



COVID-19 impacts on food security

Photo Credit – Relief International; Maban, South Sudan

Summary findings from 12 country case studies

Introduction

When COVID-19 lockdowns began unfolding across the world in March 2020, the Global Food Security Cluster (gFSC) launched a dedicated Technical Working Group with over 100 partners from around 50 organizations to tackle the potential fallout. The aim of this TWG was to establish the potential and actual effects that the pandemic had on food systems, from production to supply, access, use and the global stability of food chains.

One sub-group (TWG5) was tasked with conducting research and summarizing lessons learned from across the wider food industry. From April to September 2020, the TWG5 assessed how import/export food bans and restrictions impacted food security, especially in countries that rely heavily on food imports, as well as how planting cycles, processing, storage, finance, transport, and trade were affected.

The group brought together government and private sector international food trade and policy actors, as well as medium- and large-scale industry members.

The study

Twelve countries were chosen for this study: Afghanistan, Bangladesh, Ethiopia, Haiti, Iraq, Mozambique, Niger, Pakistan, Peru, South Sudan, Venezuela and Yemen.

Pre-COVID-19 baselines were established for each country, summarizing the main dynamics driving food insecurity (see Box 1). A key focus of the research was on countries' main food groups, based on food baskets and primary agricultural inputs. This was especially important for those producing most of their own food. At the time of writing, there are indications of disruptions to food systems and industry response, however it is too early to measure their full impact.

The research findings summarize trends from the 12 country studies, including insights into several key food basket items, leading to recommendations on potential interventions which could help or hinder a country's food security in the coming months as COVID-19 continues to pose a health challenge for the world.

Country-level food security baseline

- Regional food security issues
- National food security issues
 - Economic shocks
 - Weather extremes
 - Conflict/insecurity
- Food insecurity
- Country-level food baskets
- Food Basket Supply
- Pre-COVID-19 key food basket commodity supply trends
- Analysis of agricultural input
- Real-time tracking of COVID-19 wider industry actions
- Cropping calendars

Findings

COVID-19 may not be the worst of the drivers impacting food security – at least not yet

While much attention globally is on COVID-19, other drivers of food insecurity were cited by many countries as more of a challenge during the period of March to August 2020. With the exception of Venezuela and Bangladesh, all countries noted weather extremes as a top driver of food insecurity. Past weather incidents had reduced some food stocks and farmers had concerns for upcoming planting seasons, especially regarding droughts, flooding, and pest infestations (i.e. desert locust and Fall armyworm).

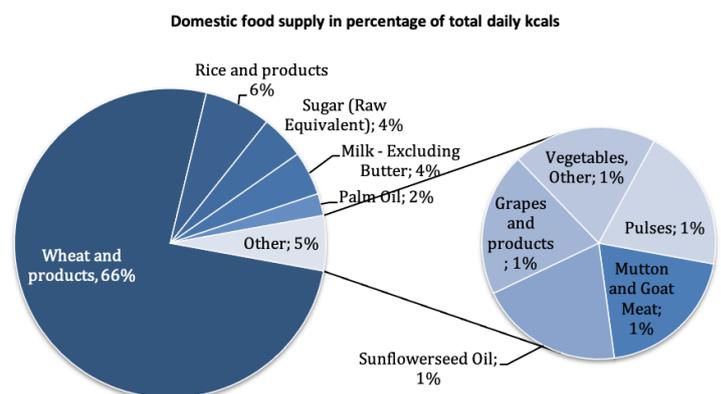
From March to July, lockdowns with varying levels of restrictions were prevalent across all countries studied. Immediate impacts of the restricted movement of people and goods caused varying disruptions in food value chains and agricultural input value chains, primarily on food purchasing power in contrast to food shortages. The widespread effects of the virus itself on a population's morbidity and mortality had yet to be studied across all countries, with the exception of Peru and Iraq. The wider food industry disruptions, especially to transport, financing, and marketing did cause food price spikes compared to previous years for the same monthly periods across most countries for key food basket items.

There were immediate disruptions to food purchasing power for workers barred from their jobs due to lockdowns and movement restrictions, especially informal workers. Reduced domestic and international remittances were also a major factor for some countries. For example, Bangladesh lost USD 2.6 billion in garment orders by the end of March 2020, forcing factories to lay off thousands of workers who had been sending money home to their families in rural villages.

Understanding a country's food basket to monitor COVID-19 impacts

The 12 country baselines were documented through country-level food baskets and how they are supplied, using FAOSTAT indicators on New Food Balance and Food Supply (kcal/person/day).

Figure 1. Food basket example from Afghanistan, 2017



Source: FAOSTAT, New Food Balance Indicators, Food Supply (Kcal/person/day)

For each major food basket item, researchers noted if a country relied primarily on domestic production, imports or both to meet national food demands. Understanding which items are produced domestically and which are primarily imported – and to what extent – helped to establish which might be at risk of disruption through trade restrictions. The information was calculated using FAOSTAT data, taking production, imports and exports as a percentage of domestic supply.

Cereals are the main source of daily calories for all 12 countries, with several having a heavy dependence on a single cereal. For example, people in Afghanistan get two-thirds of their daily calories from wheat products, in Bangladesh people take 78 percent of daily calories from rice products, and in Yemen wheat products make up 45 percent of daily caloric intake. Importantly,

a country's cereal-sourcing profile determined which wider industry COVID-19 disruptions would be problematic. For example, Bangladesh produces 98 percent of its rice and rice products. Local lockdowns impacted movement of agricultural inputs, harvested rice, and agricultural labour, which contributed to spikes in rice prices from March 2020 to September 2020 (Pothan, 2020).

In contrast, Afghanistan relies heavily on imported wheat and wheat products to meet the demands of its population. Pakistan and Kazakhstan, the two major countries that export wheat to Afghanistan, announced export quotas on wheat in March. Kazakhstan initially announced export quotas on wheat from May to August 2020 but abolished these in June (FAO, 2020). However, the quota threats contributed to a 15 percent increase in wheat prices in Afghanistan since March 2020 (Richter, 2020).

While only comprising a small percentage of each food basket, cooking oil is essential for basic nutrition. Most of the 12 countries rely extensively on imported cooking oil: Bangladesh, while nearly self-sufficient in rice production, has almost 100 percent dependence on imported cooking oils, mainly palm and soybean. Palm and soybean oil production experienced labour disruptions due to lockdowns, and the industries – dominated by medium and large global agribusinesses – saw decreased demand from buyers. As of August, Market Watch® was predicting soybean oil shortages due to COVID-19 manufacturing and supply chain disruptions. Palm oil saw price and demand drops during the lockdowns, but at the local consumer level cooking oil prices since March have increased by 40 percent (OCHA, 2020). The palm oil industry is poised to recover as lockdowns across the globe begin to ease. Whether the palm oil industry recovery translates to reduced cooking oil prices at consumer level will need to be closely monitored in the coming months.

COVID-19 restrictions on cereal exports increasing vulnerability

A few countries dominate exports of cereals and their threat of export bans or quotas makes some of the most food-insecure countries vulnerable. The 12 focus countries' food baskets rely overwhelmingly on four cereals – wheat, rice, sorghum and maize – to supply daily calories and nutrition. Most depend heavily on imports for domestic consumption, with many importing over half of their domestic supply (see Table 1). Dominant cereal-exporting countries continue to supply to countries around the world or be a key regional supplier, amidst the pandemic. For example, Russia and Kazakhstan supply wheat to Afghanistan, Venezuela, and Ethiopia. The trade restrictions imposed by Russia and Kazakhstan, to contain the effect of the pandemic, have had repercussions in each

of these countries in contributing to price increases. Threats of more widespread food export bans in early months of the pandemic did not materialize.

Table 1: Cereal import dependence by country (as percentage of domestic supply)

Country	Wheat	Rice	Maize	Sorghum
Yemen	90	83	105	-
Haiti	114	90	-	-
Mozambique	103	90	7	1
Peru	105	NA	69	-
Venezuela	78	56	46	-
Iraq	52	76	55	33
Afghanistan	34	55	-	-
Ethiopia	17	72	0.5	5
Pakistan*	1	-	-	-
Niger	111	127	-	-
Bangladesh	103	4	-	-
South Sudan**	-	-	NA	NA

Source: FAOSTAT 2020

Notes:

*Pakistan has a heavy import dependency on oils (131 percent of domestic supply) but does not register specific imports for the analysed staples.

**Data for South Sudan not available for maize or sorghum, which are staples in their diet.

Russia set an export quota of 7 million tonnes of wheat for the period of April 1 to June 1, 2020 (World Trade Organization, 2020a). The Russian Ministry of Agriculture stated that while quotas will not be in place from July to December 2020, there is the possibility of another export quota from January to June 2021 to ensure domestic demand is met (Devitt, 2020).

Even when a country relies on imports for only a small percentage of cereal supply, export bans can have significant impact when combined with other food insecurity drivers. For example, Ethiopia imports just 5 percent of its sorghum, but sorghum comprises a significant part of daily calorie consumption. Some 80 percent of Ethiopia's sorghum imports come from Sudan, which has applied a total export ban (Dabanga, 2020). With Ethiopia still recovering from the El Niño drought and desert locust infestations, this ban has contributed significantly to food shortages.

International and domestic trade are essential in addressing food availability and security. In the early months of the pandemic, export restrictions were imposed by 21 countries on staple foods including rice and wheat, causing volatility and price hikes. In order to keep global food chains moving, governments are encouraged to avoid further use of disruptive policies and maintain open and broad trade channels across borders (IFPRI, 2020).

Domestic production hampered by pandemic

Domestic food production is under threat from COVID-19 disruptions, with key agricultural input shortages of seeds, fertilizers, and labour exacerbating pre-existing economic, conflict, and weather food insecurity drivers.

The research highlighted examples of agricultural input stress and resilience across the 12 countries. From a medium- and large-scale agribusiness perspective, COVID-19 restrictions have impacted seasonal labour availability as well as access to inputs such as seeds and fertilizers, while many small-scale farmers also experienced agricultural input disruptions. Understanding each country's cropping calendar to determine when inputs and labour were and will be needed is essential to anticipate interventions to support domestic production. To illustrate, the cropping calendar for Bangladesh is shown below for the three main rice-growing seasons of Boro, Aus and Aman.

The Boro season comprises 55 percent of annual rice production in Bangladesh and runs from December to May across 42 percent of gross cropped areas. COVID-19 lockdowns were put in place just before Boro harvesting, disrupting labour and transport and threatening rice supplies. The government provided harvesting machinery support to ease labour shortages, as well as financing to help trade, although interviews with traders revealed the extent of assistance received as uneven, and for those in the informal sector at times was impossible to obtain. (Pothan, 2020).

Findings from Ethiopia and Afghanistan showed both countries as being heavily dependent on imports such as fertilizers and pesticides (FAO, 2020b). The cropping calendars of the two countries provide an understanding of the potential long-term effects of trade restrictions and price increases, based on when most domestic production occurs. Countries such as Niger, which is highly reliant on domestically produced cereals, would benefit from proactive support in anticipating cropping calendar bottlenecks due to COVID-19 restrictions.

Countries' level of resilience

Seeds

There were varying degrees of seed self-sufficiency or lack thereof. Countries such as Ethiopia, which has over 85 percent of domestic supply provided by local farm-saved seeds, were more resilient to trade restrictions. In Bangladesh, FAO in partnership with the government provided rice seeds to farmers affected by COVID-19 and Cyclone Amphan. Other countries such as Peru are having trouble obtaining seeds to support and sustain informal food chains (Zimmerer & de Haan, 2020), while companies in Niger found it difficult to produce and import quality seeds due to labour shortages, movement restrictions, and border closures (Cornell Alliance for Science, 2020).

Agricultural Labour

Informal labour is a consistent part of economies in most of the countries analysed. COVID-19 policies and measures have largely impacted domestic production and seasonal migrant labour, including agricultural labour. In countries such as Iraq, Afghanistan, Bangladesh and Peru, internally displaced people (IDPs), refugees, migrants and migrant returnees often rely on informal labour as the primary source of their income.

Fertilizers and pesticides

Many countries rely primarily on imported fertilizers and pesticides. Most government interventions to improve imports and ease tariffs proved positive – for example the government of Ethiopia apportioned 70 percent of fertilizers and pesticides to farmers across the country and is collecting bids from international companies to import 1.73 million quintals of rice, 3.2 million quintals of sugar, 18.1 million quintals of wheat, and over 104 million litres of cooking oil free of tariffs to prepare for a possible food shortage due to the pandemic.

Even for countries less impacted by COVID-19 restrictions and containment measures for

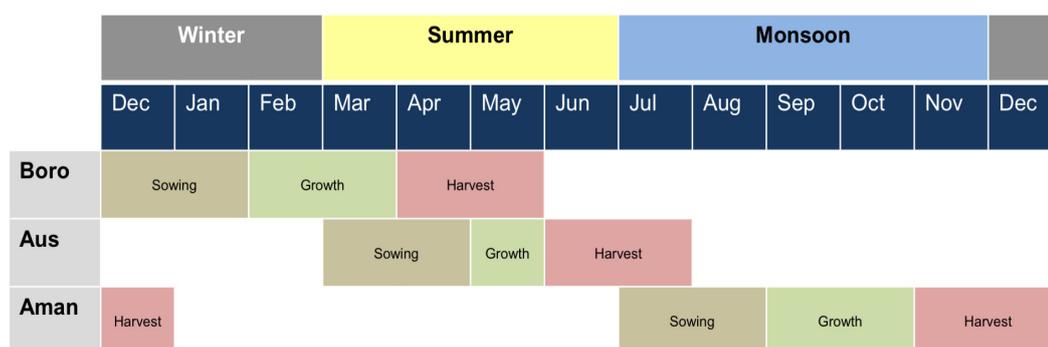


Figure 2. Rice crop calendar for Bangladesh

Source: FAO, 2019

agricultural production, such as Mozambique, there was a worsening of food insecurity due to import restrictions (FAO, 2020). In such countries, the full impact of COVID-19 is still to be determined but any analysis will need to include access to agricultural inputs and financial services in preparation for upcoming harvests, and the supply and demand side of food chains (FAO, 2020c, 2020d).

Key lessons

Promote more integration and coordination across humanitarian and development programming

The private sector, government bodies, policy fora, and development programmes have dedicated research and project funds to address wider food industry issues. Humanitarian programmes rarely work in food industry areas, yet when communities become food insecure, especially in fragile states, a humanitarian response focused on cash and/or direct food distributions are the primary response mechanisms.

When COVID-19 hit, some development programmes were allowed to adapt activities to address industry bottlenecks that were causing food insecurity and loss of income for private sector food companies. For example, Land of Lakes in the DRC had been working in the poultry sector to develop commercial egg production. These local companies had primarily sold their eggs to institutional buyers, whose demand dropped drastically when lockdowns were put into place. Land of Lakes helped the companies connect with humanitarian programmes to enable the eggs to be sold in local markets, supporting local malnutrition programmes.

There is an acute need for more of these “matching” services between humanitarian and development programmes that work with private sector food supplies and address urgent malnutrition challenges. The wider food industry needs to build in more resiliency and donors need to be able to respond quickly and make changes to existing programmes to facilitate market matching. Afghanistan, Ethiopia, Iraq, Mozambique, Peru, and South Sudan reportedly closed schools in an effort to contain the pandemic, resulting in reduced access to food due to the disruption of school feeding programmes (FAO/CELAC, 2020; WFP, 2020). Nonetheless, market matching programmes to transfer school food into other social safety net programmes were uneven.

Take a system approach to understanding COVID-19 impacts on the wider industry

The key supporting functions that need attention are transport, agricultural financing, and shifts in markets for food supply chains. Much has been documented about border restrictions and/or country-level quarantines that restricted the movement of agricultural inputs and products. Yet financing was cited in nine out of the twelve countries as impacting both domestic production and national food imports.

In all countries analysed, weather shocks, conflict and economic threats were already key drivers of food insecurity, with COVID-19 only exasperating this. An overarching economic threat was the debt levels of poor nations combined with falling commodity prices for these countries' major exports. A drop in oil prices is a prime example, which has and will continue to impact Iraq, South Sudan, and Venezuela, among other countries. Debt relief and fresh capital for struggling countries are needed to address the health, economic and social impacts of COVID-19. Increased, well-invested government spending is required, along with G20 action and rapid use of the International Monetary Fund's (IMF) Special Drawing Rights (SDRs) to support increases in government spending. Overall, a common framework for debt restructuring would help countries recover from this pandemic.

Issues to watch

As October 2020 ended, parts of the world were already seeing a renewed increase in COVID-19 cases and deaths and some countries were putting lockdowns back in place. Yet the world has also learned some valuable coping mechanisms, has better levels of non-medical grade personal protection equipment (PPE) use in place, and much better COVID-19 economic impact indicators to measure anticipated needs of all communities. The WG5 research from across its country studies has the following recommendations to make to address and advocate for with respect to food security as the world continues to deal with the pandemic.

Country-specific impacts and recommendations



AFGHANISTAN

- The Government of Afghanistan should closely monitor wheat prices and supply, given that it is such a major staple of national diets. This is increasingly important given that Kazakhstan, the main trading partner for wheat, has implemented a total export ban for six months (World Trade Organization, 2020).



ETHIOPIA

- In the short term, the Government should continue monitoring and apportioning fertilizer access for farmers. In the long term it should make sure fertilizer coming into the country informally is accounted for and made into a formal import, rather than crossing the border illegally through Kenya (IFPRI, 2020).
- The Government would do well to continue eliminating tariffs on imports of cooking oil. While there is no consistent information yet on how this will impact prices, it is expected to be beneficial to the country (FAO GIEWS, 2020).



PERU

- In Peru, 72.5 percent of employment is in the informal sector. The Government should therefore continue social protection measures such as food handouts, in-kind and unconditional cash transfers and so on, in order to ensure safety nets for workers in this sector.
- Smallholder farmers represent around 90 percent of farms and account for approximately 80 percent of Peru's food production. Given the high reliance on domestic production, the Government should ensure access to agricultural inputs (seasonal labour, fertilizers, seeds), in particular for smallholder farmers and informal value chains. This sector is crucial not only to informal food market supplies but also to ensure affordable, nutritious food for poorer populations and national food security.
- Restrictions in internal transport have hindered producers' ability to reach consumers. Furthermore, closures of fruit and vegetable markets as they became epicentres of contagion have affected people's diets. In response, the Ministry of Agriculture initiated 900 farmers' markets called "De la chacra a la olla" (from farm to pot), in all regions to guarantee the supply of fresh, diverse, quality food during the national emergency. Sanitary guidelines and kits were distributed in safe open spaces, where producers can sell directly to consumers at fair prices (Reuters, 2020).

This innovative initiative has been successful and is recommended to be expanded to allow producers to better sell their products.



VENEZUELA

- Venezuela is particularly vulnerable due to low international oil prices, which have limited the country's ability to import food, depreciated the national currency and increased food prices. There has also been limited access to production inputs (gasoline, seeds, fertilizers, etc), further reducing purchasing power. Producer associations from various sectors reported that due to the pandemic and gasoline shortages, they estimate vegetable production to have decreased by 85 percent in the last four months of 2020, while confinement could lower livestock production by some 40 percent and that farmers will have cultivated only 70,000 hectares of corn (FAO Venezuela).
- Agricultural private sector actors face constraints due to limited access to capital and credit. With dwindling production and few imports, FAS Caracas forecasts declining grain and feed availability will further squeeze the diets of Venezuelan consumers (USDA/GAIN, 2020). Policies implemented by the Government during the last decade, including state control over food prices and monopoly on agricultural supplies, as well as a decree on food distributions that enforces food companies to sell 50 percent of their production to the Government at fixed prices, have drastically reduced food availability and purchasing power. The establishment of food quotas fixed by the Government, which were generally below production costs, increased food scarcity as profits were not sufficient to maintain production (OHCHR, 2018). Empresas Polar, one of the largest private companies, began exporting products that until 2017 had only been sold in Venezuela (Reuters, 2019). The Government should further relax these price controls and ease restrictions to promote greater industry involvement in easing food insecurity (Khosravi, 2020).



NIGER

- Brazil and Argentina are major exporters of soybeans, corn and wheat to Niger, but have been dealing with logistics issues due to COVID-19 such as slow truck-loading operations and extra safety checks for ships at ports. This has led to delays in exports, with the countries' governments being advised on how to improve the overall functioning of ports to ease export of cereals to African

countries as domestic prices increased across the continent (S&P Global Patts, June, 2020).

- ➞ In rural areas of Niger, disruptions in the food supply chain have affected availability and access. Despite a good rainy season, farmers found it difficult to harvest crops and procure agricultural inputs due to mobility restrictions. It is recommended that the Government better monitor the situation and coordinate agro-pastoral response. As a negative coping mechanism, many households in Niger consumed seeds for sustenance. WFP and FAO are scaling up measures to provide the agriculture sectors with mechanization inputs to keep the food supply chain steady (FAO, May 2020).
- ➞ COVID-19 restrictions led to labour shortages and difficulties accessing markets. This in turn resulted in food loss along the food value chain, particularly of perishables. As such it is crucial to support vulnerable farmers in preparing off-season and irrigated crop production, as well as in food processing and conservation and marketing (FAO, May 2020).



BANGLADESH

- ➞ The transport and marketing of seasonal fruits was disrupted during the pandemic. Some of the key initiatives recommended by the Ministry of Agriculture were ensuring fair prices for farmers, easing transportation by minimizing costs (fuel incentives), delivering mangoes, lychees, jackfruit and other seasonal fruits to consumers' doorsteps, good management of fruit processing, extending banking hours and expanding railway cargo services. It is recommended to issue identity cards for fruit traders, aratdars, farias and farmers to allow free movement and transportation (The Financial Express, May 2020).
- ➞ The harvesting season of Boro rice crops has been drastically affected by the pandemic. Lockdowns and restrictions on people's movements have resulted in a shortage of labour as they are stuck in cities, towns and other parts of the country. The Government has provided 1,200 harvesters and reapers with farm equipment worth USD 11 million to support farmers in harvesting their crops. However, the Government's distribution of farm machinery will not compensate for the shortage of labourers. It is recommended to transport labourers under special arrangements to ensure both continuity of supply and more reliable access to income. (The Financial Express, April 2020).

- ➞ Generally, rice mill owners buy paddy from traders and farmers. Lockdown restrictions mean that millers are facing a cash crisis and cannot buy paddy due to shortened banking hours, so they also fail to supply rice to Government granaries and divisional markets. The initial decision to keep the bank open for two to three days per week for two hours was difficult for traders and cereal businesses. It is recommended for banks to remain open for all working days with extended banking hours for smooth transactions (The Business Standard, April 2020). Extended hours will allow for increased access while taking reduced capacity into account.



MOZAMBIQUE

- ➞ Disruptions to food chains from border closures with neighbouring countries have affected some of Mozambique's private agro-businesses. Both in the case of imports (i.e. poultry from Zimbabwe) and exports (maize to Malawi), the closures forced private agro-food companies to either sell their products at lower prices or readjust their provisioning. The Mozambican Government should improve commodity transport across borders to help reduce the impact on livelihoods, prioritizing food transport. As in the case of Mozambican migrant workers crossing the South African border to work in mines, the Government could offer specific COVID-19 screening and tracking services to freight-transport drivers. Mozambique's Government should work to improve mobility by integrating public health into border management with all of its trade partners/neighbouring countries (IOM, 2020, Exchange Mozambique, 2020).
- ➞ Trade restrictions have forced Mozambique's farmers to sell their produce in Nampula at USD 7.50 per bag as opposed to the usual USD 10. To sustain the agro-food private sector, financial institutions offered a 50 percent discount on interests to borrowers (Exchange Mozambique, 2020). However helpful access to credit can be for farmers, the Mozambican government should push for a price-matching or price-fixing manoeuvre that would help farmers to sell their maize domestically across regions at a mid-way price, or to buy maize excess at a more equitable price for farmers and help redistribute it for domestic needs. This would benefit Tete and Northern Manica provinces for instance, where household food stocks were reportedly depleted.

- As a result of COVID-19 various agricultural activities have been deferred or halted, whether from border closures or movement restrictions. This has affected thousands of agri-SMEs, informal migrant labourers and farming opportunities. Over 75 percent of Mozambique's farmers indicated that the lockdown had impacted their planting seasons, 30 percent reported impacts on access to local seeds and inputs (fertilizers/pesticides), and 30 percent that seeds and input prices had increased (AFAP, 2020). The Government of Mozambique should support agri-SMEs in these regards, either financially (helping them sustain the increased price of inputs by allowing credit-lines) or materially (apportioning producers with necessary inputs, facilitating transportation of inputs and goods to local markets).

goods across its borders with neighbouring countries, improving mobility (both regional and international) by integrating screening and tracking services to contain COVID-19.

- The Iraqi government should support agri-SMEs engaged in newly-launched barley exports, and keep monitoring how import bans on 24 locally-produced food items are impacting the livelihoods of citizens in the medium term. Food prices in Iraq are also affected by rising fuel prices, the lack of proper water infrastructure which has exacerbated challenges in agriculture, and international price increases (Gibson et al., 2012; USAID, 2016; Zarei, 2020). The Government should therefore support agri-SMEs that are implementing precision agriculture technologies to help increase productivity, while also reducing reliance on inputs.



IRAQ

- In Iraq, the Government temporarily closed the borders with Iran, Kuwait and Saudi Arabia in mid-March, challenging supply chains to find alternate sources of certain food items (WFP, 2020). The Iraqi government should ensure reliable and consistent transportation of freight



SOUTH SUDAN

- In South Sudan, easing of COVID-19 measures and seasonal availability contributed to declining prices of maize and sorghum, which were at their highest in May-June (FAO GIEWS, 2020).

Recommendations

The world will be dealing with COVID-19 for the foreseeable future. In March 2020 when lockdowns started around the globe, governments and the wider food industry were caught off guard. In October 2020, the wider food industry took some important steps to put in place improved safety measures for workers in food value chains, as well as to reduce COVID-19 transmission among the broader community. Although the measures were not perfect and have not been applied in all countries, it is critical to use this as a lesson to keep food value chains functioning if future lockdowns are instituted.

Scale up practices to keep food supply chain logistics healthy

For example, China instituted practices to ease trade for essential medical goods, which could be extended to agricultural goods. Practices included the use of "green lanes", point-to-point transport for workers, and interagency efforts to ease the transport, production and distribution of inputs and products (UNESCAP, 2020).

Find options to keep local informal markets open

Many food-insecure populations depend on functioning informal food markets for their daily diets, and seeds for farming. These markets have also been hotspots for COVID-19 transmission, but rather than closing them they should be supported with improved hygiene and safety measures.

Facilitate more coordination between the private sector, NGOs and donors

Medium and large companies as well as industry groups have taken COVID-19 safety measures to render food supply chains more stable, sharing their lessons learned with development organizations and food security donors to better coordinate production, processing, and delivery of food, and redirect food supplies to safety-net programmes.

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