



POLICY FORUM

FOOD SECURITY: COVID-19

COVID-19 risks to global food security

Economic fallout and food supply chain disruptions require attention from policy-makers

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As the COVID-19 pandemic progresses, trade-offs have emerged between the need to contain the virus and to avoid disastrous economic and food security crises that hurt the world's poor and hungry most. Although no major food shortages have emerged as yet, agricultural and food markets are facing disruptions because of labor shortages created by restrictions on movements of people and shifts in food demand resulting from closures of restaurants and schools as well as from income losses. Export restric-

tions imposed by some countries have disrupted trade flows for staple foods such as wheat and rice. The pandemic is affecting all four pillars of food security (1): availability (is the supply of food adequate?), access (can people obtain the food they need?), utilization (do people have enough intake of nutrients?), and stability (can people access food at all times?). COVID-19 is most directly and severely impacting access to food, even though impacts are also felt through disruptions to availability; shifts in consumer demand toward cheaper, less nutritious foods; and food price instability. We outline the main threats COVID-19 poses to food security and suggest critical responses

that policy-makers should consider to prevent this global health crisis from becoming a global food crisis.

FOOD ACCESS

COVID-19 threatens access to food mainly through losses of income and assets that prejudice ability to buy food. The poorest households spend around 70% of their incomes on food and have limited access to financial markets, making their food security particularly vulnerable to income shocks (2). As the economic costs of social distancing have become

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more evident, global economic forecasts have become increasingly pessimistic. In its most recent forecast, the International Monetary Fund (IMF) projects a 5% decline of the world economy in 2020 (3)—a much deeper global recession than during the global financial crisis of 2008–2009. The economic fallout in the initial epicenters of the pandemic (China, Europe, and the United States) is also hurting low- and middle-income countries through declines in trade, oil, and other commodity prices and restrictions on international travel and freight, compounding the economic costs of poorer nations' own COVID-19-related restrictions.

Lacking up-to-date household surveys for most countries, no precise estimates can be made yet regarding the impacts on global poverty and food insecurity. Model-based simulations suggest, however, that between 90 million and 150 million people could fall (or may already have fallen) into extreme poverty (2, 4). Although any such estimate is highly uncertain given the rapid evolution of the pandemic, both of these projections involve substantial increases in global poverty, between 15 and 24% from existing estimated levels. Most of the poverty increases would be in sub-Saharan Africa and South Asia.

Declines in incomes and increases in poverty of this magnitude would have large impacts on food security and nutrition. People in extreme poverty do not have enough resources to buy the food they need to avoid hunger and undernourishment, and both poor and near-poor people will switch to cheaper and less nutritious foods. Even if the recession is short-lived, the impacts through inadequate nutrition could be long lasting, especially for young children, whose growth and cognitive development tend to be affected by undernutrition. Recent telephone survey evidence from Ethiopia (5) confirms many of these expectations, particularly that the main challenges to vulnerable households are resulting from income declines rather than food shortages. Although this survey points to rundown of savings as a key coping strategy up to June 2020, only 20% of households were found to have enough savings to meet their food needs for a month or more.

FOOD AVAILABILITY AND STABILITY

This pandemic poses several major threats to food availability and stability.

Agricultural production

Food security crises are often due to sharp declines in food production. Epizootic pandemics, such as avian flu or African swine fever, directly reduced animal-sourced food output. COVID-19 is likely different. It will probably have smaller direct impacts on agricultural production than those shocks and

will affect food security mostly in different ways, differing by product and region.

In rich countries, production of staple crops (especially maize, wheat, and soybeans) tends to be highly mechanized, with much inherent social distancing of workers. Most farms deploy large-scale machinery and little labor for land preparation, sowing, and harvesting. Large-scale mechanization is more difficult or too costly for many nonstaple foods, such as fruits and vegetables, requiring human hands for planting, weeding, and/or harvesting. These more labor-intensive parts of agriculture often require changes in practices to reduce the risk of disease transmission, such as by avoiding concentration of workers on the field through staggered shifts. Other labor impacts come from restrictions on movement of seasonal farm workers of the type that have left food unharvested in Europe. These restrictions affect food production and can also have adverse food security effects by constraining the ability of workers from poorer countries to earn income (6).

In poor countries, farm production is mostly much more labor intensive, with many processes such as rice planting and harvesting of staple crops bringing workers close together. Although farmers in poorer countries are generally younger than in rich countries, health systems are usually weaker, and preexisting health challenges may increase people's vulnerability to COVID-19.

Supply chain disruptions

The vulnerability of food supply chains differs strongly across food systems, depending on the priority they are afforded and on their structure. We emphasize four features.

(i) Governments worldwide have placed high priority on ensuring that staple foods can be moved to consumers. Global supply chains for staple foods appear to have held up reasonably well so far, with relatively few cases of substantial supply disruptions even in countries with strict social distancing requirements. Evidence from China shows that such disruptions can be reduced by creating “green lanes” that exempt transport, production processes, and distribution of agricultural inputs and food products, as well as movements of food-sector workers, from COVID-19 lockdown measures.

(ii) Labor-intensive “traditional” value chains (mostly in poor countries) are more affected than capital-intensive “modern” food value chains (mostly in high-income countries or in richer parts of low- and middle-income countries). For example, in Ethiopia, which has poorly developed infrastructure and mostly relies on traditional distribution networks, the supply of vegetables has been affected by disruptions in transport and in the supply of key farm inputs (7). Also, im-

ports on food distribution in low-income countries tend to be worse for tens of millions of informal small- and medium-sized food-sector operations. These are typically labor intensive, with many people having to work close together in dense areas and crowded marketplaces, where the risk of COVID-19 transmission is extremely high, while social distancing measures directly affect the operation of food businesses and markets.

(iii) Even modern food supply chains and systems can be seriously affected. In the United States and Europe, more than 30,000 workers in food-processing plants have contracted COVID-19, causing meat processing plants to close or slow production. The near-total closure of international passenger aviation has seriously disrupted supply chains of specialized products that rely on air freight, such as high-value horticultural exports from Africa (8). The need to adjust the mix of products and packaging when demand shifts from restaurants to households drives declines in consumption of higher-quality meats, dairy products, and vegetables.

(iv) COVID-19 has affected public food distribution systems. For example, schools closing under India's national lockdown resulted in suspension of school feeding programs—one of the country's largest safety nets. School closures are also depriving many poor U.S. children of publicly provided meals. Farmers and other suppliers have found difficulty finding market outlets to replace institutional outlets such as restaurants and schools, resulting in substantial wastage of milk and other nutrient-rich foods. Other safety nets are also affected, including community nutrition programs for pregnant women and lactating mothers (9). Public food relief programs must also manage the risk of exposing more people to the virus by attracting large crowds at distribution points.

Trade restrictions

Although the vast majority of the world's food is produced and consumed in the same country, food trade within and between countries allows diversification of supplies that helps reduce vulnerability to food market shocks. However, policies can make it difficult for trade to play this stabilizing role.

During food crises in 2008 and 2010, many major producer countries imposed export restrictions on staple foods, especially rice and wheat, that caused world market prices to rise (10). Policy-makers often respond to a fear of imminent shortage or sharp price increase of a main food product by restricting its export to protect domestic consumers. Although such restrictions may serve a national interest in the short run, they reduce the supply to world markets, putting upward pressure on world prices.

This problem reemerged in March 2020, and by 6 July, 21 countries had announced or introduced (temporary) export restrictions covering almost 4% of the caloric value of globally traded food. Fortunately, most restrictions have been lifted, and by early July, only two countries continued to impose these measures, on a very small share of trade. However, the situation could again deteriorate [see (11) for up-to-date counts].

A key problem with food export restrictions is that they can create the upward spiral in world prices that they are intended to prevent (12). Almost all of the imposed measures limit the amounts of covered products that can be exported. Such quantitative restrictions destabilize prices because they reduce the ability of markets to adjust to production shocks through changes in exports. Expectations about the introduction and subsequent removal of these restrictions add to instability in food availability, with exports increasing before their imposition and stocks accumulating before their removal.

Since the onset of the pandemic, world wheat prices have been quite volatile (13), but prices have declined by around 10% between January and early July. By contrast, world market prices of rice rose around 20% between January and April and became highly volatile in May (14). The world market price for rice declined after the end of Vietnam's ban on rice exports to roughly their January 2020 levels by early July. Higher food prices benefit farmers but hurt consumers, and vice versa for lower food prices. However, price volatility tends to hurt all because it induces uncertainty in supply, whisking away investments that can improve productivity or food quality.

DIETS AND NUTRITION

Food shortages and lower incomes affect dietary choices. Analysis of 300,000 households in low- and middle-income countries reveals that poor people spend more than a quarter of their total income on staple foods such as wheat, rice, or maize, whereas non-poor households spend only 14% (2). Poor households spend nearly 50% of their incomes on unprocessed nonstaple foods such as fruits, vegetables, and animal-source products. Declines in incomes are likely to force many poor households to cut back on these nonstaples. A recent global economic model scenario assessment suggests that these shifts away from more nutrient-rich nonstaples toward starchy staples are likely to be substantial (2). Recent survey evidence from Ethiopia confirms this, finding that reductions in household food consumption were mainly in nutrient-dense foods such as fruit, meat, eggs, and dairy (7). The shifts limit declines in calorie intake but increase deficiencies

of micronutrient consumption, with lasting adverse consequences for human health and development. The greater disruptions in the supply of fruits, vegetables, milk, and meat products, relative to less disrupted staple foods, are reinforcing the income-related reduction in consumption of these foods, especially by poor households. This reduces dietary diversity, intake of micronutrients, and nutritional status, increasing the risk of adverse health consequences (15, 16).

FOOD SECURITY DURING A HEALTH CRISIS

Because the most important impact of the pandemic on food security is through income declines that put food access at risk, social safety-net policies are particularly suited to the problem. By June, no fewer than 195 countries had planned or introduced additional social protection measures in response to COVID-19. Most are in the form of temporary (typically 3 months) but substantial enhancements of cash transfer programs (17). Cash transfers are easy to scale up and allow consumers choices on how to best meet their nutritional needs. Targeting of assistance is particularly important to ensure that the benefits reach those most in need. Targeting benefits to women helps improve nutritional outcomes. Given the fiscal challenges that face low- and middle-income countries and given the strong international spillover effects of the economic consequences of COVID-19, it will be important for high-income countries and international organizations to contribute as much as they can to support the responses of poor countries in financial need. Doing so would aid global economic recovery and avoid enormous humanitarian cost that a global food crisis would imply.

It is critical that agricultural inputs, farms, food processing, and distribution are declared essential and exempted from lockdown measures, so that food can flow in adequate amounts from farm to fork. Health protocols are needed to protect workers in food chains and to help contain COVID-19. Incentives and support for food transport and logistics, including deliveries to needy areas and for the sick, are also important. Likewise, governments should engage with market participants to ensure the smooth functioning of agricultural input markets (seeds, fertilizer, labor, and credits), especially for time-critical inputs for planting and harvesting. Allowing movement of seasonal and migrant labor is also important in many contexts. The European Union, for example, has encouraged its member countries to consider all workers (including seasonal and migrant) in fruits and vegetable production as critical. Governments should avoid further use of disruptive policies, such as export restrictions on food, and keep trade channels

open consistent with the multilateral rules and regulations as agreed through the World Trade Organization. In addition, they should ease trade transactions, including through electronic issuance of permits and certificates, and ensure that inspection requirements are compatible with social distancing.

Last, but not least, COVID-19 has highlighted the importance of early detection of new infectious diseases, 70% of which have their source in animals. Improving surveillance systems for zoonotic diseases arising from animals used in the food chain is vitally important for avoiding future catastrophes. ■

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