

## The Economic Impact of Ebola: Monitoring the Impact of Potential Transport Disruptions on Traders, Food Availability, and Market Prices

### Summary

August is the peak of the lean season when imported rice is transported throughout the country to fill food needs. The Government cordon in Kenema and Kailahun has the potential to interrupt this flow of food. While the Government and its partners have been bringing food into the districts impacted by the cordon it is critical to monitor whether this food is reaching rural markets. In addition, if informal traders reduce their activity for fear of infection prices of food could rise even in areas with lower rates of infection.

We therefore worked with Innovations for Poverty Action to collect data on food availability, prices, and number of traders in 152 markets throughout Sierra Leone in the week of 19-27 August 2014. We were able to compare responses to those collected in August 2012. In addition, we compare the cordon districts (Kailahun and Kenema) to the non-cordon districts to look at whether the cordon is impacting food availability and prices.

We do find that:

- The number of traders of imported rice is lower in 2014 than 2012, but stable in the cordon districts of Kailahun and Kenema compared to the other districts. This suggests that the fear of infection and the cordon itself have not disrupted trade greatly. The number of traders of domestic rice is much higher relative to 2012, but this is only the case in the non-cordon districts, not in Kailahun and Kenema. However, note that only 9% of markets reported local rice harvests having already started in the area. This lower relative level of local rice traders in cordoned districts will need to be watched carefully as local rice harvests start to pick up;
- The Government's efforts to keep food flowing into the cordon areas seem to be proving largely effective. Prices of imported rice are similar in Kenema to the rest of the country but slightly higher in markets Kailahun. The majority of markets showing price spikes are in Kailahun. This suggests additional rice could be brought into Kailahun and that it is important to ensure good distribution through this remote district;
- Palm oil prices are similar in Kailahun and Kenema to other parts of the country. Normally palm oil is cheaper in these districts than elsewhere so this represents a relative increase compared to 2012;
- The rice harvest is a month away and good rains this year mean it should be a good harvest. This may relieve the need to transport rice into the cordon areas over time. However, we are in unknown territory so it will be important to continue to monitor the situation;

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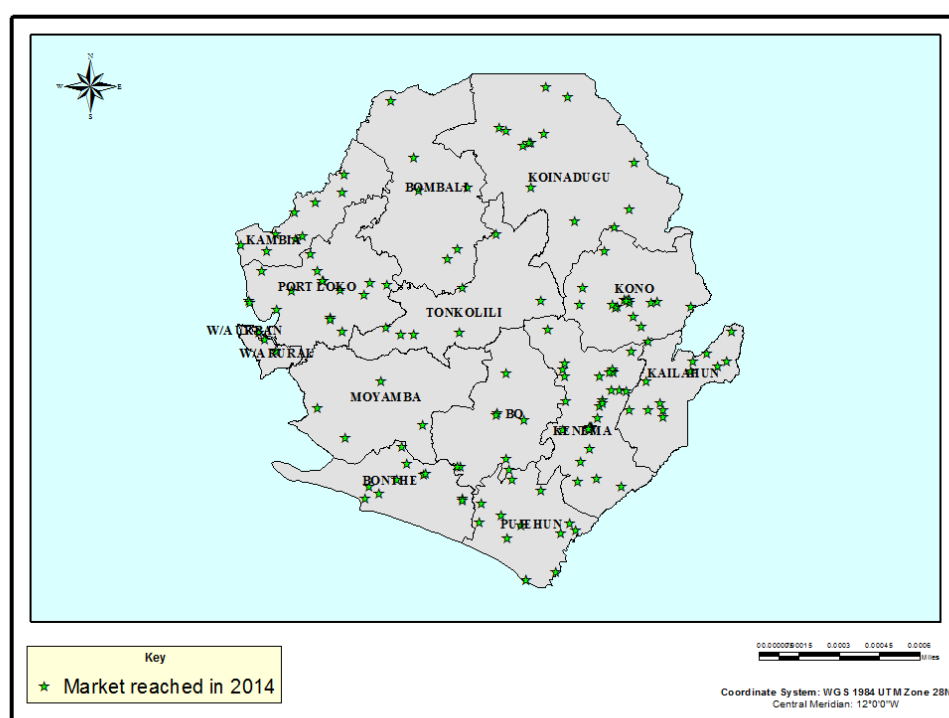


- The cocoa harvest has staired in Kailhun and Kenema and it will be important to ensure that growers of cash crops can get their produce out of cordoned areas.

## Methodology

Between August 19 and 27 we worked with IPA to activate a previously established phone-based market survey to provide independent monitoring of possible food shortages. In 2010, we collected phone numbers of people who could report on activity at a random sample of markets across Sierra Leone as part of a national agriculture survey run jointly with the Ministry of Agriculture Fisheries and Food Security and Statistics Sierra Leone. Monthly data were collected from 185 markets on food prices, availability and number of traders during 2011 and 2012. We were able to collect data from 152 of these markets in this current round of market surveys (see Figure 1). Because we asked similar questions in each year we can compare how prices differ from those in 2012 and how changes in the cordon districts of Kenema and Kailahun have changed compared to changes in other districts across the country.

*Figure 1: Location of Markets for Monitoring Survey, 2014*



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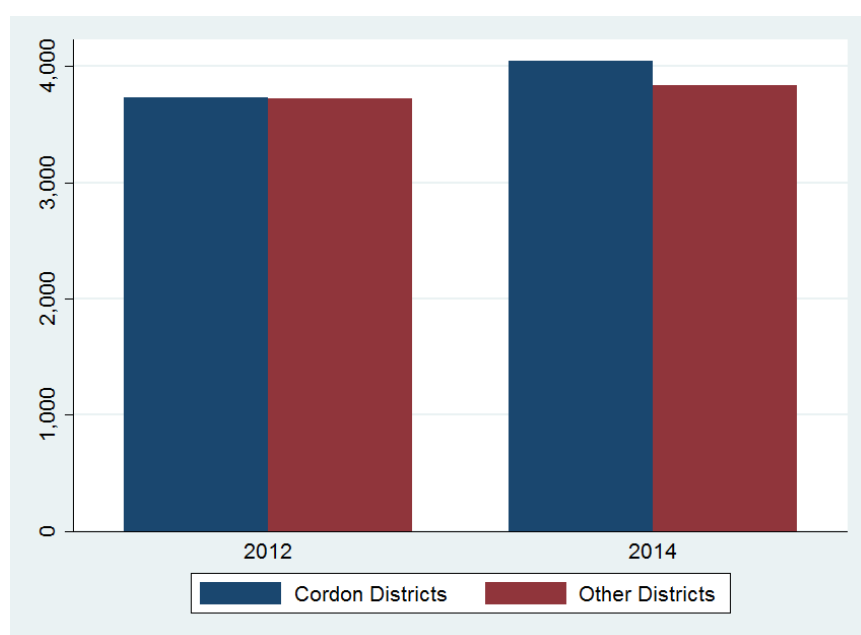


## Results

### Rice

In August, little domestic rice is traded and we therefore focus mainly on prices and traders for imported rice. Imported rice was the same price across cordon and non-cordon districts in 2012. . However, prices for imported rice in these districts are now very slightly higher in the cordon districts (roughly 4%) compared to the other districts in the country. This suggests that the Government's efforts to bring food into the impacted districts have been largely successful. However, as discussed below there are a few markets in Kailahun with much higher rice prices. In addition, since prices have not risen much compared to 2012 in all areas, it suggests that transport issues and fear of infection on the part of traders have not significantly disrupted the flow of food to markets or competition in these markets.

Figure 2: Prices of Imported Rice (Leones/kg) in 2012 and 2014 in Cordon and non-Cordon districts



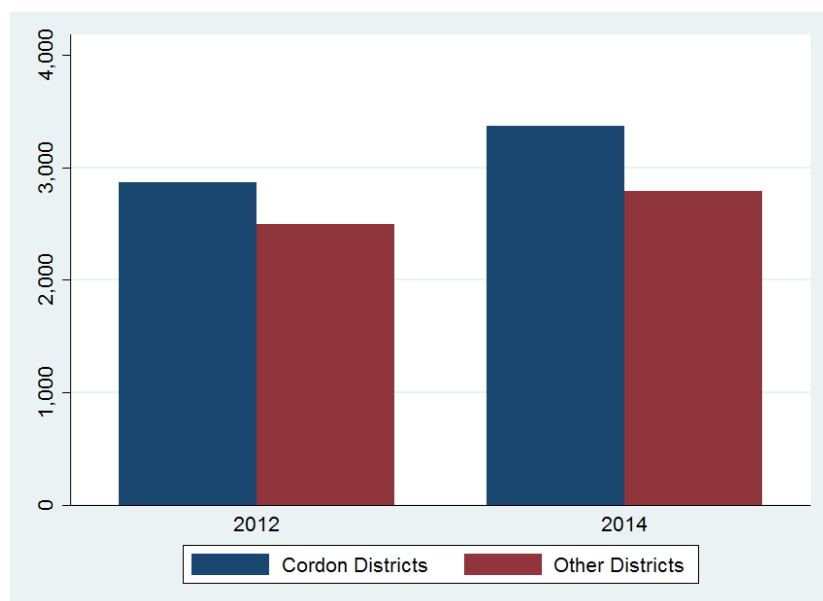
The number of traders for imported rice is relatively constant between 2012 and 2014 in both cordon districts and non-cordon districts. However, we see a sharp jump in traders of domestic rice in most parts of the country in 2014. This is very likely to be because the survey was done later in August in 2014 than in 2012 and the number of domestic rice traders picks up as the domestic rice harvest approaches. However, we do not see the pickup in domestic rice traders in Kailahun and Kenema. This trend will be important to watch as traders of imported and domestic rice are not the same (virtually no traders trade in both types of rice) and when harvest starts it will be important that domestic rice trade picks up.

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## Gari

The price of Gari looks similar to that of imported rice. In Kailahun and Kenema, there appears to be again a very slight increase in price relative to other parts of the country.

*Figure 3. Price of Gari (Leones/kg) in 2012 and 2014 in Cordon and Non-Cordon districts*

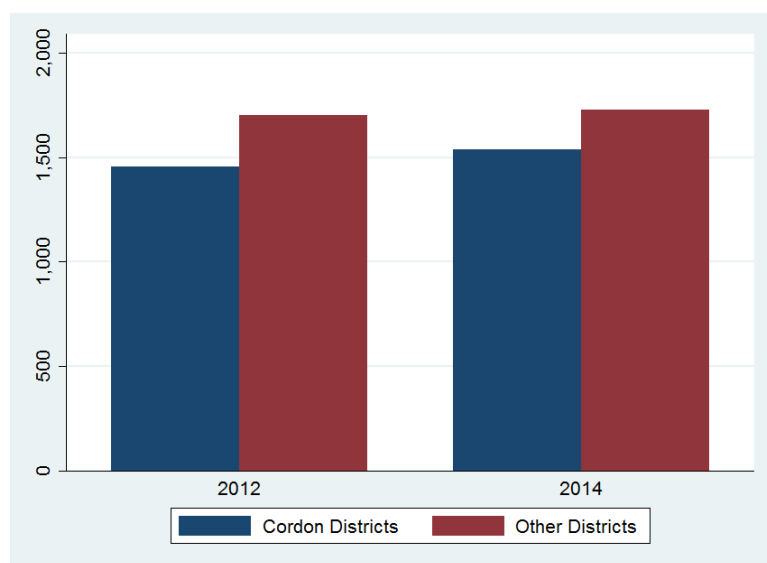


## Palm Oil

The number of traders supplying both, red and masankay palm oil is down in 2014 compared to 2012 but there are still on average about 12 traders per market in both cordon and non-cordon districts. The price for red palm oil is stable, the price for masankay palm oil has increased in the highly affected areas in comparison to other districts.

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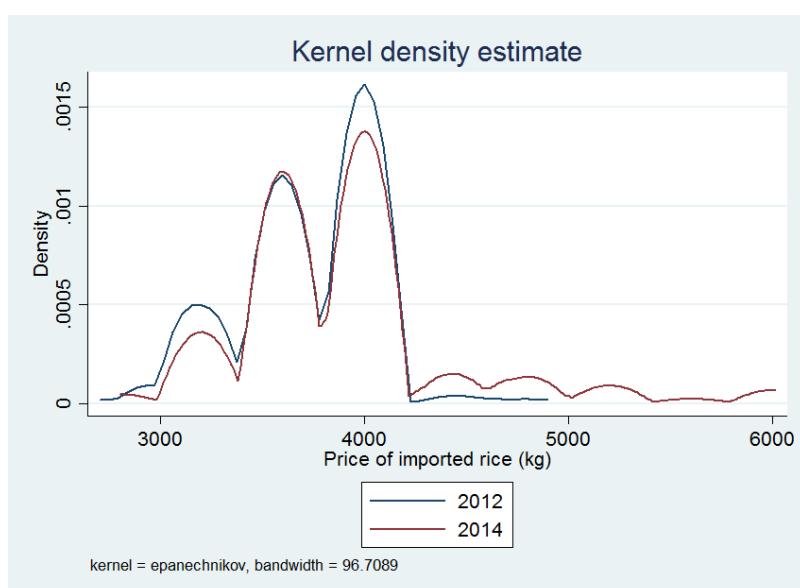
Figure 4. Price of Red Palm Oil (Leones/pint), 2012 and 2014 in Cordon and Non-Cordon districts



### Price peaks

Even in normal years the price of basic food stuffs vary from market to market, partly because of transport costs. We do find more “outliers” in rice prices in 2014 than in 2012. Looking at the graph below, there was only one market with an imported rice price of 4500 Leones per kg or more. In 2014, there were 16 such markets. Of these 16, 8 were in Kailahun (of a total of 19 markets we surveyed in Kailahun), 2 in Kenema, 5 in Pujehun and 1 in Bonthe. These are of course, small numbers of observations but should be continued to be monitored.

Figure 5: Kernel Density of Price of Imported Rice (Leones/kg)



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## Conclusion

Our findings suggest that in general the Government has been effective in getting food into the cordoned districts and that food is reaching even remote markets. However, there are price spikes in a few Kailahun markets suggesting there is room to increase food shipments into Kailahun and that monitoring of distribution within the district is important. Contrary to concerns, traders do not appear to be reducing their activity because of fear of infection. A couple of additional issues need to be watched. The number of traders of domestic rice is low for late August in Kailahun and Kenema. As the harvest starts in these districts farmers will need to be able to sell their rice and it will be important to adjust food aid distribution in these districts in response to the harvest. The cocoa harvest has already started in Kailahun and Kenema and it will be important to make sure that farmers can sell their cash crops or they, and the country as a whole, will lose important income.

Rachel Glennerster, Tavneet Suri and Herbert M'cleod

4 September 2014

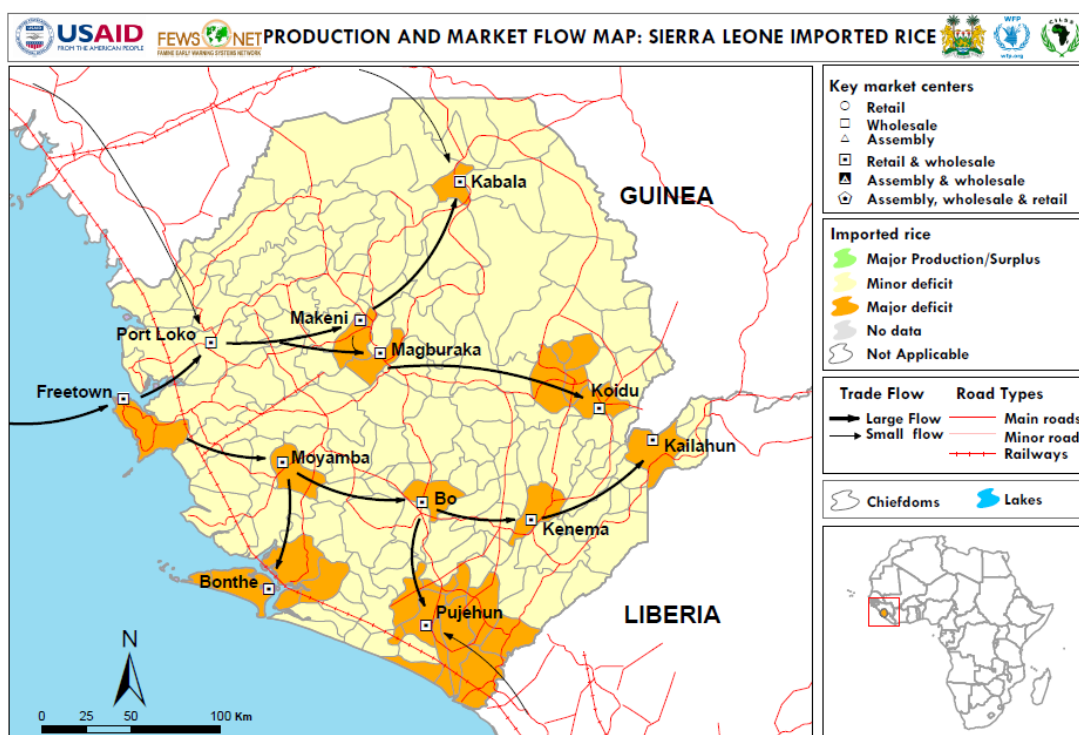
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## Appendix: Normal trade flows of imported and domestic rice in Sierra Leone

FEWSNET produces estimates of the flows of both imported (Appendix Figure 1) and domestic rice (Appendix Figure 2) in normal years. This suggests that Pujehun imports some imported rice from Liberia and thus might be negatively impacted by the closing of the border. This flow reverses for domestic rice, i.e. after harvest. Fortunately other districts (except Kailahun) rely on transport of rice through Kailahun or and Kenema.

**Appendix Figure 1: Production and market flow of imported rice in normal years**

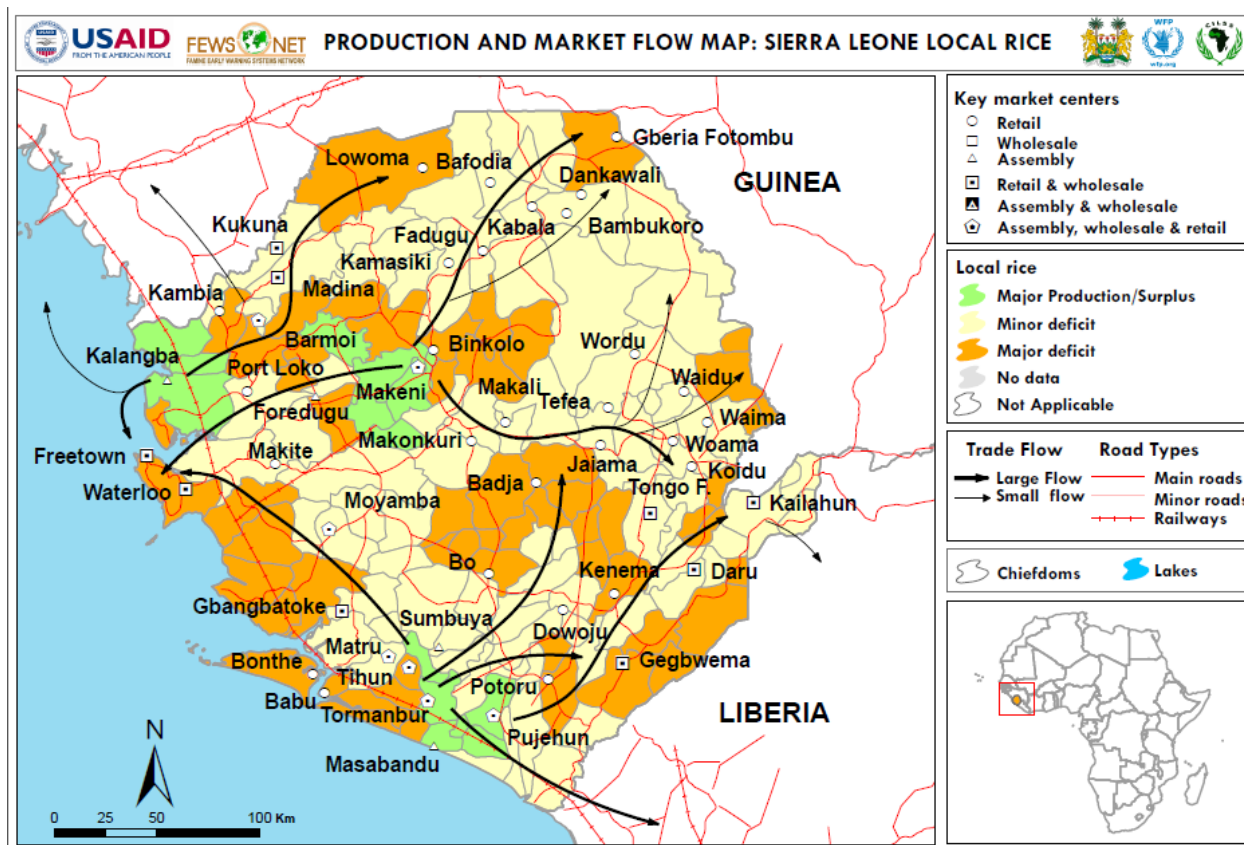


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**Appendix Figure 2: Production and market flow of domestic rice in normal years**



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