school. Fourth, the use of health facilities continued to increase in spite of Ebola. Finally, agriculture production remained resilient in all three, although there were some price fluctuations in local markets.

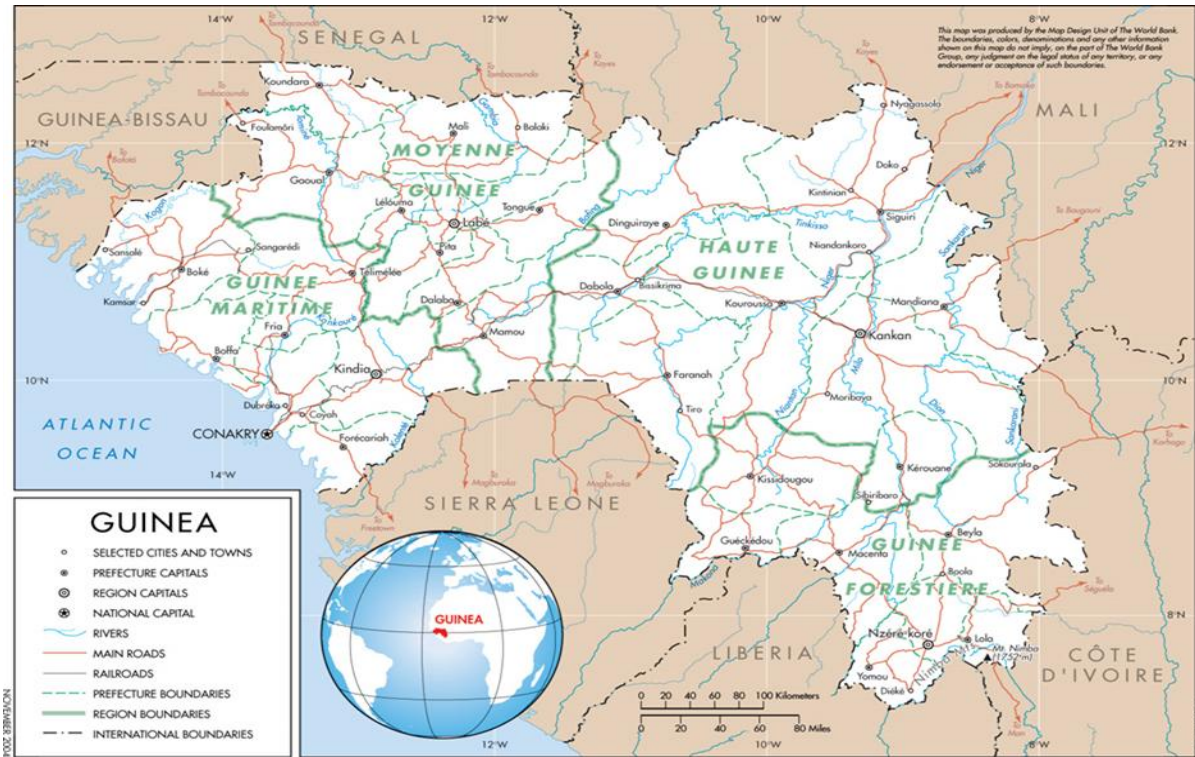
- **Policy implications.** There is a pressing need to continue mobilizing aid for Guinea even in the aftermath of Ebola in order to jumpstart its recovery and cushion the shocks. Greater supply of inputs to farmers, better social safety nets, and stronger government support for social sectors is needed.

I. INTRODUCTION AND COUNTRY CONTEXT

6. **Serious challenges remain in addressing the impact of the Ebola epidemic that affected Guinea, Liberia, and Sierra Leone since early 2014, despite great success in stopping the epidemic.** By end- December 2015, the epidemic had cost the lives of more than 11,300 people in the three countries, including more than 500 health care workers. The number of new cases peaked at more than 50 per week in early 2015 before gradually declining as containment efforts took effect. Liberia was declared free of Ebola in May 2015, Sierra Leone in November 2015, and Guinea on December 29, 2015, by WHO.

7. **Guinea, where the Ebola crisis originated in December 2013, was the last to emerge free from Ebola.** The genesis of the Ebola virus was in Guinea in December 2013, starting in the forested areas of Macenta and Guekedou, bordering Liberia and Sierra Leone (see figure 2). Strong mobilization of efforts by the international community, coupled with government leadership in the three countries, helped stem the pandemic. With the development of strong Ebola response plans, establishment of treatment centers, inflow of medical supplies and personnel, and development of robust systems of contact tracing, the epidemic was tackled. After more than a year, the pandemic was defeated. In response to the apparent eradication of the disease, the authorities in the three countries are preparing for a post-Ebola phase.

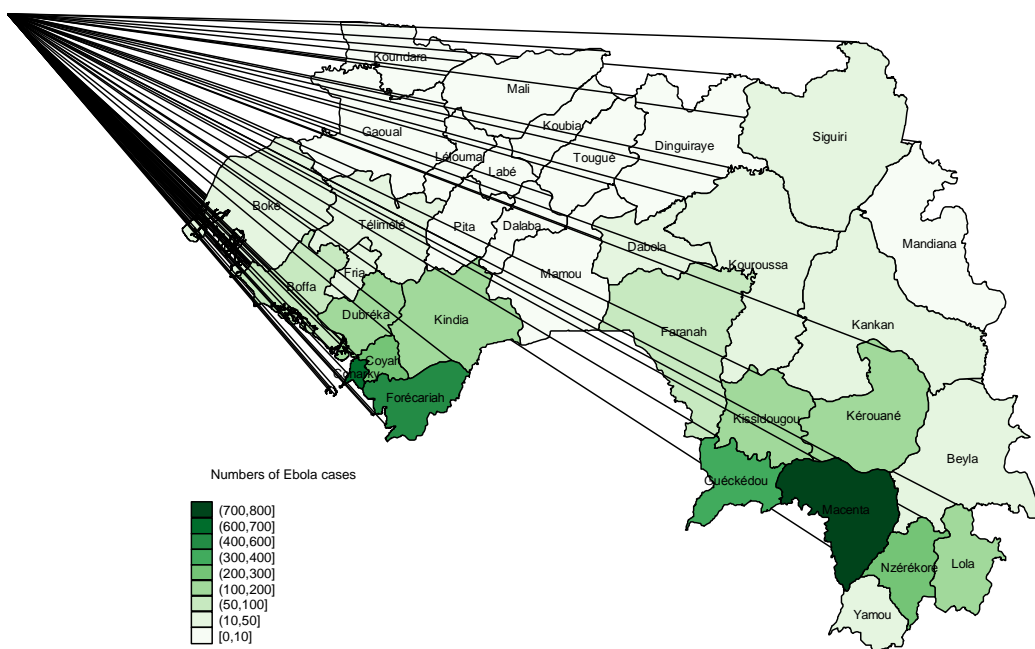
Figure 1. Political Map of Guinea



Source: World Bank

8. **In addition to the great loss of life, the epidemic has caused great damage to the countries' economies.** Total GDP losses for the three countries in 2015 alone are estimated at US\$2.2 billion, of which US\$535 million is for Guinea, US\$240 million for Liberia, and US\$1.4 billion for Sierra Leone. Inflation has moderated in all three countries, averaging below 10 percent, helped in large measure by lower international food and fuel prices. The closure of borders by neighboring countries during the pandemic had reduced international trade in goods and services and affected consumption in the short term, due to the importance of food both on imports and exports. Commodities such as rice, palm oil, potato, and banana were affected. The decline in production and economic activities resulted in the closure of some businesses and caused an economic recession by boosting unemployment and poverty in Guinea. In addition to the severe effects of Ebola, the economic downturn in the three countries has been exacerbated by the sharp decline in global commodity prices.

Figure 2. Map of Ebola Cases in Guinea



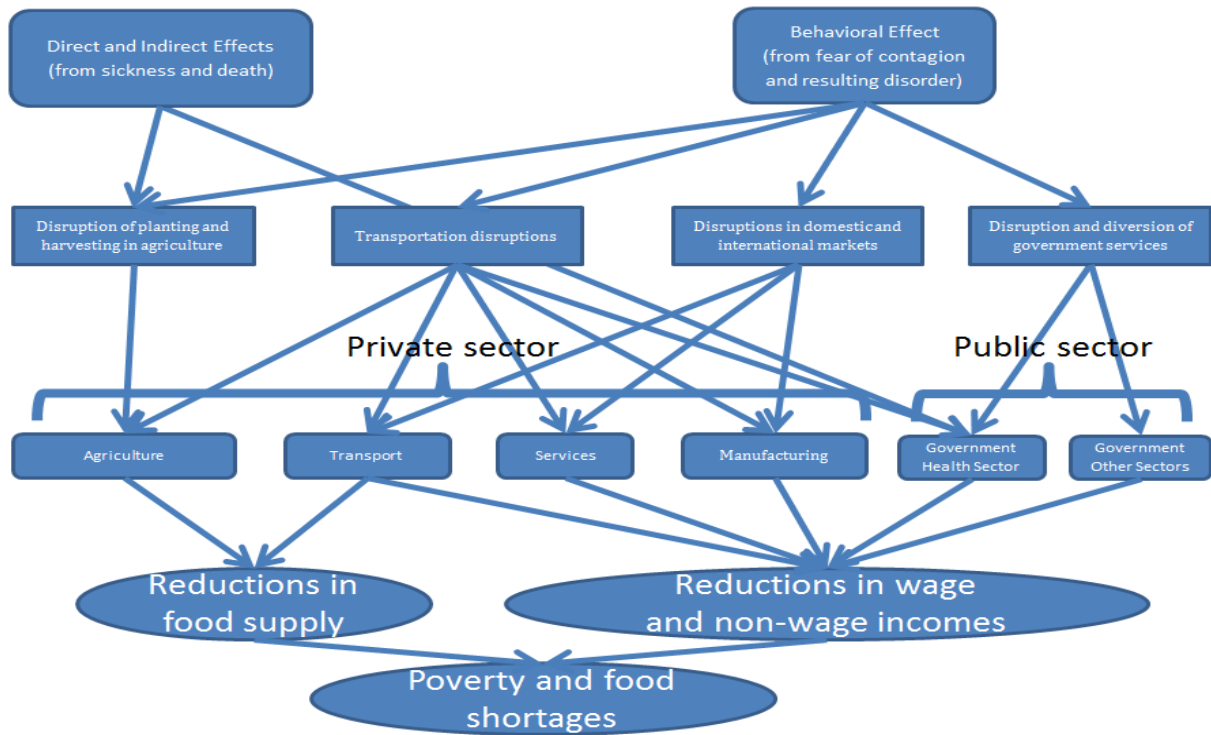
9. **As part of the international response, the World Bank Group has significantly financed the Ebola-affected countries.** Overall, the Bank Group has mobilized close to US\$1.6 billion in financing for the countries hardest hit by the crisis, including US\$400 million announced in August and September 2014 for the emergency response. The funds have financed Ebola-containment efforts in Guinea, Liberia, and Sierra Leone; helped families and communities cope with the economic impact of the crisis; and strengthened public health systems in the three countries to guard against future disease outbreaks.

10. **Guinea was significantly affected by the Ebola pandemic, jeopardizing some of the gains in macroeconomic stability and poverty reduction during the last few years.** Real GDP growth in 2015 was 0.1 percent, compared to a pre-Ebola forecast of about 4 percent. While there has been some rebound in agriculture and services, the mining sector continues to contract, and foreign investors remain wary of new projects. The mining sector is estimated to have contracted substantially in 2015 due to a combination of investor risk aversion because of Ebola, declining international metal prices, and Guinea's uncertain policy regime. Pre-Ebola agriculture GDP growth was projected at 5 percent for 2015 compared to an actual growth of 3 percent, as the agricultural sector showed more resilience than

expected. On the whole, Ebola affected all sectors of the Guinean economy. This shock was further compounded by the uncertainty in the legal regime of the mining sector and by the preparation for the national elections held in November 2015. Electricity production has improved following the start of operations of the new Kaleta hydroelectricity power plant by midyear. Reflecting low domestic demand and the sharp decline in domestic fuel prices early in 2015, inflation continued to decline, reaching less than 8 percent in 2015. In addition, the fiscal situation deteriorated sharply in 2015. Revenue and grants were estimated to fall by almost 3 percentage points of GDP, principally as the result of lower external budget support that has not been realized, and expenditures increased by 2 percentage points due to Ebola-related transfers and public investment spending.

11. The impact of the Ebola epidemic on economic well-being operates through several channels. First, there are the direct and indirect effects of the sickness and mortality themselves, which consume scarce health care resources and affect labor force participation rates. Second, are the behavioral effects that result from peoples' fear of contagion, which in turn lead to a fear of association with others and reduces labor force participation, closes places of employment, disrupts transportation, and motivates some government and private decision makers to close seaports and airports (World Bank 2015). In the recent history of infectious disease outbreaks such as the SARS epidemic of 2002–2004 and the H1N1 flu epidemic of 2009, behavioral effects have been responsible for 80 to 90 percent of the total economic impact of the epidemic. Third, there are longer-term economic effects, due to possible changes in labor markets, agricultural production, employment, school enrollment, and quality of life. The first of these channels, consisting of the labor force and health expenditure impacts, closely tracks the number of suspected and actual cases of the disease (see **Error! Reference source not found.**). The other two channels are less sensitive to the actual number of cases of Ebola because they are driven by aversion behavior and perception. Human reaction varies depending on the perceived threats and the impact of the pandemic.

Figure 3. Broad Channels of Short-term Impact



Source: World Bank (2015).

II. POVERTY CONTEXT

12. **In line with the deteriorating macroeconomic situation has been a worsening poverty situation which has been exacerbated by the crisis.** The goal of the survey has been to empirically document that increase. Historically, the poverty rate in Guinea has remained high. With elusive and volatile growth, the poverty rate increased from 53 percent in 2007 to 55 percent in 2012 (See table 1). Declining average per capita consumption contributed to the increase in poverty, but a mild reduction in inequality, notably in rural areas, somewhat contained the overall increase in poverty. Rural-urban migrations and the sharp increase in food prices explain why rural areas fared better than urban areas in terms of poverty reduction, even if poverty rates remain higher in rural areas than in urban areas, with 65 and 35 percent, respectively, in 2012. Poverty headcount that was almost the same in 2007 for zone 1 and zone 2¹ (around 58 percent), increased in the former to reach 63 percent in 2012, while it decreased to 56.8 in the latter. Conakry also experienced a significant rise in poverty from 26 to about 36 percent. The proportion of poor individuals living in households with a mobile phone increased from only 24 percent in 2007 to nearly 43 percent in 2012. The same trends are observed for the poverty gap and poverty severity. This reflects that mobile phones, which were accessible only to some privileged households a decade ago, have become widely accessible even to more deprived households. It appears, however, that more than half of poor households do not have a mobile phone, which raises the issue of the national representativeness of the Ebola survey. Table 2, based on the 2012 survey, shows how the mobile survey sample may be biased. The differences in the main socioeconomic and demographic characteristics between households with and without cell phone seem to be significant, especially for the distribution by the place of residence. Unsurprisingly, more than 90 percent of households without cell phone are located in rural areas against less than 50 percent for households with cell phone.

Table 1. Poverty of Households by Geographical Area and Mobile Phone Ownership

	2007			2012		
	Poverty Headcount (%)	Poverty Gap (%)	Poverty Severity (%)	Poverty Headcount (%)	Poverty Gap (%)	Poverty Severity (%)
Place of residence						
Urban	30.5	7.7	3.0	35.4	9.6	3.8
Rural	63.0	22.0	10.5	64.7	22.6	10.5
Epidemiological zone						
Zone 1	58.3	18.4	8.0	63.0	21.8	10.0
Zone 2	59.3	21.5	10.7	56.5	19.0	8.8
Conakry	26.3	6.1	2.3	35.6	9.9	3.9
Ownership of mobile phone						
No	61.2	21.0	9.9	70.0	25.6	12.3
Yes	24.0	5.7	2.1	42.6	12.2	5.0
Guinea						
All	53.0	17.6	8.2	55.2	18.4	8.4

Source: Government of Guinea household survey (ELEP) 2007 and 2012.

13. **The poor people have increasing access to mobile phones in Guinea.** Figure 4 shows that poverty incidence in households with a mobile phone increased from about 19 percent in 2007 to nearly 52 percent in 2012. In fact, this reflects that the poor have experienced an increase in ownership of

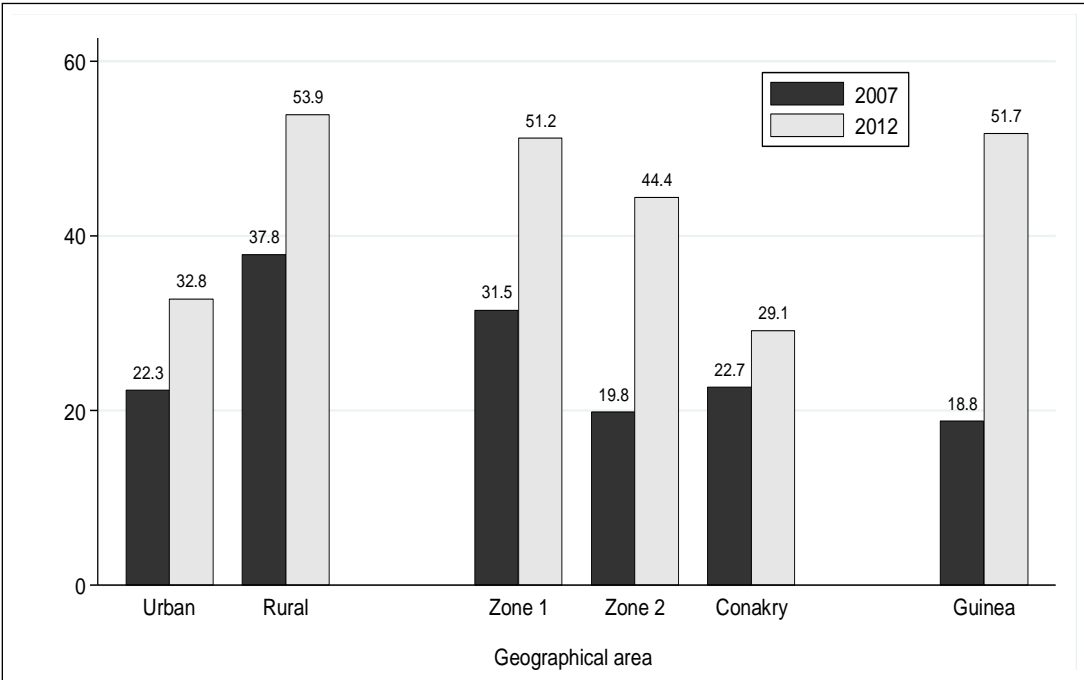
¹ Zone 1 and Conakry are the areas severely affected by Ebola, while zone 2 represents the less affected areas.

mobile phones. Moreover, if households without a mobile phone appear to be mostly poor, nearly 30 percent of individuals from these households were not poor in 2012. Poverty appears to be higher for the severely affected zone than the less affected zone and Conakry in 2012, with a poverty incidence of 51.2 percent, against 44.4 and 29.1 percent, respectively. This is consistent with the poverty incidence in all households as shown by table 2. This is also the case for the breakdown by place of residence, because the rural areas still show a higher poverty incidence.

Table 2. Main Demographics of Households by cell phone access in 2012

Cell phone access status	Proportion of Households (%)	Average Age	Average Size	Place of Residence (%)		Sex of Household Head (%)	
				Urban	Rural	Male	Female
<i>No cell phone</i>	48.3	51.2	6.2	7.3	92.7	88.2	11.8
<i>Cell phone access</i>	51.7	49.8	6.7	53.3	46.7	85.5	14.5
<i>All</i>	100	50.5	6.4	31.1	68.9	86.8	13.2

Figure 4. Poverty of Households Owning a Mobile Phone by Geographical Area



Source: ELEP (2012, 2017)

III. SURVEY METHODOLOGY

14. **The majority of economic impact studies on epidemics are desk studies, given the dangers associated with pandemics.** Because of risks of infection and travel limitations, field surveys are difficult to conduct. Desk studies have typically used data from institutions such as the World Bank and WHO. In the context of Ebola, it was important to obtain disaggregated data to analyze the socioeconomic impact of Ebola on households in Guinea. While there was an urgent need to monitor the impacts of

Ebola on household welfare, the Ebola virus outbreak limited the movement of people and goods in the three most affected countries (Liberia, Sierra Leone, and Guinea). The health and security situation made it not only risky, but also impossible to deploy interviewers to the field to collect information from households.

15. **In high-risk environments such as this one where face-to-face data collection would be very difficult or not feasible, mobile phone surveys offer a valuable alternative.** This was the case in Mali, where the Listening to Displaced People Survey used mobile phones to collect information on living conditions from the displaced population in Mali and refugees in camps in Niger and Mauritania who were displaced by the crisis in North Mali (Etang et al. 2015). Similarly, in Liberia and Sierra Leone, Himelein (2015a; 2015b) and the World Food Programme’s mVAM project used a mobile phone survey to collect data to monitor the Ebola crisis and its effects on food security and to provide estimates of its socioeconomic impact. Box 1 provides more information on the advantages and experiences from mobile phone surveys in other countries, suggesting the possibility for wider use of mobile phone surveys for poverty and impact analysis.

Box 1: Advantages of Mobile Phone Surveys (from Dabalen et al., forthcoming)

In a forthcoming book entitled “Mobile Phone Panel Surveys in Developing Countries: A practical guide for micro data collection”, Dabalen et al. stress that mobile phone surveys should not and cannot replace completely face-to-face household surveys in developing countries. However, the authors note mobile phone surveys can offer substantial benefits in specific circumstances and for specific data needs. The book provides an overview of some of the main advantages of mobile phone surveys summarized below and provides evidence where mobile phone surveys can be very useful tools to obtain important evidence.

- Gathering data in volatile and high-risk environments where traditional data collecting methods present limitations:
 - No ‘boots on ground’ (i.e. data collection in hard-to-access areas) and no deployed personnel that is able to reach the most difficult parts of country
 - Political crisis/unrest i.e. to track living conditions from the displaced population (IDP’s and returnees) in Mali for example (Etang et al. 2015) where violence precludes more traditional analysis
 - Epidemic i.e. to monitor the Ebola crisis where risks for surveyors are too high
- Quick response to new data needs in terms of flexibility is urgently needed to provide just-in time information, for example in relation to natural disasters (floods, droughts, etc.)
- Quick turnaround helps ensure timeliness of survey
- Cost effectiveness in terms of cheaper mobile phone surveys vs traditional household surveys
- Monitoring and impact evaluation efforts are possible with mobile phone surveys

Further details on mobile phone surveys can be found at

<http://www.worldbank.org/en/programs/listening-to-africa>

16. **Given the various constraints, a household survey was conducted in Guinea to measure the socioeconomic impact of Ebola on Guinean households by using a mobile phone survey interview.** From September 7 to 21, 2015, Guinea’s INS conducted a mobile phone survey that allows estimation of the socioeconomic impact of Ebola on the living conditions of households. The questionnaire was modeled on the successful questionnaire used in Liberia. Given the constraints of conducting face-to-

face interviews because of Ebola's pernicious impacts, a mobile phone approach was considered the second-best solution to obtain timely and important data. Given the dangers associated with the pandemic, the simplicity of the approach and the short duration, the team opted for a mobile phone survey. Using a sample of 2,500 households, a household questionnaire was implemented to collect both quantitative and qualitative data. Phone interviews limit the number of questions that can be asked, relative to a face-to-face interview; but for the purpose of this study, the information collected was sufficient.

17. To build local ownership, ensure the involvement of good statistical teams, and ensure knowledge of the local context, Guinea's INS was chosen as the local partner and implementer of the survey. Working closely with the Bank team, the INS had several functions: development of technical tools and implementation of the data collection; the design of the methodology of the study, organizing methodological workshops, validation of technical documents before the collection of data, determination of the sampling frame, recruitment and training of a survey team; supervision of the investigation; data analysis; and drafting a report with the key findings. Recruitment and training of the survey team was held from August 27, 2015 to September 5, 2015. In terms of personnel, the survey involved 20 agents/operators for data collection and entry, 2 supervisors, 3 statisticians/demographers for the analysis of the data and quality control, and 4 experts for drafting the main report. The combination of technical knowledge and experience in conducting surveys in Guinea allowed the INS to be a strong partner to the Bank team.

18. To have the most representative sample under the circumstances, the Bank/INS team worked closely with the largest mobile company in Guinea, Orange, which has an extensive network and phone lists. The sampling frame, the list of all possible units from which selected households were drawn, was an existing list of phone numbers. There are four players in Guinea's mobile market—Orange, MTN Areeba, Cellcom, and Intercel.² Orange is the biggest mobile telephone network in Guinea, with over 5,300,000 customers and a market share of nearly 60 percent in value terms (on December 31, 2015).³ The sampling frame for this survey was the list of subscribers to the Orange network from which the study sample was drawn, randomly (see annex A). One of the advantages of using Orange was that, in addition to its size, the Orange network has an average of three subscribers per household throughout the country. In terms of eligibility criteria, the survey focused on those individuals who were 15 years of age or older and had resided for at least six months in the survey area⁴. The survey was conducted in the eight administrative regions of Guinea (Conakry, Boké, Faranah, Kankan, Kindia, Labé, Mamou, and Nzérékoré). Each subscriber was identified by region and prefecture.

19. To analyze the impact of Ebola on households living conditions and ensure a degree of rigor, two strata were used based on classification from the Epidemiological Report on Ebola Outbreak (January 20, 2015). The first stratum (or zone) covers areas severely affected by Ebola, including the forested area where Ebola first started, the border areas with Sierra Leone, and Conakry and its neighboring areas. The second zone includes areas not directly affected by Ebola, especially the northern parts of the country. The later zone formed the control group for the analysis, and it was ensured that a significant number of the responders were from the north and central part of the country, in provinces with no Ebola cases. We can also consider Conakry as another stratum from the

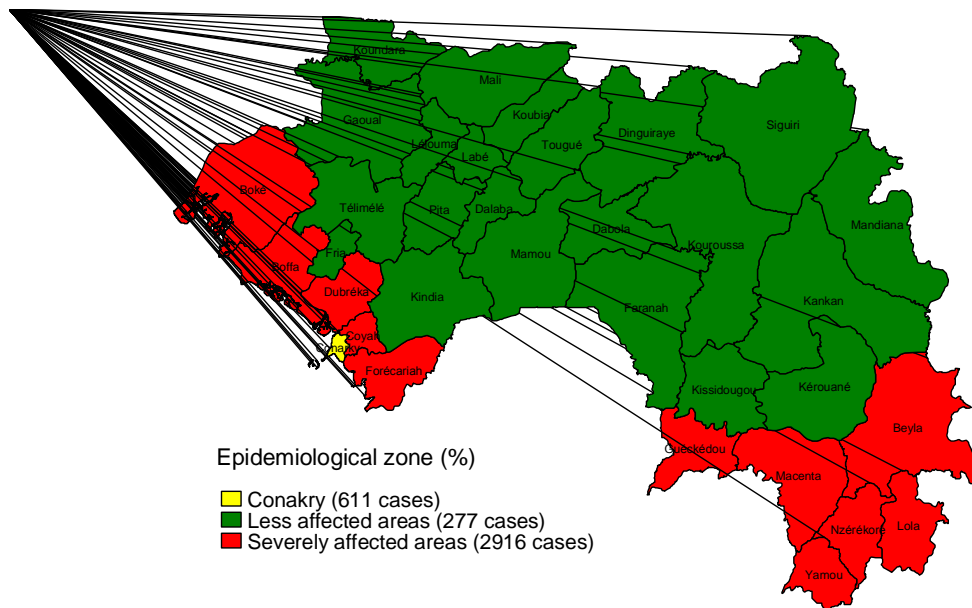
² <http://www.telecomsinsight.com/market-overview-guinea-mobile-market-overview-feb-2014>

³ <http://www.orange.com/en/About/Global-footprint/Orange/countries/Welcome-to-Orange-Guinea-Conakry>

⁴ Even though Ebola peaked in November–December 2014, it had ripple effects that exacerbated in 2015, so the six-month period seemed acceptable in design of the survey.

severely affected areas. Figure 5 shows the three strata and the numbers of cases in each one by the end of 2015.

Figure 5. Map of Ebola by epidemiological zone



20. This survey, which uses the subscribers of the Orange network, attempted to compare the results of the household survey in the third Population Census of 2014 (RGPH-3 of 2014) conducted by the INS, but for methodological reasons the two surveys cannot be compared easily. From a methodological standpoint, the sample drawn from the Orange subscriber base was not exactly comparable with the 70 percent of households that have reported mobile phone ownership. The team checked the risk of duplicate households by monitoring the ratio between the number of subscribers of each prefecture and the number of households in the prefecture.⁵ However, given the differences in means, ages, and household incomes, the team found that comparisons with previous surveys were not methodologically robust enough.

21. The methodology used by the team was the random digit dialing (RDD) approach, which has several clear advantages including timeliness and lack of a clear selection bias. The RDD method refers to a set of techniques for drawing a sample of households from the frame or set of telephone numbers.⁶ It was chosen because under the circumstances (inability to carry out a face-to-face survey), it was the

⁵ To eliminate any bias, each person interviewed asked members of his household if another person had been subject to this interview. Each respondent received GNF 10,000 of credit transfer. This approach allowed the participation of an adequate number of households in the analysis.

⁶ This particular RDD approach is distinguished from other RDD telephone sampling methods because it selects the sample from the frame of telephone numbers in the operator's (Orange's) database, whereas the other methods select from lists of numbers in directories or commercial lists (which may not include all phone owners). The ability to sample all telephone households, not just those households on a list, is one reason for the popularity of RDD sampling. To incentivize households to participate, call credit was given to those who already have mobile phones after the completion of the interview. For a detailed look at the RDD methodology, there is a good review at <http://www.pewresearch.org/methodology/u-s-survey-research/sampling/#random-digit-dialing>.

second-best option as noted earlier. This mobile phone approach had the advantage of collecting timely information, which in special cases such as the Ebola context, might be more important than representativeness. In addition, the approach seems to be relatively more cost-effective for collecting data from the general population and potentially targeted subpopulations. Nevertheless, the RDD methodology has its own limitations. Phone surveys based on RDD are the most common methodology for data collection in developed countries⁷ (Waksberg 1978; Massey et al. 1997), because nearly everyone has a phone number.⁸ This is not true in developing country contexts, where mobile phone penetration is much lower and access to personal landlines is often negligible. RDD is not suitable for contexts in which the target population has low coverage rates and the aim is to create a representative sample.⁹ The mobile phone penetration rate in Guinea is such that close to 70 percent of the households own at least one mobile phone.¹⁰ This level of mobile phone ownership represents some challenges in the national representativeness of the data collected through phone surveys using RDD. For instance, to the extent that mobile phone ownership is correlated with the household's wealth and welfare status, one would expect a lower probability of poorer households being included in the survey compared with the actual proportion of them in the population. Indeed, as we show later in this report, the risk of contracting Ebola decreases across the wealth quintiles from the poorest (highest risk) to the richest (lowest risk) households; and poverty is more prevalent among households without a mobile phone (although many poor households own mobile phones). In summary, given that there are households that live in areas without a mobile phone network, it is not possible to have a fully nationally representative sample from this method. In this case, there will almost certainly be an element of bias in the estimates even after reweighting. Thus, we are probably underestimating the impact of Ebola on households, if the poorest households are excluded from the sample. This was also the challenge with the Liberia and Sierra Leone Ebola surveys (2015a; 2015b).

22. **To ensure a sufficient sampling size and geographic representativeness, a sample of 2,500 households was selected throughout the country.** In the severely affected area, 1,500 households were selected compared to 1,000 households in the area less or not at all affected by Ebola (see Table 3). The sample was distributed proportionally according to the number of households in each prefecture. Various eligibility criteria were set with regard to age, the duration of residence in the prefecture where the person was interviewed, and the presence of the person in the locality during the Ebola crisis. Because the survey was conducted by mobile phone, it was necessary to carry out tests of representativeness of this sample compared to the national population. The census data was used to allow the team to test to what extent mobile phone ownership varies with households' welfare status.

Table 3. Sampling and Response Numbers from the Ebola Survey in Guinea

Strata	Number of Households Sampled	Number of Households that Responded	Coverage Ratio (%)
Total	2,500	2,467	99

⁷ The term 'random digital dialing' refers to the use of all possible telephone numbers as a sampling frame for telephone surveys. A detailed review of RDD is provided in Lepkowski (1988).

⁸ See Ferraro et al. (2016) on possible sources of bias in RDD surveys.

⁹ There are always exceptions. This was the case for the World Food Programme's mobile phone surveys on food security during the Ebola crisis in West Africa, where timing was more important than representativeness. Under these circumstances, analysts are encouraged to seek advice from an experienced statistician on the necessary modeling to mimic a representative sample.

¹⁰ Despite relatively slow growth for a country with a relatively low mobile penetration rate in 2012, the market picked up considerably in 2013 and 2014.

Zones severely affected by Ebola (Zone 1 and Conakry)	1,500	1,472	98
Zones less affected by Ebola (Zone 2)	1,000	995	99

23. **The survey included both qualitative and quantitative questions to assess the impact of Ebola on consumption, employment, education, health, income, and quality of life, modelled on the various transmission channels of the pandemic.** Modelled on that of Sierra Leone, the questionnaire collected information on the following parameters: individual characteristics of respondents, household characteristics, assets owned by the household, employment, agriculture, food security, migration, health, education, income, and quality of life. Key questions focused on (a) whether government closures affected employment of the household members; (b) whether the Ebola pandemic affected crop cultivation and harvesting activities; (c) whether households changed food intake due to Ebola and whether food prices in the areas changed significantly; and (d) whether household member(s) migrated to other areas to seek work and avoid Ebola exposure. The questionnaire also tried to ask the following two direct questions about income: (a) What was your average monthly income in 2013? (Q29), and (b) What is your average monthly income now? (Q30).

24. **To ensure success and community sensitization, the team tested the methodology on a number of individuals in the country.** The survey was expanded to the sample drawn from the Orange lists. Furthermore, the INS team engaged in a campaign of sensitization involving a joint press conference with the Bank, national radio, rural radios, and community radios. Free call credits were offered to individuals to encourage their participation in the survey. Although it is estimated that poorest populations are not represented in the Ebola survey because not having mobile phones, five living standard groups (quintiles) were defined in the survey sample, from poorest to richest, on the basis of ownership assets and access to utilities by households. It appears that poor and poorest households are living in all regions except Conakry where their proportions are almost null (see Table 4). This motivated the choice to consider Conakry as a full stratum in the analysis of breakdown by epidemiological areas (Box 2).

Table 4. Breakdown of Survey Responders by standard of living and Region

Administrative Region	Quintiles in terms of standard of living (%)				
	<i>Poorest</i>	<i>Poor</i>	<i>Middle</i>	<i>Better off</i>	<i>Richest</i>
Boké	24.2	17.2	18.4	23.5	16.6
Conakry	0.0	0.2	4.6	32.7	62.5
Faranah	32.9	13.3	23.2	19.2	11.4
Kankan	22.6	11.3	27.1	29.5	9.5
Kindia	16.6	15.6	26.0	23.5	18.4
Labé	26.5	35.5	21.2	12.3	4.6
Mamou	29.6	32.1	18.2	17.8	2.3
NZérékoré	20.9	38.4	26.0	10.3	4.4
Guinea	18.6	18.2	19.4	22.6	21.2

Box 2. Survey Analysis Sampling

Administrative region: Guinea is subdivided into eight administrative regions: Boké, Conakry, Faranah, Kankan, Kindia, Labé, Mamou, and Nzérékoré.

Natural region: Lower Guinea, Middle Guinea, Upper Guinea, and Forest Guinea

Type of residence: Urban and rural

Status of the zone: Zones severely affected by Ebola and zones less affected by Ebola

Quality of life of household: This composite indicator was created based on a combination of multiple indicators looking at asset endowment of households. This indicator was subdivided into three classes: very poor, poor, and rich. The variables that have been used include main source of water for the household; source of electricity; employment status of occupants; type of housing; type of toilet used by household; main material for walls and floor of habitation; main roofing; possession of goods in the households, including radio, television, and Internet connectivity; and possession of goods, including car, boat, livestock, motorcycle, bicycle, refrigerator, agricultural machinery, provisions, solar panel, and generator.

25. **One of the main limitations of the survey was the exclusion of very poor households without mobile phones.** Pearson’s chi-square tests show that households with mobile phones have different characteristics from those without phones, particularly on socioeconomic characteristics (quality of dwelling, ownership of durable goods, and access to several utilities). These results were confirmed by another multivariate descriptive test based on the multiple correspondence analysis. This is consistent with the literature that the characteristics of individuals and households with phone access often differ greatly from those without, with mobile phone owners more likely to be wealthier and living in urban areas (Sauti za Wananchi 2012), and more educated (Pew Research Center 2015). The costs associated with charging and maintaining call credit further exacerbate the gaps in the probability of responding (Leo et al. 2015). The conclusion is that the results from the 2015 Ebola survey are valid only for households with a mobile phone, which is a significantly large sample. The main demographic characteristics of households with mobile phone are compared between the two previous surveys (ELEM 2007 and 2012) and the Ebola survey, and results are presented in table 5.

26. **Although the 2015 survey may be considered in some way as representative of households with cell phone, the differences in its sample design make it not really comparable with the previous household surveys.** In fact, one could use the subsample of households with mobile phone in the 2012 survey to make comparisons. However, this approach does not ensure that both samples are comparable. The means of the population were so different that it was hard to find exactly corresponding samples. There is also no guarantee that the reweighting will function properly. The main reason is that information potentially useful to build an appropriate counterfactual sample are missing in the 2015 survey.

Table 5. Main Demographics of Households with Mobile Phone by Epidemiological Zone

Year/ Epidemiological Zone	Number of Households	Proportion of Households (%)	Average Age	Average Size	Place of Residence (%)		Sex of Household Head (%)		
					Urban	Rural	Male	Female	
2007	Zone 1	51,615	19.7	51.7	8.7	67.1	32.9	86.6	13.4
	Zone 2	49,079	18.7	53.5	7.3	75.8	24.2	85.3	14.7
	Conakry	161,894	61.6	49.3	8.2	100	–	82.0	18.0
	All	262,588	100	50.5	8.1	89.0	11.0	83.5	16.5
2012	Zone 1	324,189	35.9	50.0	6.7	34.5	65.5	88.1	11.9
	Zone 2	327,237	36.3	50.9	6.8	41.6	58.4	84.8	15.2
	Conakry	250,543	27.8	48.3	6.7	100	–	83.0	17.0
	All	901,969	100	49.8	6.7	53.3	46.7	85.5	14.5
2015	Zone 1	353,969	34.9	44.8	8.4	57.8	42.2	88.0	12.0
	Zone 2	446,652	44.0	47.4	7.8	43.7	56.3	86.0	14.0
	Conakry	215,004	21.1	43.9	7.3	100	–	90.6	9.4
	All	1,015,625	100	45.7	7.9	60.4	39.6	87.7	12.3

IV. KEY FINDINGS OF THE SURVEY

27. **The survey was conducted in all provinces of Guinea, with 60 percent of the respondents residing in the areas strongly affected by Ebola.** The results paint a very interesting picture of the impact of the pandemic and provides real-time and new information for policymakers and international donors. The survey was also able to use innovative mobile phone technology to access remote households that were risky to reach with traditional face to face surveys. While the survey could not reach the very poorest households, it was able to reach the 70 percent of the population who had mobile phones. As in many other African countries, mobile phone ownership is concentrated among younger, richer, male, and coastal populations, but there has been quite wide use of phones even in the poorer regions. Close to 99 percent of the households interviewed were aware of Ebola and its impact on health. Rich households (98.9 percent) believed more in the Ebola pandemic than rural households (95.6 percent) did. One in five respondents in the severely affected areas and one in twenty respondents in the less affected areas reported experiencing proven cases of Ebola in their neighborhood or village. The survey focused on labor markets, food prices, household incomes, agriculture, education, health, and quality of life.

28. **The survey collected important information on the perceptions of Ebola.** Almost all households reported having heard of Ebola, regardless of whether they were severely affected or less affected by the pandemic. Nearly one quarter of households reported having a friend or an acquaintance who had contracted Ebola. To avoid contracting Ebola, households described the following Ebola prevention measures: avoid eating fruits bitten by a bat (38.5 percent); avoid eating bush meat (22.9 percent); avoid contact with body fluids of Ebola patients (21 percent); avoid unsafe burials and funerals (15.5 percent). Eating bush meat and contact with body fluids have been identified as key channels of transmission, and, apparently, some households followed these measures to avoid Ebola transmission. In terms of communication through the media, more than 70 percent of households surveyed reported having been informed of Ebola through media (see table 6).

Table 6. Sources of Information about Ebola

	Media (%)	Sensitization Campaign (%)	Parent/Friend (%)	Medical Personal/ Nongovernmental Organization (%)
All	73.2	14.1	8.9	3.6
Place of residence				
Urban	72.7	13.6	9.1	4.4
Rural	73.9	14.8	8.6	2.4
Gender				
Male	72.4	14.3	9.7	3.7
Female	74.4	13.7	8.1	3.5
Epidemiological zone				
Zone 1	67.3	17.0	12.1	3.3
Zone 2	80.8	7.9	9.8	1.4
Conakry	67.2	21.9	1.9	8.8
Education level				
None	73.8	12.5	11.1	2.5
Primary	73.7	14.5	9.0	2.8
Secondary	72.2	15.7	6.4	5.2

A. FACTORS INFLUENCING THE RISK OF BEING INFECTED WITH EBOLA

29. **Several socioeconomic and demographic factors may explain the risk for a household to be infected with Ebola.** The microeconomic determinants of the vulnerability of households to Ebola virus infection are analyzed econometrically through logit regressions. Following convention, the dependent variable is a binary variable that takes the value 1 if a household has experienced a case of Ebola, and 0 otherwise. The descriptive statistical analysis shows that the households that have experienced Ebola account for about 5 percent of the total number of households in the sample, while they are a little more than 8 percent of the sample in severely affected zones that have experienced this epidemic. The regressions are performed by considering two regressions, the first on the whole sample and the second on the subsample of households in severely affected zones (including Conakry). A second model is considered to understand the main determinants of Ebola infection in the neighborhood. Households that reported cases of Ebola in the neighborhood represent about 16 percent of households in the whole sample and 25 percent in the severely affected zones. Tables 7 and 8 present the results of regressions of both models.

30. **The gender and marital status of the household head, the standard of living, and the population density are the main explanatory factors for the occurrence of Ebola in a household.** The main factors that significantly affects the likelihood of a household to experience a case of Ebola are related to demographics (population density and gender and marital status of head of household) and material welfare (wealth) of household. Compared to households headed by married persons, the risk of being infected with Ebola decreases for households headed by single, divorced or widowed persons. This could be explained by the fact that households headed by married persons are more likely to receive patients from other locations than single households, which increases their risk of being infected. Moreover, households headed by women have proven to be more vulnerable to Ebola infection. The location also played an important role, insofar as the probability that Ebola occurs in a household is higher in high population density areas. It also appears that the bottom 40 percent of households in terms of wealth are more likely to contract Ebola compared to the richest 60 percent of households.

Table 7. Main Determinants of the Risk of Infection with Ebola in Households

Explanatory Variables	Whole Sample		Severely Affected Zones	
	Coefficient	Std. Err.	Coefficient	Std. Err.
Level of wealth				
Household is part of the richest 60%	-0.44*	0.23	-0.34	0.24
Gender of household head				
Household head is female	0.53*	0.29	0.60**	0.31
Marital status				
Polygamous married	0.00	0.23	0.08	0.24
Single, divorced, or widowed	-1.09**	0.49	-1.03**	0.50
Population density				
30–49 inhabitants	0.38	0.32	0.31	0.34
50 inhabitants or more	0.58*	0.32	0.31	0.33
Epidemiological zone				
Less affected zone	-2.36***	0.38	–	–
Conakry	-0.10	0.28	-0.15	0.28
Constant	-2.56***	0.38	-2.62***	0.40

Number of Observation	2107	1293
LR Chi2 (probability)	85.5 (0.00)	13.4 (0.34)
Pseudo R2	0.09	0.02

Note: *, **, and *** mean that coefficients are significant at 10%, 5%, and 1% levels, respectively.

31. **The place of residence, the household size, the standard of living, and the population density are the main explanatory factors of the occurrence of Ebola in neighborhoods.** Results from table 7 show that rural neighborhoods have less risk of experiencing Ebola compared to urban neighborhoods. This is corroborated by the effect of population density, because the population concentration is a risk factor for the spread of the epidemic. This finding is also consistent with those from Liberia and Sierra Leone. In addition, when the average household size in the neighborhood is relatively high, this increases the risk of occurrence of Ebola. The richest neighborhoods, based on the proportion of the richest 60 percent households, are less vulnerable to the epidemic than those including most of the bottom 40 percent households.

Table 8. Main Determinants of Ebola Infection in Neighborhoods

Explanatory Variables	Whole Sample		Severely Affected Zones	
	Coefficient	Std. Err.	Coefficient	Std. Err.
Place of residence				
Household is in rural area	-0.39**	0.15	-0.31*	0.17
Level of wealth				
Share of the 60% richest households in the prefecture	-1.25***	0.35	-1.61***	0.39
Household size				
Average household size in the prefecture	1.27**	0.59	1.18*	0.67
Population density				
30–49 inhabitants	0.95***	0.22	0.88***	0.24
50 inhabitants or more	1.17***	0.22	1.30***	0.24
Epidemiological zone				
Less affected zone	-2.56***	0.21	–	–
Conakry	-0.18	0.25	-0.09	0.25
Constant	-1.67***	0.52	-1.50**	0.60

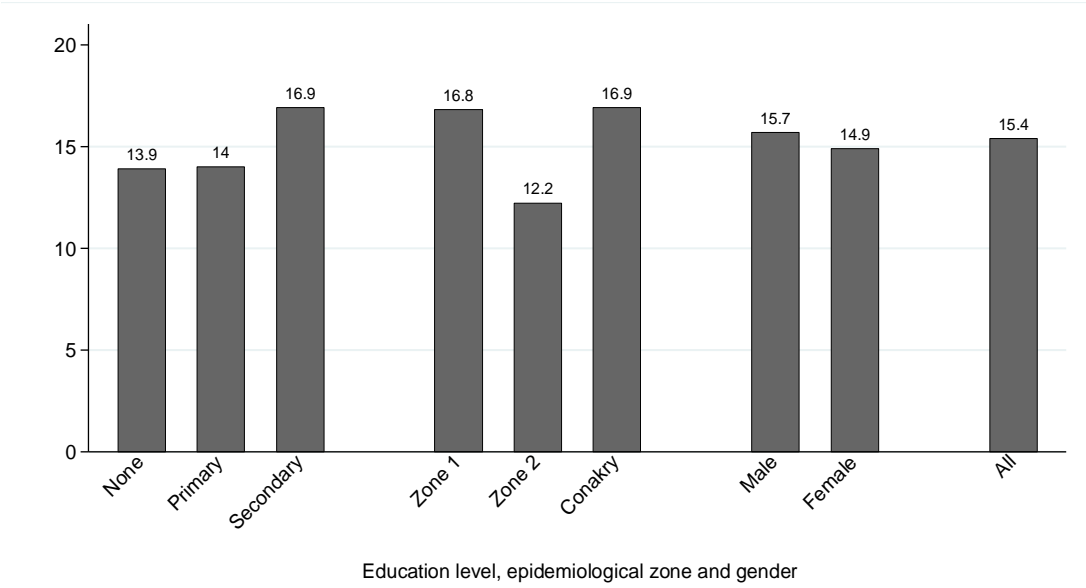
B. EFFECTS ON EMPLOYMENT AND WORKING CONDITIONS

32. **The situation of urban employment has deteriorated with Ebola outbreak.** In line with the International Labour Organization definition, the unemployed are defined as all persons ages 15 to 64 who are available to work but who are without work during a reference period.¹¹ These persons are also supposed to have looked for work in the previous weeks and be available to work immediately. However, if the unemployment rate based on this definition may be relevant for urban areas, this is not the case in rural areas where the decision to work for seven days may vary depending on the agricultural season. In the 2015 survey, the unemployment rate appears higher in urban areas severely affected by Ebola (urban zone 1 and Conakry) than in urban areas less affected (urban zone 2), with about 17 percent and 12 percent, respectively (see figure 6). The negative effect on employment is in line with findings from the study on the economic impact of the 2014 Ebola epidemic in Liberia that Ebola severely constricted the Liberian economy across all sectors of employment (Himelein 2015a). Large percentages of wage workers were either asked to stay at home or lost their positions completely.

¹¹ The reference period in both surveys (ELEP 2012 and Ebola survey 2015) is seven days.

Similarly, people involved in non-agricultural self-employment, such as small-scale traders, saw their business fall as markets were closed. Similar impacts might have been experienced in Guinea.

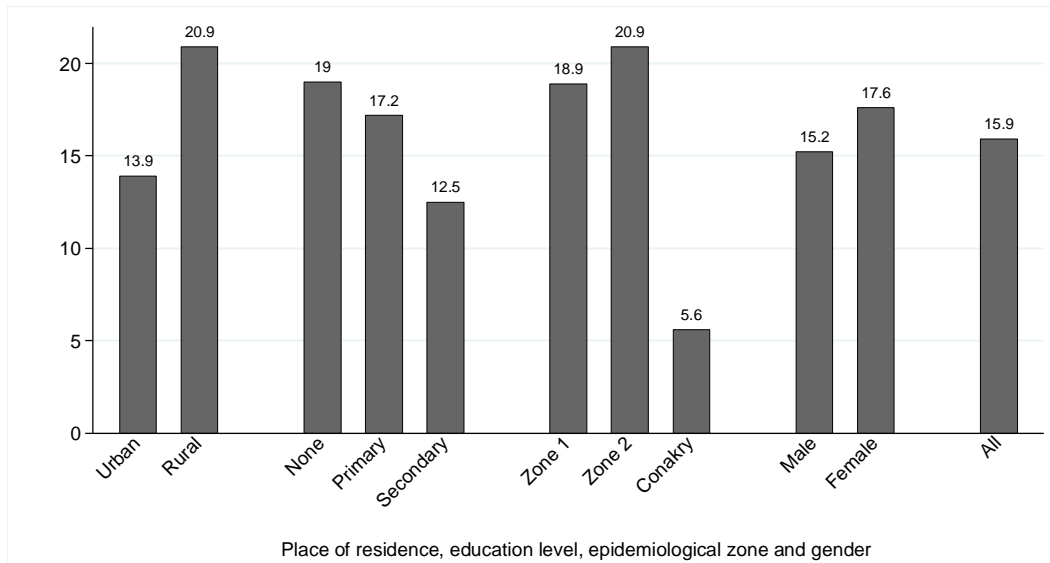
Figure 6. Unemployment Rates for Urban Individuals over 17 Years



33. **The results could be explained (at least in part) by Ebola, although it is believed that other factors such as seasonality should not be overlooked.** In fact, a qualitative analysis based on individuals without work and not available for work shows that sometimes Ebola is cited among the reasons for the unavailability. Specifically, about 18 percent of these individuals attribute the reason for not wanting to work to Ebola in urban areas that were severely affected against approximately 7 percent in less affected areas.

34. **The impact on overall country employment has been negative.** Nationally, 16 percent of employed individuals felt that their economic activity has deteriorated since March 2014, of which 19 percent are in areas severely affected (excluding Conakry), 21 percent in less affected areas (see figure 7), and only 6 percent in Conakry. Generally, the situation has deteriorated in the country, but relatively more significantly in rural areas than in urban areas, with 21 percent against 14 percent. Educated people seem to be more resilient with a proportion of 12.5 percent for those with at least a secondary level versus 19 percent for people with no education. On the other hand, women appear to be slightly more affected than men.

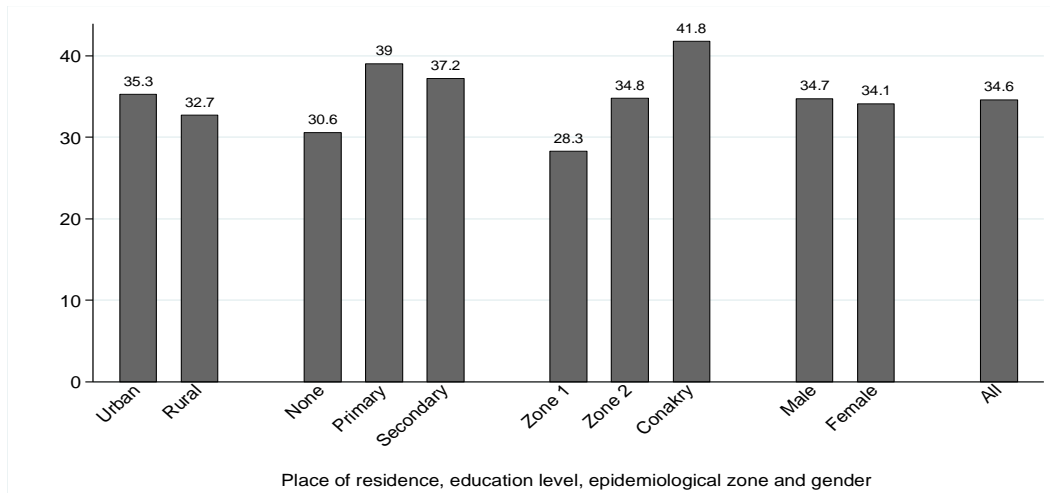
Figure 7. Proportion of Individuals whose Activities have Deteriorated



35. **The decline in income during the period of Ebola has mostly affected women and residents of rural areas.** A deterioration in working conditions, including a high rate of absenteeism at work, will generally result in a decrease in income, particularly when accompanied by price increases. The proportion of individuals who reported absence from work since March 2014 are quite high, with a national level of about 35 percent (see figure 8). This rate appear to be relatively high for Conakry, with 42 percent against 35 and 28 percent, respectively, for the less affected and the other severely affected areas. The reason of this absence is explained in 30 percent of cases as Ebola in the severely affected areas, excluding Conakry, and for only 11 percent in less affected areas. When considering all individuals who report a deterioration in working conditions, almost all or 96 percent of them declare a loss of monthly income between 2013 and 2015. Considering that the consumer price rose by nearly 10 percent and 8 percent¹² respectively in 2014 and 2015, the situation could be worse when analyzed in terms of real income. In fact, this inflation, which results in a decrease in real income, is expected to exacerbate the situation, including welfare reduction even for individuals reporting unchanged working conditions.

¹² Joint mission of the International Monetary Fund and the World Bank in Guinea.

Figure 8. Proportion of Individuals who were Absent from Work since March 2014



36. **The employment findings in Guinea are similar to those in Liberia and Sierra Leone.** Indeed several findings of the Guinea survey (including those discussed below) are consistent with results of the Ebola surveys in Liberia and Sierra Leone (Himelein, 2015a; 2015b). Box 3 summarizes common findings and lessons learned in Guinea, Liberia and Sierra Leone.

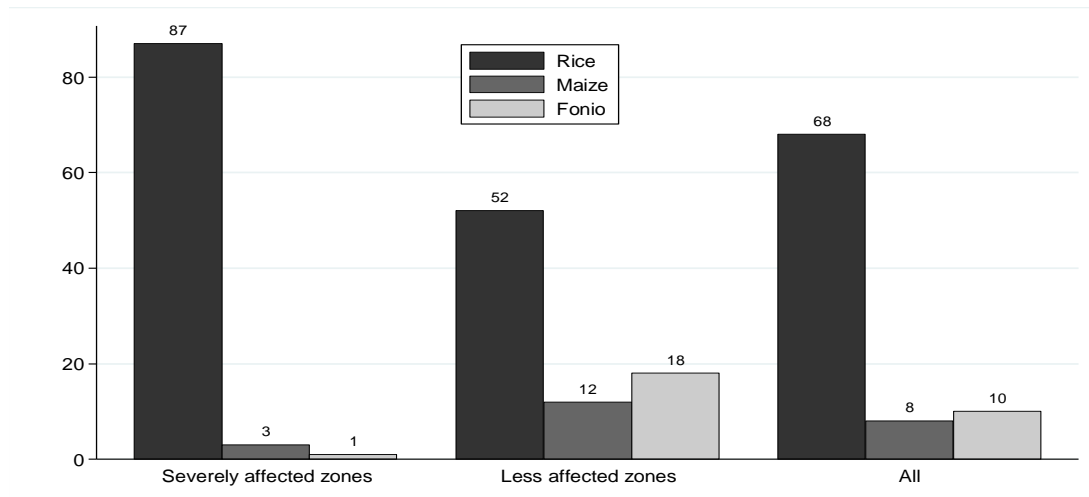
Box 3: Common findings in Guinea, Liberia and Sierra Leone

- **Knowledge of Ebola:** In Guinea, almost all households reported having heard of Ebola, regardless of whether they were severely affected or less affected by the pandemic. In Liberia, the results showed that nearly all respondents had heard of Ebola.
- **Migration:** In Guinea, individuals in severely affected areas appear to be relatively less mobile than in the less affected areas. In Sierra Leone, 93 percent of respondents indicate living in the same district they lived in prior to Ebola. In Liberia, although migration increased, migrants were most likely to remain within their original county.
- **Unemployment worsened,** and unemployment rate was higher in urban areas
- **Food consumption declined:** For example, households had to reduce the number of meals eaten in a day
- **Coping strategies:** households adapt strategies to cope with Ebola, including selling key assets, borrowing (get into debt), reducing their food consumption.
- **School drop-out:** Substantial share of households that include at least one school-aged child report that they are not in school. Ebola was cited by a substantial share of households as the reason for withdrawing their children from school. .
- **Health:** Use of health facilities continues to increase. 89 percent of households reported that a household member gave birth in the two months prior to the survey and did so in a hospital or clinic (Sierra Leone). In Guinea, almost all individuals who needed treatment for malaria and diarrhea still visited a health facility.
- **Agriculture production remained resilient.** Food production did not decrease in Guinea. In Sierra Leone, rice harvest in 2014 were similar to harvest in the previous years.
- **Rice prices increased** - more so in severely affected areas of Guinea, and parts of Sierra Leone outside of Freetown.

C. EFFECTS ON AGRICULTURAL OUTPUTS

37. **The survey also assessed the impact on the agricultural sector.** For this sample of households with mobile phones, it appears that about 37 percent of households have at least one member involved in some form of agricultural activity, including 44 percent in severely affected zones (without Conakry) and 48 percent in less affected zones. The crops mainly grown by households are rice (68 percent of households), fonio (10 percent), and maize (8 percent). While less affected zones are more agricultural, severely affected zones are grow more rice, with 87 percent of households in the latter zones growing rice compared to 52 percent in the former zones. On the other hand, the less affected zones grow more maize and fonio.

Figure 9. Proportion of Households by Main Crops Grown



38. **The pandemic has not had as negative an impact on the agricultural sector as expected.** As shown in figure 10, about 45 percent of households did not have sufficient quantities of seed for the 2015 crop year. Not surprisingly, these households were more likely to be in the severely affected areas. Compared to 2013, agricultural production in 2015 increased for 41 percent of households, while it remained unchanged for 45 percent and decreased for 15 percent (see figure 11). The finding that food production did not decrease significantly in 2015 is surprising. A potential explanation for this, according to FAO/WFP (2015), is that the impact of Ebola on food production was localized, with most of the disruption taking place in the forest zone. The results also show that households in less affected zones were more likely to report that their agricultural production remained unchanged or decreased, compared to their counterparts in severely affected zones. Although, the differences between the two zones are small, this is consistent with the fact that agricultural productivity suffered a bit more in severely affected areas. This is probably a reflection of the fact that movement (which is likely to include going to farms) was limited during the Ebola crises, even more so for severely affected areas. This is also the case of households headed by men which do better than those headed by women, with proportions of 41 and 31 percent, respectively.

Figure 10. Proportion of Households with Sufficient Quantities of Seed for the Current Crop Year

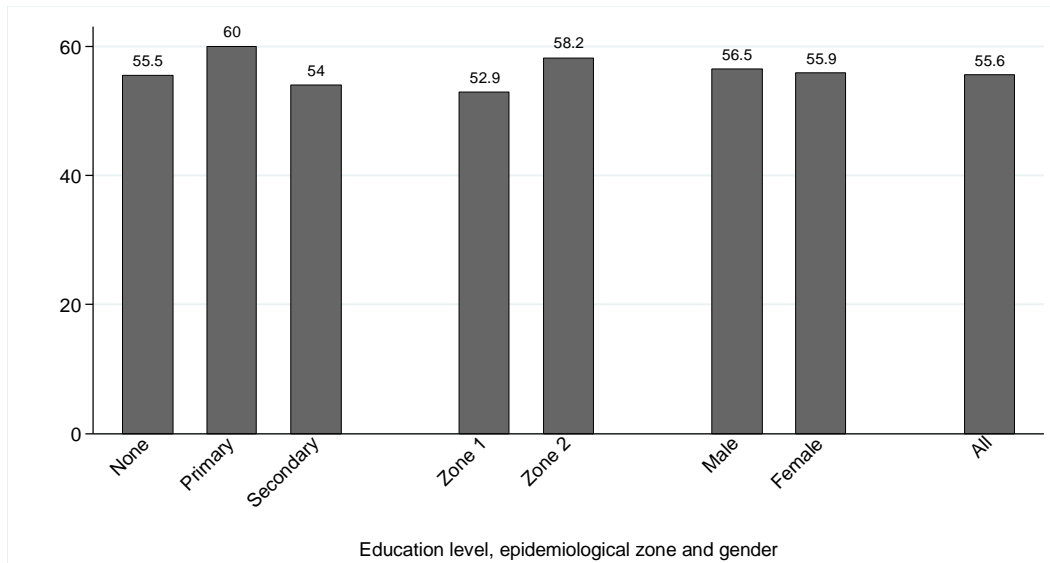
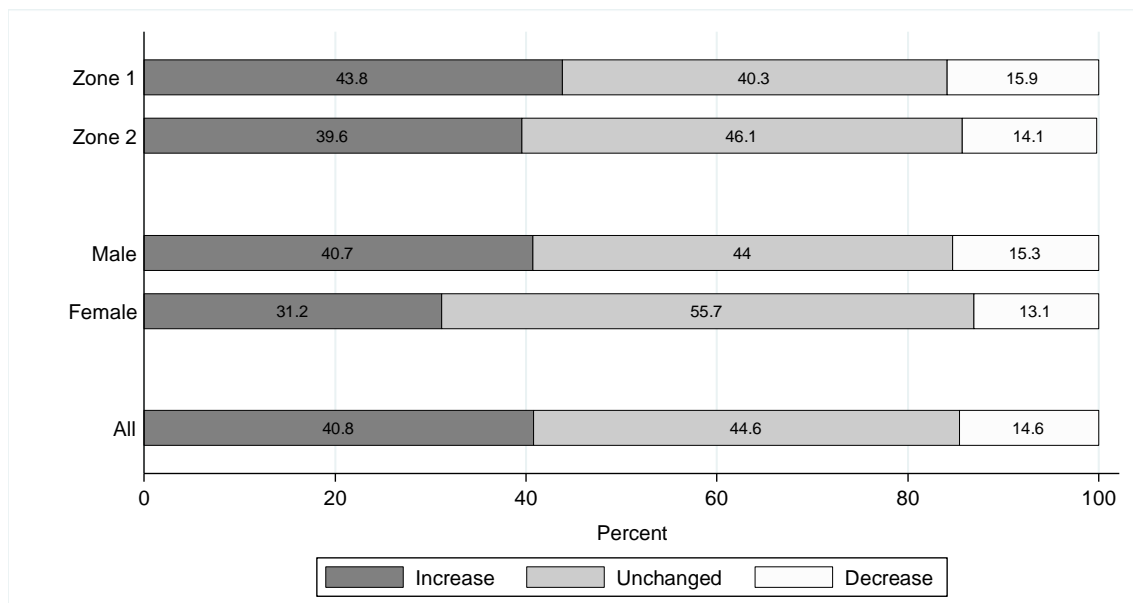


Figure 11. Evolution of the Agricultural Production in the Market Compared to 2013

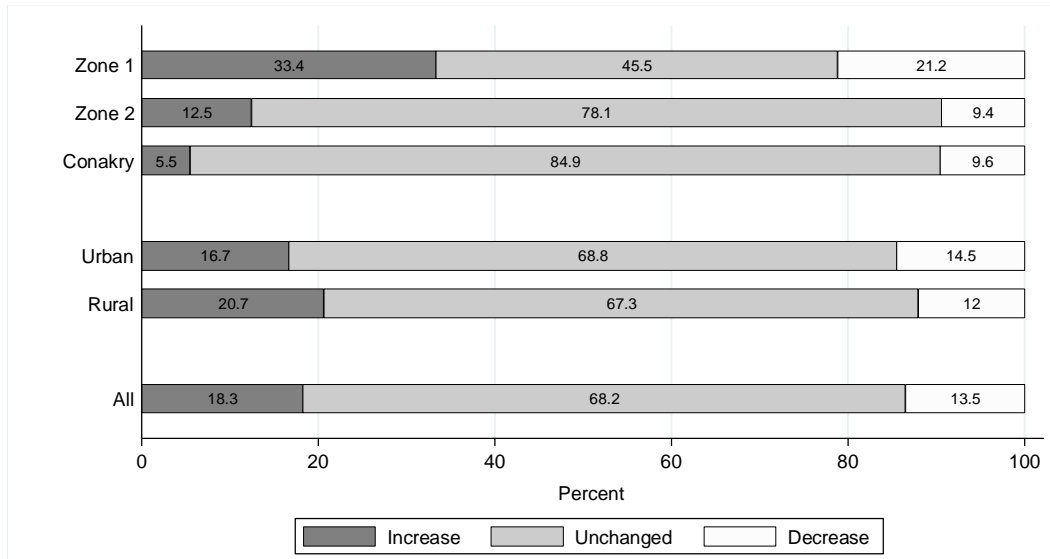


D. EFFECTS ON FOOD SECURITY AND COPING STRATEGIES

39. **The impact of Ebola on food security was also examined through its effect on food prices, especially on rice—the most common staple in the Guinean diet.** The results show that the price of rice increased over the last 12 months for 33.4 percent of households in the severely affected areas without Conakry (zone 1), against 12.5 percent for households in less affected areas (zone 2). Paradoxically, these areas experience price decrease for 21 percent of households versus 9.4 percent in the less affected areas (see figure 12). This relatively strong fluctuation in the price of rice in areas with high risk of Ebola could be explained in part by the pandemic, especially if it restricts the movement of persons and goods, including food products, which could lead to an imbalance between the supply and demand

of rice.¹³ We can thus observe greater price stability in less affected areas (78 percent of households), and in Conakry (85 percent of households) which has a more developed market. Finding that food retail prices remained stable for most households is consistent with the argument that the increasing pressure on food prices resulting from disruptions in production and trade limitations was offset by the diminishing effect of low domestic demand (FAO/WFP 2015).

Figure 5. Evolution of the Price of Rice during the Last 12 Months



40. **An important finding was that there has been a negative impact on food consumption at the household level, with households using a variety of coping strategies when hit by the Ebola shock.** The proportion of households with only one meal a day is slightly higher in severely affected areas without Conakry than in less affected areas and Conakry, with proportions of 12.4, 10, and 9.6 percent, respectively (see figure 13). There was a marked impact, with households changing their food habit. It is interesting that 22.6 percent of households changed their eating habits (compared to the 12 months before the survey) in areas severely affected by Ebola, compared to 17 percent in the less affected areas (figure 14), and many households made dietary changes (figure 15). About 67 percent of households eat less expensive food; 61 percent will get into debt; 53 percent reduce the number of meals; 48 percent restrict consumption of adults; and 36 percent sell a durable good, 32 percent sell pets, and 7 percent sell land. These strategies were generally less expressed in the severely affected areas than in the other areas, meaning that severely affected areas had fewer coping strategies (see figure 16 and 17).

¹³ The "scarcity and price theory" suggests that if the supply of a good is limited (which is what might be expected in Ebola severely affected areas – because of low business activity, restrictive movement, among other factors) and there is a high or constant demand for the food item (especially rice being a main staple in Guinea), then the price of the scare good (rice) should increase.

Figure 6. Proportion of Households with Only One Meal a Day

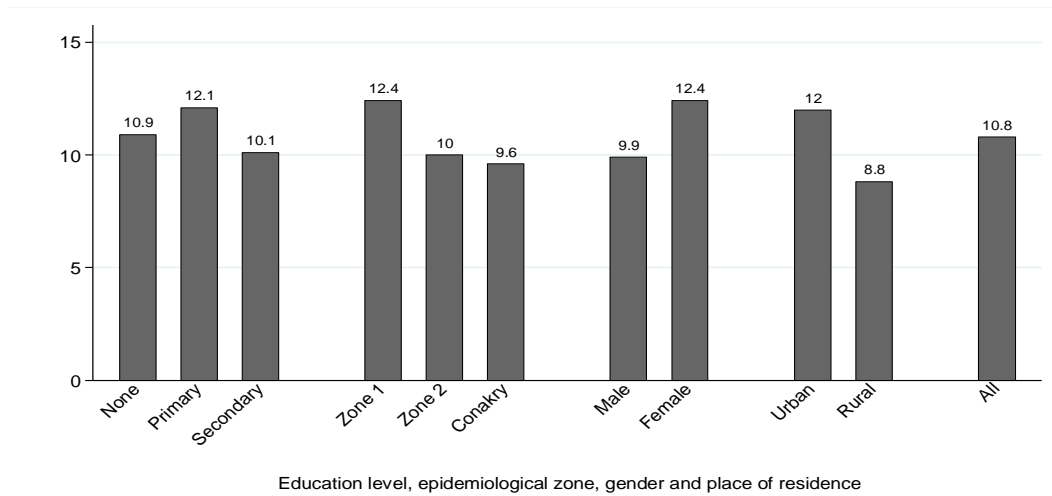


Figure 7. Proportion of Households which Changed their Food Habit

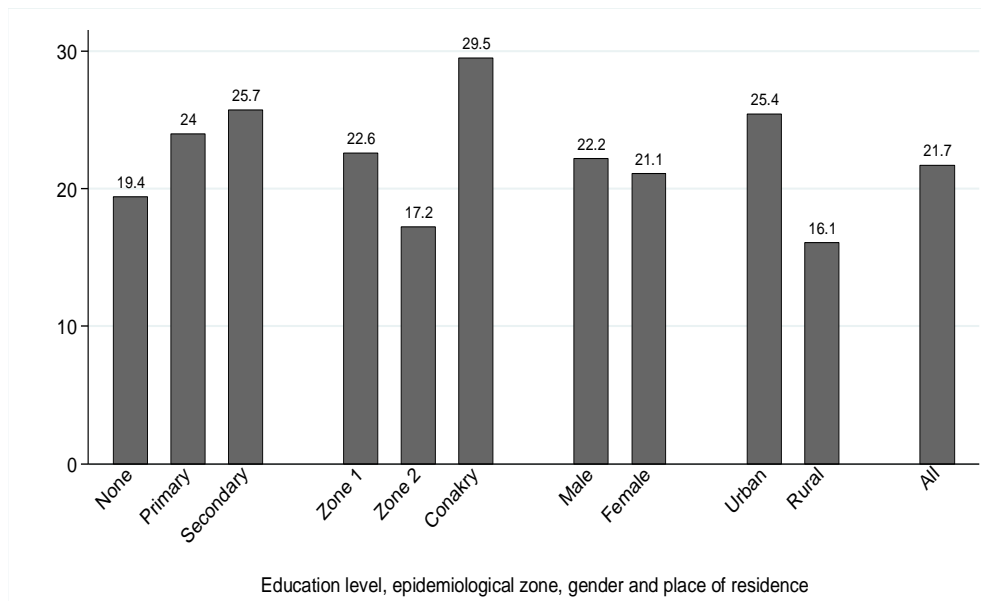


Figure 8. Proportion of Households by Food, Subject to Dietary Change

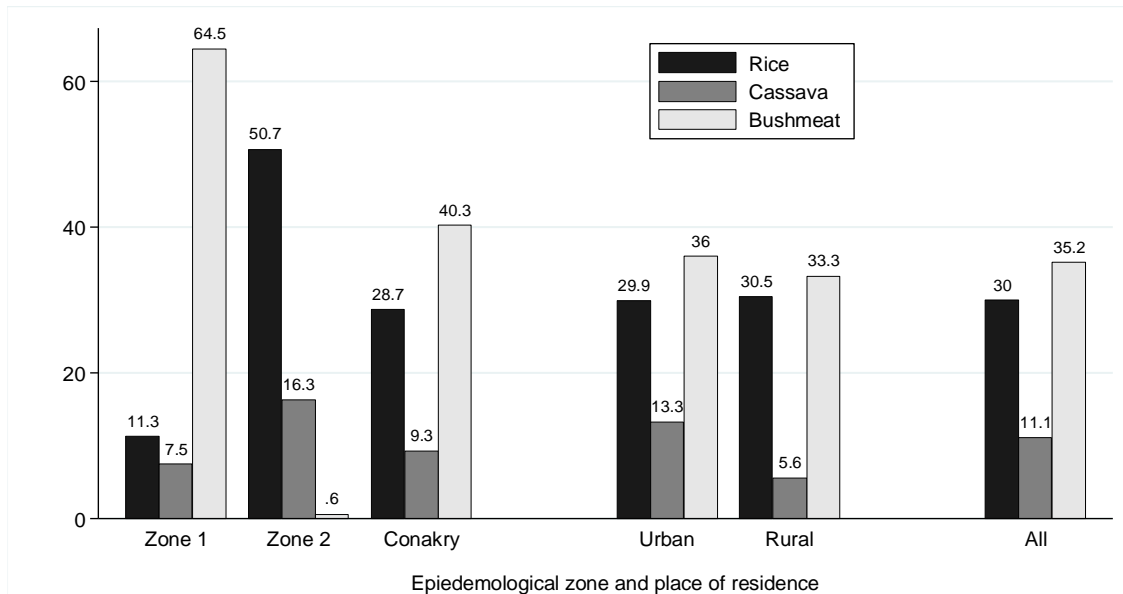


Figure 9. Possible Coping Strategy of Households by Place of Residence

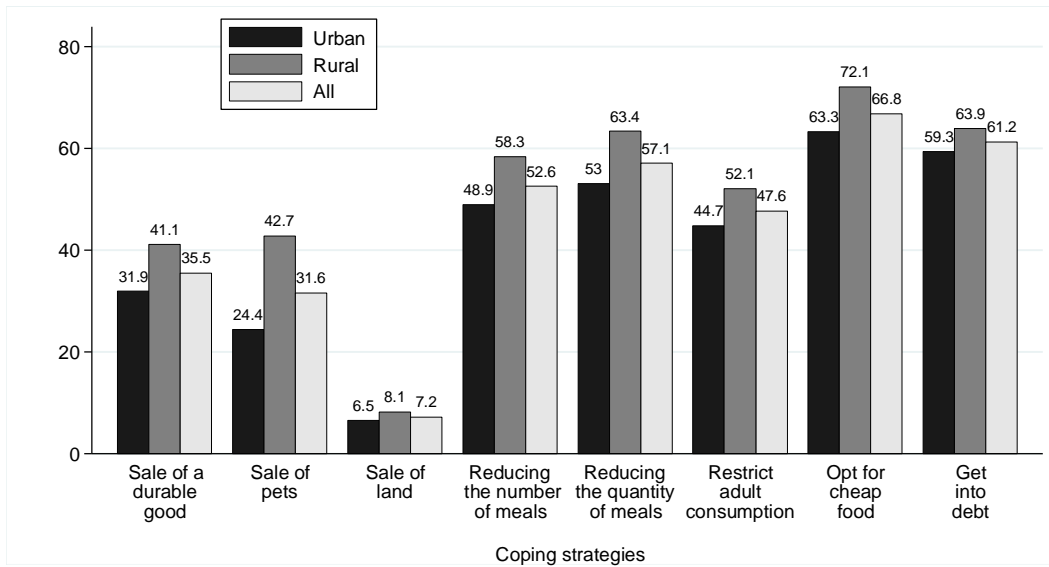
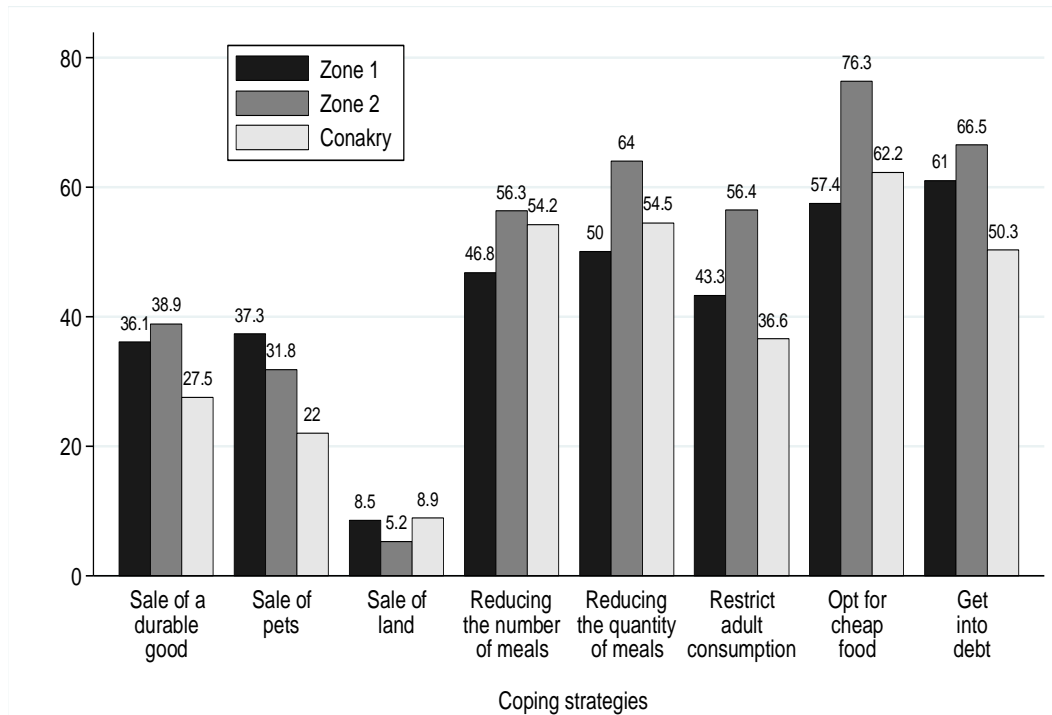


Figure 10. Possible Coping Strategy of Households by Epidemiological Zone



E. EFFECTS ON MIGRATION AND CASH TRANSFERS

41. **The survey finds evidence of a small but significant impact on migration and some evidence of cash transfers.** The mobility of individuals within households is quite high in Guinea. Close to 38 percent of households experienced at least a migratory movement in the last 12 months, with departures only, arrivals only, or both (figure 18). In an epidemic situation, where the restriction of movement of persons is considered a good behavior to curb the spread of the disease, migration should be less important in areas at risk. From this Ebola survey, individuals in severely affected areas indeed appear to be relatively less mobile than in the less affected areas. The proportions of households having experienced migration are 36 and 32 percent, respectively, for zone 1 and Conakry, which is lower than the 42 percent of households for the less affected areas (zone 2). In terms of cash transfers, the proportion of households who received financial assistance from family or friends (from within or outside the country) is higher for less affected areas (20.5 percent compared to 12.5 percent for severely affected areas) (figure 19). This is probably because the severely affected are relatively poor and are from households that could not afford to send a family member outside the household because of the costs associated with such migration.

Figure 11. Migrations within Households in the last 12 months

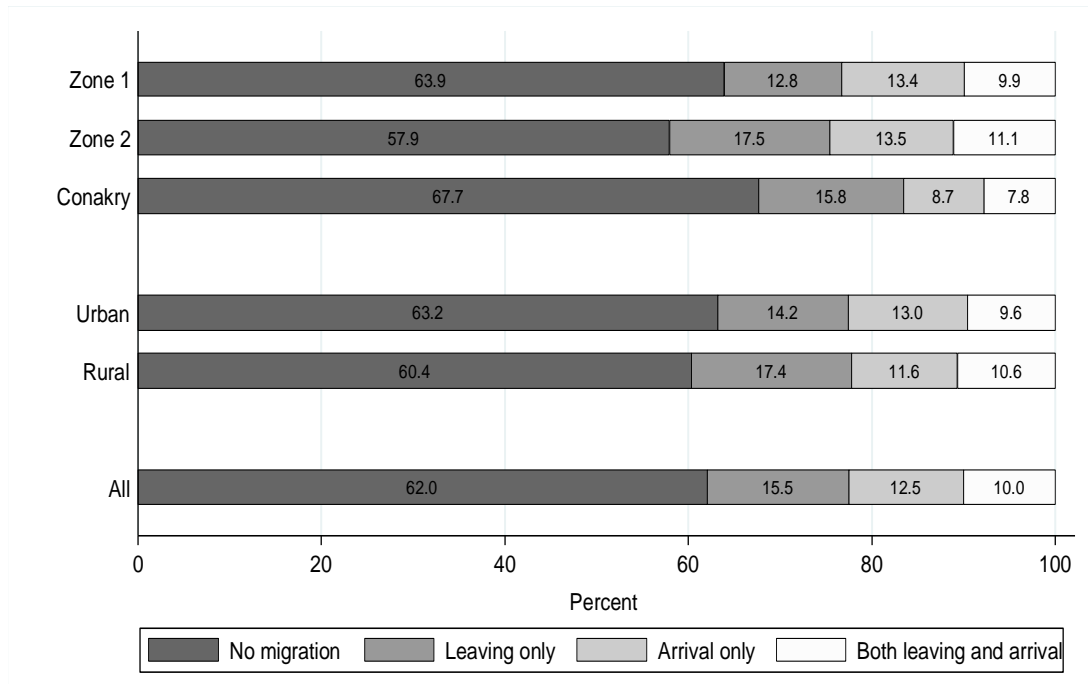
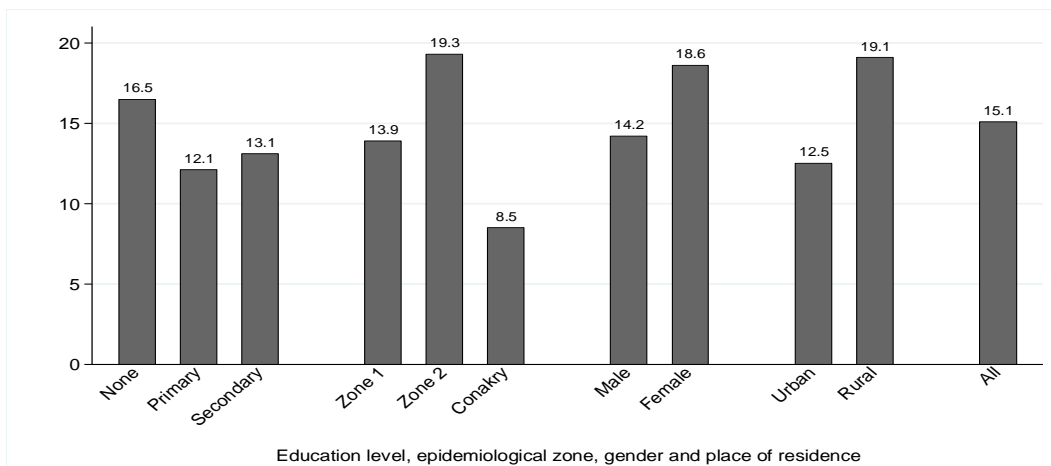


Figure 12. Proportion of Households Receiving Assistance in the last 12 months



F. EFFECTS ON HEALTH

42. **The onset of the Ebola pandemic was feared to dissuade people from visiting health clinics, given the dangers of contagion and the scarcity of resources to handle non-Ebola illnesses, but the fear did not materialize.** Fear of contracting the disease and restricted movement could have led to a decrease in the use of health facilities by individuals who suffer from other illnesses (such as malaria and diarrhea) during that period. Indeed, 22 percent of households reported that at least one member of their household suffered from malaria during the two weeks preceding the survey. For diarrhea, this proportion was 1 percent. For zone 1 and Conakry which are the severely affected areas, the proportion of households reporting malaria was 18 and 14 percent, respectively, while it was about 28 percent in

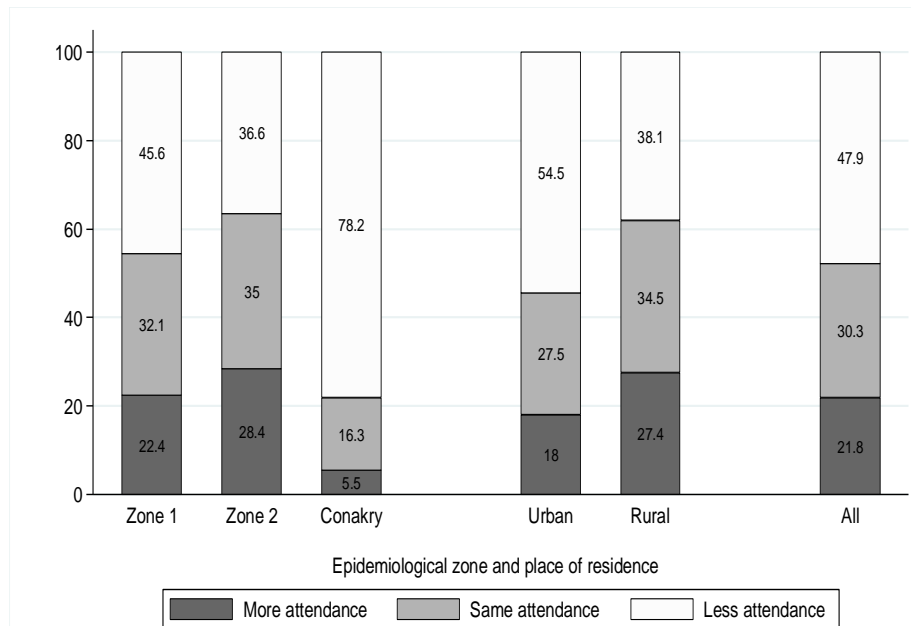
less affected areas (zone 2). Surprisingly, despite the prevalence of Ebola, people continued to visit health facilities. Nearly all households (94 percent) in the severely affected areas, excluding Conakry, reported that they went to a health facility for treatment of malaria or diarrhea, while the corresponding proportion was close to 96 percent in the less affected areas (figure 20).

Figure 20. Use of Health Facilities and Concerns about Facility Attendance



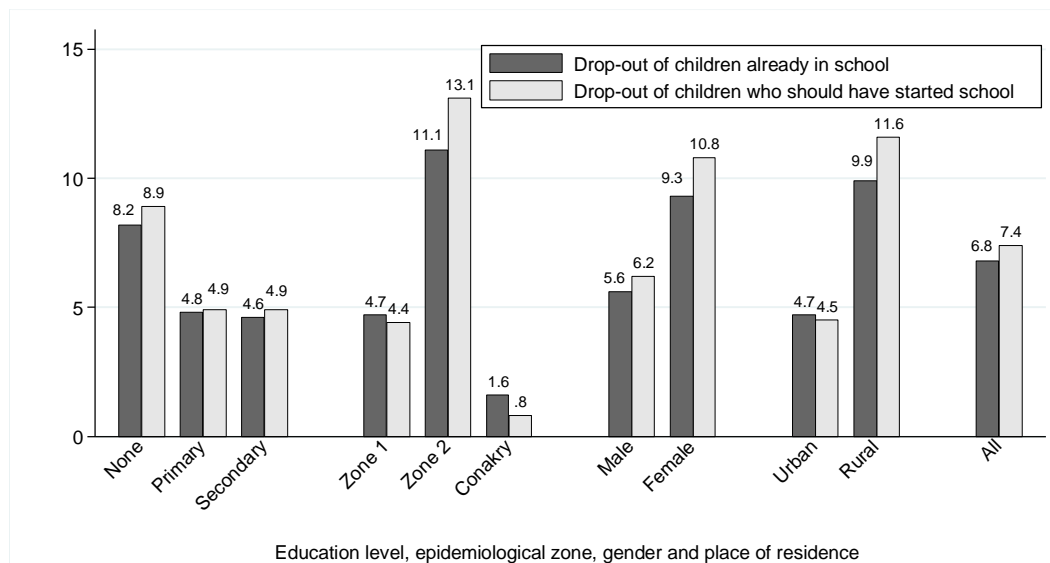
43. **Nonetheless, there was a significant impact of Ebola on use of clinics and health facilities.** The survey showed that about 11 percent of households in the areas severely affected by Ebola were afraid to go to health facilities because of fear of contacting the pandemic, compared to only 2 percent of those living in less affected areas. Compared to 2013, the proportion of households that reduced the frequency of use of health facilities in 2015 appears substantially higher for the severely affected areas than for the less affected ones, with a proportion of 46 percent against 37 percent of households, respectively (figure 21). This proportion is even higher for Conakry, which is also a severely affected area, reaching a level of 78 percent. This means that, even if individuals continue to attend health facilities for relatively serious illnesses such as malaria, their attendance at these facilities for other minor health concerns have importantly decreased.

Figure 21. Frequency of Household's Visits to Health Facilities Compared to 2013



G. EFFECTS ON EDUCATION

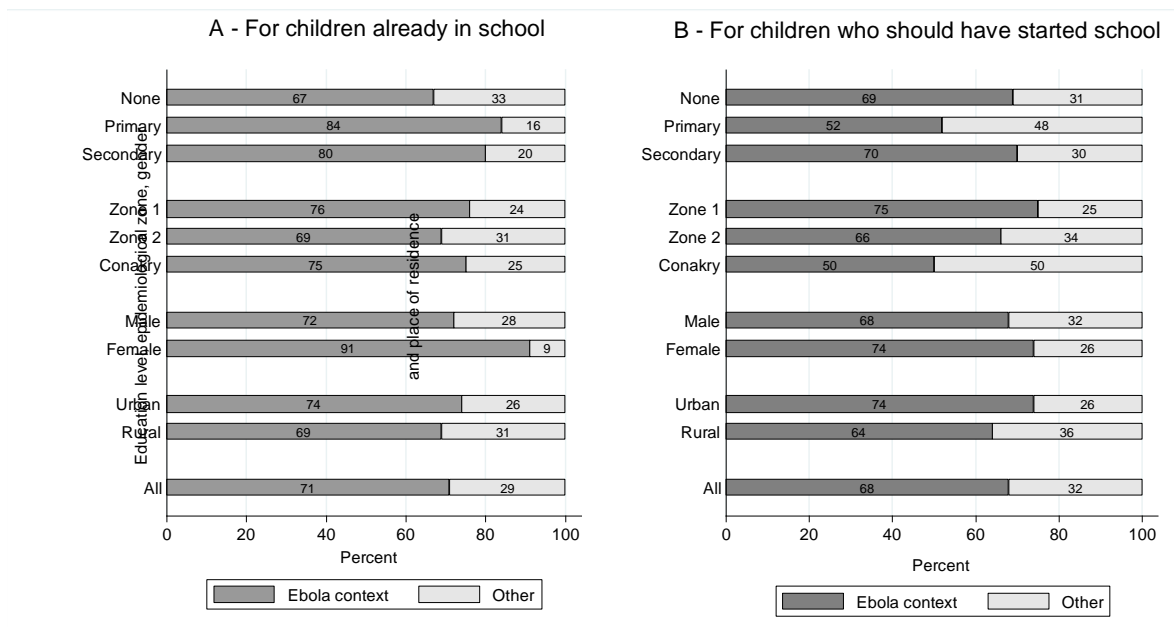
Figure 13. Proportion of Households Experiencing School Drop-out



44. **On education, Ebola had an adverse effect, with potential adverse longer-term implications.** At the national level, 58.7 percent of households had children school (ages 6–12 years). About 7 percent of them pulled their children out of school (figure 22). Of these almost three quarters of the households with school-age children, reported that the children did not return to school in 2014–2015 because of Ebola-related reasons, especially in severely affected areas where the proportion is about 75 percent, compared to the 69 percent recorded in the less affected areas (see figure 23). The analysis according to area shows that, regardless of the area, the main reason that prevented children of school age from

attending school in 2014–2015 is the Ebola context. The lack of attendance of schools can have a negative longer-term impact on human capital formation and labor productivity.

Figure 14. Proportion of Households by the Causes of School Dropout



H. EFFECTS ON ASSETS

45. **An asset index is generally considered an indicator of permanent income and therefore less subject to cyclical fluctuations than current income or consumption of households.** While we recognize that poor households are more likely than non-poor households to experience cases of Ebola, the pandemic may in return reduce the welfare of many households, including those who are not directly affected by the disease. Sometimes, in the event of a major shock or crisis, the sale of certain assets are part of the household’s strategies to cope with urgent consumption needs.¹⁴ In these circumstances it is possible to observe a decline in this welfare indicator over a short period. However, due to the comparability issue, we may not analyze the trends between 2012 and 2015. Moreover, even if a decrease in asset index is observed during a period, it could not be necessarily attributed to the emergence of Ebola. An asset index is derived based on the ownership of several durable goods (car, motorcycle, bicycle, refrigerator, power generator, solar panel, TV, radio, sewing machine) and using the multiple correspondence analysis. Results of the comparison of the three epidemiological zones in 2015 are shown in figure 24. It appears that, if welfare, measured by asset index, is significantly higher for Conakry, there is no significant difference between the severely affected zone (excluding Conakry) and the less affected zone, as evidenced by their fairly similar poverty curves. Figure 25 shows the same situation for 2012, with the caveat that the only comparison being made is the respective gaps in the two surveys.

¹⁴ As shown in the figure 15, nearly a third of households from the Ebola survey are willing to sell durable goods to deal with an adverse situation.

Figure 15. Wellbeing Based on Asset Ownership by Epidemiological Zone in 2015

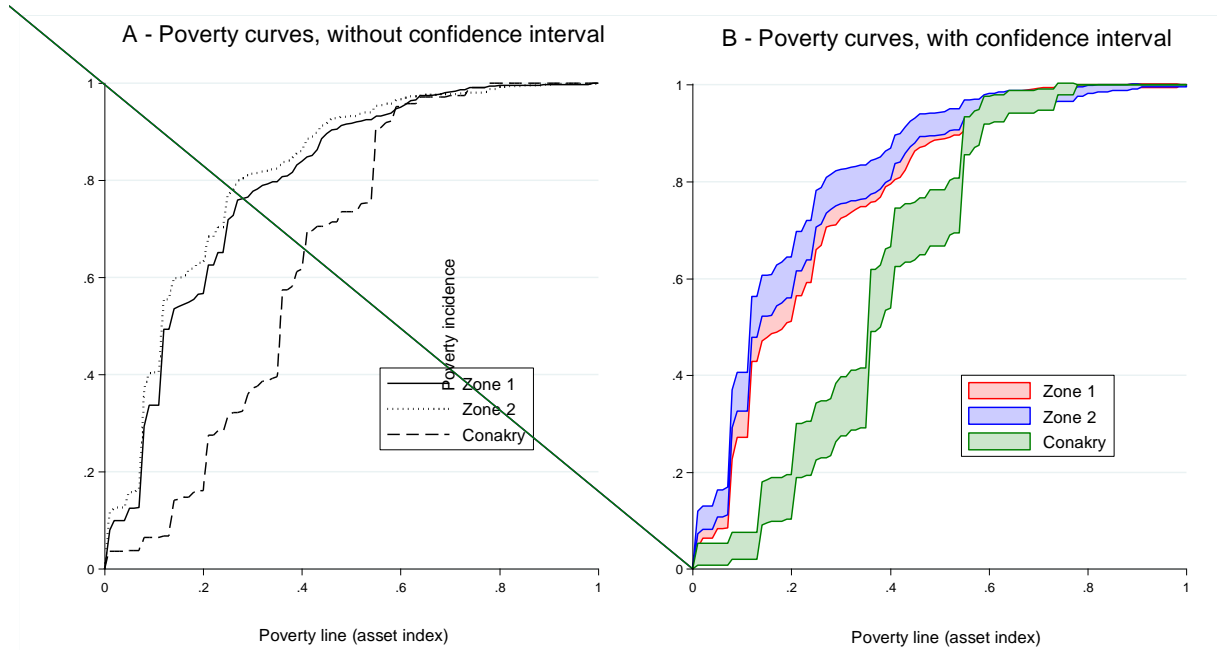
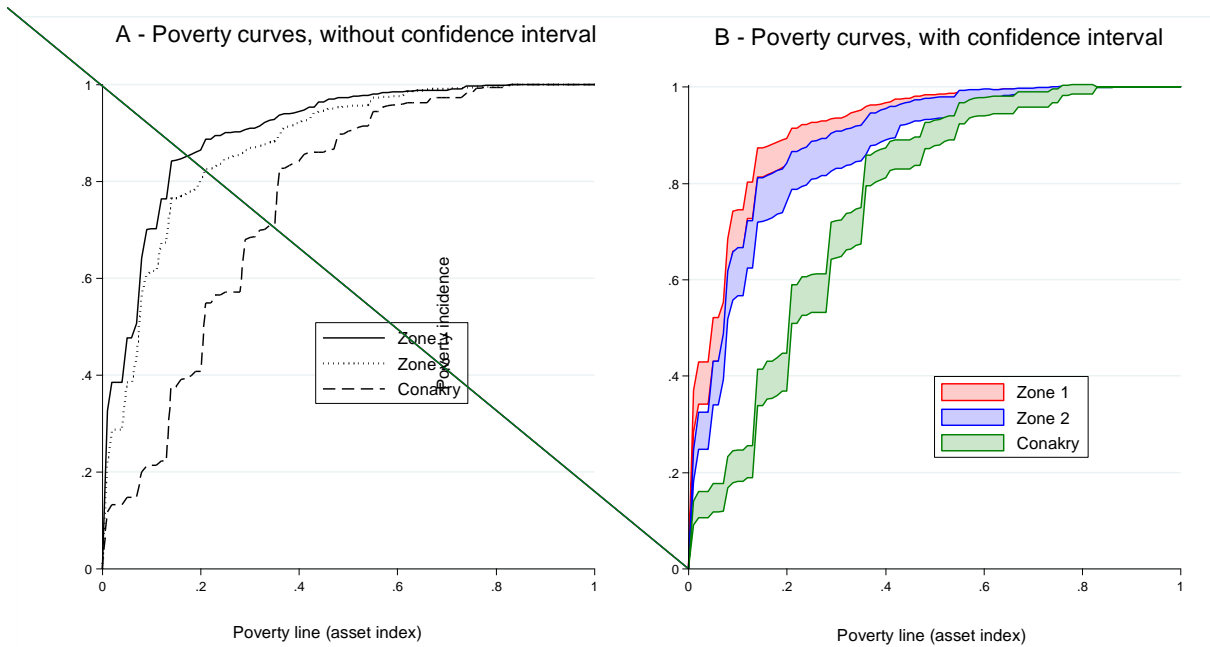


Figure 16. Wellbeing Based on Asset Ownership by Epidemiological Zone in 2012



V. CONCLUSION

46. Using newly collected data through a mobile phone survey, this study analyzes the socioeconomic impact of Ebola on households in Guinea. The survey was conducted in September 2015. The pandemic led to worsening employment and loss of incomes, especially rural incomes, confirming the declines in output emerging from the macroeconomic data. The survey shows that all

parts of Guinea were economically affected by Ebola, with greater impacts in the southeast and the areas around Conakry. It is interesting to note that a quarter of respondents in the severely affected areas reported experiencing proven cases of Ebola in their neighborhood or village. The survey also confirmed the strong correlation between poverty and the impact of Ebola. The probability of a household experiencing Ebola increased significantly with poverty and also if the household was headed by a woman, while factors such as household size and population density, and the community standard of living may explain the occurrence of Ebola in neighborhoods. The survey also showed that the economic impact of the pandemic may outlast the epidemiological impact, suggesting the need to continue to seek grant aid inflows.

47. **In relation to agriculture, it is found that Ebola did not negatively affect agricultural production and food price.** Food production (rice, maize, and fonio) increased and food prices were stable, minimizing the impact of Ebola on famine risk and food insecurity in Guinea. This is perhaps contrary to expectations. Possible explanations for these results, as proposed in the FAO/WFP (2015) report, include the following: (a) the impact of Ebola on food production was localized rather than spread across the country, with most of the disruption taking place in the forest zone; and (b) food prices remained stable in general because the increasing pressure on food prices resulting from disruptions in production and trade limitations was offset by the diminishing effect of low domestic demand. Nevertheless, agricultural productivity was slightly more affected in severely affected areas compared to the less affected areas. This may be related to the finding that more households in the less affected areas reported having sufficient agricultural inputs (seeds) than those in severely affected areas. This has policy implications. Programs that aim to improve agricultural productivity by providing farming inputs such as seeds should pay particular attention to the severely affected areas, which also tend to be the poorest areas of Guinea, and food security interventions need to be scaled up in backward parts of the country.

48. **Another surprising finding is that despite Ebola and risk of contamination, households that needed treatment for malaria and diarrhea still visited a health facility, whereas a significant proportion of households reduced their attendance of health facilities.** This finding also has implications for policy. Given that households continue to visit health facilities to seek treatment for malaria, the authorities should prioritize prevention measures to minimize the risk of contracting illnesses at hospitals. Further, this result highlights the seriousness of malaria, which has proven to be very deadly, and thereby empathizes the need to expand efforts to eliminate malaria, which can also help minimize the risk of contracting other illness as a result of trying to seek treatment for malaria at health facilities.

49. **Income loss for rural households was much more related to difficulties in selling their production, than to lower agricultural production or lower food prices.** However, Ebola has had a larger effect on urban employment, as illustrated by the increase in the urban unemployment rate. On the other hand, due to Ebola, children dropped out of school, and households adopted coping strategies by reducing their food consumption and selling key assets. Though these strategies have helped households to cope with the crisis, they will have long-lasting effects on malnutrition, education, and poverty. From a policy standpoint, continued social protection support from both the donors and the government are needed.

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ANNEX A: NUMBER OF ORANGE NUMBERS DRAWN BY PREFECTURE FOR THE WORLD BANK SURVEY ON THE IMPACT OF EBOLA IN GUINEA

Zone A: Severely Affected by Ebola	Number of Households	Number of Numbers to Draw
Conakry,	238,134	876
Boké,	61,731	227
Nzérékoré	62,095	228
Coyah	36,165	133
Macenta	45,458	167
Faranah	34,707	128
Beyla,	38,182	140
Dubreka	45,525	167
Kissidougou	40,133	148
Gueckedou	45,397	167
Forecariah	35,186	129
Kerouane	27,967	103
Yomou	18,124	67
Lola,	29,205	107
Kouroussa,	29,704	109
Boffa,	27,785	102
Total	815,498	3,000

Zone B: Less Affected by Ebola	Number of Households	Number of Numbers to Draw
Kankan	47,005	140
Mandiana	22,528	67
Siguiri	63,850	190
Mamou	58,941	175
Pita	56,049	167
Télémele	49,116	146
Dinguiraye	26,875	80
Dabola	25,797	77
Labé	56,910	169
Tougué	21,859	65
Lélouma	29,838	89
Koubia	16,787	50
Mali	42,699	127
Koundara	19,284	57
Gaoual	28,716	85
Fria	16,601	49
Dalaba	27,171	81

Zone B: Less Affected by Ebola	Number of Households	Number of Numbers to Draw
Kindia	62,612	186
Total	672,638	2,000

ANNEX B: BREAKDOWN OF HOUSEHOLDS RESPONDENTS BY ADMINISTRATIVE REGION

Level of Analysis	Number	Percentage
Total	2,467	100
Région Administrative		
Boké	255	10.3
Conakry	437	17.7
Faranah	209	8.5
Kankan	299	12.1
Kindia	375	15.2
Labé	252	10.2
Mamou	215	8.7
Nzérékoré	425	17.2
Région Naturelle		
Basse Guinée	996	40.4
Moyenne Guinée	538	21.8
Haute Guinée	435	17.6
Guinée Forestière	498	20.2
Total	2,467	100
Residence		
Urban	1,445	58.6
Rural	1,022	41.4
Status of the Zone		
Zone severely impacted by Ebola	1,472	59.7
Zone less affected by Ebola	995	40.3
Quality of Life of Households		
Very poor	497	20.1
Poor	495	20.0
Medium income	490	19.8
Rich	524	21.2
More rich	464	18.8

ANNEX C: EBOLA SURVEY QUESTIONNAIRE (2015)

REPUBLIQUE DE GUINEE
Travail-Justice-Solidarité

MINISTERE DU PLAN

INSTITUT NATIONAL DE LA STATISTIQUE

**ENQUETE MOBILE SUR L'IMPACT D'EBOLA SUR LES
CONDITIONS DE VIE DES MENAGES**

QUESTIONNAIRE MENAGE



INS

Septembre 2015



N° du Questionnaire | ____ || ____ || ____ || ____ || ____ |

CONSENTEMENT : Bonjour Monsieur/Madame, je m'appelle
L'Institut National de la Statistique (INS) est entrain de mener une étude sur l'impact d'Ebola sur les conditions de vie des ménages. Votre numéro a été tiré dans l'échantillon. Je dois m'entretenir avec vous en vous posant quelques questions sur l'impact de cette maladie sur les conditions de votre ménage.

L'entretien se fait par téléphone et durera 20 minutes environs. A la fin nous vous transférons un crédit de 10.000 GNF sur votre numéro de téléphone

Etes-vous disponible ?

Oui maintenant = 1 Oui mais rappelez moi aheure =2 Oui mais demain=3; Non je ne veux pas participer=4

I. IDENTIFICATION

REGION ADMINISTRATIVE: _____/_____/_____

Vous résidez dans quelle Préfecture: _____/_____/_____

Vous résidez dans quelle Sous-Préfecture ou Commune urbaine _____/_____/_____

Vous êtes dans quel District ou Quartier _____/_____/_____

Quel est le nom de votre Village ou Secteur _____/_____/_____

Milieu de résidence _____/_____/ (1=urbain, 2=rural)

I-Vous avez fait combien de mois vous vivez dans cette préfecture ? /_____/_____/ (mois)
(Si moins de 6 mois dans la préfecture, fin d'interview)

II-Quel est votre âge (/_____/_____/ (année)
(Si moins de 15 ans, fin d'interview)

II. CARACTERISTIQUES INDIVIDUELLES

N°	Questions	Modalités de Réponses	Codes
Q1	Vous êtes un homme ou une femme?	1=Homme 2=Femme	/_____/
Q2	Vous avez quel âge?		
Q3	Vous êtes guinéen?	01= Guinée 02=Côte d'Ivoire 03=Libéria 04=Sierra Léone 05=Sénégal 06=Mali 07=Guinée Bissao 08=Autre pays CEDEAO 09=Autre pays Africain 10=Autre Continent	
Q4	Quel est votre niveau d'instruction?	1=aucun 2=Primaire 3=secondaire 4= Professionnel 5= Supérieur	/_____/
Q5	Quel est votre état matrimonial?	1= Célibataire	

		2=Marié 3= Divorcé/Séparé 4=Veuf /Veuve 5=Union Libre	/_____/
Q6	Quelle est votre situation d'activité?	1=Occupé 2= Chômeur 3= Elève/étudiant 4= Rentier 5= Retraité 6=Ménagère 7=vieillard	/_____/

III. CARACTERISTIQUES DU MENAGE

	Questions	Modalités de Réponses	Codes
Q7	Combien de personnes vivent dans votre ménage?		/_____/
Q8	Combien de personnes parmi elles travaillent?		/_____/
Q9	Combien d'élèves vivent dans votre ménage?		/_____/
Q10	Combien d'enfants de moins de 5 ans vivent dans votre ménage?		/_____/
Q11	Quelle est la principale source d'approvisionnement en eau de boisson de votre ménage?	1=Robinet 2=Forage 3=Puits/Sources aménagées 4=Puits traditionnels 5=Eau de surface (rivière, marigot, etc.) 6=Eau minérale	/_____/
Q12	Quelle est votre principale source d'éclairage?	1=Electricité/Energie Solaire 2=Torche, Lampe à pile 3=autres	/_____/
Q13	Statut d'occupation du logement	1=Propriétaire 2=Location 3= Logé gratuitement	/_____/
Q14	Type de logement (considérer ou vivent la majorité des membres du ménage)	1=Case 2=Maison 3=Immeuble 4=Baraque	/_____/
Q15	Nombre de pièces à coucher		/_____/
Q16	Quel est le principal Matériau du toit de votre habitation	1=Tôle 2=Béton 3=Paille/Feuille 4=Bâche/Plastique/Toile	/_____/
Q17	Quel est le principal Matériau du sol de votre habitation	1=Terre Battue 2=Ciment 3=Carreaux 4=Planche/Bois	/_____/
Q18	Quel est le principal Matériau des murs de votre habitation	1=Briques en ciment 2=Briques en terre cuite 3=Terre battue 4=Bois/Bambou/Planche/Paille 5=Pierre 6=Tôle 7=Bâche/Plastique/Toile	/_____/

V. EMPLOI.

Q22	Avez-vous fait un travail quelconque pendant la dernière semaine pour une rémunération quelconque (en argent ou en nature), même si c'est seulement une heure?	1=Oui → Q26 2=Non	/_____/
Q23	Bien que vous n'ayez pas travaillé, êtes-vous disponible à travailler?	1=Oui → Q25 2=Non	/_____/
Q24	Quelle est la raison principale qui vous empêche de travailler?	1=Contexte Ebola 2=Autres à préciser	/_____/
Q25	Est-ce que vous avez cherché un travail quelconque au cours des quatre dernières semaines?	1=Oui → Q34 2=Non → Q34	/_____/
Q26	Quel type de travail exercez dans cette activité?		/_____/
Q27	Dans quel type d'institution travaillez-vous?	1=Administration publique 2=Entreprise privée 3=PME Non agricole 4=ONG 5=Organisation internationale 6=Exploitation agricole 9=Autre	/_____/
Q28	Votre activité a-t-elle connu une amélioration ou une détérioration ou est-elle constante depuis Mars 2014?	1=détériorée 2=constante → Q31 3=Améliorée	/_____/
Q29	Quel était votre revenu mensuel moyen en 2013? (SVP, faites une estimation)	En millier de FG	<u>/_/_/_/_/_/</u>
Q30	Quel est votre revenu mensuel moyen maintenant? (SVP, faites une estimation)	En milliers de FG	<u>/_/_/_/_/_/</u>
Q31	Quel est votre statut dans l'emploi?	1=indépendant 2=Employeur 3=Salarié 4=Travailleur à la tâche 5=Apprenti 6=Aide familial	/_____/
Q32	Est-ce que depuis mars 2014 vous vous êtes absenté de votre travail?	1=Oui 2=Non → Q34	/_____/
Q33	Quelle était la raison principale de votre absence?	1=Contexte Ebola 2=Autres à préciser	/_____/
Q34	Est-ce qu'un ou plusieurs membres de votre ménage a exercé une activité ou des activités non agricoles (commerce, services, affaires ...) au cours des 12 derniers mois (depuis Mars 2014)	1=Oui 2=Non → Q37	/_____/
Q35	Quel est le montant total des revenus tiré de cette ou de ces activités au cours du dernier mois?	En milliers de FG	<u>/_/_/_/_/_/</u>
Q36	Cette activité a-t-elle ou ces activités ont-elles connu un arrêt?	1=Oui pour toutes 2= Oui pour certaines 3=Non → Q38	/_____/
Q37	Quelle était la raison principale?	1= Contexte Ebola 2= Autres à préciser	

VI. AGRICULTURE

Q38	Est-ce que un membre de votre ménage a exercé de l'activité agricole au cours des 12 derniers mois?	1=Oui 2=Non → Q48	/____/
Q39	Qu'est ce que vous cultivez principalement?	1=riz 2=fonio 3=mil/sorgho 4=mais 5=manioc	/____/
Q40	Quelle quantité avez-vous récolté la saison dernière(2014) ? (en sac de 50 kg)		/____/ Sacs de 50kg
Q41	Quelle quantité avez-vous vendu ? (en sac de 50 kg)		/____/ Sacs de 50kg
Q42	Quelle quantité avez-vous acheté ? (en sac de 50 kg)		/____/ Sacs de 50kg
Q43	Quelle quantité aviez- vous récolté l'année d'avant ?(2013) (en sac de 50 kg)		/____/ Sacs de 50kg
Q44	Disposez-vous de semences pour la saison en cours?	1=Oui en quantité suffisante 2=Oui en quantité insuffisante 3=Non	/____/
Q45	Cette ou ces activités agricoles est/sont-elle(s) restée(s) inchangées ou ont-elles subies des changements?	1=inchangées 2=changées positivement 3=changées négativement	/____/
Q46	Selon vous les quantités des produits agricoles ont-elles augmenté ou diminué sur le marché par rapport à 2013?	1=oui 2=non	/____/
Q47	Si oui à quelle proportion?	1=faible 2=normale 3=forte	/____/

VII. SECURITE ALIMENTAIRE/STRATEGIE DE SURVIE

Q48	Est-ce que le riz est actuellement disponible pour vente dans votre localité (village ou commune urbaine) ou localités voisines?	1=Oui 2=Non	/____/
Q49	Combien coute le kg de riz sur le marché actuellement?	1=riz local étuvé..... FG 2=riz importé..... FG	
Q50	Le prix du riz a-t-il baissé ou augmenté ou est resté constant ces 12 derniers mois?	1=augmenté 2=constant →Q52 3=baissé	/____/
Q51	De combien de franc environ?	En franc guinéen	/__/_/___/
Q52	Combien de repas prenez-vous par jour dans le ménage? (repas : riz, fonio, manioc, mais)	A=Riz B=Fonio C=Manioc/Tôô D=Maïs Z=Autres	Nombre de fois /____/
Q53	Quelle quantité préparez-vous ou prenez vous par jour pour le repas dans le ménage?	A= Riz /__/_/ kg B= Fonio /__/_/ kg C=Manioc/Tôô /__/_/ kg D=Maïs /__/_/ kg Z=Autres /__/_/ kg	
Q54	Cette quantité de repas de riz a-t-elle augmenté, baissé ou reste constante par rapport à l'année 2013?	1=augmentée 2=baissée 3=constante	/____/
Q55	Cette quantité de repas de fonio a-t-elle augmenté, baissé ou reste constante par rapport à l'année 2013?	1=augmente 2=baisse 3=constant	/____/
Q56	Cette quantité de repas de manioc a-t-elle augmenté, baissé ou reste constante par rapport à l'année 2013?	1=augmente 2=baisse 3=constant	/____/
Q57	Cette quantité de repas de maïs a-t-elle augmenté, baissé ou reste constante par rapport à l'année 2013?	1=augmente 2=baisse 3=constant	/____/
Q58	Est-ce que vos habitudes alimentaires ont changé ces 12 derniers mois?	1=Oui 2=Non →Q60	/____/
Q59	Par rapport à quel aliment ? c'est-à-dire qu'est ce que vous ne mangez pas maintenant comme avant?	1=riz 2=Manioc 3=Fruits 4=Viandes de brousse 5=Maïs 9=Autres	/____/
Q60	Au cas où votre ménage rencontre des difficultés pour satisfaire ses besoins que faites-vous? (Réponses multiples)	A=Vendre un bien durable ; B=Vendre animaux domestiques ; C=Vendre des terres ; D=réduire le nombre de repas ; E=réduire la quantité de repas ; F=restreindre la consommation des adultes G=Manger des aliments moins couteux H=S'endetter	/____/

VIII. MIGRATION/TRANSFERT

Q61	Combien de personnes ont quitté votre ménage pour aller s'installer ailleurs ? (y compris l'extérieur) au cours des 12 derniers mois		/_____/
Q62	Combien de personnes votre ménage a-t-il reçu venant d'ailleurs au cours des 12 derniers mois?		/_____/
Q63	Est-ce que vous avez reçu de l'intérieur ou de l'extérieur une aide (argent ou nature) de la part d'un parent ou d'un ami?	1=Oui 2=Non → Q65	/_____/
Q64	Estimer en chiffres le montant de l'aide	En Miliers de GNF	/_/_/_/_/_/

IX. SANTE/HYGIENNE

Q65	S'il y a des enfants de moins de 5ans dans votre ménage, au cours de deux dernières semaines au moins un de ces enfants a-t-il souffert de diarrhée?	1=Oui 2=Non → Q68	/_____/
Q66	A-t-il été traité?	1=Oui 2=Non → Q68	/_____/
Q67	Où a-t-il été traité?	1=Poste/Centre de sante 2=Hôpital 3=Clinique/cabinet de soins 4=Guerrisseur/Marabout 5=Auto medication	/_____/
Q68	Vous ou un membre de votre ménage est il tombé malade de palu ou diarrhée au cours des deux dernières semaines?	1=Oui, paludisme 2=Oui, diarrhée 3=Oui, paludisme et diarrhée 4=Non.....→ 71	/_____/
69	A-t-il été traité ?	1=Oui 2=Non 71	/_____/
Q70	Où a-t-il été traite ?	1=Poste/Centre de sante 2=Hôpital 3=Clinique/ cabinet de soins 4=Guérisseur/Marabout 5=Auto medication	/_____/
Q71	Selon vous les habitants de votre localité (quartier/village ou district) fréquentaient ils régulièrement les structures de santé en 2013?	1=Oui 2=Non	/_____/
Q72	Fréquentent-ils actuellement ces structures comparativement à 2013?	1=Oui, fréquentent plus qu'en 2013 2=Oui, fréquentent comme en 2013 3=Oui, fréquentent moins par rapport à 2013 4=fréquentent peu maintenant 5=Ne fréquentent plus	/_____/
Q73	Utilisez-vous régulièrement le savon et/ou le chlore pour le lavage des mains dans votre ménage?	1=Oui 2=Non	/_____/
Q74	Utilisez-vous le chlore pour le traitement de l'eau de boisson dans votre ménage?	1=Oui 2=Non	/_____/

X. FREQUENTATION SCOLAIRE

Q75	Est-ce qu'il y a des enfants d'âge scolaire (6 à 12ans) dans votre ménage?	1=Oui 2=Non.....→Q78	/_____/
Q76	Parmi ces enfants y a-t-il des élèves qui n'ont pas repris l'école cette année (en 2014)?	1=Oui 2=Non.....→Q78	/_____/
Q77	Pourquoi?	1=Contexte Ebola 2=Autres raisons à préciser	
Q78	Y a-t-il des enfants qui devraient être scolarisés cette année et qui ne l'ont pas été?	1=Oui 2=Non.....→Q80	/_____/
Q79	Pourquoi?	1=Contexte Ebola 2=Autres raisons à préciser	/_____/

XI. INFORMATIONS SUR EBOLA

Q80	Avez-vous entendu parler d'Ebola?	1=Oui 2=Non.....→Fin	/_____/
Q81	Avez-vous eu des informations sur comment se protéger contre Ebola?	1=Oui 2=Non.....→Q84	/_____/
Q82	De quelles sources avez-vous reçu ces informations?	A=Medias (radios, télévision) B=Parent /amis/voisins C=Personnel médical/ONG D=Campagne de sensibilisation Z=Autres	/_____/
Q83	Citez les moyens de prévention contre Ebola que vous connaissez (Réponses multiples)	A=Se laver les mains avec du savon et du chlore B=Eviter le contact avec les vomissures, les selles, les urines, le sang, la sueur, les larmes d'un malade d'Ebola C=Eviter les fluides corporels d'un malade d'Ebola D=Eviter les enterrements non sécurisés d'un malade d'Ebola E=Eviter la viande de brousse F=Eviter de manger des fruits mordus par une saute souris G=Autre à préciser_____	
Q84	Croyez-vous à l'existence d'Ebola?	1=Oui.....→Q86 2=Non	/_____/
Q85	Pourquoi?	a. _____ b. _____ c. _____	
Q86	Avez-vous peur d'Ebola?	1=Oui 2=Non	/_____/
Q87	Y a t-il eu un cas avéré d'Ebola dans votre ménage?	1=Oui 2=Non	/_____/
Q88	Y a-t-il eu un parent ou un ami ou une connaissance qui a été atteint d'Ebola?	1=Oui 2=Non	/_____/
Q89	Y a t-il eu un cas avéré d'Ebola dans votre village/quartier?	1=Oui 2=Non 3= Ne sait pas	/_____/
Q90	Avez-vous peur de fréquenter les structures sanitaires actuellement?	1=Oui 2=Non.....→FIN	/_____/
Q91	Pourquoi?	a. _____ b. _____ c. _____	

MERCI POUR VOTRE DISPONIBILITE

Nous allons vous transférer des unités de 10.000 francs sur votre numéro Orange.

SVP, Veuillez nous rappeler demain ou après-demain lorsque l'un des membres de votre ménage sera appelé pour être interviewé dans le même cadre. Dans le cas contraire, excusez-nous de voir rappeler pour vous demander de cette information.

Nom de l'enquêteur :.....CODE |__||__|

N° de téléphone du répondant : |__||__||__||__||__||__||__||__||__|

Nom du répondant:.....