

# EVIDENCE OF IMPACT OF THE COVID-19 PANDEMIC ON DIET QUALITY, FOOD SECURITY AND NUTRITION IN LOW- AND MIDDLE-INCOME COUNTRIES

Nutrition Research Facility – May 2021

Despite significant progress over the last decades, many low and middle-income countries (LMICs) still encounter high levels of malnutrition, often combining the triple burden of undernutrition, micronutrient deficiencies and overweight and obesity.

The outbreak of the COVID-19 pandemic in the early months of 2020 and associated containment measures have raised serious concerns about the evolution of the malnutrition burden in LMICs. Indeed, it was anticipated that the COVID-19 crisis would have adverse effects on many aspects of food and health systems.

Approximately one year after lockdowns and movement restriction measures were first adopted in many countries throughout the world, the Nutrition Research Facility (NRF)\* synthesised and analysed the available literature that documents these impacts on diet quality, food security and nutrition (see box 1).



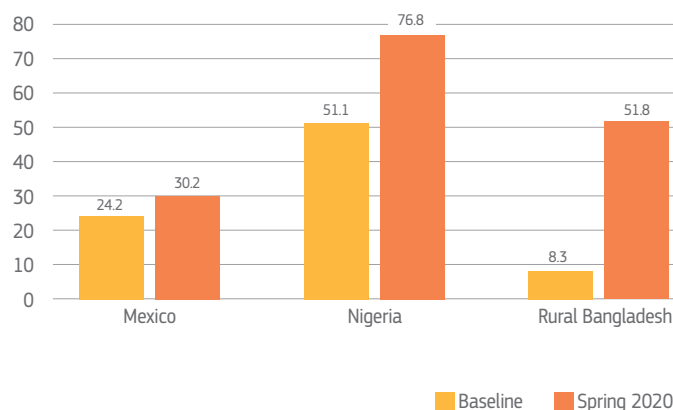
**This review highlights that the COVID-19 pandemic has increased food and nutrition insecurity in LMICs, mainly through income reductions linked to containment measures; but also that policy responses may have limited some of the adverse effects of the sanitary crisis on malnutrition. However at this stage, the data available for analysing both the impact of the pandemic and the efficiency of policy responses on nutrition outcomes are scarce.**

## Evidence n°1: the COVID-19 crisis has increased food insecurity in LMICs

There is strong evidence that, overall, the food insecurity experienced by populations in LMICs has risen significantly during the crisis. This is shown in several studies across different settings (where baseline data were available) by an increase in the percentage of households experiencing moderate and severe food insecurity – measured either by the Food Insecurity Experience Scale (FIES) or the Household Food Insecurity Access Scale (HFIAS), such as:

- a 25% increase in June 2020 compared to 2018 in Mexico (national survey)<sup>1</sup>;
- a 50% increase in June 2020 compared to 2018 in Nigeria (national survey)<sup>2</sup>;
- a 6 times increase during the lockdown period (May-June 2020) compared to 2017-2019 in a rural area of Bangladesh<sup>3</sup>.

Percentage of surveyed households experiencing moderate and severe food insecurity before and during the COVID-19 crisis



(\*) The Nutrition Research Facility pools expertise from European academia to provide, upon request from the European Commission, improved knowledge and evidence for policy and programme design, management and monitoring & evaluation in order to reach better nutrition outcomes. It is established in the framework of the Knowledge and Research for Nutrition project of the European Commission. Contact: [nrf@agrinatora-eu.eu](mailto:nrf@agrinatora-eu.eu)

This experience of food insecurity takes multiple forms, with reductions in food quantity as well as in diet quality and diversity, as observed in various countries and population groups. For instance, a survey in Uganda and Kenya indicated that the frequency of “running out of food” or “going without eating for a whole day” events more than doubled during the COVID-19 crisis (April 2020) compared to the pre-COVID period<sup>4</sup>. Another study on urban vulnerable households in Ethiopia reported a three-time increase in the proportion of households

consuming less than three meals a day as a consequence of COVID-19 restrictions<sup>5</sup>. Additionally, in some Indian states, 8% of surveyed farm households reported eating less food since the pandemic<sup>6</sup>. Moreover, a shift from more expensive foods (fruit, vegetable, pulses, nuts, animal products) towards cheaper and less nutritious ones (staple foods) was observed in Guatemala<sup>12</sup>, in urban<sup>7</sup> and rural<sup>8</sup> Ethiopia, in Uganda and Kenya<sup>4</sup>, as well as in India among farm households<sup>6</sup>.

### Box 1 - A systematic literature review with insights from two country case studies in Ethiopia and Guatemala

A systematic literature review was carried out to identify the documented effects of the COVID-19 pandemic on diet quality, food security and nutritional status of children under-5 and women of childbearing age in LMICs. A review protocol including search strings and inclusion and exclusion criteria was developed. The list of food and nutrition security indicators considered was guided by the “UNSCN framework of impact of COVID-19 pandemic on food environments”<sup>9</sup>. Peer-reviewed studies were searched in MEDLINE (Pubmed®), EMBASE®, Scopus® and Web of Science®. Grey literature was retrieved by screening a list of targeted institutions’ websites. The search (most recently updated in January 2021) yielded 1,964 single records. After exclusion of studies based on title/abstract (n=1,903) and full texts (n=26), 35 studies were retained for synthesis and analysis, covering 13 countries (Bangladesh, n=2; Côte d’Ivoire, n=1; Ethiopia, n=15; India, n=3; Kenya, n=1; Mexico, n=1; Nepal, n=2; Nigeria, n=7; Senegal, n=1; South Africa, n=1; Uganda, n=1; Vanuatu, n=1 and Zambia, n=1). Quality appraisal was based on the grid for observational studies proposed by the Joanna Briggs Institute<sup>10</sup>. In addition, two specific country case studies were conducted (Ethiopia and Guatemala) to gain a more in-depth understanding of COVID-19 impact on nutrition and of the implementation of mitigating interventions. A draft report of the evidence retrieved was submitted to critical analysis by a panel of key stakeholders in those countries, to assess and complement the information. The full reports of the literature review and country case studies<sup>11,12,13</sup> are available upon request to NRF\*.

### Evidence n°2: income loss due to COVID-19 prevention measures is the main driver of aggravated food insecurity

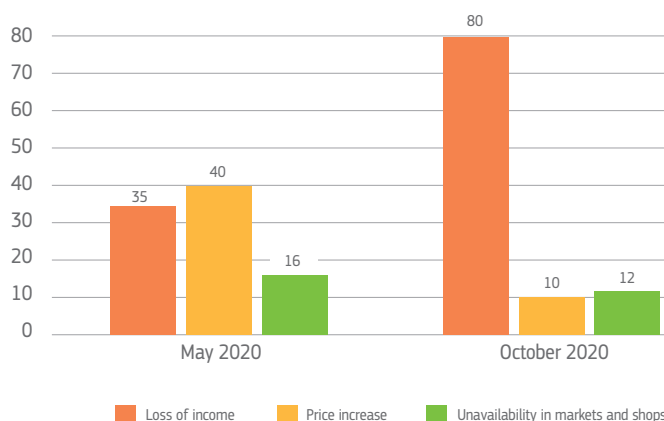
The main driver of higher food insecurity and lower diet diversity is undoubtedly a reduction of households’ income linked to lockdowns and consequent reduced economic activity, as reflected in 22 of the 35 studies retrieved. As an illustration, in Bangladesh, an interview of more than 2,400 women revealed a drop of the median monthly family income from USD212 at baseline to USD59 during the lockdown, a loss of income that concerned almost all households<sup>3</sup>. Such an income reduction was also experienced between March and May 2020 by 80% of the respondents of a nationally representative survey in Nigeria<sup>2</sup> and by 85% of rural Nepalese households<sup>14</sup>. Both urban and rural areas were hit, though in different ways (see box 2).

Other barriers to food access, related to the physical availability of food and to an increase in food prices, could also be observed at the early stages of lockdowns and travel restrictions, but were mainly transitory. Higher food prices were reported by a large share of the surveyed individuals in Nigeria, Bangladesh, Côte d’Ivoire and Guatemala<sup>12,15,16,17</sup>. The food consumer price index measured by the Nigeria Bureau of Statistics actually increased by 24% over a few months<sup>15</sup>.

The effect of market closures or lack of replenishment in shops on the ability to buy food was reported in Ethiopia, Senegal, Zambia, India or Nepal<sup>14,18,19,20,21</sup>. But it generally had a limited impact, except in remote areas, such as the outer islands of Vanuatu, for instance, where food supply has been a major issue<sup>22</sup>.



Main reasons for not being able to purchase a basic food basket in Ethiopia during the COVID-19 crisis (percentage of surveyed households)





## Box 2 - Specific impact of the COVID-19 crisis in rural areas

In rural areas, similarly to urban settings, difficulties accessing food due to unavailability on markets or high prices were encountered, as reported for instance by farmers in the Haryana state of India<sup>20</sup>. The reduction of income concerned rural households as well, as witnessed by more than two thirds of farmers interviewed in Kenya and Uganda<sup>4</sup>. This could be due not only to the overall reduction of business activities – especially difficulties encountered selling food produced because of travel restrictions, as experienced by farmers of the Odisha state of India<sup>20</sup> – but also to a cessation of remittances from urban to rural areas<sup>4</sup>. Sometimes an inverse trend could be observed, for instance, some farmers in the Central Rift Valley of Ethiopia were able to sell their vegetables at a higher price because of the disruption of trade activities between Addis Ababa and other regions<sup>7</sup>.

The limitations to “external” food access that affected most rural households could be, to some extent and in the short term, compensated by self-consumption, as could be inferred from a survey in Ethiopia<sup>18</sup>, where food insecurity did not deteriorate further in rural areas.

According to a study of agriculture value chains conducted in Nepal, traditional agriculture networks were more resilient to disturbance than agri-business models<sup>21</sup>. Such an analysis seems to be corroborated in Kenya, a country that is highly dependent on food imports and has been more vulnerable than its neighbours to food market fluctuations<sup>4</sup>. In Ethiopia, early indications suggest that food value chains have been largely resilient<sup>7,23</sup> and this could partly be attributed to the swift agricultural policies put in place by the government at the onset of the outbreak<sup>13</sup>.

Finally, the COVID-19 crisis may have had some completely unexpected and non-predictable effects. For instance, a transient disruption of the dairy market occurred in April-May 2020 in Ethiopia, because of rumors of COVID-19 transmission through raw milk. This negatively affected distributors, collectors and farmers in the dairy sector and resulted in more milk processed, increased butter supply and lower prices, increased self-consumption and greater waste<sup>24,29</sup>.

## Evidence n°3: efficient mitigation measures can be implemented to prevent a worsening of the food security situation of the most vulnerable people in times of crisis

Unsurprisingly, the most vulnerable populations, such as women-headed households, informal workers and among them young adults, those who already suffered food insecurity before the pandemic, were most severely hit by the crisis<sup>24,25,26,27</sup>. In addition, the health and nutrition services provided by healthcare centres were also affected (see box 3), further increasing the risk of malnutrition, especially among children and pregnant women.

However, this review also highlights, firstly, that pre-existing and well-functioning social protection and food distribution programmes can be a strong asset to cope with such a crisis; and secondly, that efficient mitigation measures can be put in place relatively quickly to prevent a worsening of the food security situation of the most vulnerable.



In Ethiopia, one of the responses of the government to the outbreak has been to extend the long-lasting Productive Safety Net Programme (PSNP) and its more recent urban counterpart (UPSNP) – which are directed to disadvantaged households – to more beneficiaries. It has been shown, both using surveys and macroeconomic simulations, that such programmes sustain income and food demand while preventing the food security from worsening among beneficiaries<sup>28,29</sup>.

In one of the poorer states of India, Odisha, the public food distribution system seems to have prevented a further aggravation of food insecurity<sup>20</sup>. In Guatemala, the usual April-to-August peak in acute undernutrition among children under-5 due to the “hunger season” was not observed in 2020, an effect which could putatively be attributed to the additional support given to poor households as part of the COVID-19 government response<sup>12</sup>.



The case studies conducted in Guatemala<sup>12</sup> and Ethiopia<sup>13</sup> show that governments were prompt in implementing policies to mitigate the deleterious effects of the COVID-19 pandemic and associated containment measures, in various sectors (social protection, agriculture, market, nutrition...), some of them were specifically targeted to vulnerable populations more at risk with food insecurity. In Guatemala, a number of aid operators reported having adjusted their programmes to support governmental measures in a synergistic and complementary way, and preliminary information seems to indicate that this coordinated combination of efforts had a real alleviating effect<sup>12</sup>.

Finally, in both countries, the widespread disruptions of health and food systems that were feared did not occur. How far this can be attributed to specific policies still remains to be evaluated.

### Box 3 - Basic health and nutrition services have also been impacted by the pandemic

The COVID-19 pandemic has strongly affected the activities of health centres in LMICs, in various ways. Firstly, health centres' staff have been strongly mobilised for outreach activities in relation to the prevention of COVID-19 transmission, thus becoming less available for other tasks (for example, 44% of households interviewed in Nigeria in July said the lack of medical staff was the main reason for delays in immunization of their children<sup>2</sup>).

Secondly, travel restriction measures resulted in a poorer transport network, which have made it more difficult for some people to access health centres when needed (as shown for instance in Zambia<sup>19</sup>). Thirdly, the perceived risk of exposure to the virus by visiting health centres and being in contact with sick people may have discouraged a number of individuals from accessing medical services, as reported in one Ethiopian survey<sup>5</sup>. Nevertheless, the implementation of mitigation strategies by health centres to overcome those constraints has also been observed, such as performing rapid malnutrition checks or providing basic health services during home visits in the framework of COVID-19 awareness campaigns<sup>30</sup>.



#### Evidence n°4: data that are available and can be exploited for the purpose of analysing the impact of the COVID-19 pandemic on nutrition in LMICs are relatively scarce

This review also highlights that, despite a considerable effort to synthesise available information during the crisis, the data that are available and can be exploited for the purpose of analysing the impact of the COVID-19 pandemic on nutrition in LMICs are relatively scarce. In particular, no data on the nutritional status of children under-5 and women of childbearing age was available (except in Guatemala). A number of limitations were experienced:

- First, in many instances, a lack of baseline or time-series data with consistent methodologies made it difficult to compare the nutrition situation before and during the crisis, as well as to disentangle other sources of variation and eliminate possible confounding factors;
- Second, possible bias associated with the methods used to collect data, mainly through phone or online surveys, which may exclude certain categories of population (especially the most vulnerable), limit the kind of indicators that can be collected, as well as reduce the reliability of responses;
- Third, a time-lag between the event under scrutiny, its impact and the moment the analysis is made available, which at this stage strongly limits, for instance, the evaluation of mitigating policies that have been implemented.

The nutritional status of populations also needs to be monitored and remote anthropometric assessment conducted, possibly complemented by in-person visits. A thorough appraisal of mitigating policies is also lacking at this stage. Such an appraisal is difficult for complex interventions in times of crisis, but data collection could be improved to identify vulnerable groups and measure how interventions are successful in protecting them.

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