

# COVID-19, Food Insecurity, and Migration

Michael D Smith and Dennis Wesselbaum

National Oceanic and Atmospheric Administration, US Department of Commerce, Silver Spring, MD, USA

## ABSTRACT

In this policy piece, we investigate the coronavirus disease 2019 (COVID-19)–food-insecurity migration channel and develop a policy agenda. The interaction between COVID-19 and the drop in economic activity will lead to increased food insecurity within and across countries. Higher food insecurity may act as a multiplier for the epidemic due to its negative health effects and increased migration. Research has shown that food insecurity affects within-country and cross-border migration. Besides the mean prevalence rate, the distribution of food insecurity affects the migration decision. The impacts of COVID-19 are particularly strong for people in the lower tail of the food-insecurity distribution. In the current context, the effect of food insecurity therefore could be increased migration, including both rural–urban migration and international migration. Importantly, the crisis might lead to a structural break in migration patterns. People might avoid heavily affected COVID-19 destination countries (e.g., United States, Italy, or Spain) and move to other countries. Due to the persistent nature of migration flows, this could have long-lasting effects. *J Nutr* 2020;150:2855–2858.

**Keywords:** COVID, food security, inequality, immigration policy, migration

## Introduction

The coronavirus disease 2019 (COVID-19) pandemic and the global recession it has induced is the most serious crisis in the world economy since the end of the Second World War. Most countries in the world have imported the SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2) virus and are now beginning to deal with the societal and economic effects.

The policy response, including lockdown and social-distancing measures, have large, negative effects on economic activity. In its April World Economic Outlook (1) the International Monetary Fund predicts a decrease in the world economy of 3%, which is larger than the output loss of the Global Financial Crisis. They also predict the drop in Gross Domestic Product to be larger in advanced countries (−6.1%) than in developing countries (−1%). World trade volume is predicted to fall by 11% and consumer prices are predicted to increase by 0.5% in advanced economies and 4.6% in developing economies.

This situation is likely to be especially severe in countries with weak institutions and countries that are already dealing with crises, such as conflicts and weather-related disasters. An important channel through which COVID-19 affects people is the food and agriculture sector. Food insecurity is an increasing concern around the world, with >1 billion people affected by nutrient deficiencies (2). According to recent data, the total

number of food-insecure individuals has increased for several years, with 8.9% of the world's population (~690 million people) experiencing undernourishment in 2019 (3). David Beasley, Director of the UN's World Food Program (WFP), said that the world was “on the brink of a hunger pandemic.” The WFP predicts an additional 130 million people will be pushed into starvation by the end of 2020. Further, we already observe large increases in food prices in some countries. According to FAO data, food prices since February 2020 have, for example, increased by >10% in Belarus, Bolivia, Ghana, and Myanmar and by >20% in Guyana, Sudan, and Zambia.

In this context, the effect of food insecurity could lead to increased migration, as individuals migrate to diversify household income and smooth consumption to withstand exogenous shocks to food access (2). Food insecurity is likely to increase both rural–urban migration and international migration. The COVID-19 crisis might also lead to a structural break in migration patterns as people avoid heavily affected COVID-19 destination countries (e.g., the United States, Italy, or Spain) and move to other countries.

In this policy piece, we investigate the COVID-19–food-insecurity migration channel and develop policy recommendations.

## Epidemics, Migration, and Food Insecurity

According to the FAO (4), food insecurity is a multidimensional concept that includes availability, access, utilization, and stability. The recent COVID-19 crisis and the associated

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Address correspondence to DW (e-mail: [dennis.wesselbaum@otago.ac.nz](mailto:dennis.wesselbaum@otago.ac.nz)).

policy responses are likely to affect each of these components (5).

What does history teach us about the link between epidemics, migration, and food insecurity? The last global pandemic like COVID-19, arguably, is the Spanish flu (1918–1920), which had up to 500 million cases and 50 million deaths. Comparisons with the Spanish flu and other pandemics allow us to derive upper bounds on the economic effects, to understand key factors in how the pandemic spread, and which policy measures were effective. These insights will be important to inform policy makers today, given the great deal of uncertainty around COVID-19, even if economies are vastly different 100 y after the Spanish flu.

History suggests that hunger can worsen disease. For example, some scholars argue that bad quality of food contributed to the spread of the Spanish flu (6). Further, famines in Europe from 1550 to 1700 increased rural–urban mobility (7), which, in turn, increased the epidemics raging in cities (these epidemics included, for example, typhus and the plague in the early 17th century and smallpox in the late 17th and 18th centuries). A discussion of early 19th-century famines identifies other interactive effects (8). Data suggest that famines adversely affect health, which lowers the ability to resist a viral infection and, hence, make epidemics more severe. In addition, the increased mobility of people suffering from malnutrition increased population densities, which, in turn, increased the likelihood of infection. A similar argument is made for 19th century India (9). Famines increased food prices and led to mass unemployment, which increased rural–urban migration. Increased migration toward cities and unsafe water caused a cholera epidemic (1876–1878).

In the current crisis, food supply will suffer from disruptions to the food supply chain. These disruptions, for example, are generated by 1) producers themselves contracting the virus, 2) policy responses affecting markets, and 3) transport restrictions. Food distribution will be affected as well: transport limitations and restrictions put in place to limit the spread of the virus (e.g., social distancing, quarantine, restaurant closing). Food utilization will be adversely affected, particularly for those living in high-density areas, where conditions are already unsafe and could become worse due to lockdown measures. For example, limited access to health services, sanitation facilities, and clean water may impact food storage, processing, and sanitation (10). Moreover, we expect behavioral responses (panic buying, hoarding) to affect food prices and the availability of food. Lockdowns and increased uncertainty might lead to overeating, as stress is known to increase food consumption (11).

Policy responses implemented in many countries will have severe implications, especially in developing countries. People in developing countries rely heavily on informal labor, have low savings, and face a high population density at home. According to Gallup World Poll data from 2017, the average household in a low-income country has 3.3 adults and 1.4 children. In comparison, in high-income countries the numbers are 2.3 adults and 0.55 children. Further, lockdowns will likely affect the institutions providing help to the poor and lead to short-term rural–urban migration flows. The looming global recession will reduce remittances flowing toward low-income countries. According to Gallup World Poll data from 2017, 30% of households in low-income countries reported having received remittances. The World Bank (12) predicts for 2020 a 20% (\$142 billion) decline in remittances toward low- and middle-income countries. Overall, lockdowns might quickly lead to an

increase in food insecurity and a further spread of the virus in low-income countries.

In the United States, nutrition and obesity, which correlate with racial and ethnic inequalities, have been found to increase COVID-19 hospitalization rates (13). Simulation results for 118 low- and middle-income countries indicate that, due to disruptions in health care and access to food, child and maternal deaths could increase dramatically (up to 1,157,000 extra child deaths and 56,700 maternal deaths over 6 mo) (14). Underlying health conditions or comorbidities have been found to increase hospital admission rates and mortality from COVID-19 (15). Research in the United States shows that food insecurity is strongly correlated with these chronic health conditions, such as hypertension, coronary heart disease, stroke, cancer, asthma, diabetes, chronic obstructive pulmonary disease, and kidney disease (16, 17). Currently, data are still lacking to determine with certainty whether or not COVID-19 health outcomes are worse among the food insecure. However, since food insecurity has been shown to worsen COVID-19 comorbidities, it is likely that food insecurity also affects the severity of COVID-19 outcomes.

The interaction between COVID-19 and the drop in economic activity will lead to increased food insecurity within and across countries. Higher food insecurity may act as a multiplier for the epidemic due to its negative health effects and increased migration.

## Food Security Impacts Migration

The effects of food insecurity are likely to be heterogeneous within and across countries. According to the FAO (18), the consequences will be largest for the unemployed, workers in the informal sector, and other vulnerable groups (e.g., women and children). The poor are more likely to suffer from increased food insecurity due to, for example, binding liquidity constraints (19) and lower adaptive capabilities (20). In this context, migration is a response from a utility maximization (21) and from a risk-management perspective (22–24).

Domestic migratory movements are mainly from rural to urban areas or from small towns to larger cities. Rural populations and smallholder farmers make up most of the food insecure in developing countries (25). In these areas, domestic migrants often end up working in the urban informal sector (with precarious jobs and highly variable earnings). For those who are severely food insecure, rural to urban migration may be more common than international migration, since they may not be able to afford the international migration costs. Rural migrants also use migration to the city as a first step towards eventually migrating internationally. Additionally, due to economic hardship, we expect increased flows from urban to rural areas. Poor urban residents are likely to return to rural areas, which could further spread the virus (10, 18).

Food insecurity is also likely to lead to increased international migration. For example, Frongillo et al. (26) found that food insecurity was strongly and negatively associated with subjective well-being, especially in relatively more-developed countries (27). In Cai et al. (28), it was shown that individuals with lower subjective well-being have higher international migration desires, with subjective well-being playing a bigger role in determining migration than income.

Returns to international migration are potentially greater than domestic migration, but it typically has greater fixed costs and associated risks (29, 30). Households with better networks

and more resources to meet migration costs are more likely to select international destinations and thus receive international remittances. Moreover, international migrant jobs are typically neither seasonal nor temporary and therefore more reliable than domestic migrant jobs.

People will also have to manage the risk of moving to a destination where COVID-19 might be more prevalent. This holds particularly true for rural–urban migration, where cities with a higher population density might increase the risk of infection. This negative health effect could reduce migration.

Recent research shows that food insecurity can have a large effect on migration behavior (31). A study of 94 countries shows that individual-level food insecurity is an important determinant of migration behavior (24). Likewise, in a cross-section of 8 countries, Warner and Afifi (32) found that households use migration as a risk-management strategy to deal with changes in rainfall variability and food insecurity. Climatic conditions in Guatemala affected food security while also decreasing migration opportunities (33), and adverse climatic conditions in Senegal depressed international migration in regions with high undernutrition (34). Based on a survey of people in 11 African cities, Crush (35) showed that urban food insecurity has a greater impact on international migration than rural food insecurity.

The effect of the mean prevalence rate and within country distribution of food insecurity on migration behavior in low- and middle-income countries is studied in an unpublished paper by Smith and Wesselbaum (36), which showed that food insecurity increases international migration flows toward OECD (Organization for Economic Co-operation and Development) countries and higher within-country dispersion of food insecurity reduces migration. For people below the mean country prevalence rate, the effect of food insecurity on migration is stronger than the effect for people above the mean. The impacts of COVID-19 are particularly strong for people in the lower tail of the food-insecurity distribution, which is likely to magnify the effect of food insecurity on migration patterns.

## A Policy Agenda

Our discussion suggests the need for immediate coordination between the international food security and migration policy agendas. In order to reduce the hardship of unemployment and reduced incomes, countries rely on monetary and fiscal policies. Fiscal spending should be targeted toward health and supporting all components of food security (37). Automatic fiscal stabilizers (e.g., unemployment benefits and food-assistance programs) should limit the effect of the recession, but additional measures, such as cash transfers and wage subsidies, are needed (38, 39). Resources that have addressed food crises in the past could disappear.

Supporting the food distribution system is paramount (37, 40). Reducing disruptions to global and local trade flows requires international coordination. The 2007–2008 food crisis led to food price spikes that increased food insecurity (41). Avoiding such disruptions could involve reviewing existing tax and trade policies as well as supporting transportation systems (e.g., increasing efficiency and labor supply). A group of 9 countries (including New Zealand, Chile, and Canada) have responded to this need by removing trade-restrictive measures on essential goods, including food (42). Export restrictions have reduced the ability of exporting and importing countries to stabilize domestic food price volatility (41, 43).

Thus, protectionist measures (e.g., export and import barriers) implemented by food-exporting countries to increase domestic food stocks should be avoided (37, 41). In contrast, multilateral agreements to limit protectionist measures can limit price spikes and reduce the negative effects of beggar-thy-neighbor policies (43, 44). Finally, support systems need to be implemented for vulnerable groups (e.g., the elderly and other groups at high risk of COVID-19 infection and death) and state and civil society agencies should provide health information (e.g., about nutritious diets and accessing food assistance) (18).

We expect COVID-19 to prompt structural changes to seasonal and permanent migration flows. This holds for rural–urban as well as cross-border migration. Further, COVID-19 will have different economic effects across countries (e.g., due to different policies). This could lead to a changing pattern of global migration flows. Italy, Spain, and the United States have been prime destinations for migrants, but they are among the worst-hit countries in the world (45). On the one hand, higher food insecurity in Africa and Asia due to the global recession could increase migration towards Europe and the United States. On the other hand, severe recession in traditional destination countries will reduce their desirability, potentially forcing migrants towards other, less affected countries (21). This implies that countries that currently do not receive large migration flows should prepare for increased migration (e.g., by updating immigration laws and migrant support policies).

Even as some countries face increased migration, others might face problems due to lower, mainly seasonal, migration (40, 46). For example, due to outbreaks, migration may decrease in continental European countries where harvesting or planting often requires seasonal workers (e.g., from Eastern Europe). Easing immigration and labor-market policies in these countries might reduce the shortage induced by the crisis (46).

Finally, while the crisis has many negative effects, it may also lead to innovative ideas and should encourage policy makers to use unexploited technologies. For example, it could increase efficiency by reducing food waste (47). Further, this crisis should lead to a re-thinking of immigration policies and encourage a global approach to managing migration flows.

In conclusion, food insecurity could act as a multiplier for the epidemic due to its negative effects on health and its push effect on migration. We expect COVID-19 will affect the level and inequality of food insecurity within and across countries. Both the level and inequality of food insecurity will also affect the decision to migrate. We therefore expect food insecurity to lead to increased migration: rural–urban and international. Importantly, the crisis might lead to a structural break in migration patterns. People might avoid heavily affected COVID-19 destination countries (e.g., Italy, Spain, or the United States) and move to other countries. Due to the persistent nature of migration flows, this could have long-lasting effects.

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