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THE IMPLICATIONS OF THE EBOLA OUTBREAK ON MARKETS, TRADERS, AND FOOD SECURITY IN SIERRA LEONE

IN BRIEF

- The number of traders selling basic food items in Sierra Leone has fallen. In Kailahun and Kenema, the first districts to be cordoned, there are 69% fewer domestic rice traders than in 2012. In newly cordoned areas there are 29% fewer domestic rice traders.

- In much of the country, the prices of domestic rice are similar to prices in 2012.

- It's important to monitor prices and target food where it is needed. There are some high price outliers but there is also a danger of flooding areas with food and undermining prices for local farmers.

- The decline in the number of traders in markets raises concerns that traders who go village to village to purchase crops are also reducing their activity for fear of infection. This is a particular concern for farmers of cash crops who cannot consume their own product.

Summary

The recent outbreak of Ebola in West Africa has generated global alarm, but while the policy response has, so far, rightly focused on the public health challenge, attention is now turning to the economic consequences which may add further to the damage caused by the disease itself.

The Government of Sierra Leone and its development partners must have valid, credible data and analysis to ensure that their policy responses are evidence-based and that corrective actions are effective and well targeted.

The International Growth Centre (IGC), as part of its mission to bring world-leading economic researchers to work in partnership with policymakers in Asia and Africa, is

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committed to providing the Government of Sierra Leone with accurate, timely evidence to support the development of effective policy responses.

As a first step, the IGC and Innovations for Poverty Action (IPA) have activated an existing, phone-based food-price-monitoring system to provide rapid feedback to the government on areas of critical need. The IGC and IPA are comparing this data to a baseline collected in 2012.

The latest round of market surveys took place in early October very shortly after all Sierra Leoneans were asked to stay at home for two days and after the introduction of new cordon restrictions in Port Loko, Moyamba, and Bombali. We find:

- The number of traders selling basic food items has continued to fall in all districts. In Kailahun and Kenema (the first districts to be cordoned) there are 69% fewer domestic rice traders than in 2012 while the decline in newly cordoned areas is 29%.

- Prices of basic food commodities at markets are not significantly higher in October than they were at this time in previous years, nor are they higher on average in cordon areas.

- There are outliers where prices are much higher and there are more of these outliers than in normal years.

- There are an increasing number of markets that are closed. In most of these cases traders report they are selling food from their homes. However, it will be important to monitor food security at the household level to ensure that food (at reasonable prices) is reaching households especially in remote locations.

- Very preliminary data however suggests a new risk to food security or at least a potential delay in the rice harvests. Rainfall in September was much higher than it usually is at this time of year, but it did begin to decrease in October. This may negatively impact the rice harvest or at the very least delay the rice harvests.

Food security is not just a function of food availability and price but also of income. The reduction in the number of traders is suggestive of reductions in economic activity more generally which will depress income. Other data collection efforts are attempting to capture the decline in economic activity more generally. We will report on the results of this work as soon as they are available.

Survey Details and Additional Data Used

The data in this note comes from phone surveys which took place between September 30th and October 3rd. As in previous rounds, IPA staff and enumerators phoned respondents (usually traders or market officials) at a representative random sample of 185 markets across Sierra Leone. Data were successfully collected from 166 markets in October. Respondents answered questions about prices and the level of activity at the markets where they were

based. Figure 1 shows the geographic spread of the markets in the sample as well as which districts were under quarantine at the time of the survey. In this survey round, in a number of markets across the country, a second independent source was also reached as a double check on the price figures. This independent checking produced very similar figures, increasing our confidence in these results. We also note that the data from this survey produces extremely similar results to those from a monitoring survey conducted by the WFP, the reports of which can be found at http://vam.wfp.org/sites/mvam_monitoring/index.html.
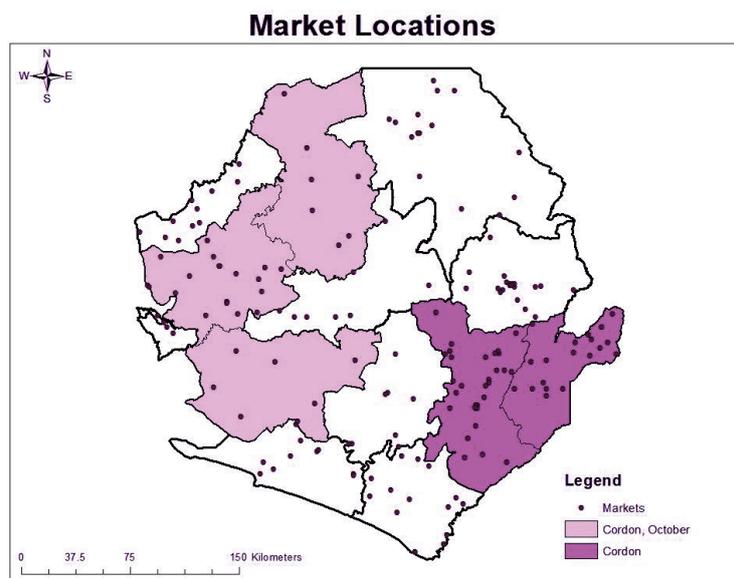

Figure 1: Locations of Markets Reached in October Market Survey

In addition to the market phone surveys, we present the data on rainfall from the NOAA, using their Africa Rainfall Estimates for both Sierra Leone and Liberia. We include data from January 2014 through October 2014, which we compare to the average for each of these months for the past thirteen years.

Transport Restrictions and Spread of Cases

Since our last report, additional transport restrictions were imposed in additional districts in Sierra Leone in October. The Districts of Bombali, Port Loko, and Moyamba are all under cordon as is Waterloo in Western Area Rural (Waterloo is an important transport hub linking Freetown to the rest of the country). In Figure 2 below, we illustrate via maps the geographic spread of confirmed cases and the cordon restrictions that were placed on districts in Sierra Leone. The left panel shows the situation as of September 17, 2014 with just two districts cordoned. The right panel shows the situation as of October 23, 2014 with the additional three districts that were included in the cordon in October.
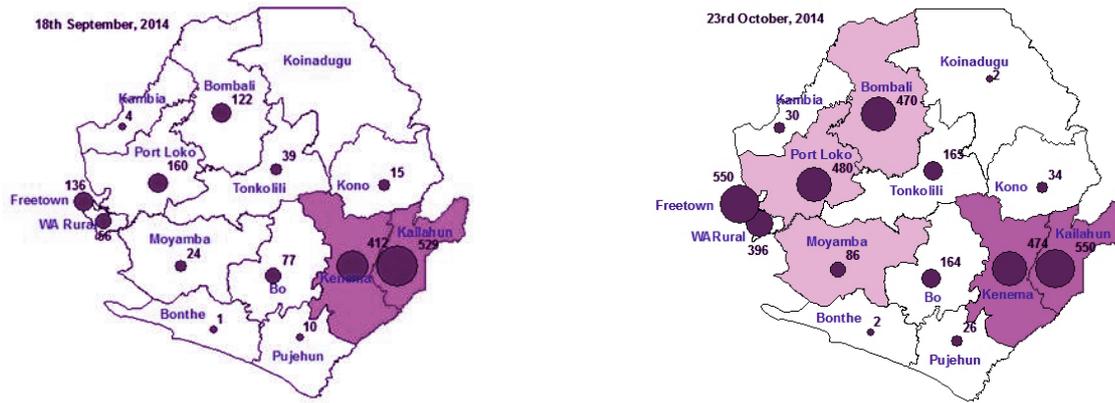
Figure 2: Geographic Spread of Confirmed Cases and Cordon Restrictions

(September 17 and October 23)

Price Results

Average prices for domestic and imported rice, cassava, and palm oil in markets both in cordon and non-cordon districts continue to be reasonably stable. There are no large changes from month to month nor are there large changes compared to the same time in 2012. We show results for domestic rice below as this is the main staple for Sierra Leone but the results for other basic commodities are similar. As noted, these results are consistent with similar data collection efforts by the World Food Program.[1]
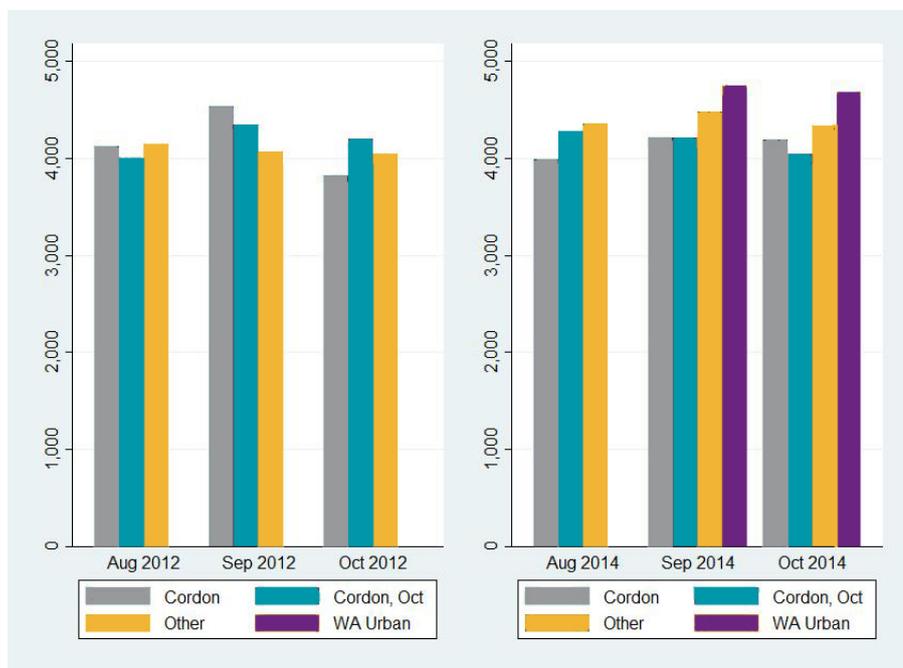

Figure 3: Domestic Rice Prices in Cordon and Non-Cordon Districts

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[1] See http://documents.wfp.org/stellent/groups/public/documents/ena/wfp268590.pdf

It is important to note that the prices reported here are market prices – in other words, these are the prices at which traders sell these commodities in markets. Prices paid by households may deviate from these prices, particularly in more remote communities, if the commodity needs to be transported from the market to the village. We will be conducting additional surveys to study prices faces by households in the near future and will report the results from these surveys as soon as possible post data collection. There are also important outliers among markets where prices are substantially higher than average and there are more such outliers in 2014 than in previous years. Figure 4 shows the distribution of domestic rice prices in 2012 and 2014. Because we did not collect data on domestic rice prices in markets in Western Area Urban (Freetown) in 2012 we show this distribution of prices in Freetown separately. We see a small but significant tail of outliers with prices at or above 6,000 Leones per kg in 2014. Western Area Urban has higher domestic rice prices than other districts because of transport costs, but it also has lower prices of imported rice. The geographic distribution of these outlier markets can be seen in Figure 5. Price outliers are to be found in high Ebola districts (in particular, Kailahun) as well as in low Ebola districts. Pujehun, for example, has not been cordoned and has low rates of infection, but it does have some markets with high (outlier) prices. This may be because trade with Liberia has been disrupted.
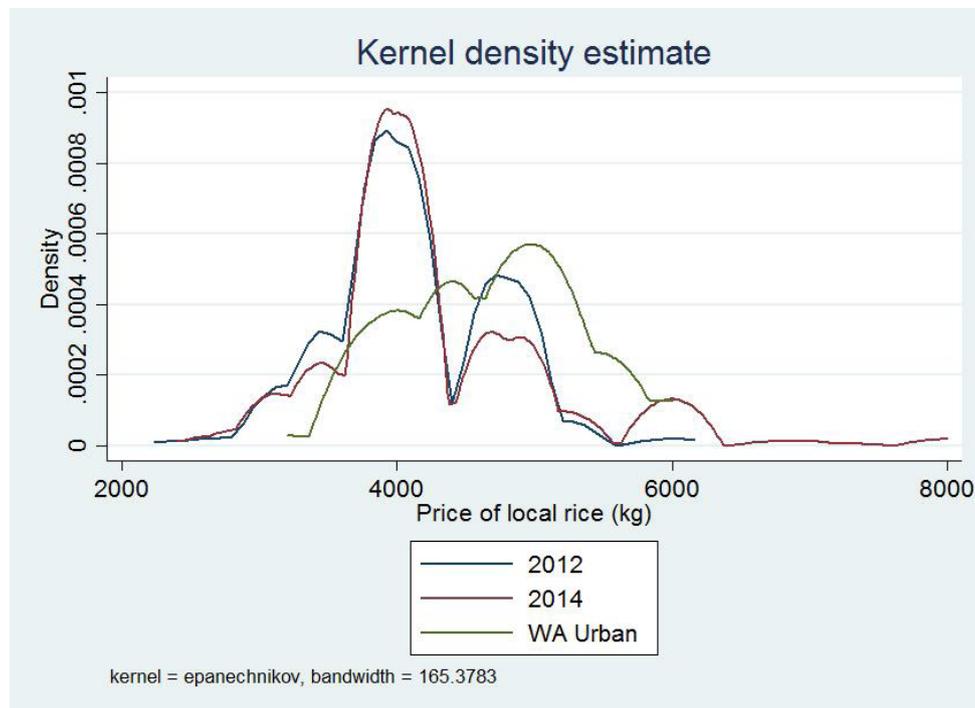

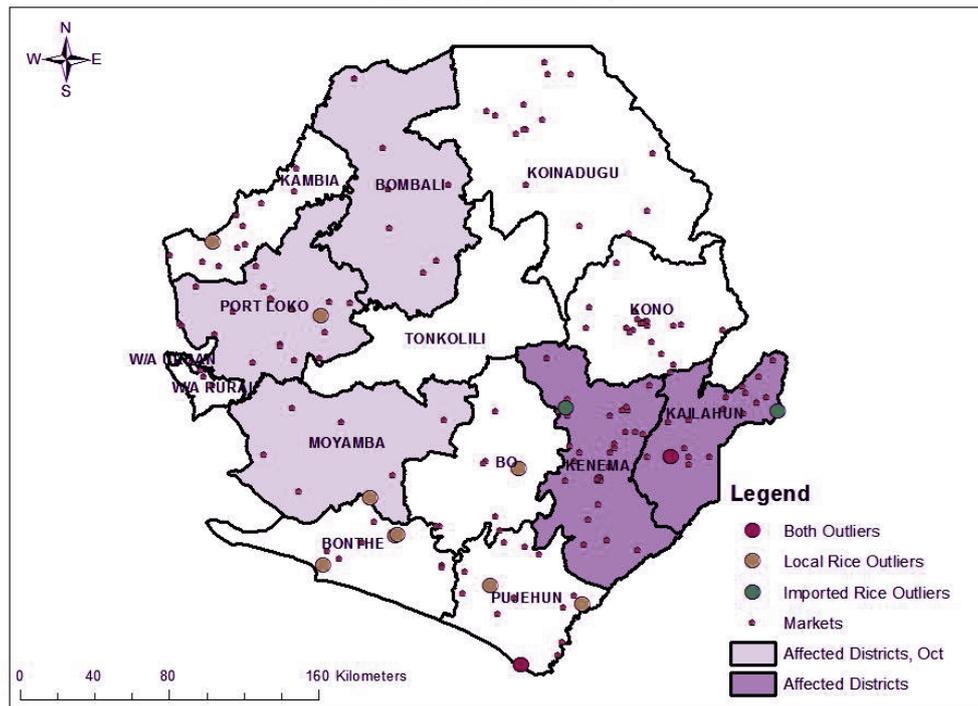Figure 4: Distribution of Domestic Rice Prices by Year

October 2014

Figure 5: Geographic Distribution of Outlier Markets in October

Trader Activity

October saw even further falls in the already depressed activity of rice traders that we had already started to see in the September data. This is despite the fact that in roughly half of markets, traders report that the rice harvest has started. The onset of the rice harvest is normally accompanied by a large increase in the number of traders but this not the case in 2014. In all but the non-cordon areas we see a fall in the number of rice traders between September and October.

This is concerning for two reasons:

1. Informal traders traveling from farm to farm are the main way that farmers sell their crop. If traders are sharply reducing their activity because of fear of infection farmers will see a reduction in income and it will be hard for rice to move from surplus areas to deficit areas. While only a relatively small proportion of farmers sell rice (roughly 80% of the respondents in the AHTS data from 2010 kept their entire rice crop for their own consumption), other crops such as cocoa and vegetables have much higher rates of trade and are an important source of income for farmers in some areas. The sales of these crops will need to be monitored closely, especially those crops like cocoa and coffee that have specific harvest times;

2. The decline in activity by traders may be a more general indicator of reduced informal

economic activity outside agriculture due to the fear of infection. This survey is one of the few representative sources of data on informal economic activity across the economy and the declines are now dramatic.

It is essential to keep monitoring these worrying trends in the numbers of traders.
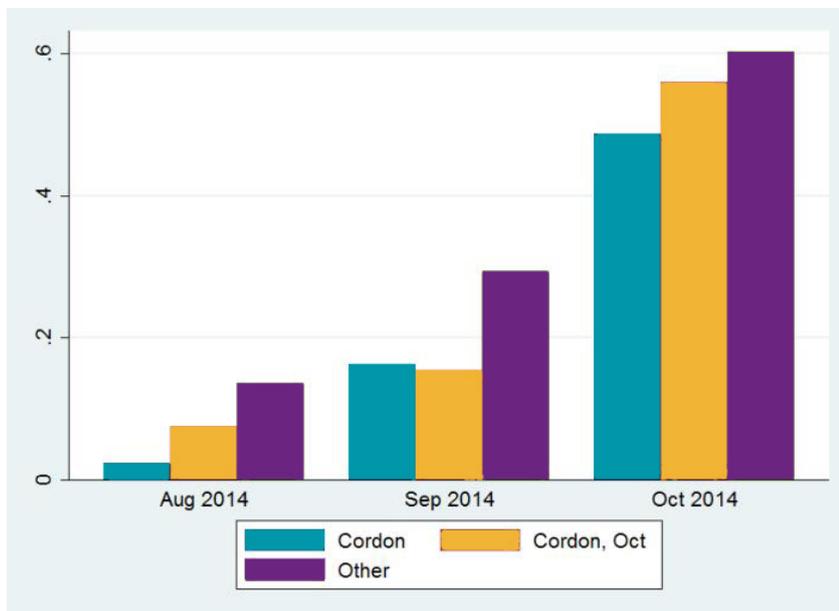

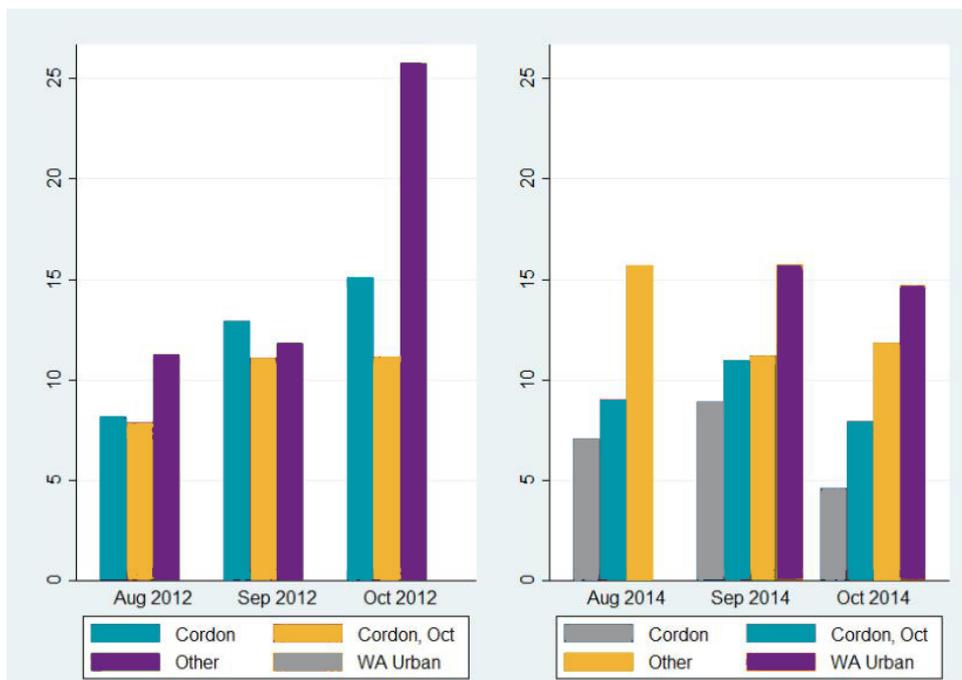Figure 6: Trader Reports on Whether the Local Rice Harvest has Started

Figure 7: Number of Domestic Rice Traders per Market

## Potential New Risks to Food Security via Harvest Delays

Finally, we report on a potential new risk to food security in Sierra Leone, Liberia, and potentially Guinea which it will also be important to monitor closely. Rainfall in September and October was higher than normal for this time of year. Figure 9 shows this for Sierra Leone and Liberia. While the higher than average rainfall in the month of May through August was predicted to be good for rice yields and harvests, high rainfall in September and October could potentially delay the rice harvests and may, in fact, even damage crops. Indeed, we would expect more than 50% of markets to have reported the onset of the rice harvest by early October under normal circumstances. The deviations in rainfall for September are very substantial with some areas reporting as much rainfall as two standard deviations higher than the normal rainfall for this month. In October, rainfall did indeed start to fall, as expected, but it did not fall back to reach its normal level by the end of October. Also of note is that the areas with the highest rainfall (above average) in Sierra Leone and Liberia happen to be those that have been particularly badly affected by Ebola (results not shown but available on request). It will be important to continue monitoring rainfall. We also plan a household level survey (to start shortly) that will monitor harvests and food availability at the household level. We will report these results as soon as they become available, likely in the next few weeks.

Figure 9: Average Rainfall by Month in Sierra Leone and Liberia

a) Sierra Leone
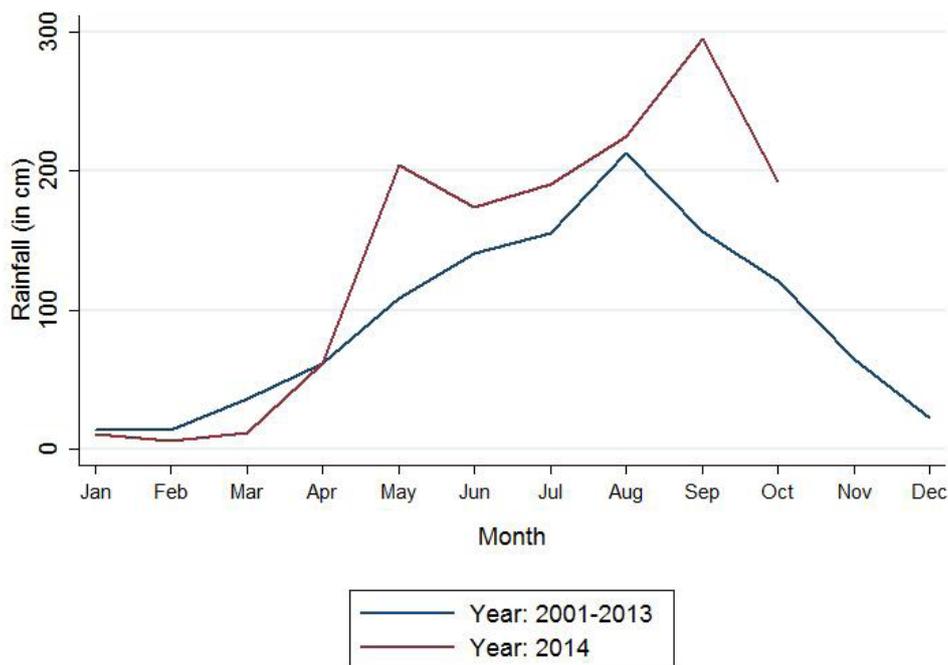
b) Liberia
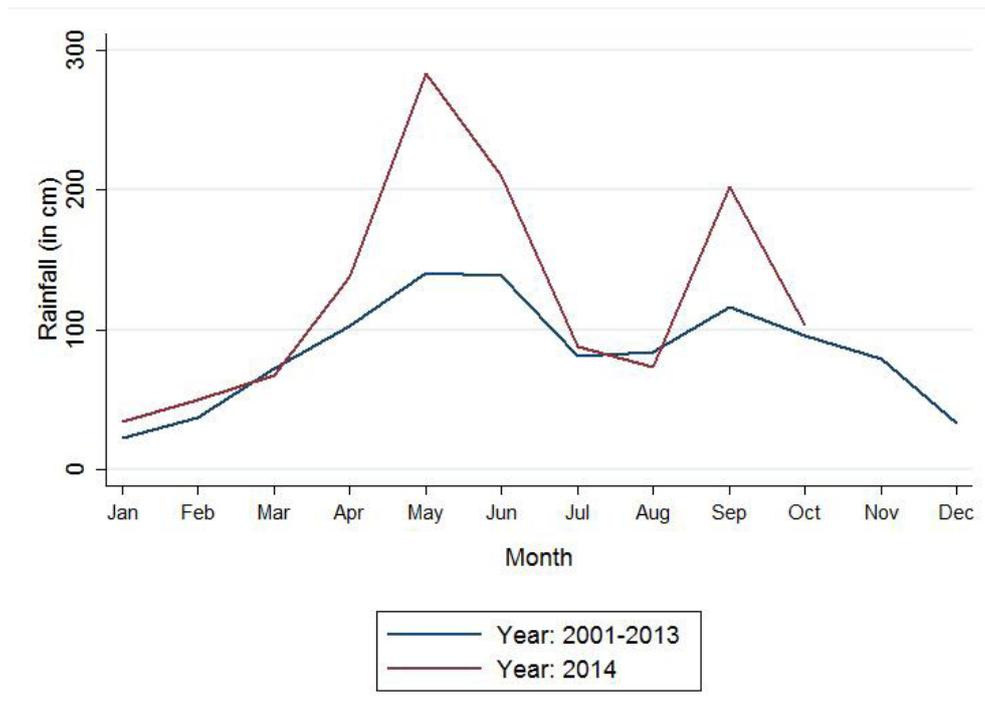
Conclusion

While considerable attention has been focused on the impact of the Ebola outbreak on food prices a much bigger threat to economic health is from reduced domestic trade and international trade. To the extent that the sharp decline in the activity of agricultural traders is an indicator of sharply reduced economic activity more generally, these results are even more concerning. The much higher than average rainfall in September represents an additional potential threat to the economy and food security and at the very least may imply harvests will be a little delayed relative to normal.

IGC Bulletins: The Economic Impact of Ebola

In recent weeks there has been speculation regarding the short and long term impact of Ebola on West African economies. In a set of bulletins on the economic impact of Ebola, the IGC will disseminate the data collected, including key facts and policy recommendations. The IGC will be sharing these bulletins with the broad group of aid agencies, NGOs, and journalists with an interest in the Ebola epidemic.

As soon as the data has been collected, the IGC plans to publish further bulletins on the impact of Ebola on firms and households in Sierra Leone and Liberia.

The International Growth Centre (IGC)

The International Growth Centre (IGC) aims to promote sustainable growth in developing countries by providing demand-led policy advice based on frontier research. The IGC directs a global network of world-leading researchers and in-country teams in Africa and South Asia and works closely with partner governments to generate high quality research and policy advice on key growth challenges. Based at LSE and in partnership with the University of Oxford, the IGC is funded by the UK Department for International Development (DFID).

The IGC Sierra Leone programme started in 2010 and focuses on the issues of trade, governance, health and agriculture. Current projects are addressing the government's requests to help evaluate the national health insurance scheme, monetary policy, managing natural resources, urban planning and agricultural production.

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