Guinea, Liberia and Sierra Leone
August 2015: Coping improves in all three countries this month

Tracking food security during the Ebola Virus Disease (EVD) outbreak

Highlights

- August normally marks the end of the lean season. This month there were strong improvements in coping in Guinea. In Liberia and Sierra Leone, coping also improved albeit more modestly.
- Little variation in prices, manual labour rates and correspondingly terms-of-trade were observed this month.

Coping improves in all three countries

The Reduced Coping Strategies Index (rCSI) measures the frequency and severity of the mechanisms households employ such as skipping meals or reducing the size of portions when faced with food shortages. A higher score indicates households are resorting to more frequent and/or severe negative coping strategies. Detailed information on the rCSI can be found here.

In August, improvements in national rCSI levels were observed in all three countries. In Guinea, the rCSI on average fell -2.7 points for each repeat respondent (those who completed the survey in July and August).*** In Liberia, among repeat respondents the average rCSI decreased -1.6 points for each household.*** Similarly, in Sierra Leone, the rCSI decreased on average -1.42 points per household.***

Methodology

August 2015 marked the eleventh round of data collection, using SMS in all three countries. The interval between survey rounds this month was 2 weeks shorter than normal (25 to 30 days). With a shorter interval, results are less significant than a previous reporting rounds. In Liberia, 1,150 questionnaires were collected from August 8th to the 11th; in Sierra Leone, 1,020 questionnaires were completed from the 8th to the 12th and in Guinea, 981 questionnaires were completed from the 8th to the 14th. The adjacent map, shows the cell phone towers from which responses were received. Details on methodology are available online.
In Guinea, since polling with SMS commenced in June, we have observed substantial improvements in the rCSI. This month, the rCSI decreased an average of -2.7 points among the 398 respondents who were surveyed in both July and August. The rCSI particularly improved in two areas: in Conakry it decreased on average -1.8** points per respondent and in Nzerekore it decreased -1.9 points per respondent.*** 1 The proportion of all households using any negative coping strategy was lower than in July (90% vs 86%).** 2 The proportion that used less expensive food (85% vs 80%)** 2 or reduced the number of meals (65% vs 61%) as coping strategies was lower in August compared to July.* 2 The decrease in the overall rCSI was also driven by reductions in the average number of days households resorted to coping strategies. Looking at the rCSI in August by sample domain, we note that Mamou-Labe and N’zerekore have higher average rCSI levels than the capital, Conakry and Kankan-Faranah.

In Liberia in July, despite being in the lean season, the rCSI improved and negative coping decreased. This month, we observe continued improvements and among the 672 repeat respondents, the rCSI fell on average by -1.6 points per person.*** 1 In Margibi, the rCSI also decreased by a sizeable -3.2 points on average for each respondent.** The overall proportion of households using negative coping strategies decreased from 79% to 75%.*** 2 This month, the national proportion of households using less expensive food as a coping strategy decreased from 75% to 70%.*** 2 Observing the average rCSI by sample domain, we note that Monrovia and the Southeast have the lowest rCSIs while coping is highest in Bong and Lofa.

In Sierra Leone, the rCSI failed to improve in June and July, but in August we begin to see improvements in coping. Among the 508 repeat respondents the rCSI decreased on average by -1.42 points.** 1 The rCSI also decreased an average of -1.8 points per respondent in the sample domain of Bonthe-Moyamba-Pujehun.*** 1 In Sierra Leone, the difference (between July and August) in the proportion of households using negative coping was not statistically significant at both national and lower administrative levels. Last month, we noted a change in the proportion of poorer households using negative coping strategies, but this month, changes in the rCSI and proportion of negative coping strategies across wealth groups were not statistically significant. Observing the average rCSI by sample domain, the urban area of the capital, Freetown, has the lowest average rCSI, while the regions of Bombali-Koinadugu-Tonkolili, Kambia-Port Loko and Kailahun-Kono have the highest rCSI scores.
Ebola Update
In August, Ebola cases continued to decrease. By the end of August, all suspected contacts in Liberia completed their 21-day observation period and no new cases were detected. In Sierra Leone, one case was detected at the end of August, breaking a two week period without new cases, bringing the total number of cases detected in the month to four. According to the WHO, the overall case incidence has remained stable and the number of persons who are at risk of exposure continues to fall. Furthermore, at the beginning of the month, market restrictions were lifted by the Government of Sierra Leone. In Guinea, 11 cases were detected in August compared with 57 cases in July. Although the trend is encouraging, a few high-risk cases were detected this month that have the potential to have caused further transmission. *WHO Ebola Situation Report, 2 September 2015*

No significant price changes at national levels
Looking at the seasonal calendar, August is typically a transition month in Guinea, Liberia and Sierra Leone, when the lean season begins to taper off and harvesting and agricultural activities traditionally pick up. According to NOAA’s analysis of rainfall from May to September, all three countries have received average or above average rainfall. While the abundance of rainfall can cause short-term difficulties such as flooding, reduced mobility and access to goods, in the longer-term this bodes well for agricultural activities and crop yields.

This month, no statistically significant changes in average national prices have been observed in any of the countries. In Liberia, comparing prices from the beginning of the year with those of August, prices have decreased for imported rice (-3%) and palm oil (-1%), while the mean price of local rice has not changed. This price trend is verified by a recent joint agency price monitoring report. Price variations in Sierra Leone have been greater with prices for imported rice (+1%), local rice (+5%) and palm oil (+2%) all increasing since the beginning of the year. In Guinea, all commodities: imported rice (+1.5%), local rice (+4%) and palm oil (+3%) have increased in the last three months. National prices often hide regional fluctuations, but in this reporting round, we observe only a few changes in commodities prices at sub-national levels. In Bong, Liberia, the reported price of imported rice increased 6% from July. In Guinea, the reported price for local rice decreased 4% in Conakry while in N’zerekore the price rose 3%. In Kenema, Sierra Leone the price of palm oil increased 7%.

Minimal change in wages and terms of trade
This month no statistically significant changes in manual labour wages were detected at either national or regional levels in Guinea, Liberia or Sierra Leone. Looking at the beginning of the year to August, wages have grown 8% in Liberia and 4% in Sierra Leone while wages have not changed Guinea in the past three months.

Little movement in terms of trade is observed in Liberia and Sierra Leone. In Guinea, from July to August, terms of trade for a daily wage to a half-litre of palm oil fell from 8.5 to 6.5 in Conakry, reflecting the price increase without corresponding increase in manual labour wages. **3**

Perceptions of food security in August
At the end of the questionnaire, participants are asked an open-ended question, “Tell us about the food situation in your community.” To analyse these responses and gauge perceptions of food security, we use the sentiment analysis tool Repustate which calculates the “polarity” of each response — a measure of how positive/negative the statement is on a scale of -1.0 to +1.0.

As observed in previous months, the mean sentiment scores for the three countries, Liberia (-0.02), Sierra Leone (-0.05) and Guinea (-0.02) were slightly negative.

---

**Table 1: Price changes (%), Sierra Leone, Liberia and Guinea**

<table>
<thead>
<tr>
<th>Area</th>
<th>Price Changes: July to August 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Imported rice</td>
</tr>
<tr>
<td>Conakry, Guinea</td>
<td></td>
</tr>
<tr>
<td>N’zerekore, Guinea</td>
<td>-3.4%**</td>
</tr>
<tr>
<td>Bong, Liberia</td>
<td>6.3%**</td>
</tr>
<tr>
<td>Kenema, Sierra Leone</td>
<td></td>
</tr>
</tbody>
</table>

**Figure 6: Manual labour wages for all three countries**

**Figure 7: Average sentiment scores by region, August 2015**
In Liberia, the change in mean sentiment score this month was not statistically significant at both national and regional levels. The most frequently mentioned words were “hard”, “bad”, “good”, “expensive” and “difficult”. This month, the most frequently cited difficulty was the lack of employment and economic opportunities. A greater proportion of respondents cited difficulties due to the rainy season and difficulties caused by roads or transportation networks. Ebola was mentioned by four respondents, three of whom mentioned Ebola still negatively affects their food security situation. Three respondents in Grand Cape Mount, Grand Gedeh and Lofa mentioned that due to the commencement of harvesting, their food security situation was improving.

In Sierra Leone, mean sentiment scores at the national level were slightly more positive when compared to the month before (-0.06 vs -0.05).** The top five most cited words were “difficult”, “expensive”, “problem”, “easy” and “hard”. While Ebola was cited less frequently this month (27 out of 661 responses) compared with last month (50 out of 625), it is clear that Ebola is still on the minds of Sierra Leoneans. As in last month, respondents mentioned difficulties due to rain, roads/transportation and lack of employment and economic opportunities. Coinciding with the lifting of travel restrictions, there was no mention of quarantines/movement restrictions this month as a source of difficulty. Three respondents in Bombali, Kailahun and Koinadugu mentioned that due to the commencement of harvesting, their food security situation was improving.

In Guinea, there was no change in sentiment despite improvements seen in the rCSI. Overall, the most frequently used words were “expensive”, “good”, “lack”, “hard” and “problem”. While concerns about food prices and food accessibility were mentioned frequently, few responses mentioned specific causes or explanations of food security except for a few mentions of rains as a source of difficulty. Two respondents mentioned Ebola negatively affecting their food security situation.

Conclusions and Outlook

In August, there were strong improvements in coping in Guinea and more modest improvements in coping in Liberia and Sierra Leone. This month, changes in national averages for food prices, wages and terms of trade were not statistically significant and less than normal price variation was noted at regional levels. Respondents reported that rains, roads and lack of employment opportunities were negatively affecting food security and in Sierra Leone, Ebola was mentioned much more frequently than in Liberia or Guinea. In a normal year, August is a transition month — where the lean season winds down and agricultural activities commence. If climactic and seasonal events follow their normal trends, we should continue to see improvements in coping, good harvests and greater food availability.
Appendix

References

1. The Coping Strategies Index:

2. Disclaimer and Methodological Notes for mVAM ebola-affected regional bulletins
   http://vam.wfp.org/sites/mvam_monitoring/Read_Me.pdf

3. FEWS NET’s seasonal calendars for Guinea, Sierra Leone and Liberia:
   http://www.fews.net/sites/default/files/styles/large/public/Guinea%20Oct_0.png
   http://www.fews.net/sites/default/files/styles/large/public/Liberia%20Apr_0.png
   http://www.fews.net/sites/default/files/styles/large/public/Sierra%20Leone%20Apr_0.png

4. United States National Oceanic and Atmospheric Administration (NOAA): ARC2 May-September Percent of Normal Rainfall:
   http://www.cpc.ncep.noaa.gov/products/african_desk/cpc_intl/cf_test2/africa_arc/africa_arc_May-Sep_wa_pnorm.gif

5. MoA, LISGIS, FAO, WFP: Liberia Market Price Monitor, August 2015
   http://www.wfp.org/content/liberia-market-price-monitor-2015

6. Repustate Sentiment Analysis Platform:
   https://www.repustate.com/text-analytics-api/

Reporting statistical tests and significance level

Except where explicitly indicated, only statistically significant results are reported (for a good primer on statistical significance: http://www.measuringu.com/blog/statistically-significant.php). To report the level of statistical significance, the following reference is used:

<table>
<thead>
<tr>
<th>p-value</th>
<th>reported symbol</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;0.10 to 0.05</td>
<td>*</td>
</tr>
<tr>
<td>&lt; 0.05 to 0.01</td>
<td>**</td>
</tr>
<tr>
<td>&lt; 0.01</td>
<td>***</td>
</tr>
</tbody>
</table>

Similarly, the type of statistical test is also reported in superscript after the level of statistical significance. The following reference indicates the type of test referenced in the text:

1. Mann-Whitney Test
2. G Test
3. Welch’s t-test
4. Mann-Whitney t-test

Currency conversions

For comparability, prices and wages in national currency are converted into US Dollars using exchange rates to the US dollar at December 31, 2014 (http://www.oanda.com/currency/historical-rates/).