

# FOOD SECURITY IN THE FACE OF COVID-19

Evidence from Africa

Akuffo Amankwah and Sydney Gourlay



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As the pandemic started spreading to sub-Saharan Africa, one concern has been that of its possible impacts on food security, as the crisis has the potential to exacerbate an already fragile food security environment. Prior to the onset of the COVID-19 pandemic, 55.6% of the sub-Saharan African population were moderately or severely food insecure.<sup>1</sup> The health implications, movement restrictions, food supply disruptions, and other shocks brought on by the pandemic may inflict increasing food security concerns across the region.

Data from a series of high-frequency phone surveys (HFPS) allows for the analysis of food security challenges in the midst of the COVID-19 environment. The HFPS data used here have been collected primarily by national statistics offices<sup>2</sup> in five SSA countries, with support from the World Bank's Living Standards Measurement Study (LSMS) and the Poverty and Equity Global Practice. These five countries are part of the LSMS-Integrated Surveys on Agriculture (LSMS-ISA) project that fields longitudinal, multi-topic household surveys with a focus on agriculture. Thus, the households included in the HFPS were also interviewed as part of the LSMS-ISA panel survey conducted in these countries. A uniform methodology was adopted in sampling, weighting, and implementing the HFPS 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 governmental COVID-19 response).

The analysis from the HFPS shows that **over 105 million adults are affected by moderate or severe food insecurity across Uganda, Nigeria, Malawi, Ethiopia, and Burkina Faso following the onset of the COVID pandemic**, estimated using the Food Insecurity Experience Scale (FIES), the official methodology for measuring SDG Indicator 2.1.2.<sup>3</sup> In what follows, changes in food security from pre-COVID periods and the prevalence of food insecurity are explored, as well as the mechanisms behind food insecurity in the post-pandemic world.

## PREVALENCE OF FOOD INSECURITY: PAST AND PRESENT

Food security has been a significant concern for the region, even before the onslaught of challenges brought about by the COVID-19 pandemic. According to the State of Food Security and Nutrition in the World (2020), the prevalence of moderate or severe food insecurity in the countries reviewed here was as high as 82.2% of the population in the years preceding the pandemic (Burkina Faso - 47.7%; Ethiopia - 57.9%; Malawi - 82.2%; Nigeria - 44.1%; Uganda - 66.3%).<sup>4</sup>

1 FAO, IFAD, UNICEF, WFP and WHO. 2020. The State of Food Security and Nutrition in the World 2020. Transforming food systems for affordable healthy diets. Rome, FAO.

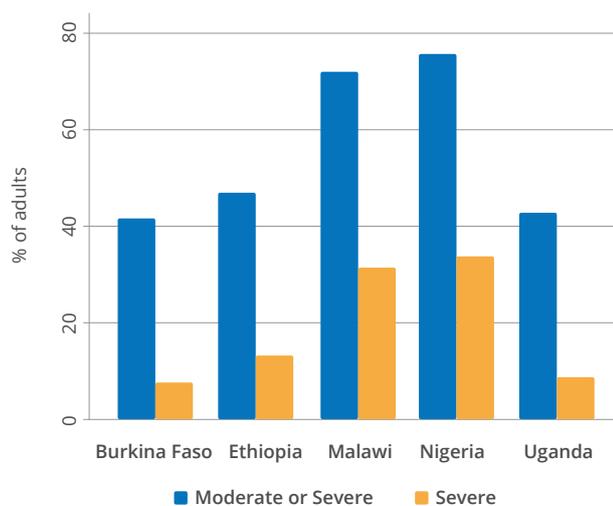
2 The Ethiopia HFPS was implemented by a private survey firm, not the national statistics office.

3 The FIES questionnaire module used for SDG reporting uses a 12-month reference period. However, the LSMS-supported high-frequency phone surveys used a reference period of 30 days in order to assess food security and changes therein related to the COVID-19 pandemic period. The FIES questionnaire module is available at <http://www.fao.org/in-action/voices-of-the-hungry/fies/en/>

4 FAO, IFAD, UNICEF, WFP and WHO. 2020. The State of Food Security and Nutrition in the World 2020. Transforming food systems for affordable healthy diets. Rome, FAO.

By employing the FIES methodology, we estimate the overall food insecurity rates for both moderate and severe food insecurity among the adult population *after* the onset of the pandemic.<sup>5,6</sup> As illustrated in Figure 1, **over 70% of adults in Nigeria and Malawi are impacted by moderate or severe food insecurity, as well as 47% in Ethiopia, 42% in Burkina Faso, and 43% in Uganda.** Over 30% of adults in Nigeria and Malawi are plagued by severe food insecurity, as well as 9% of Ugandan adults, 8% of Burkinabe adults, and 13% of Ethiopian adults.<sup>7</sup>

FIGURE 1. PREVALENCE OF MODERATE OR SEVERE FOOD INSECURITY, BY COUNTRY



5 Prevalence of moderate and severe food insecurity estimated according to the FIES methodology, which employs item response theory. For details on the methodology, visit <http://www.fao.org/in-action/voices-of-the-hungry/en/>.

6 Note that figures on FIES reflect the following survey rounds unless otherwise indicated: Burkina Faso – Round 2 (August); Uganda – Round 1 (June 2020); Nigeria – Round 2 (June 2020); Malawi – Round 1 (May/June 2020); Ethiopia – Round 3 (June 2020). Estimates are made for the adult population rather than the population as a whole as relevant for SDG 2.1.2, in order to address inconsistencies in the phrasing of FIES questions across countries. Malawi (Round 1), Nigeria (Round 2), and Uganda (Round 1) phrased the FIES questions such that they asked specifically about adult household members. In subsequent survey rounds, these questions were revised to ask about any household member, regardless of age. Ethiopia and Burkina Faso surveys ask about any household member.

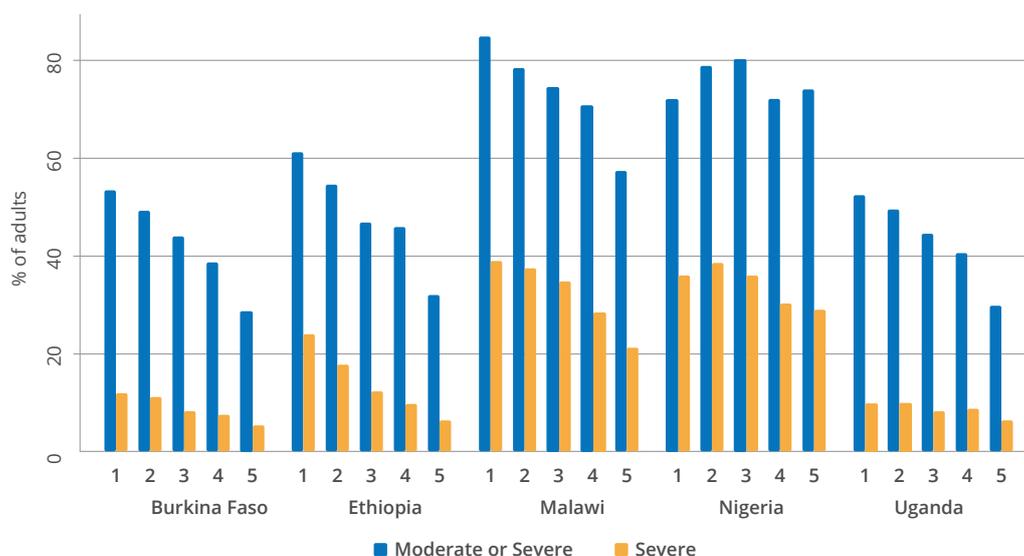
7 Given the different reference population and reference period of the HFPS FIES questions vis-à-vis the standard FIES and SDG reporting methodology, the estimates presented here are not comparable to the pre-COVID estimates reported in the State of Food Security and Nutrition in the World (2020).

The HFPS data also reveals a relationship between food insecurity and well-being across all countries. Leveraging the consumption indices of the pre-COVID LSMS-ISA surveys, we estimate the prevalence of food insecurity by pre-COVID consumption quintile. Figure 2 illustrates this relationship, with **households in the lower end of the consumption distribution presenting a higher rate of both moderate and severe food insecurity**, particularly in Burkina Faso, Ethiopia, Malawi, and Uganda.

**Food insecurity appears to affect rural households disproportionately vis-à-vis urban households in Burkina Faso, Ethiopia and Malawi**, with a greater share of the rural population experiencing moderate or severe food insecurity (Figure 3). In Nigeria and Uganda, there is no significant distinction between the prevalence of moderate or severe food insecurity across urban and rural populations. The rate of severe food insecurity between urban and rural populations is only statistically different in Malawi, with 33.4% of rural adults and 23.4% of urban adults experiencing severe food insecurity.

What exactly does food insecurity look like on a daily basis? The FIES questions, which include eight questions on behaviors related to household food availability, allow us to assess the degree to which households restricted food consumption. As illustrated in Figure 4, **food consumption was a source of worry for the majority of households in all countries**, with as many as 71% of households having at least one member worrying they would

FIGURE 2. PREVALENCE OF FOOD INSECURITY, BY PRE-COVID CONSUMPTION QUINTILE



not have enough food to eat (Burkina Faso – 69%; Ethiopia – 57%; Malawi – 71%; Nigeria – 71%; Uganda – 58%). The majority of households also had a member that was forced to skip at least one meal in Malawi and Nigeria, while more than 30% of households had a member that skipped a meal in Burkina Faso, Uganda, and Ethiopia. Food consumption was severely limited for a large share of households, with approximately 36% of households having

at least one member going at least one whole day without eating in Malawi and Nigeria. Eleven percent of households in Ethiopia, 11% of households in Uganda, and 20% of households in Burkina Faso also had a member that went at least one whole day without eating.

Food insecurity concerns pre-date the COVID-19 crisis, so how much of the food insecurity observed today can be attributed to the current crisis? Leveraging the

FIGURE 3. PREVALENCE OF FOOD INSECURITY, BY RURAL/URBAN

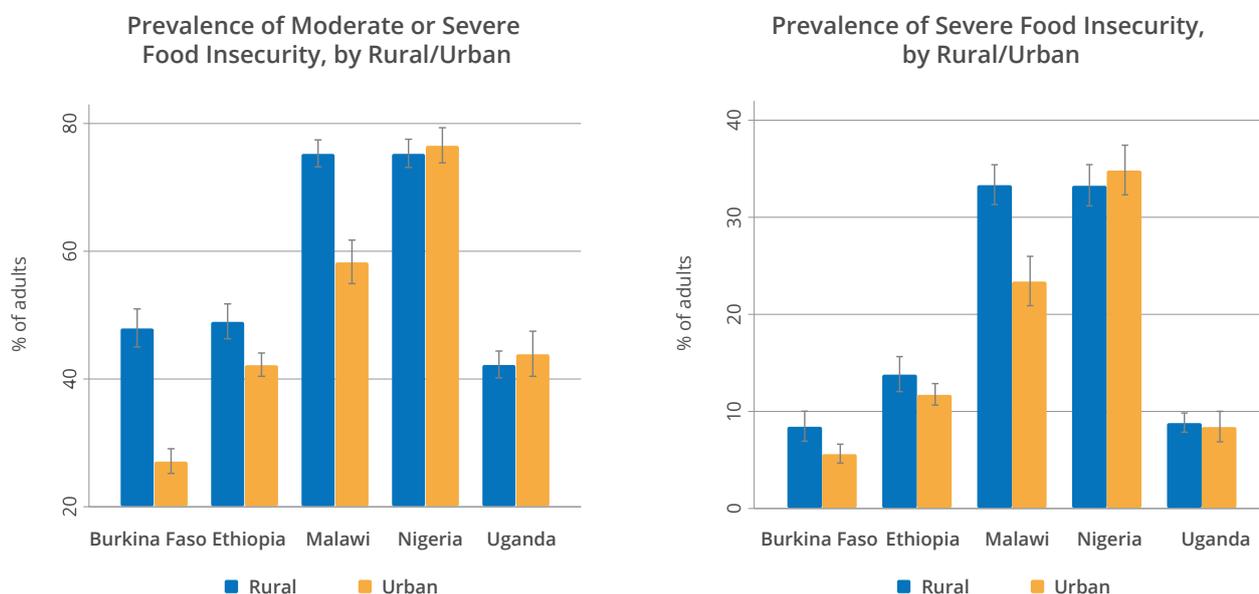
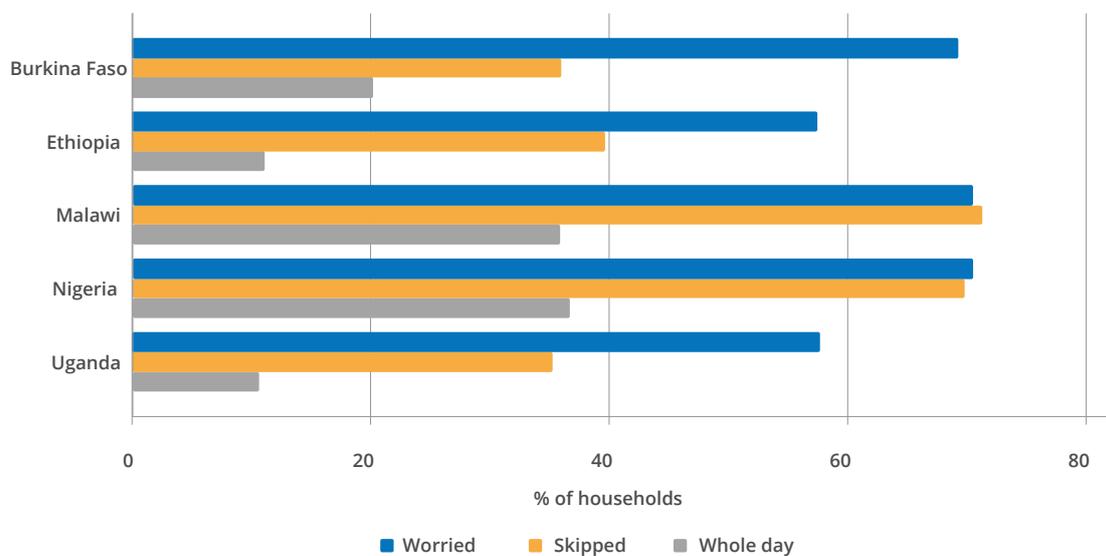


FIGURE 4. INCIDENCE OF HOUSEHOLDS WITH A LEAST ONE MEMBER WORRIED ABOUT FOOD, SKIPPING A MEAL, OR GOING A WHOLE DAY WITHOUT EATING, IN THE 30 DAYS PRECEDING THE INTERVIEW



panel nature of the HFPS data, and the consistent FIES questionnaire implementation in Nigeria, we compare the food insecurity rates before COVID-19 (from the 2018-19 GHS-Panel) and after the onset of the pandemic (from the HFPS).<sup>8</sup> Data from the 2018-19 GHS-Panel, supported by the LSMS-ISA, suggest that 48.5% of the Nigerian adult population suffered from moderate or severe food insecurity, while 14.0% suffered from severe food insecurity.<sup>9</sup> The HFPS, implemented following the onset of the COVID-19 pandemic, suggests that the prevalence of food insecurity amongst the adult population in Nigeria has increased to 75.5% (moderately or severely food insecure) and 33.5% (severely

food insecure).<sup>10</sup>

Figure 5 depicts, at the household level, the movement from a food insecure to a food secure status, and vice versa, for both moderate or severe and severe food insecurity in Nigeria.<sup>11</sup> **Forty-three percent of households that were not severely food insecure in 2018 were estimated to be severely food insecure in June 2020,** representing a dramatic increase likely attributable at least in part to the COVID-19 pandemic. The incidence of moderate or severe food insecurity among the sample also increased significantly, with 71% of households that were considered as food secure in July 2018 were moderately or severely food insecure in June 2020.

8 This analysis is only possible for Nigeria given the comparability of the questionnaires pre- and post-COVID.

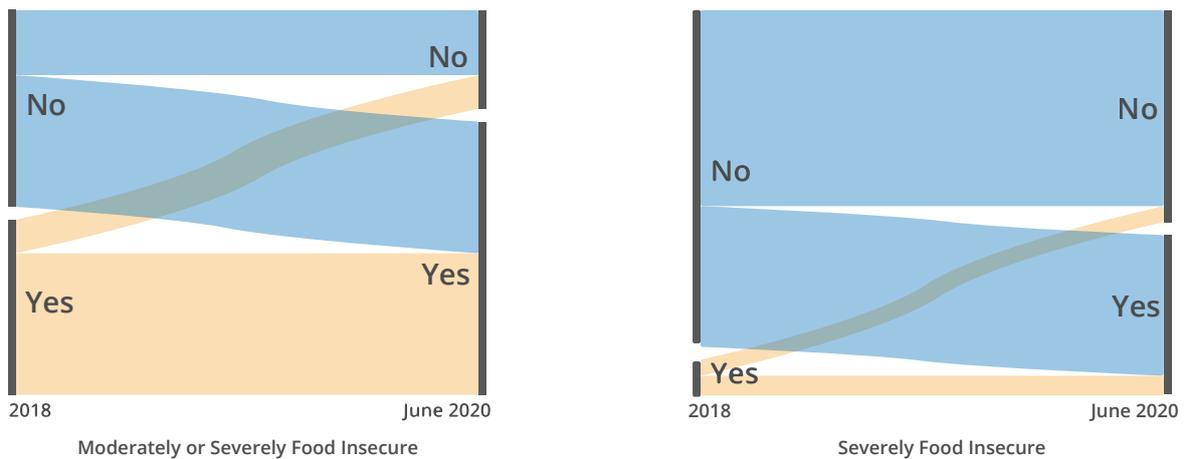
9 Figures are reported from the post-planting visit of the GHS-Panel for better comparability with the HFPS interview timing.

10 As a robustness check, we also limited the analysis sample to households that were interviewed in July 2018 to be compared with the estimates from HFPS interviews conducted in June 2020, both in the pre-harvest phase of the agricultural calendar (resulting in a sample of 892 households). The 2018-19 data suggests that 46.8% (13.9%) of adults were moderately or severely (severely) food insecure. The post-COVID-19 outbreak data suggests a significant increase in the prevalence of food insecurity since July 2018, with 75.1% of adults being moderately or severely food insecure and 32.6% severely food insecure.

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11 For the purposes of comparing food insecurity status over time, households are assigned to a food insecurity class based on the probability that adult members are food insecure. That is, if the adult members of a household have a probability greater than 50% then they are moderately or severely food insecure, and the household is classified as such.

FIGURE 5. TRACKING FOOD INSECURITY OVER TIME FOR NIGERIA.



The figures compare the food insecurity status of a subset of Nigerian households in 2018/2019 and June 2020 (graphic unweighted)

Of the households that were not severely food insecure in 2018 but became severely food insecure in June 2020, 35% resided in urban areas, significantly higher than the share of urban households that were not severely food insecure in both 2018 and June 2020, suggesting that urban households in Nigeria are disproportionately affected by severe food insecurity following the onset of the pandemic. Conversely, those in the wealthiest consumption quintile were disproportionately food secure following the pandemic, when looking both at severe and moderate food insecurity. Patterns also emerge across Nigeria’s geography, with the South West seeing more households shift to severe food insecurity than remaining not severely insecure, and the North Central zone seeing more households shift to moderate or severe food insecurity than remaining secure.<sup>12</sup>

12 More detailed findings on the characteristics of households shifting from a food secure to insecure status have been omitted for brevity, but are available upon request.

## UNPACKING FOOD INSECURITY IN THE COVID-19 WORLD

Of the many shocks endured by households since the onset of the pandemic, increase in the price of major food items consumed by the household was one of the most prevalent. In Malawi, 66% of all households reported an increase in the price of key consumption goods (July 2020), while the same was true for 90% of Nigerian households (July 2020) and 53% of households in Burkina Faso (August 2020). Increases in the market price of consumption goods will harm the food security of households, particularly those without the ability to produce their own food or in the lower end of the consumption distribution. While there seem to be similar distribution of households reporting experiencing shocks due to increase in the price of food items consumed across rural-urban divide in Nigeria and Burkina Faso, the impact appears to be more severe among rural households in Malawi (Figure 6).

FIGURE 6. PREVALENCE OF FOOD PRICE SHOCKS, BY COUNTRY (LEFT) AND URBAN/RURAL STATUS (RIGHT)

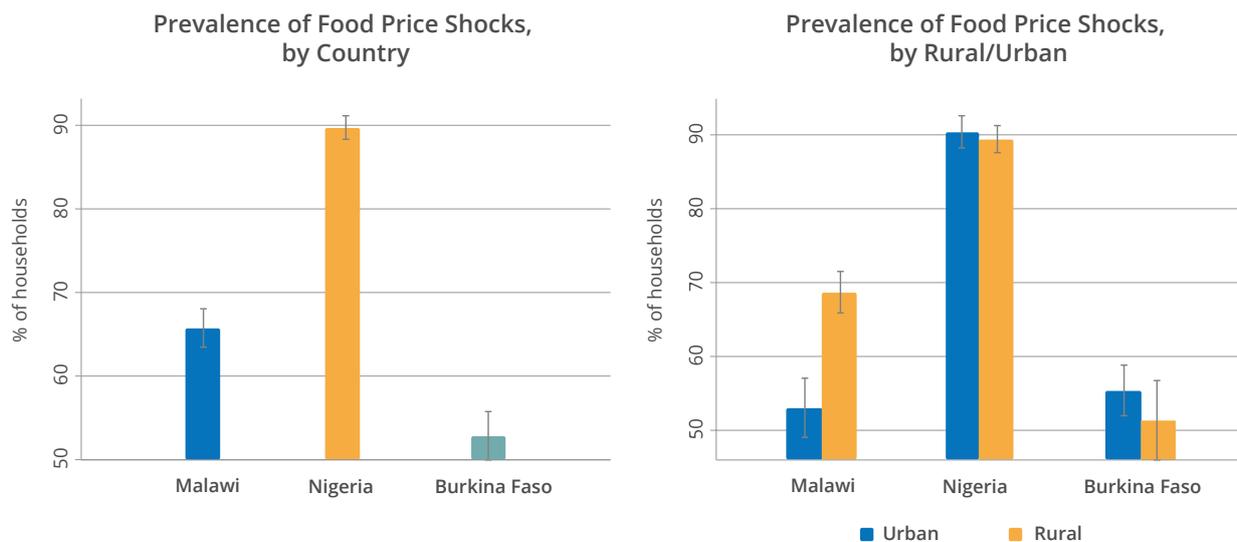
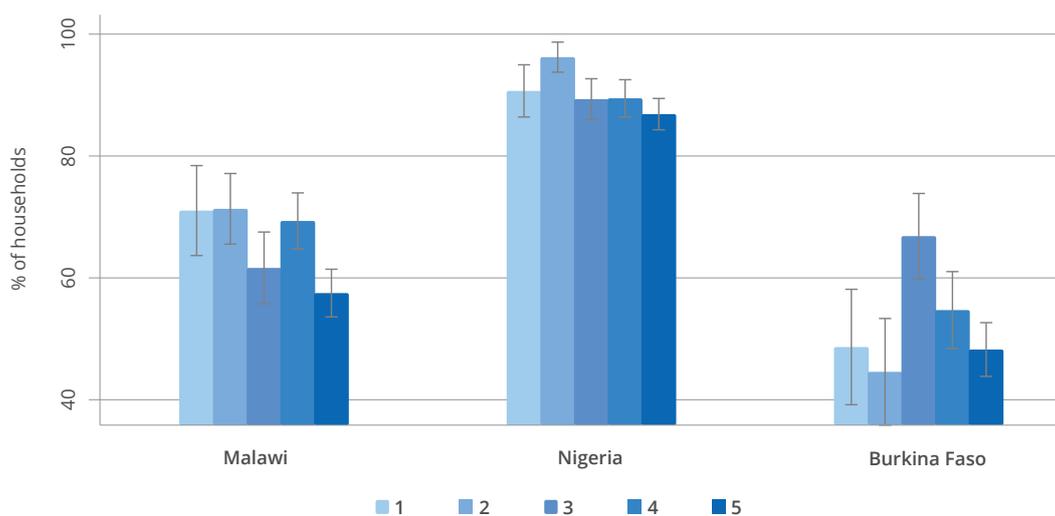


FIGURE 7. PREVALENCE OF FOOD PRICE SHOCKS TO MAJOR CONSUMPTION GOODS (% OF HOUSEHOLDS), BY CONSUMPTION QUINTILE



Analysis of the incidence of price shocks across the consumption distribution reveals a statistically similar incidence across consumption quintiles, particularly for Nigeria and Burkina Faso (Figure 7). **In Malawi, households in the wealthiest quintile experienced a lower incidence of food price shocks**, suggesting that poorer households suffered disproportionately from food price shocks.

**Food consumption, though a basic need, is one of the levers used by many households to cope with shocks of all types.** In July 2020, 66% of Nigerian households reduced food consumption as a coping mechanism in response to a variety of shocks. The same is true for 9% of households in Malawi and 16% of households in Uganda. Nine percent of households limited food consumption in response to in-

FIGURE 8. PERCENT OF HOUSEHOLDS REDUCING FOOD CONSUMPTION TO COPE WITH SHOCKS OVER TIME, BY CONSUMPTION QUINTILE.

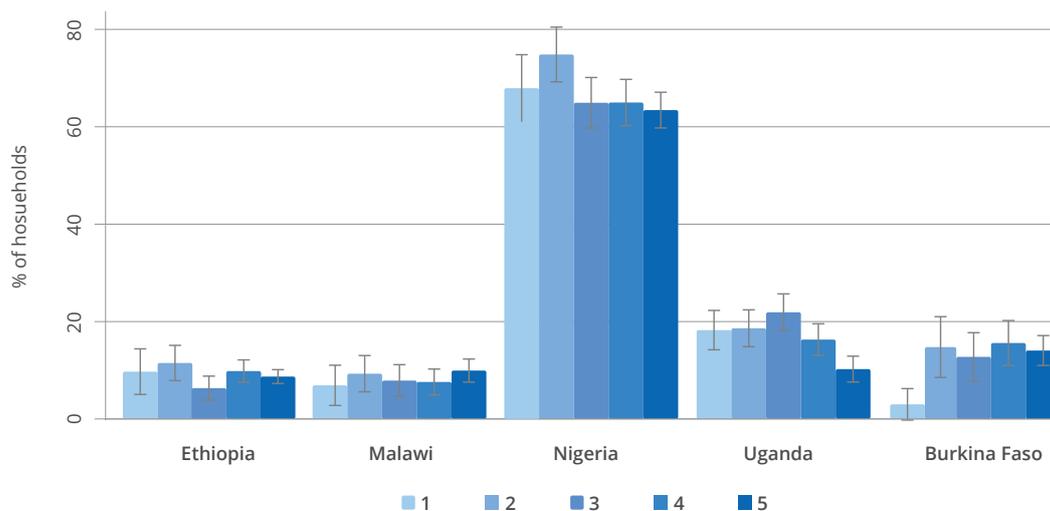
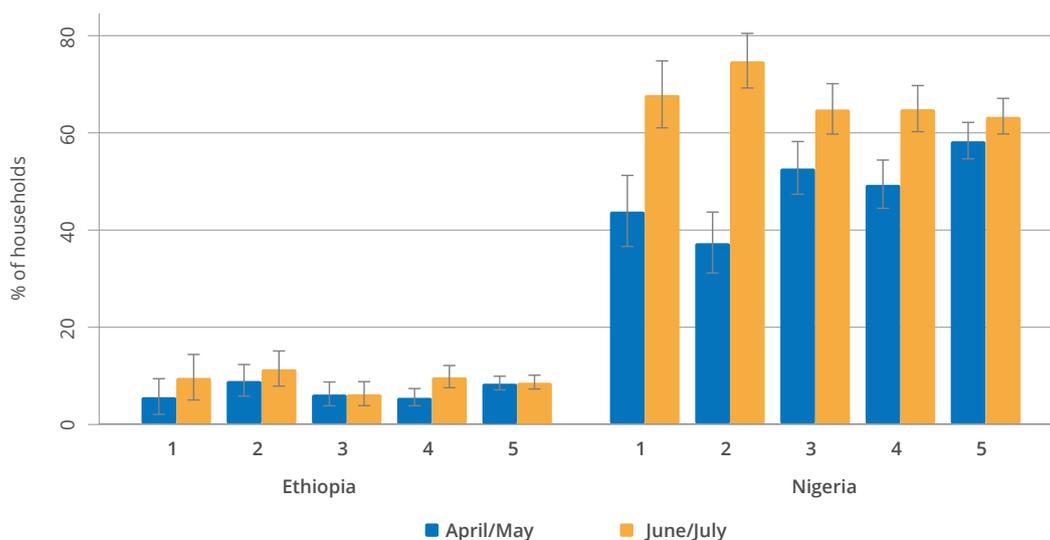


FIGURE 9. PERCENT OF HOUSEHOLDS REDUCING FOOD CONSUMPTION TO COPE WITH SHOCKS OVER TIME, BY CONSUMPTION QUINTILE.



come loss in Ethiopia (June 2020).<sup>13</sup>

The HFPS provides evidence that the restriction of food consumption as a means of coping with shocks is a behavior observed in households across the consumption distribution. As illustrated in Figure 8, there is a fairly consistent implementation of food restriction across pre-COVID-19 wealth quintiles. There is evidence, however, that

as the pandemic progresses, more households in the lower quintiles are restricting food consumption due to shocks. Figure 9 presents the share of households that reduced food consumption in two consecutive months for Nigeria and Ethiopia.<sup>14</sup>

In both countries, the prevalence of this food reducing behavior increased in the second month of interview, and it in-

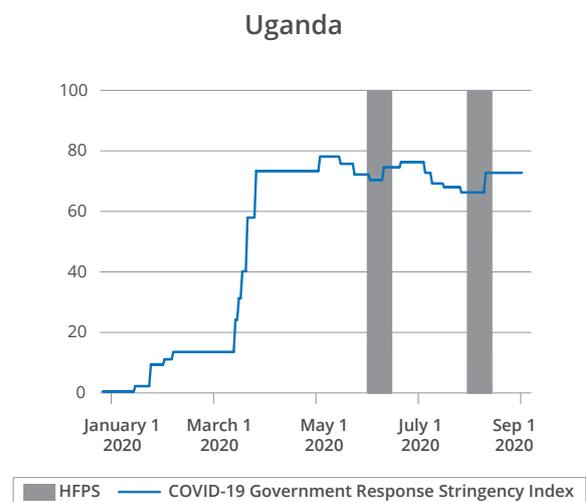
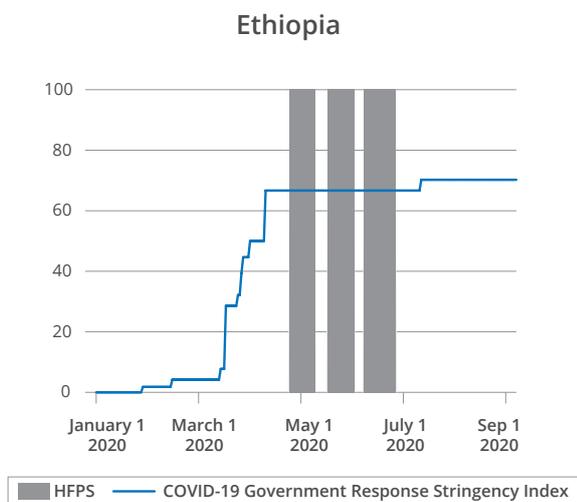
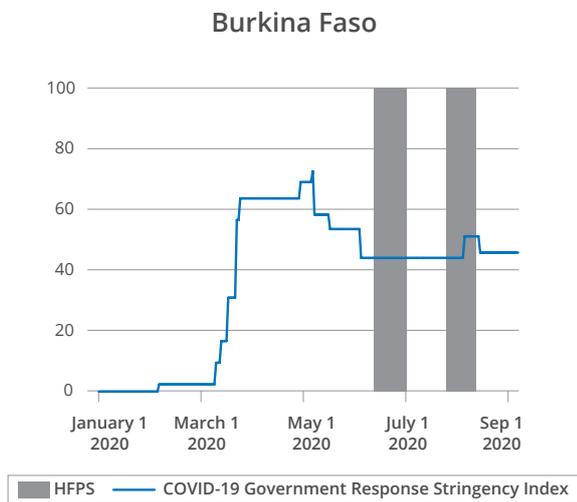
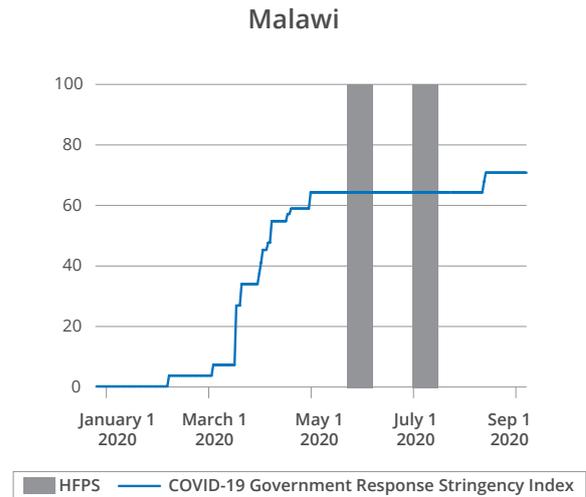
13 In Ethiopia, coping mechanism questions were presented to respondents in the context of their response to income loss rather than to shocks in general.

14 Ethiopia and Nigeria were the only two countries to include the relevant data in more than one interview, as of the date of publication.

creased more for households on the low end of the consumption distribution. The change was extremely pronounced in Nigeria, where there is a **dramatic increase in the restriction of food consumption of the households in the poorest two quintiles** as the pandemic state extended. This may suggest that the longer the COVID-19 environment persists, the more vulnerable households will be impacted, and potentially to a disproportionate degree.

## ANNEX I. COUNTRY-LEVEL COVID RESPONSE & HFPS INTERVIEW TIMING

The figures below illustrate the timing of each HFPS survey round against the COVID-19 Government Response Stringency Index.<sup>15</sup> 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.



15 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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