IMPACT OF COVID-19 CRISIS ON AGRICULTURE

Evidence From Five Sub-Saharan African Countries

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BACKGROUND

Countries in Sub-Saharan Africa (SSA) have not been spared from the negative impact of the COVID-19 crisis. Though countries in the region have reported fewer cases of COVID-19 than other parts of the world, governments in these countries implemented various containment measures. The containment measures implemented by governments in the region varied across countries, but generally included nationwide or partial lockdowns, travel restrictions, schools and offices closures, restrictions on social gathering, among others.[1] Countries in the region were impacted at the time of other shocks. For instance, Uganda and Ethiopia in Eastern Africa were beset with locust invasion, while the global fall in oil prices created a dual crisis for Nigeria as the country's economy is heavily reliant on oil. Overall, the COVID-19 crisis, coupled with these other external shocks, is expected to impact countries in the region negatively, and articulating a policy response requires understanding how and which households have been impacted and if households may have been able to rely on or move into specific activities which may act as a buffer in times of crises.

The brief leverages COVID-19 high frequency phone survey (HFPS) data collected primarily by National Statistics Offices (NSO)[2] of five SSA countries (Burkina Faso, Ethiopia, Malawi, Nigeria, and Uganda), with support from the World Bank's Living Standards Measurement Study (LSMS) and the Poverty and Equity Global Practice teams.[3] These five countries are part of the LSMS - Integrated Survey on Agriculture (LSMS-ISA) project that fields multi-topic household surveys with a focus on agriculture. Thus, the households included in the HFPS are sub-samples of LSMS-ISA households interviewed in the most recent face-to-face interviews in respective countries. A uniform methodology was adopted in sampling, weighting, and implementing the survey across the countries, making cross-country comparison feasible. While the phone surveys began after the onset of the coronavirus pandemic, the timing of implementation varies across countries, as does the intensity of the pandemic and the local restrictions (see Annex I for an illustration of survey timing and COVID-19 response).

Davis et al (2017)[4] report that more than 50% of households in Sub-Saharan Africa generate their livelihoods from agriculture. In what follows, we explore the impact of COVID-19 on agriculture in SSA, looking at participation in agriculture before and after the outbreak of the crisis. Agricultural shocks, changes in income, and expectations regarding harvests and revenue are also explored. Given that data collection coincided with the 2020/21 pre-harvest season, the brief focuses primarily on pre-harvesting and expectations. Following completion of the agricultural season and the related data collection, additional

1 In Malawi, schools were closed but a planned nationwide lockdown was challenged in court, and ultimately was not implemented.

2 The Ethiopia HFPS was implemented by a private survey firm, not the national statistics office.

3 This survey is part of the World Bank's effort to support the collection of monthly high frequency phone surveys to monitor the impact of the COVID-19 crisis on households.

4 Davis, Benjamin, Stefania Di Giuseppe, and Alberto Zezza. 2017. "Are African Households (Not) Leaving Agriculture? Patterns of Households' Income Sources in Rural Sub Saharan Africa." Food Policy 67: 153–174

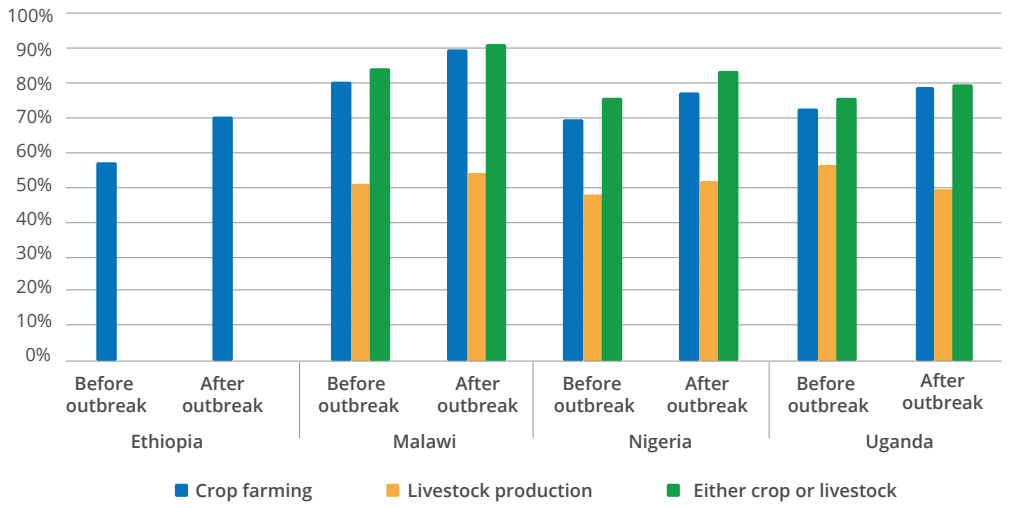
analysis will be presented on harvest activities and outcomes.

PARTICIPATION IN AGRICULTURE BEFORE AND AFTER THE COVID-19 OUTBREAK

The data shows that **agriculture continues to be the main source of livelihood of Sub-Saharan African households, with the share of households involved in agriculture increasing since the start of the pandemic**.[5] Prior to the outbreak, 76% of Nigerian households were involved in agriculture (either crop or livestock farming), but the share has increased to 84% since the start of the pandemic. We observed similar results in Malawi and Uganda, where 91% and 79% of households respectively are involved in some form of agriculture since the start of the COVID-19 crisis, compared to the pre-pandemic levels of 84% and 76% respectively.[6]

The changes in Figure 1 are the product of **the net effect of households moving into and out of agriculture; in most cases, entries were larger than exits, with the exception of livestock in Uganda.**[7] In general, the share of households that have entered into agriculture since the start of the pandemic is higher than those exiting. For instance, in Malawi, about 9% of households who were not involved in agriculture (either crop or livestock farming) before the pandemic are doing so now, compared to less than 2% that were involved in agriculture pre-pandemic who are not doing so since its onset. Similarly, the share of Nigerian households who have gone into agriculture is higher (12%) than those exiting (4%) since the start of the pandemic.

FIGURE 1: PERCENTAGE OF HOUSEHOLDS INVOLVED IN AGRICULTURE BEFORE AND AFTER COVID-19 OUTBREAK, BY COUNTRY

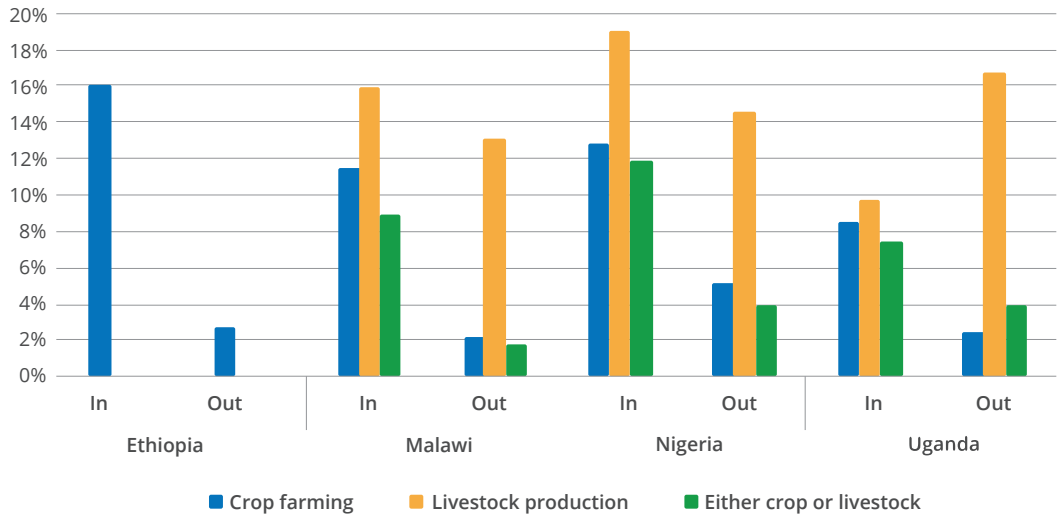


5 During the last post-harvest visit to the households in 2018/19, households were asked if they are involved in crop or livestock farming activities. Similarly, during the 2020 phone interviews, respondents were asked if any member of their household has done any crop farming or livestock production activities since the start of the COVID-19 crisis (coinciding with the 2020/21 agricultural season in most of the study countries). We use these questions to construct the before and after comparison and the churning in and out of agriculture since the start of the crisis.

6 As at the time of this report, Ethiopia was yet to collect information on post pandemic livestock production, hence we are not able to get a full picture of total share of households involved in agriculture (either livestock or crop farming).

7 Entry into agriculture is defined as those households who were not involved in agriculture pre pandemic, but are doing so since the outbreak, while exit from agriculture means those households who were involved in agriculture pre pandemic but have not engaged in any agricultural activities since the start of the pandemic.

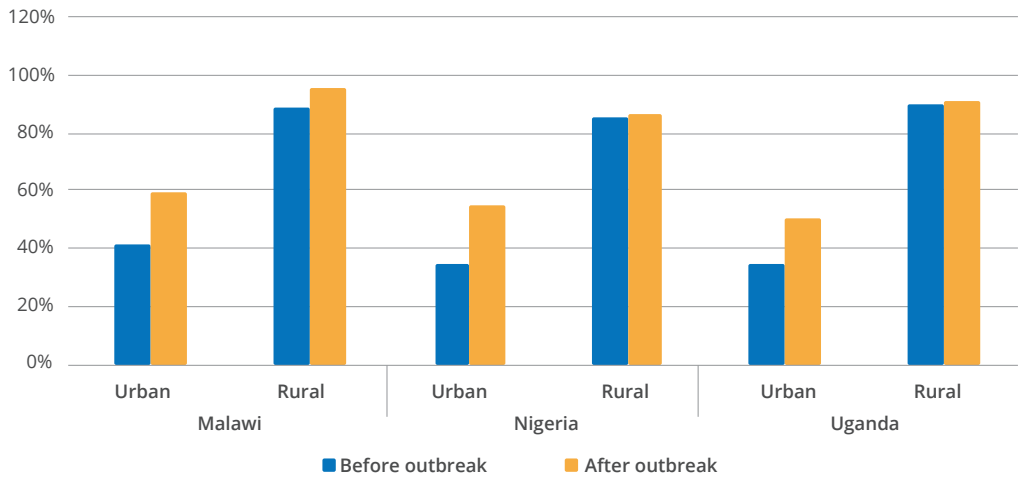
FIGURE 2: CHURNING IN AND OUT OF AGRICULTURE SINCE THE START OF COVID-19 CRISIS



We explore further how households in the study countries are moving in and out of the different sub-sectors of agriculture by looking at crop farming and livestock production separately. **The share of households that have gone into crop farming appears higher than those that have exited.** In Ethiopia, about 16% of households that were not involved in crop farming before the pandemic are doing so now, compared to about 3% that were engaged in crop farming before the pandemic that did not cultivate crops during the 2020 agricultural season. Similarly, in Malawi, 11% of non-crop farming households are cultivating crops in the 2020 agricultural season, compared to 2% that did so in the last agricultural season but are not cultivating in the 2020 agricultural season. In Nigeria, about 19% of households who did not own/raise livestock pre-pandemic are doing so now, compared to about 15% that owned/raised livestock last year but are not doing so after the outbreak. We find similar results in Malawi where the entry into and exit out of livestock farming are 16% and 13% respectively. In Uganda, however, we find more households going out of livestock production (17%) than those entering (10%) since the start of the pandemic. **Across countries, the percentage of households going into livestock production appears higher than those going into crop farming since the start of the pandemic.** This can possibly be explained by the seasonal nature of crop production, compared to livestock farming.

Across countries, the movement of households into crop farming since the outbreak seems to be more prevalent in urban than in rural locations. Specifically, in Malawi, about 42% of urban households were involved in crop farming pre-pandemic, but the share increased to about 60% after the outbreak, compared to their counterparts in rural locations. We observe similar results for Nigeria and Uganda. The high increase in urban dwellers participating in agriculture might be the consequence of food security and employment challenges emanating from the negative impact of the pandemic being higher in urban than in rural areas.

FIGURE 3: PERCENTAGE OF HOUSEHOLDS INVOLVED IN CROP FARMING, BY RURAL-URBAN



We observe further that more households in urban Nigeria and Malawi are participating in livestock farming, while the rural share involved in livestock production seems fairly constant in these two countries. In Uganda, however, the share of rural households involved in livestock production decreased from 69% before the outbreak to 59% after the COVID-19 outbreak, while the share of urban households decreased from 30% to 29%.

Looking deeper at the transitioning in and out of agriculture by rural-urban divide, we observe that, **across countries, more urban households are moving into agriculture compared to their counterparts in rural areas.** For instance, 21% of households in urban Malawi who were not cultivating crops pre-pandemic are doing so now, compared to 9% of their rural counterparts. The data shows similar results for Nigeria and Uganda, where the share of urban dwellers going into crop production during the 2020 agricultural season seems higher than the share transitioning from rural areas. In the case of livestock, 22% of urban Nigerian households who were not owning livestock last year are doing so now, compared to 17% of their rural counterparts. In the case of Uganda,

FIGURE 4: PERCENTAGE OF HOUSEHOLDS INVOLVED IN LIVESTOCK FARMING, BY RURAL-URBAN

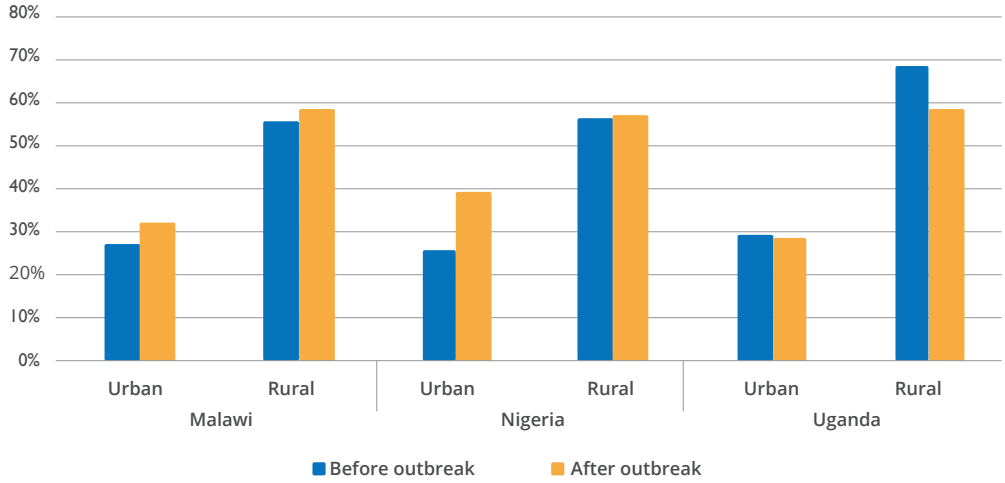
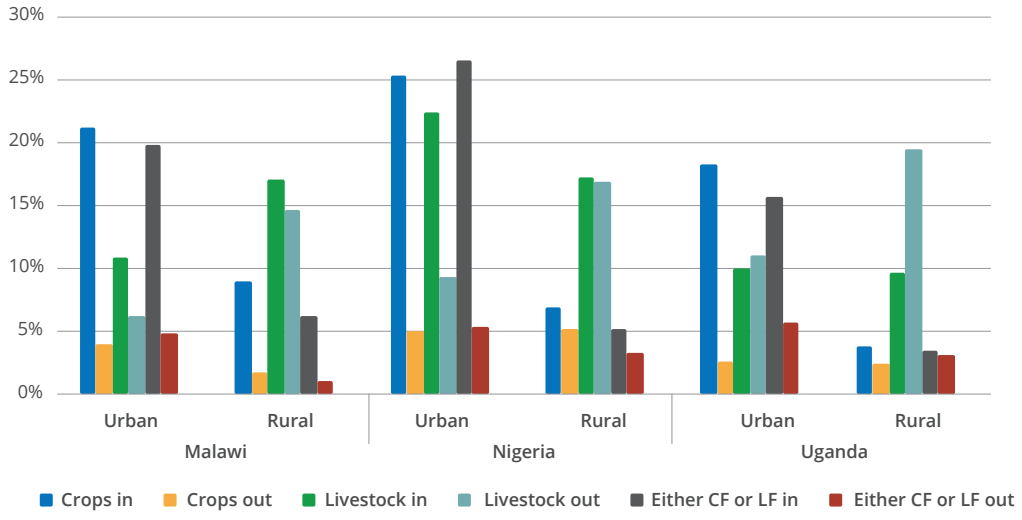


FIGURE 5: CHURNING IN AND OUT OF AGRICULTURE, BY COUNTRY AND LOCATION (% OF HOUSEHOLDS IN LOCATION)



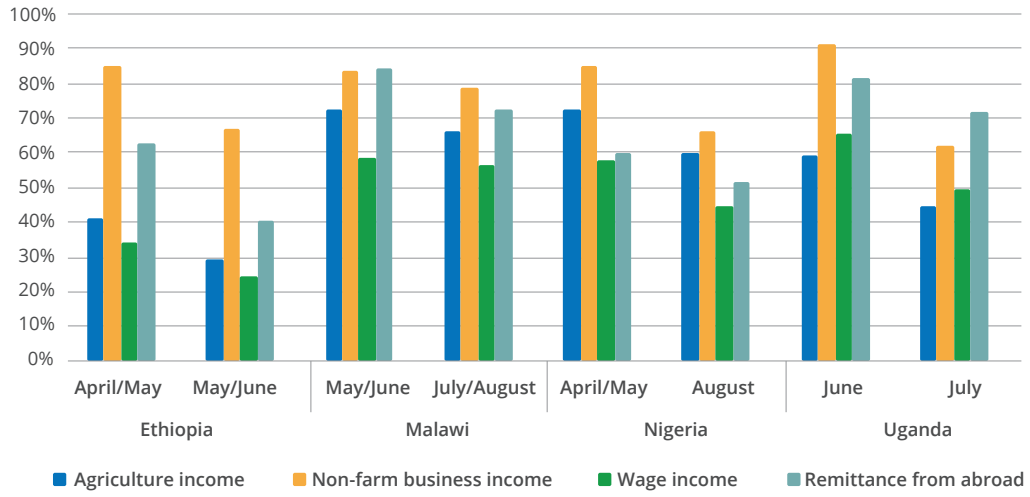
however, the share of urban households going into livestock production after the outbreak seems about the same as that in rural areas, though the share of households in rural Uganda who have gone out of livestock production seems higher (20%) compared to 11% exiting in urban areas. Across countries, the data seem to suggest that rural households are exiting livestock production more than they are entering (more pronounced in Uganda). This is probably due to the impact of the pandemic on livestock production activities such as access to feed, animal health services and markets.[8]

INCIDENCE OF INCOME LOSS AND SHOCKS

While agriculture has been impacted by the pandemic, the effect seems less compared to other sectors. Households were asked in different rounds of the phone survey if they received income from specific sources (including agriculture, non-farm family business, wage and remittances from abroad) and whether the income from those sources increased, decreased or stayed the same since the start of the pandemic. In April/May 2020, 41% of Ethiopian households who received income from agriculture in the last 12 months, reported loss of income from agriculture (i.e. agriculture income decreased compared to before the pandemic), while 85% and 63% reported experiencing income loss from non-farm family businesses and remittances from abroad respectively. Similarly, in Malawi, 73% of households who received income from agriculture in the last 12 months reported loss of income from agriculture in May/June 2020, while 84% and 58% reported loss of income from family business and wage work respectively, during the same period. We observe similar results for Nigeria and Uganda. Across countries, the share of households reporting income loss from these sources, however, seems

8 In Nigeria, households were asked how the pandemic has affected their livestock activities; limited access to feed (89% of livestock households), animal health services/drugs (79%) and limited access to markets (82%) were reported.

FIGURE 6: INCIDENCE OF INCOME LOSS (% OF HOUSEHOLDS WITH INCOME FROM SOURCE IN LAST 12 MONTHS), BY COUNTRY AND INTERVIEW MONTH

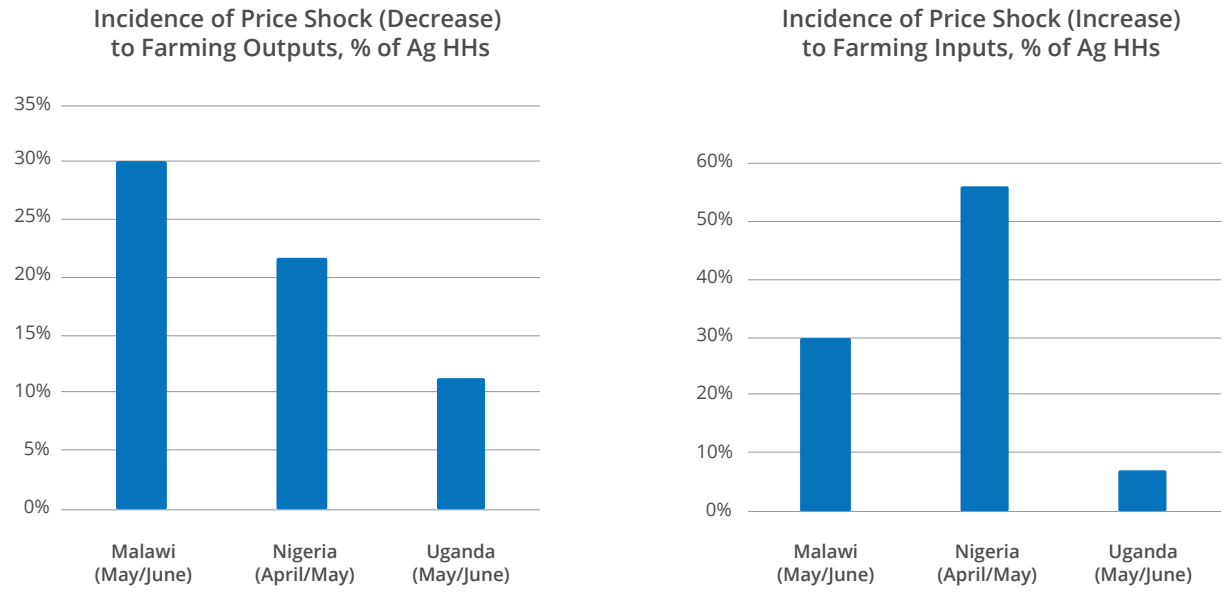


to be reducing in the months following the first phone interviews. This might be attributed to the easing of lockdown restrictions in the countries during subsequent interviews.

Households in SSA have also been affected by price shocks in the form of high prices of farming inputs and reduction in the prices of outputs, though at different levels. In Malawi, about 29% of farming households reported experiencing input price shocks, while 30% reported output price shocks. While the share of farming households reporting input or output price shocks are low in Uganda, the shares are unsurprisingly high in Nigeria. These results may be explained by the extent of lockdown restrictions implemented in the respective countries and other shocks that were apparent during the period. The high percentage of households reporting shocks in Nigeria can be explained by the fact that Nigeria experienced a dual crisis – COVID-19 and fall in oil prices – concurrently. The locust outbreak in Uganda might have shifted households' attention from the impact of the COVID-19 crisis, while in Malawi, there was no government nationwide lockdown implemented.

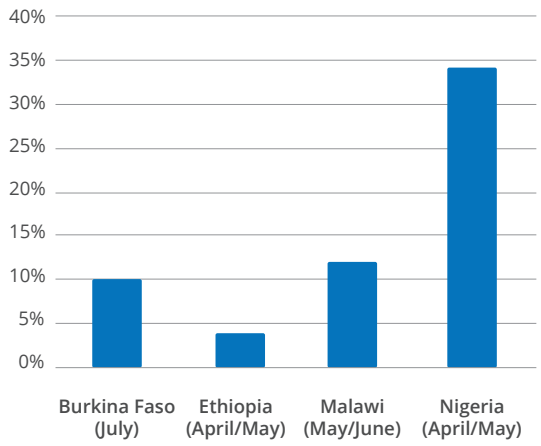
Given the containment measures implemented by governments in the study countries, it is important to understand their impact on households day-to-day farming operations, in terms of being able to perform their farming activities. Thus, households were asked if they were able to conduct their agricultural activities normally despite the closures and restrictions in their countries. The fielding of this question coincided with the planting seasons in most countries except Malawi, where the question was fielded during the harvest season. The data show that, except for Nigeria**, there is little evidence of household's having issues undertaking their crop farming activities, which corroborates the churning in and out of agriculture discussed earlier.** For instance, about 34% of Nigerian farming households indicated that they were unable to perform their farming activities normally,

FIGURE 7: INCIDENCE OF PRICE SHOCKS, % OF AGRICULTURE HOUSEHOLDS



while 10% of farming households in Burkina Faso were unable to do same, and nearly all Ethiopian farming households seem to have worked normally on their crop farms. These results can possibly be explained by the lockdown restrictions implemented in the countries. For instance, we see that in Malawi, where strict lockdowns were not implemented, the majority of farmers were able to go about their farming activities normally, compared to Nigeria, where strict lockdowns (including inter-state travel restrictions) were implemented for a longer period.

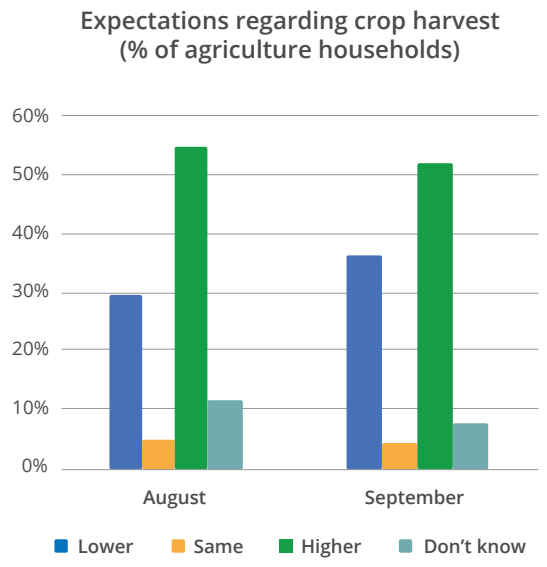
FIGURE 8: PERCENTAGE OF HOUSEHOLDS UNABLE TO CONDUCT THEIR AGRICULTURAL ACTIVITIES NORMALLY

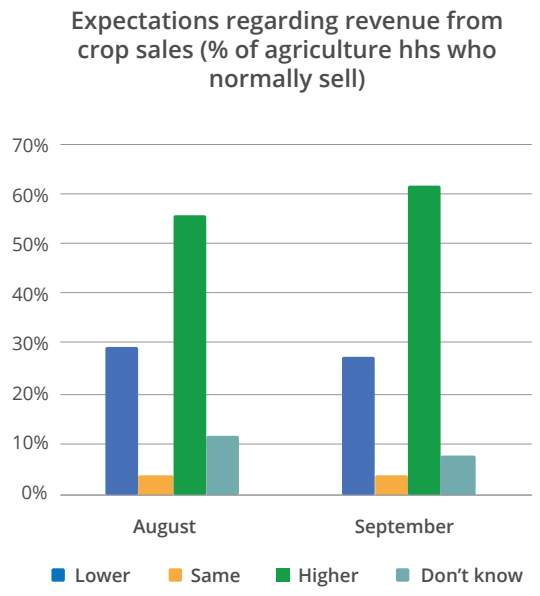


EXPECTATIONS REGARDING HARVEST AND SALES

During the August phone interviews, agricultural households in Nigeria were asked about their expectations concerning crop harvests and revenue from crop and livestock sales for the 2020/21 agricultural season. In order to track how these households are updating their expectations given the changes in the country, they were presented with the same set of questions in the September round of the survey. **Overall, farming households in Nigeria seem to update (change) their output and sales expectations over time due to the changes in the country.** In August, about 30% (54%) of current crop farming households indicated that they expect their harvest this year to be lower (higher) than what they harvested from similar planted area in the 2019/20 agricultural season, while the share of households who expect decline in output by the end

FIGURE 9: CROP HARVEST AND REVENUE EXPECTATIONS

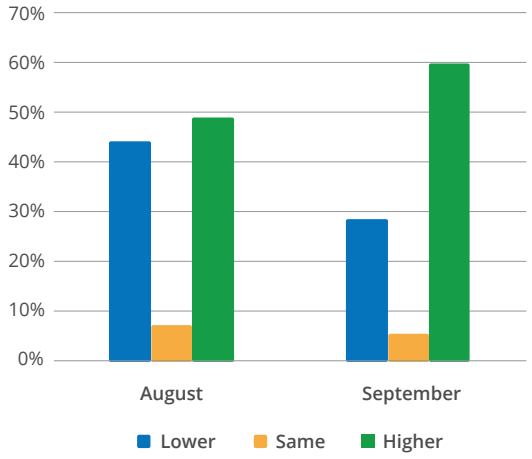




of 2020/21 increased (decreased) to about 36% (52%) during the September interview. On expected revenue, we observed that the share of households anticipating reduction in 2020/21 agricultural season's sales revenue decreased from 29% in August to 28% in September, while the share of those expecting increase in revenue from sales rose from 56% to 62% between August and September. The share of households who expect either their harvests or sales revenue in 2020 to remain the same as that of 2019 agricultural season seem stable between August and September.

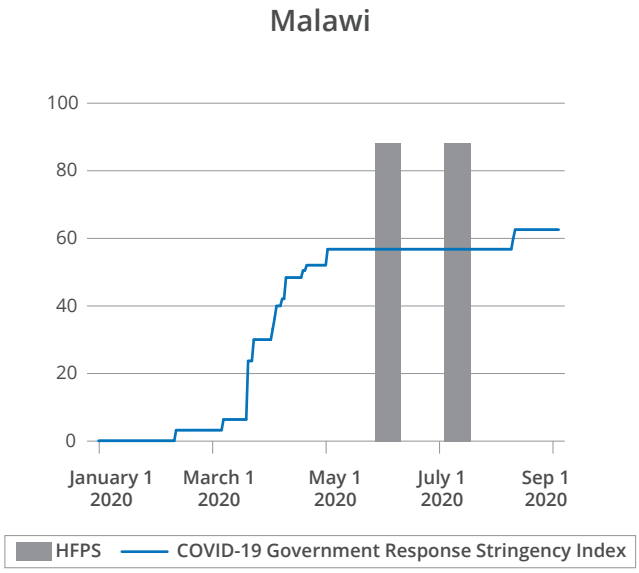
Similarly, the share of livestock farming households expecting their 2020 sales revenue to be higher than that of 2019 decreased from 44% in August to 29% in September, while those anticipating sales to be higher increased from 49% to 60% between August and September respectively. The percentage of households who expect their livestock sales revenue to stay the same decreased from 7% to 6% between August and September.

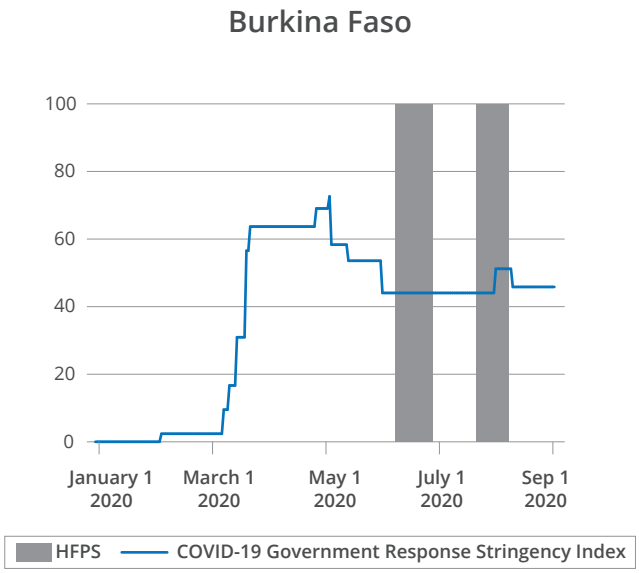
FIGURE 10: EXPECTATIONS REGARDING REVENUE FROM LIVESTOCK SALES (% OF LIVESTOCK FARMING HOUSEHOLDS)

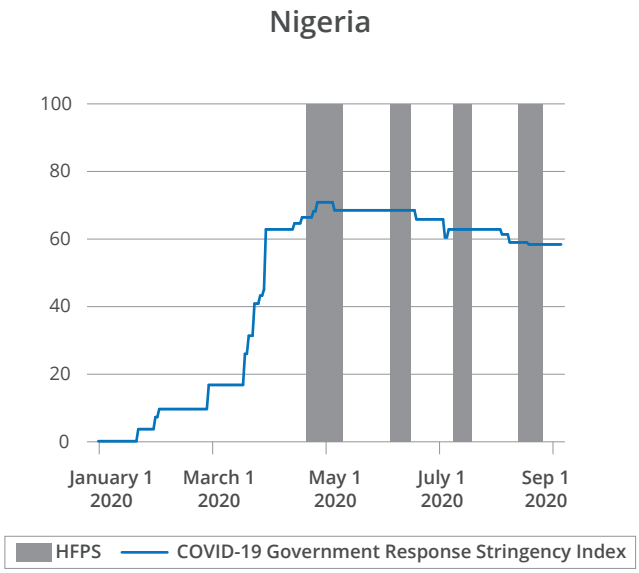


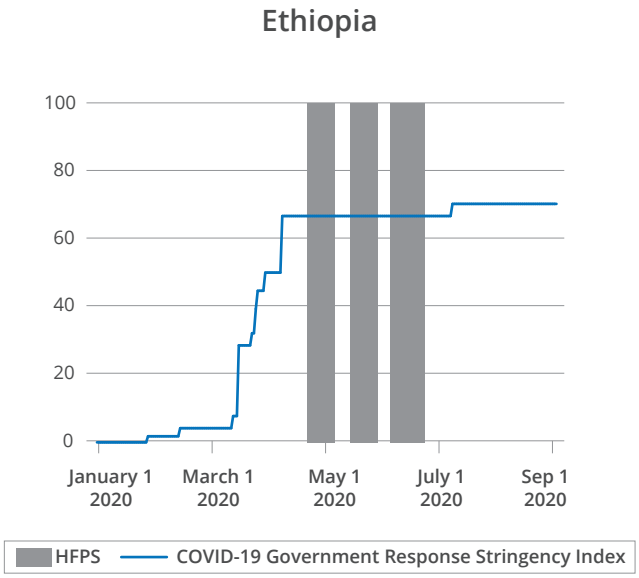
ANNEX I. COUNTRY-LEVEL COVID-19 RESPONSE AND HFPS INTERVIEW TIMING

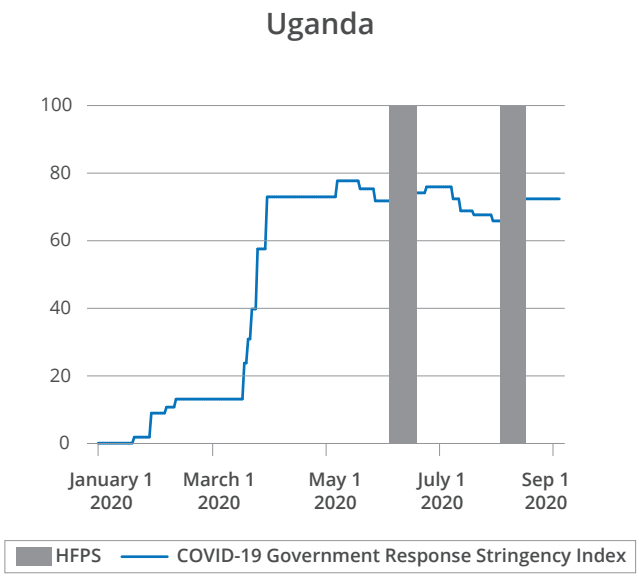
The figures below illustrate the timing of each HFPS survey round against the COVID-19 Government Response Stringency Index.[9] Only HFPS survey rounds that are analyzed in this brief are included. In all countries, subsequent survey rounds have been or will be collected. The survey round dates presented below are trimmed (5%) to eliminate outliers.











9 Thomas Hale, Sam Webster, Anna Petherick, Toby Phillips, and Beatriz Kira (2020). Oxford COVID-19 Government Response Tracker. Last updated Nov. 5, 2020.

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