Food and Agriculture Organization of the United Nations

AGRICULTURAL TRADE & POLICY RESPONSES DURING THE FIRST WAVE OF THE COVID-19 PANDEMIC IN 2020

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ACRONYMS & ABBREVIATIONS

AoA	WTO Agreement on Agriculture
APEC	Asia-Pacific Economic Cooperation
ASEAN	Association of Southeast Asian Nations
ASF	African swine fever
CEFTA	Central European Free Trade Area
COVID-19	Coronavirus disease 2019
EAEU	Eurasian Economic Union
FAO	Food and Agriculture Organization of the United Nations
FAPDA	Food and Agriculture Policy Decision Analysis
FAW	Fall Armyworm
FPMA	Food Price Monitoring and Analysis
IFPRI	International Food Policy Research Institute
ILO	International Labour Organization
IMF	International Monetary Fund
IPPC	International Plant Protection Convention
ITC Macmap	International Trade Centre Market Access Map
ITFC	International Islamic Trade Finance Corporation
NFIDC	Net food-importing developing country
SPS	Sanitary and phytosanitary
SIDS	Small Island Developing States
SEED	Systematic Electronic Exchange of Data for Customs Administrations
TRQs	Tariff rate quotas
TBT	Technical barriers to trade
UNDP	United Nations Development Programme
UNSD	United Nations Statistics Division
WTO	World Trade Organization

EXECUTIVE SUMMARY

The Coronavirus disease 2019 (COVID-19) pandemic has had unprecedented effects on all dimensions of human life. The full economic and social impacts are still unfolding, as the disease continues to spread in all regions around the world. On top of the death toll and overstretched health systems, the virus and the measures to contain its spread have caused a deep global economic recession and increased extreme poverty and acute and chronic food insecurity.

Concerning agricultural markets, COVID-19 has resulted in a dual shock affecting both supply and demand. Measures to control the spread of the disease have affected many supply chain related activities, including production, processing, logistics, and retailing. Border and travel restrictions have often led to shortages in agricultural labour; limited access to inputs such as seeds, fertilizers and pesticides; lower capacity in the food processing industry; and challenges in the distribution of food products. At the same time, significant reductions in income, restrictions on the movement of people and the closure of restaurants and food services induced rapid changes in food consumption patterns.

Despite these shocks, however, the efforts of governments and agricultural sector stakeholders worldwide to keep agricultural markets open and trade in food flowing smoothly have contributed to remarkably resilient agricultural commodity markets.

Overall, effects on global trade in food and agriculture remained limited to short-term disruptions at the very beginning of the pandemic. While disruptions of global trade in basic foods such as cereals, oilseeds, fruits and vegetables were minimal, trade in products affected by shifts in consumption patterns (e.g. beverages and fish) and non-food commodities (e.g. cotton, live plants and cut flowers) declined more sharply during the first months of the COVID-19 outbreak.

The pandemic and its potential effects on agricultural value chains and the global trading system induced concerns over food security and food safety worldwide, leading countries to implement policy measures to curb potentially adverse impacts on their domestic markets.

These policy responses covered a wide range of measures, including export restrictions, lowering of import barriers, and domestic measures. Most of the trade restricting measures were short-lived. Some major exporting countries imposed export bans or quotas on specific commodities. A few countries imposed import restrictions or introduced requirements for certificates attesting negative COVID-19 test results for the shipments. In most cases, such measures were temporary in their application.

Trade restricting measures can alter the balance between global food supply and demand, with harmful effects on both exporters and importers. In order to avert the pandemic causing a global food crisis, it is crucial to keep markets open, trade flowing smoothly and supply chains functioning properly. The international community played an important role in limiting the use of trade restricting measures during the pandemic. Through several joint ministerial declarations and statements, many countries made non-binding commitments to refrain from using trade restrictions. Such international political commitments were pivotal in the coordination of a global response to the crisis and in deterring countries from taking unilateral measures that could have further harmed the food security situation in other countries.

At the same time, to ensure the availability of critical food items and contain potential food price increases, many countries lowered existing import tariffs while some countries, even temporarily relaxed technical barriers to trade (TBT) measures on food products, including on content and labelling requirements and standards.

Moreover, several countries increased flexibilities and efficiencies in trade-related procedures and implemented measures to facilitate the flow of agricultural goods and food products. Acknowledging the role of COVID-19 containment measures in hampering trade operations, including the need to provide certificates and other licenses and approvals for trading agricultural products, some governments implemented measures to accept electronic phytosanitary and veterinary certificates on a temporary basis, and simplified import-licensing procedures for selected products.

Measures to support producers and other value chain actors differed among countries. In high-income economies, policies were largely aimed to protect incomes of farmers and processors through direct transfers and loans and promoted food procurement for domestic food aid. They also aimed to support importers and exporters to overcome international logistics and marketing disruptions, for example, through airfreight assistance programmes. In developing countries, policies were aimed to support specific groups of farmers through input subsidies or direct transfers to ensure sufficient domestic availability by expanding food reserves (comprised of both imports and domestic procurement), and to support consumers through domestic price controls and stock release from national reserves.

With the overall global market situation being robust and prospects favourable, the challenge of food security continues to be one of food access, rather than availability. In many developing countries, acute and chronic food insecurity are expected to increase due to the effects of slower economic activity, rising unemployment and reduced remittances from workers abroad. In this context, social safety nets, including unemployment payments and cash/in-kind transfers represent fundamental means to secure incomes and access to food for the poor and vulnerable.

As the full economic and social impacts of the pandemic are still unfolding, and as the disease is still spreading, COVID-19 will continue to be a serious source of uncertainty in the markets with potentially severe implications for access to food and longer-term shifts in global demand and supply of food and agricultural commodities. It is therefore of utmost importance that countries and the international community as a whole continue supporting vulnerable groups in promoting access to food, ensuring open markets and uninterrupted trade flows, and avoiding actions that can jeopardize the food security situation particularly in developing countries dependent on food imports.

METHODOLOGY

Covering the first half of 2020, this report provides an overview of the short-term changes in trade patterns and the policy measures related to food and agricultural trade that were adopted by countries in response to the COVID-19 pandemic.

The monthly trade data used in most part of the analysis were extracted in October 2020 and used as reported by the countries at that time. Data revisions and delays in reporting may still lead to changes in the reported data afterwards. At the time of extracting the data, 95 countries had reported data for January to June in 2018, 2019 and 2020 (see Table 11 in the Annex for an overview of the countries represented in each of the regions). The data as reported by the countries include exports to and imports from their trading partners, even if these had not reported data themselves. All monthly data in 2020 are compared to the same time period average in 2018/19 to account for some volatility in the previous years (see Figure 21 in the Annex for a comparison of import values to 2019).

The changes in trade patterns throughout the analysis are interpreted against the backdrop of the COVID-19 pandemic and related measures taken by governments worldwide. Part of the impact could also stem from delayed reporting caused by pandemic-related disruptions in data processing. Changes in trade patterns can also be caused by many other factors in 2018, 2019 and 2020. Further analysis will be required to disentangle effects related to the pandemic from other factors.

Agricultural and food products include all products covered by the World Trade Organization (WTO) Agreement on Agriculture (AoA), Annex 1 plus fishery products (see Table 12 in the Annex for a detailed definition). The regional aggregation follows the M49 standard of the United Nations Statistics Division (UNSD).

The report includes a few country case studies per region. Data for the country case studies were extracted in January and February 2021. The countries have been selected based on data availability and geographical representation and to illustrate a range of impacts of the pandemic on aggregate patterns of agricultural and food trade.

The analysis of policy measures in Chapters 2 and 3 attempts to provide an integrated overview of both border (export restrictions, lowering of export duties, and lowering of import restricting measures) and domestic measures (price controls, release of stocks from reserves and/or domestic food aid, procurement for food reserves, market price support and/or commodity-specific producer subsidies, and non-product-specific producer income support or subsidies).

The policy analysis covers a sample of 66 countries plus the European Union, for which information on COVID-19 related agri-food trade and domestic policy changes was readily available through several policy trackers. Border measures that were reported through Members' notifications to the WTO, the International Trade Centre Market Access Map (ITC Macmap), the International Food Policy Research Institute (IFPRI) export restrictions tracker, and Global Trade Alert were monitored and cross-checked for consistency among these various sources, and to the extent possible, with official announcements on government websites. Domestic policy measures were monitored mainly through FAO tools and reports, namely the Food Outlook, the Food Price Monitoring and Analysis (FPMA) tool, and the Food and Agriculture Policy Decision Analysis (FAPDA) policy database. The final selection of countries was based on the availability of information from several policy trackers, and aims to ensure balance across regions, income levels and commodities (Table 1).

Table 1. **Regions and income levels of countries covered in the policy review.**

REGIONS	NUMBER OF COUNTRIES
Africa	18
Americas	14
Asia	25
Europe	7 + European Union
Oceania	2
TOTAL	**66 + European Union**

COUNTRY INCOME LEVEL	NUMBER OF COUNTRIES
High-income	15 + 26 European Union
Upper-middle income	19 +1 European Union
Lower-middle income	23
Low-income	9
-	-
TOTAL	**66 + European Union**

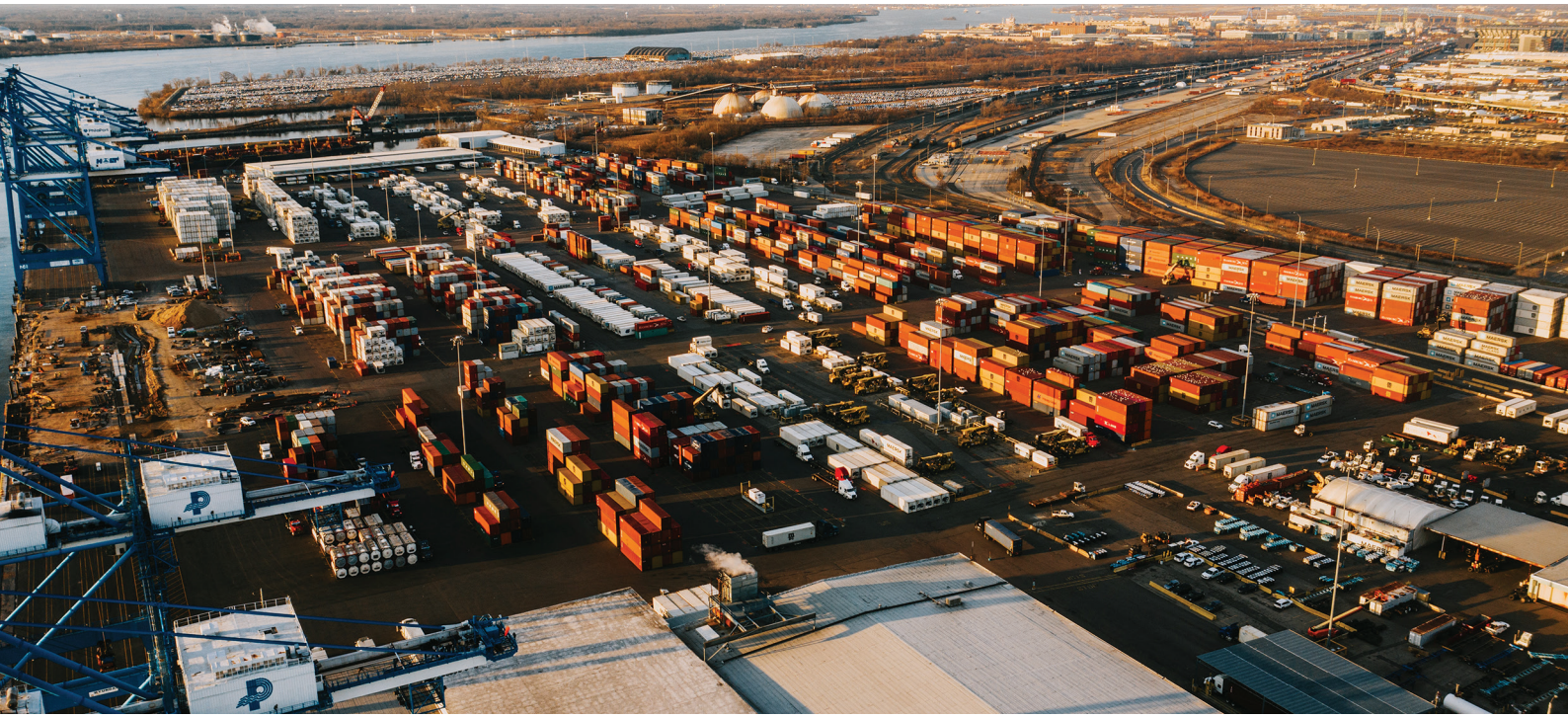
The analysis covers policy measures adopted during the first wave of the pandemic between January and May 2020. The information was accessed until July 2020. Where possible, the duration of the measures is described in the analysis; however, attesting to whether or not the measures were still in place at the time of writing is beyond the scope of this report.

Chapter 2 presents a synthesis, across product groups, of the various kinds of policy measures implemented by governments, whereas Chapter 3 provides a more in-depth assessment of relevant policy measures affecting specific commodities. As such, some policy measures mentioned in Chapter 2 may be repeated but presented in more depth in Chapter 3, and vice versa.

The references for all policy measures reported in Chapters 2 and 3 can be found in the "Policy measures" sub-section of the Bibliography. For ease of reference, these are organized in alphabetical order by country name, followed by descriptions of the type of policy measure and the chapter where that measure is discussed in most depth.

The authors welcome any feedback to correct remaining errors.

CHAPTER 1



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COVID-19 effects on agricultural trade

The COVID-19 pandemic crisis has had unprecedented effects on all dimensions of human life and the full economic and social impacts are still unfolding, as the disease continues to spread around the world. On top of the death toll and overstretched health systems, the virus and the measures to contain its spread have caused a deep global economic recession, increased extreme poverty and acute and chronic food insecurity, rolling back progress made over the past decades.

In its April 2021 *World Economic Outlook*, the International Monetary Fund (IMF) estimates the global growth contraction in 2020 at -3.3 percent (IMF, 2021). Advanced economies are estimated to have contracted by 4.7 percent year-on-year, emerging markets and developing economies by 2.2 percent. According to *The State of Food Security and Nutrition* (SOFI) 2020, and depending on the economic growth scenario, an additional 83 to 132 million people might have been pushed to the ranks of chronically undernourished globally in 2020 as a result of COVID-19 (FAO *et al.*, 2020).

To reduce and mitigate the spread of COVID-19, governments around the world adopted various containment measures, including closures of business activities, confinements, curfews, quarantines, and travel restrictions within and across borders. The first lockdown was imposed in the city of Wuhan and other cities in China on 23 January 2020. By the end of March/beginning of April 2020, most countries in the world had implemented various forms of virus containment measures (Figure 1) (Hale *et al.*, 2020b). Around mid-May 2020, many governments started easing the restrictions, and economic activity, at least partly, resumed.

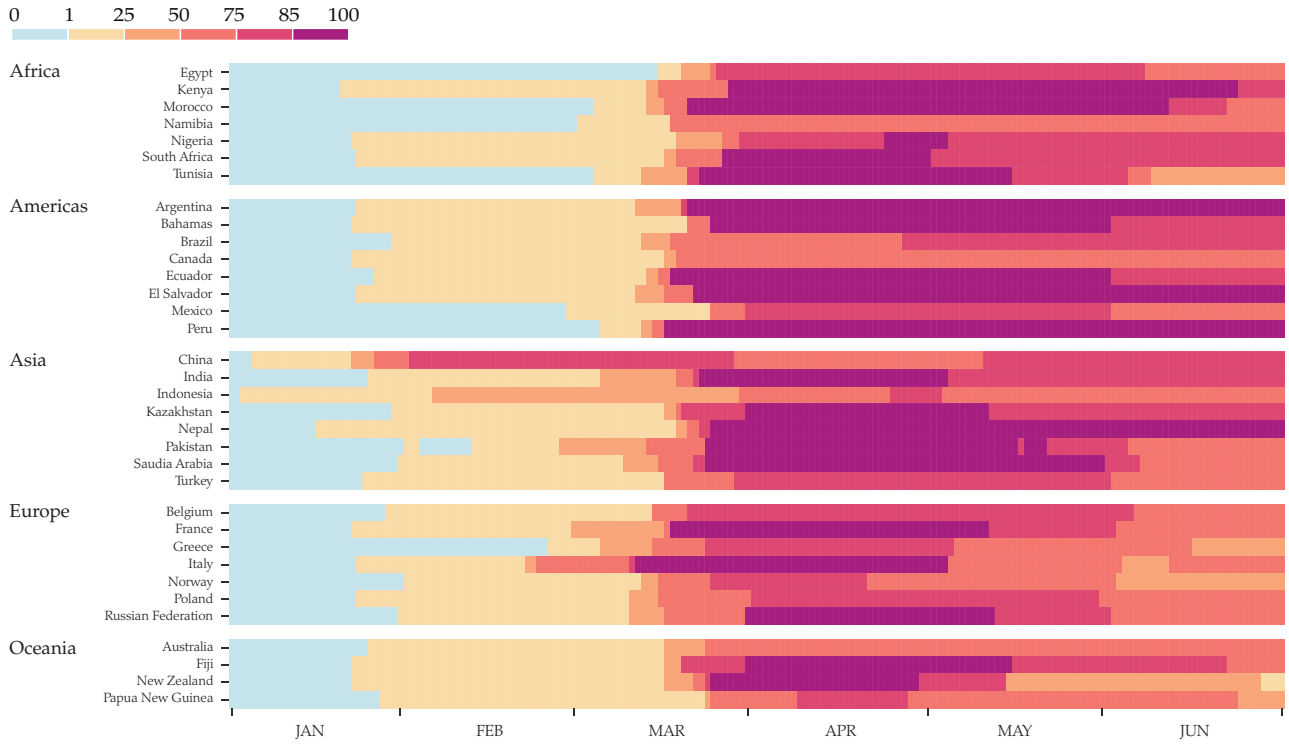
While curbing the circulation of the virus and lowering the pressure on health systems globally, these containment measures also had disruptive effects on food value chains (Figure 2) (Laborde *et al.*, 2020).

The COVID-19 pandemic has triggered questions about the resilience of the global food system in ensuring that nations dependent on the import and export of food products can meet their import demands and realise export earnings in response to shocks such as the one caused by the pandemic.

Border and travel restrictions often led to shortages of agricultural labour, affected the level of trade activity and limited availability of, and access to, inputs, including seeds, fertilizers and pesticides. In addition, labour-intensive segments of the food industry (such as processing facilities) were under stress in an effort to minimize the transmission of the virus, thus running at lower capacity due to shutdowns and partial closures (Larue, 2020; Schmidhuber, Pound and Qiao, 2020).

Regarding the logistics sector, there have been multiple impacts that have varied depending on the product traded. The severe decline in commercial flights affected the distribution of many perishable food products, namely fruits and vegetables, while problems also emerged in maritime freight and at the harbours, as countries globally modified their operation protocols, ranging from quarantine measures to additional documentation and examination. Disruptions have also been reported in relation to container and truck transport, following reductions in service operations (FAO, 2020a; OECD, 2020a; Schmidhuber, 2020).

Figure 1. Oxford COVID-19 stringency index, selected countries, January-June 2020.



Source: Illustration based on Hale et al. (2020a), visualization following the Financial Times (2021).[1]

[1] The stringency index of the Oxford COVID-19 Government Response Tracker covers containment and closure measures imposed by governments to contain the virus spread. The measures considered to calculate the stringency index include school closing, workplace closing, cancelling of public events, restrictions on gathering size, closure of public transport, stay at home requirements, restrictions on internal movement, restrictions on international travel and public information campaigns (Hale *et al.*, 2020b).

Figure 2. Main COVID-19 impacts on supply and demand of agricultural and food products.

SUPPLY	DEMAND
Restrictions on the movement of people and people falling ill: Severe impact on migrant workers; shortages in workforce in agriculture, processing and distribution facilities. **Logistics:** Transport and trade restrictions. **Existing crises:** Topping-up effect to pre-existing problems in different countries (locust in East Africa, African swine fever, climate change, etc.).	**Recession:** Global growth is projected at -3.3 percent in 2020, with significant implications for incomes and consumer spending. **Shift in purchasing modalities:** Lower restaurant traffic, increased e-commerce deliveries, and rise in consumption at home. **Change in consumption patterns:** Increase in both staple foods and ready-to-eat food that can be stored.

The global economic recession that followed the pandemic was associated with significant reductions in income and consumer spending that also affected the demand for food products. Restrictions on the movement of people and the closure of restaurants, bars and hotels induced immediate changes in consumption patterns (Cranfield, 2020; FAO, 2020b; Hobbs, 2020). In addition to the restrictions imposed by governments, massive changes in consumer behaviour including, for example, consumer traffic away from restaurants and bars towards groceries and other food sellers, have also been explained by individual choices tied to fears of infection (Goolsbee and Syverson, 2021).

Food commodity markets have faced major uncertainties related to the COVID-19 pandemic, adding to the challenges posed by the African swine fever (ASF) disease, the desert locust crisis and the more frequent and extreme climate-related events (see Box 9 and Box 10).

However, the efforts of governments and agricultural sector stakeholders worldwide to keep food and agricultural markets open and trade flowing have resulted in agricultural commodity markets being remarkably resilient. Global food markets remained well supplied and prospects are favourable, at least for basic foodstuffs. For instance, cereal production, utilization and trade are all estimated to have been higher in 2019/20 than in the previous years and are expected to grow further in 2020/21 (FAO, 2021).

Commodities other than cereals have been more affected by the pandemic. Oilcrops experienced a COVID-19-related stagnation in terms of demand by the food and non-food sectors in 2019/20 and sugar consumption declined due to COVID-19-related lockdown and containment measures. International dairy prices, measured by the FAO Dairy Price Index, fell between February and May 2020, largely due to a slump in global import demand, caused by logistical bottlenecks, reduced food services sales and market uncertainty. The pace of production expansion across all meat sectors has been moderated by pandemic-related disruptions to production processes and producers' output restraints to balance supply under uncertain demand. Similarly, there has been an overall reduction in fishing efforts due to COVID-19-related restrictions on fishing vessel crews and poor market conditions. Fish supply, consumption and trade revenues have declined in 2020 due to the impact of the COVID-19 containment measures on demand, logistics, prices, labour and business planning (FAO, 2020c).

While global agricultural trade in the first half of 2020 remained close to, or even exceeded, the level of 2019 (Schmidhuber and Qiao, 2020a), the pandemic still had pronounced short-term effects on the patterns of trade in specific agricultural and food products (WTO, 2020). Concerns about food security and safety and the resilience of the trading system led to a breadth of policy responses in many countries in the world.

Covering the first half of 2020, this report provides an overview of the short-term changes in trade patterns and the policy measures related to agricultural trade that were adopted by countries in response to the pandemic.

1.1 Decline and recovery of imports and exports

International trade in food and agriculture plays an important role in global food security. Trade improves the availability of, and access to, food, especially for food import-dependent countries, has the potential to stabilize food prices and increases the diversity of foods available to consumers (FAO, 2015). Agricultural export revenues constitute an important source of income in many developing countries (Schmidhuber and Qiao, 2020a). Trade and global value chains in agriculture and food are also linked to economic development and can promote sustainable outcomes when combined with appropriate domestic measures (FAO, 2020d).

However, COVID-19 and the measures taken to contain the spread of the virus affected the global trading system and had clear short-term effects on the patterns of food and agricultural trade in the first half of 2020 (Figure 3).[2] While global import values in January 2020 were slightly lower than the average of the same month in 2018 and 2019, they increased in February and March.[3] By the end of March/beginning of April 2020, many countries in the world had imposed restrictions on the movement of people, with significant impacts on the global economy. Global food and agricultural imports declined significantly in April (-5 percent), followed by an even greater reduction in May (-10 percent). In June 2020, global trade values rebounded and were up 5 percent compared to previous years (Box 1 discusses the development of commodity prices in global markets).

A part of the COVID-19 pandemic's impact on trade values was caused by abrupt trade disruptions. A trade disruption describes a trade flow of specific commodities and between two trading partners that was observed in previous years, but discontinued in 2020.[4] Trade disruptions were caused by several factors including policy restrictions (see Chapter 2.1), difficulties in supply chains and trade logistics, and reduced demand for specific commodities. In both April and May 2020, trade disruptions resulted in the number of import flows decreasing by 9 percent compared to previous years at the global level (Figure 4). These were also the months when most countries in the world had just entered the first lockdowns which led to widespread disruptions in all economic activity. However, following the easing of the restrictions in May (see Figure 1), by June 2020, the number of monthly trade flows had bounced back to near pre-pandemic levels.

[2] Agricultural and food products include all products covered by the World Trade Organization (WTO) Agreement on Agriculture (AoA), Annex 1 plus fishery products (see Table 12 in the Annex for a detailed definition).

[3] The analysis in this report is based on trade values (measured in USD), which reflect both changes in traded quantities and changes in export and import prices (see Box 1 for a discussion of changes in prices in globally traded commodities).

[4] Trade flows (or"links") are counted at the HS 6-digit product level by exporting and importing country pair.

Figure 3.

Percentage change of world agricultural and food import values, January to June 2020 compared to the same month average in 2018/19.

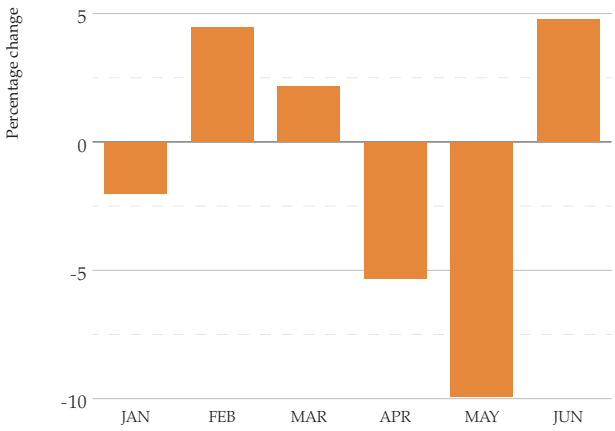
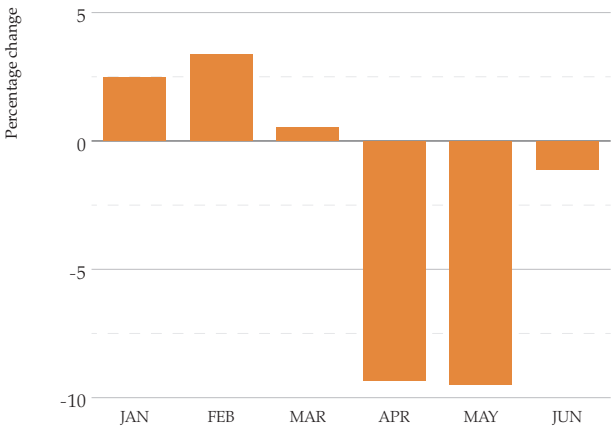


Figure 4.

Percentage change in the number of import flows of agricultural and food products, world, January to June 2020 compared to the same month average in 2018/19.



Source: Estimates based on Trade Data Monitor (accessed October 2020).

Box 1. Evolution of world commodity prices.

Changes in trade values reflect both the changes in quantities traded and in import and export prices. Broadly in parallel with trade values, the FAO Food Price Index, a measure of the monthly change in international prices of a basket of globally traded food commodities, dropped in the first months of 2020 and reached its lowest value in May (Figure 5). Between May and December 2020, the FAO Food Price Index increased continuously. Against the widespread expectation at the beginning of the pandemic that food prices would drop in response to falling demand caused by the global recession, the FAO Food Price Index reached a three-year high for 2020 as a whole, 3.1 percent higher than in 2019, but still more than 25 percent below its historical peak registered in 2011.

Among specific commodity price indices (Figure 6), especially the price indices of sugar and vegetable oils declined rapidly in the beginning of 2020 and recovered strongly in the second half of the year. Fluctuations of the cereals, dairy and meat indices were comparably less pronounced in the first half of 2020. For 2020 as a whole, the FAO Price Indices for cereals, vegetable oils and sugar surpassed the levels of previous years, while the price indices for dairy products and meat remained lower than in 2019.

Figure 5.
FAO Food Price Index.

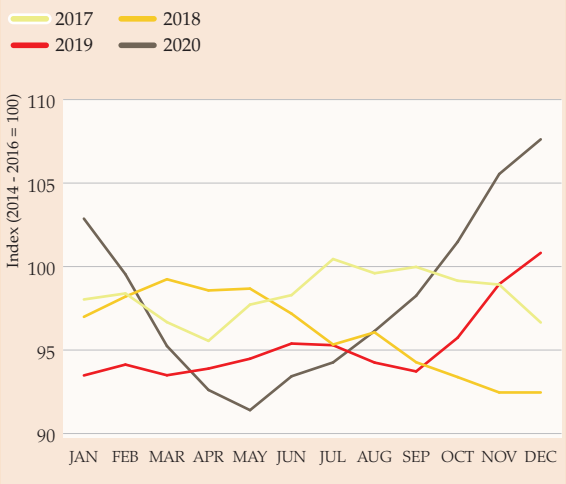
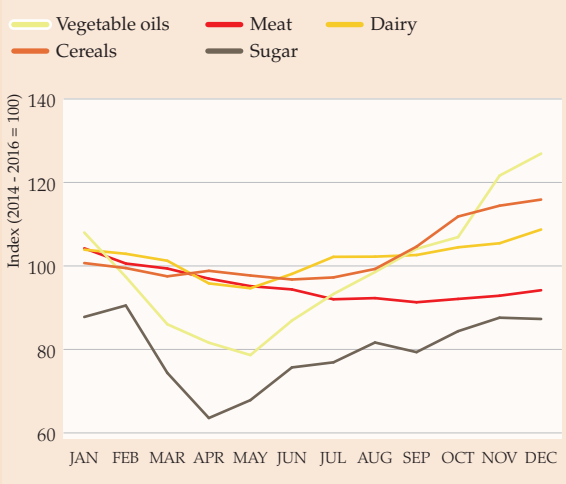


Figure 6.
FAO Food Commodity Price Indices, 2020.



Source: FAO Food Price Index. www.fao.org/worldfoodsituation/foodpricesindex/en/ (accessed January 2021).

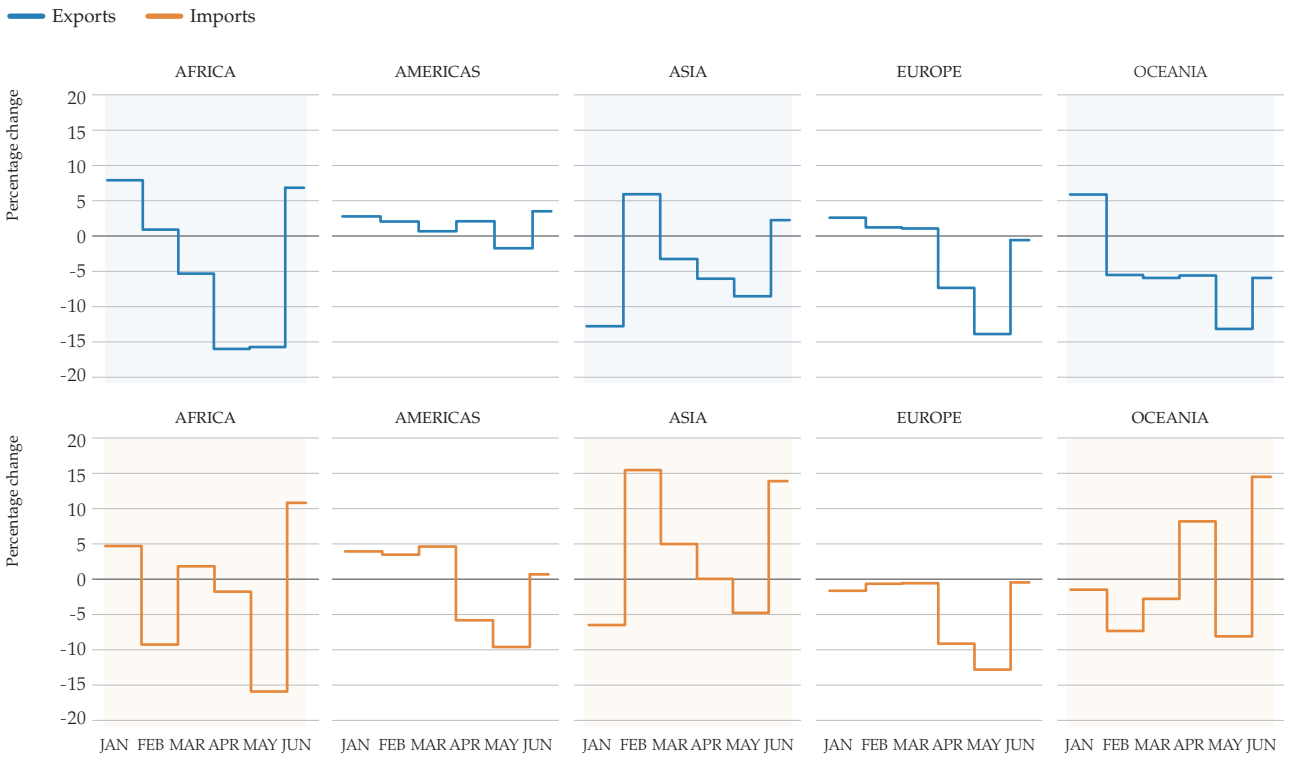
The pandemic and the related containment measures affected agricultural trade worldwide. In fact, patterns similar to the global level have been observed in all five regions (Figure 7). Import and export values dipped in May 2020 compared to previous years, which was followed by a strong rebound effect already in June. Countries in Africa reported a relatively strong decline of both exports and imports,[5] while exports from the Americas remained almost stable (see also Box 4). The strong increase of both export and import values in Asia in February 2020 partly appears to reflect a change in China's reporting of trade data, which has been combined since 2020 for January and February in order to remove volatility stemming from the Chinese New Year period (Leng, 2020), but is also apparent in other Asian countries (see Box 5).[6]

Corresponding to global level patterns, all regions recorded trade disruptions in both exports and imports in April and May 2020 (Figure 8), with the steepest decline in the number of export and import flows reported by African countries. Export disruptions were comparably less pronounced in the Americas, a continent with strong agricultural exporters. In most cases, disruptions affected both intra-regional trade as well as trade between regions, although historically stronger trade relationships appear to have been less affected (see Box 2). Similar to the global level, the number of trade flows had already declined significantly in April in most regions, while the impact on trade values was much more pronounced in May 2020. This could suggest a gradual impact in which weak demand and difficulties in supply chains affected smaller trade links first, while trade of major commodities and between main trading partners were impacted only later (see also changes in the diversity of trade in Chapter 1.3).

[5] Only a very limited number of countries in Africa had reported monthly trade data at the time of extracting the data (see Table 11 in the Annex for an overview of the countries represented in each of the regions).

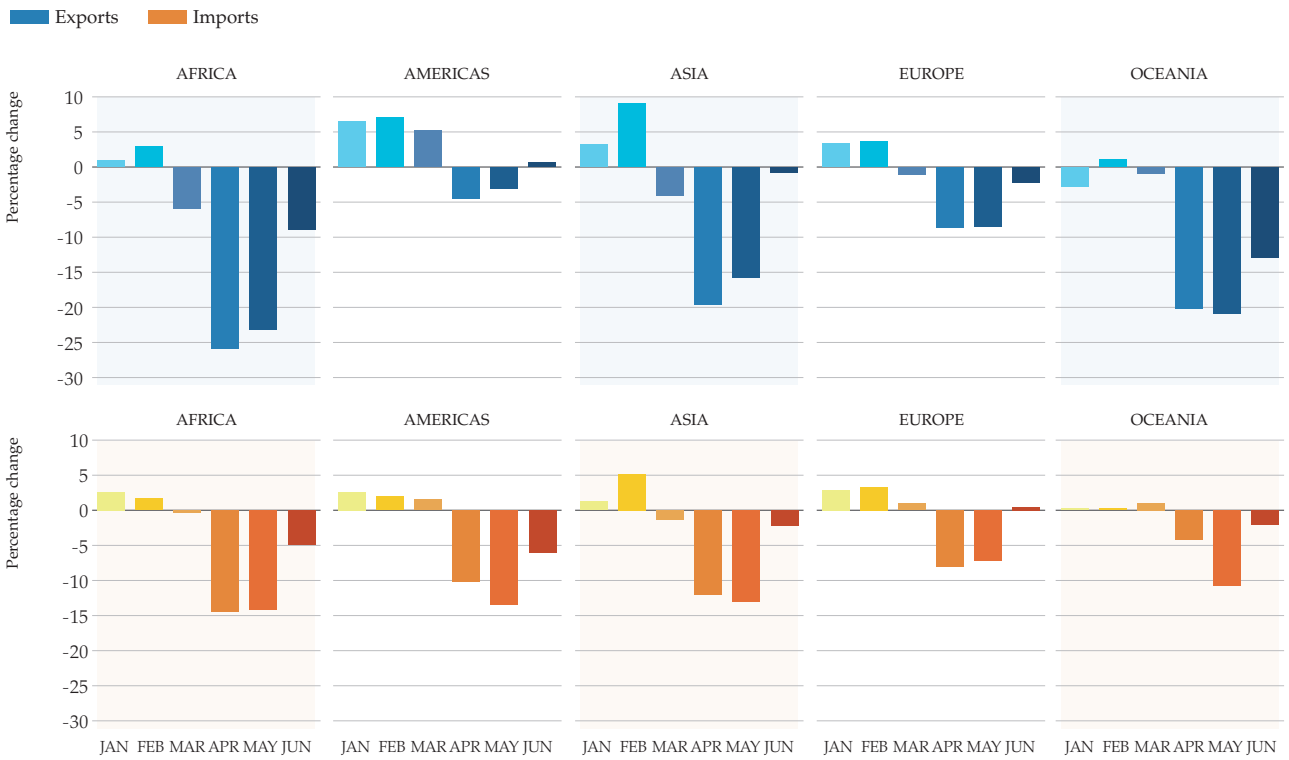
[6] As China is a major exporter and importer of agricultural and food products, this change in reporting appears to be also reflected on global level patterns in January and February 2020 compared to previous years. Accounting for the change in reporting in China indeed smoothens the effects in January and February in 2020 compared to the previous years in Asia, and, partly, at global level. This will be considered in future updates of the analysis.

Figure 7. Percentage change in agricultural and food export and import values, January to June 2020 compared to the same month average in 2018/19, by region.



Source: Estimates based on Trade Data Monitor (accessed October 2020).

Figure 8. Percentage change in the number of export and import flows of agricultural and food products in 2020 compared to the same month average in 2018/19, by region.

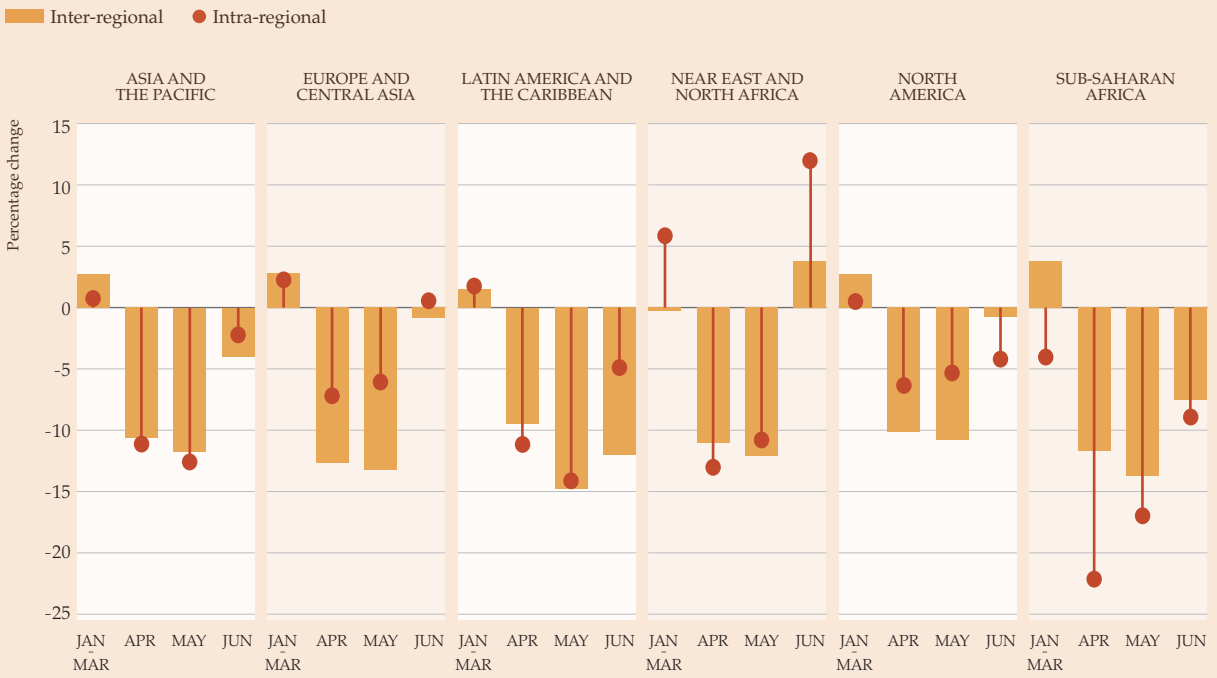


Source: Estimates based on Trade Data Monitor (accessed October 2020).

Box 2. Changes in intra-regional trade.

In terms of trade disruptions, most regions did not experience strong differences in whether their imports were sourced intra-regionally or from other regions (Figure 9).[7] However, intra-regional import flows of countries in sub-Saharan Africa appeared to be less resilient than imports sourced from other regions, while the opposite was observed for Europe and Central Asia and North America. In fact, countries in Europe and Central Asia primarily trade with each other and their trade links are fostered through strong economic and political integration in the region (FAO, 2020d). Intra-regional trade flows might therefore have proved more resilient than trade with other regions. Countries in sub-Saharan Africa have traditionally been more globally oriented in their trade, and these trade relationships also appear to have been more resilient during the pandemic.[8]

Figure 9. Percentage change in intra-regional and inter-regional import flows of agricultural and food products in 2020 compared to the same period average in 2018/19.



Source: Estimates based on Trade Data Monitor (accessed October 2020).

The aggregate patterns of COVID-19 related disruptions of agricultural and food trade can mask very different developments at country level. Indeed, countries within the same region were also differently affected. In Africa, Egypt and Namibia, for example, experienced declining exports and imports, while trade in food and agriculture in Kenya remained at or above the levels in previous years (Box 3).

[7] The regional aggregation in Box 2 broadly resembles FAO Regional Offices.

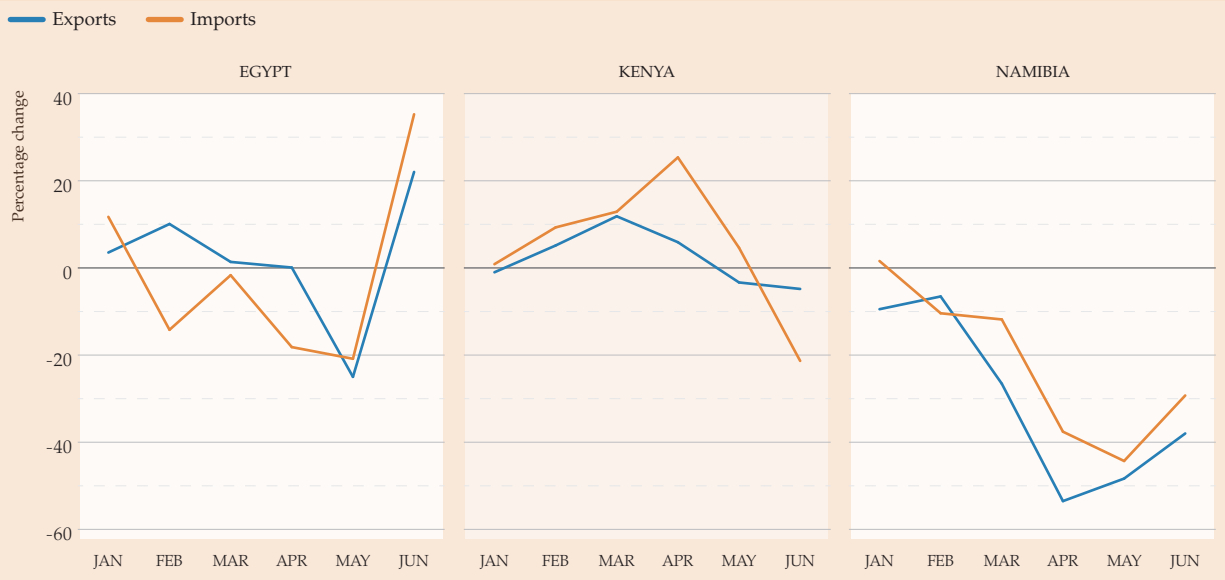
[8] Only a limited number of countries in sub-Saharan Africa had reported monthly trade data at the time of extracting the data and reliable information on intra-African trade is also scarce in general given the large share of informal trade in the continent (Malabo Montpellier Panel, 2020).

Box 3. A closer look at markets in Africa.

In Egypt, export values of agricultural and food products clearly deviated from 2018/19 levels only in May 2020 (Figure 10). Import values remained below average in February, April and May 2020. In fact, in May, import values of almost all commodity groups in Egypt declined compared to previous years. Egypt is a major wheat importer and experienced also declining wheat import values and flows in both April and May, while import values were above average in June. Egypt's import values of flours, starches and malts were far above average in all observed time periods except May when they declined. In addition, Egypt's imports became more concentrated in a fewer number of products and trading partners at the height of the pandemic-related global movement restrictions. Egypt's cotton exports, which contribute an important part to Egypt's GDP (The Africa Report, 2020), suddenly dropped between March and May 2020 due to COVID-19 related disruptions and an overall decline in demand for textiles and cotton products. Exports to India, Egypt's main cotton market, were suspended for almost three months due to disruptions in port operations and reduced spinning capacity in India (Omar and Akingbe, 2020). Both Egyptian exports and imports of agricultural and food products recovered strongly in June 2020.

Kenyan exports and imports of agricultural and food products did not show a clearly COVID-related pattern. In fact, food exports and imports of Kenya, a low-income food-deficit country, appear to have increased after the imposition of lockdown measures of Kenya and its main trading partners (Socrates, 2020). The volume of fruit exports, for instance, surpassed the 2019 level and Kenyan tea exports peaked at a record high in April 2020. However, reflecting global patterns, shipments of flowers, an important export sector in Kenya, to the European Union via the Netherlands declined sharply (Mold and Mveyange, 2020). By contrast, Namibia saw a deep decline in both export and import values of agricultural and food products in April and May 2020 with weak signs of recovery in June. Import values and the number of import flows of Namibia decreased significantly in almost all commodity groups.

Figure 10. Percentage change in agricultural and food export and import values in selected countries in Africa, January to June 2020 compared to the same month average in 2018/19.



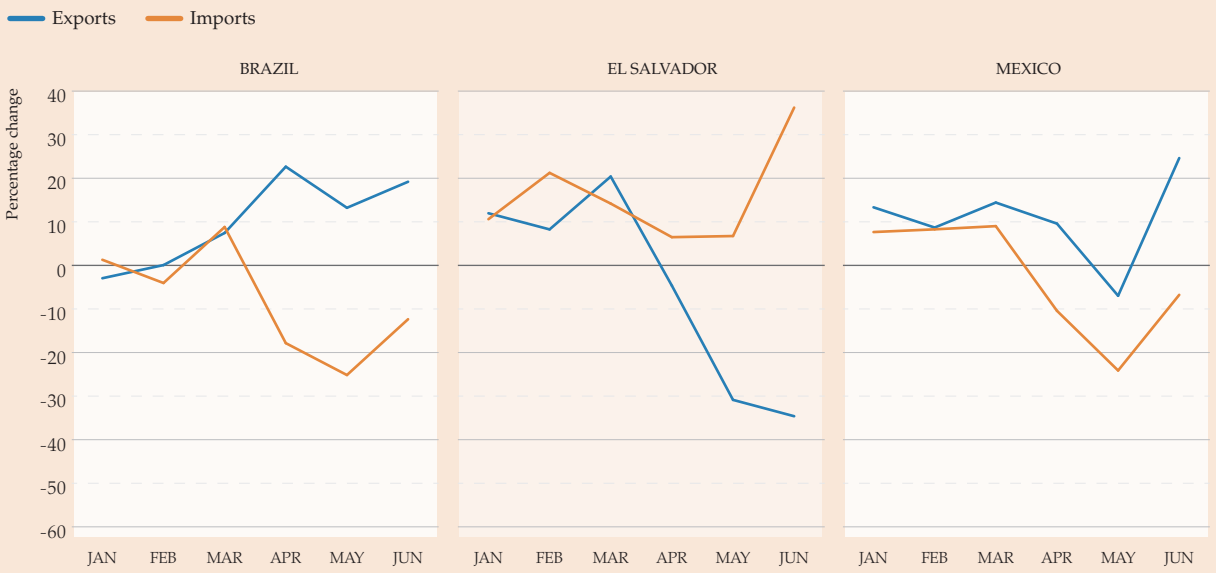
Source: Estimates based on Trade Data Monitor (accessed January 2021).

Box 4. A closer look at markets in the Americas.

In Latin America and the Caribbean, Brazil, a major agricultural exporter, managed to drive up its exports compared to previous years, while import values declined compared to the 2018/19 trend in April and May (Figure 11). In fact, Brazil and Argentina, the main exporters in the region, both saw increasing export values in both April and May 2020, especially in their main export commodities meat, cereals (Argentina), flours, starches and malts (Brazil), and oilseeds. The number of export flows, however, declined in almost all commodity groups, along with an increasing intensity and concentration of trade in the remaining trade flows.

El Salvador's exports were lower than in previous years in May and June 2020, but its imports were higher and increased strongly in June. Mexico's exports in value terms were higher in March, declined somewhat in May and recovered in June 2020. Mexico's imports declined compared to the 2018/19 trend in April and May, but also recovered to almost pre-COVID patterns in June.

Figure 11. Percentage change in agricultural and food export and import values in selected countries in the Americas, January to June 2020 compared to the same month average in 2018/19.



Source: Estimates based on Trade Data Monitor (accessed January 2021).

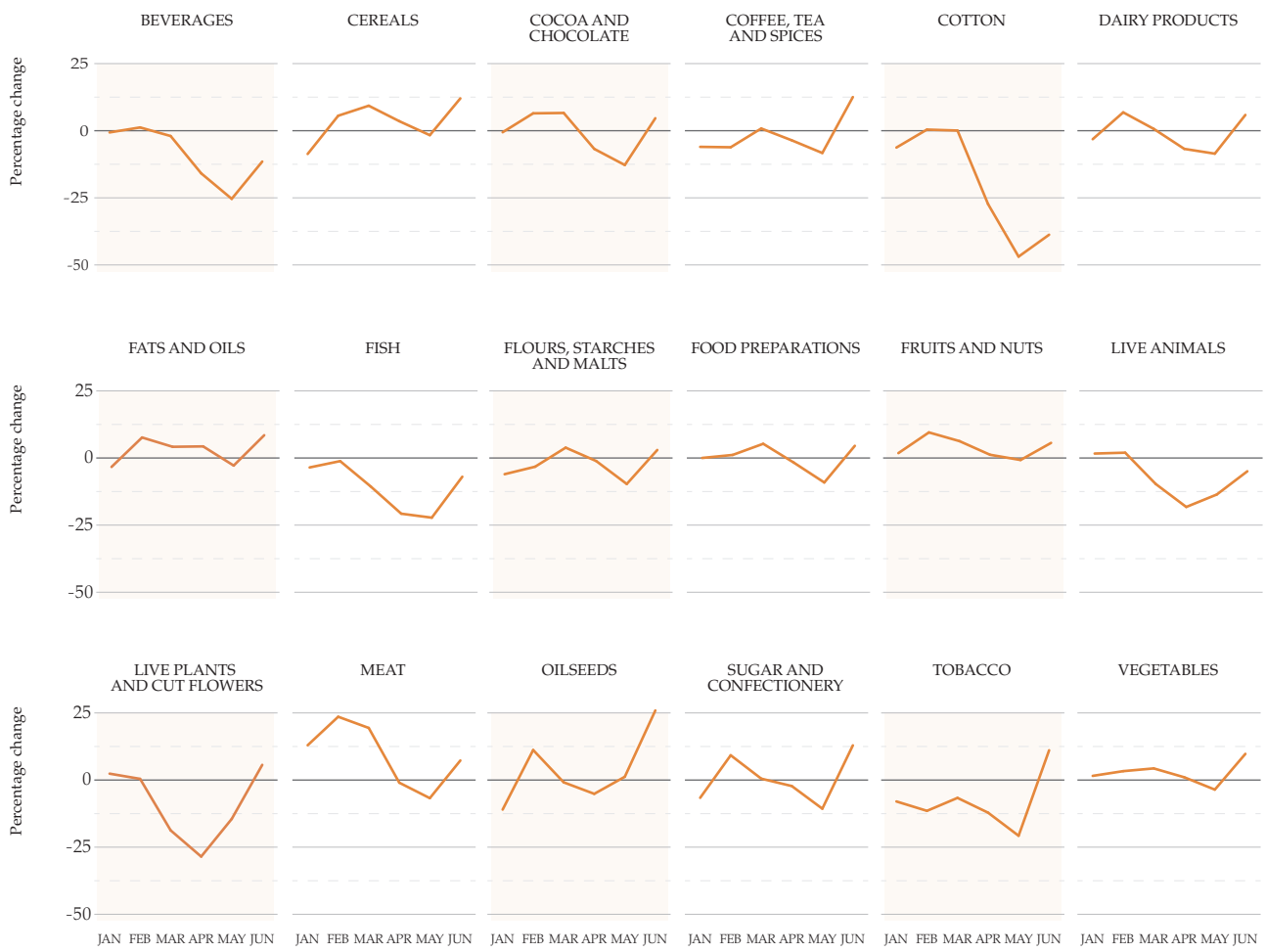
1.2 Impacts across countries and commodity markets

While overall trade values and flows declined in April and May 2020, there were also pronounced differences at the commodity level (Figure 12). Effects on the trade of many major commodities and staple foodstuffs such as cereals, oilseeds, fats and oils as well as foods important for a healthy diet such as fruits, nuts and vegetables remained rather limited (Schmidhuber and Qiao, 2020a), even at the height of the trade disruptions in May.

Other commodity groups, especially non-food commodities, were significantly affected. Trade import values of cotton declined by almost 50 percent in May 2020, probably owing to a reduction in demand for downstream products using cotton as an intermediate input (Muhammad, Smith and

Yu, 2021; TextileFuture, 2020; Voora, Larrea and Bermudez, 2020). Significant impacts are also evident on import values of products such as live animals, live plants and cut flowers, and tobacco, which were affected by logistical bottlenecks, reduced demand, and, partly, policy restrictions (see Chapter 2.1.2) (Morton, 2020; Saha and Bhattacharya, 2020). The pandemic also significantly reduced the import values of fish and beverages. The trade of fish and beverages has been particularly affected by domestic measures that were taken to contain the spread of the virus such as the closure of restaurants and restrictions on social gatherings (Eftimov *et al.*, 2020; FAO, 2020c). In addition, some fish trade was also affected by temporary trade restrictions (see Chapter 2.1.2). The import values of most commodities recovered in June, but still remained below the average level of 2018/19 for beverages, fish, live animals, and, quite substantially, cotton.

Figure 12. Percentage change in global import values of agricultural and food products in 2020 compared to the same month average in 2018/19, by commodity group.



Source: Estimates based on Trade Data Monitor (accessed October 2020).

These trade patterns differ across countries. For example, export values of Argentina, a major agricultural exporter increased in the main product groups such as cereals, meat and oilseeds in April to June 2020, although the number of export flows of these products did not significantly change. Also Brazil expanded its exports of meat, flours, starches and malts, oilseeds and cotton in terms of export value, despite a decline in the number of export flows of the same commodities (see also Box 4). In Italy, trade in agricultural and food products appears to have been mainly affected by logistical bottlenecks and changes in demand for Italian exports. A study found that, in particular in Europe, demand for Italian products and thus exports to European countries declined during the first phase of lockdowns in spring 2020. Especially Italian flower and wine exports were affected

in the period March to May 2020. The demand for flowers declined as a clear effect of the closure of florists, cemeteries and markets, while the sharp decline in wine exports was attributed to the closure of the hospitality sector (Coluccia *et al*., 2021).

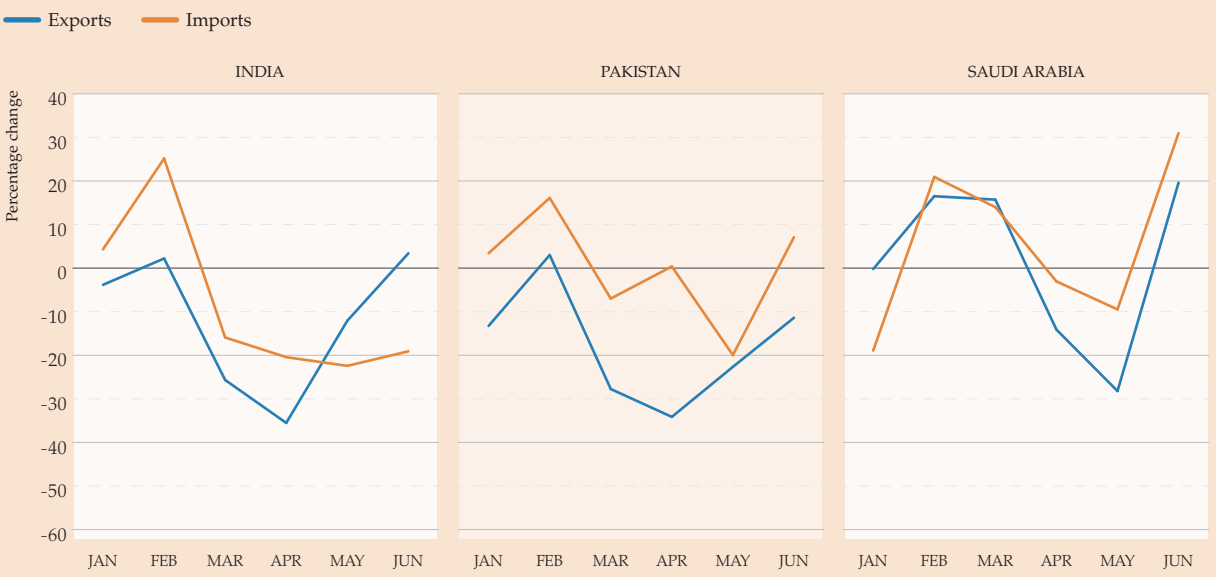
Box 5. A closer look at markets in Asia.

India's exports in value terms (measured in USD) dipped in April, while its imports remained somewhat subdued in the whole time period March to June 2020 (Figure 13). While the Government of India had exempted all agricultural and food related activities from the lockdown measures imposed since March 2020, the temporary closure of ports, processing facilities, warehouses, and retail outlets still led to widespread disruptions at the beginning of the lockdown. In fact, port operations slowed down or halted completely after the lockdown announcement on 24 March 2020 as the lack of public transportation and restrictions on vehicle movements hindered employees from reaching port facilities and prevented the clearing of shipments (Sonali Kalsi, Sandoval and Sood, 2020).

In India, also domestic food trade was heavily affected by the lockdown measures imposed since March 2020. A study finds that product availability both online and in wholesale markets fell, pointing to supply chain disruptions within the country. Supply chains were also more fragile for products that are produced far from retail centres and perishable products were generally more affected (Mahajan and Tomar, 2021).

Pakistan's exports remained below average from March to June 2020, while its imports were more volatile but did not very significantly deviate from the trend. Saudi Arabia's food exports declined in April and May, but recovered in June to above average levels. As a highly import-dependent country, Saudi Arabia's agricultural and food imports remained above 2019 levels almost throughout the first half of 2020.

Figure 13. Percentage change in agricultural and food export and import values in selected countries in Asia, January to June 2020 compared to the same month average in 2018/19.



Source: Estimates based on Trade Data Monitor (accessed January 2021).

1.3 Impacts on the diversity of trade

Beyond the decline in trade values and a reduction in the number of trade flows, the diversity of trade in terms of products and trading partners also decreased at the height of the pandemic-related movement restrictions worldwide. Imports of a broad range of food products can be important for ensuring healthy diets based on a diversity of foods. In addition, reliance on imports from a larger range of countries can improve resilience to supply shocks in the countries the foods are sourced from, for example in cases when shocks are caused by extreme weather events, plant and animal diseases or export restrictions (Koppenberg *et al*., 2021). Equivalently, exporters seek to diversify products and markets to buffer impacts of supply and demand shocks on their economy.

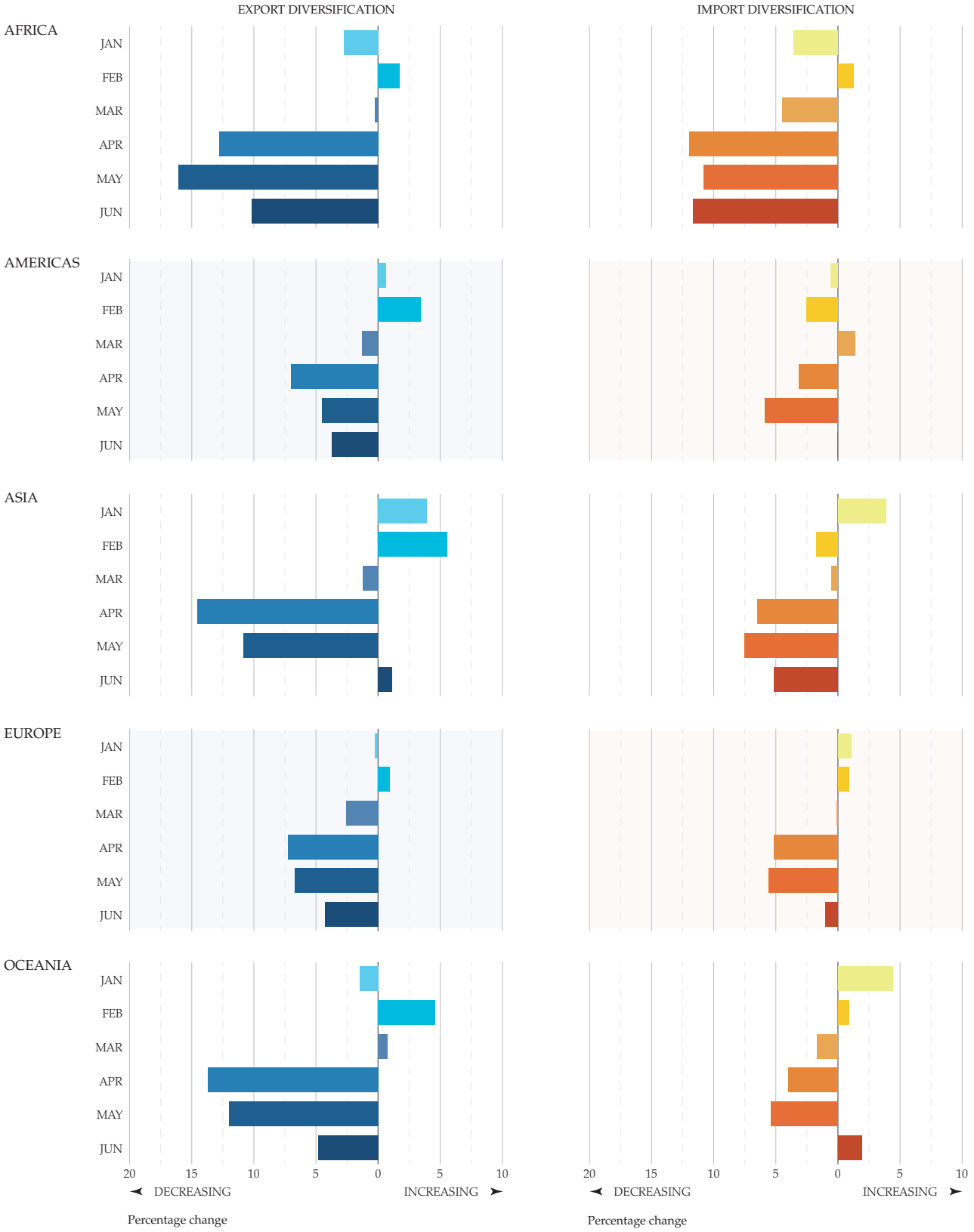
However, during the first wave of the COVID-19 containment measures in April and May 2020, imports and exports became less diversified at the global level and in all regions (Figure 14).[9] In particular, exports and imports of the African countries included in the sample became less diverse, a trend that continued in June. While exports remained slightly less diversified than in previous years in the Americas, Europe and Oceania in June 2020, the diversity of imports of these regions remained around pre-pandemic levels in the same month.

Less diversity reflects fewer products traded and fewer trade partners and/or a more uneven distribution of trade intensity across existing trade flows, thus increasing concentration across product space and trade partners. In fact, the increasing concentration of trade during the first wave of the pandemic and related containment measures appears to have happened mainly through decreasing numbers of products traded and a reduction in trading partners. Only in the Americas, a larger part of the increasing concentration in exports was caused by an increasing intensification in fewer numbers of remaining trade flows.

Imports became also less diversified within different product groups in April and May 2020 (Figure 15). Concentration increased especially in product groups characterized by a high heterogeneity and diversity in terms of products and/or exporters such as meat, but also fish, fruits and nuts, and a few others. Partly, trade in these product groups became already more concentrated before the main impacts of the pandemic hit in April and May 2020 (e.g. meat and cotton). Other product groups including beverages, cereals, fats and oils were less affected.

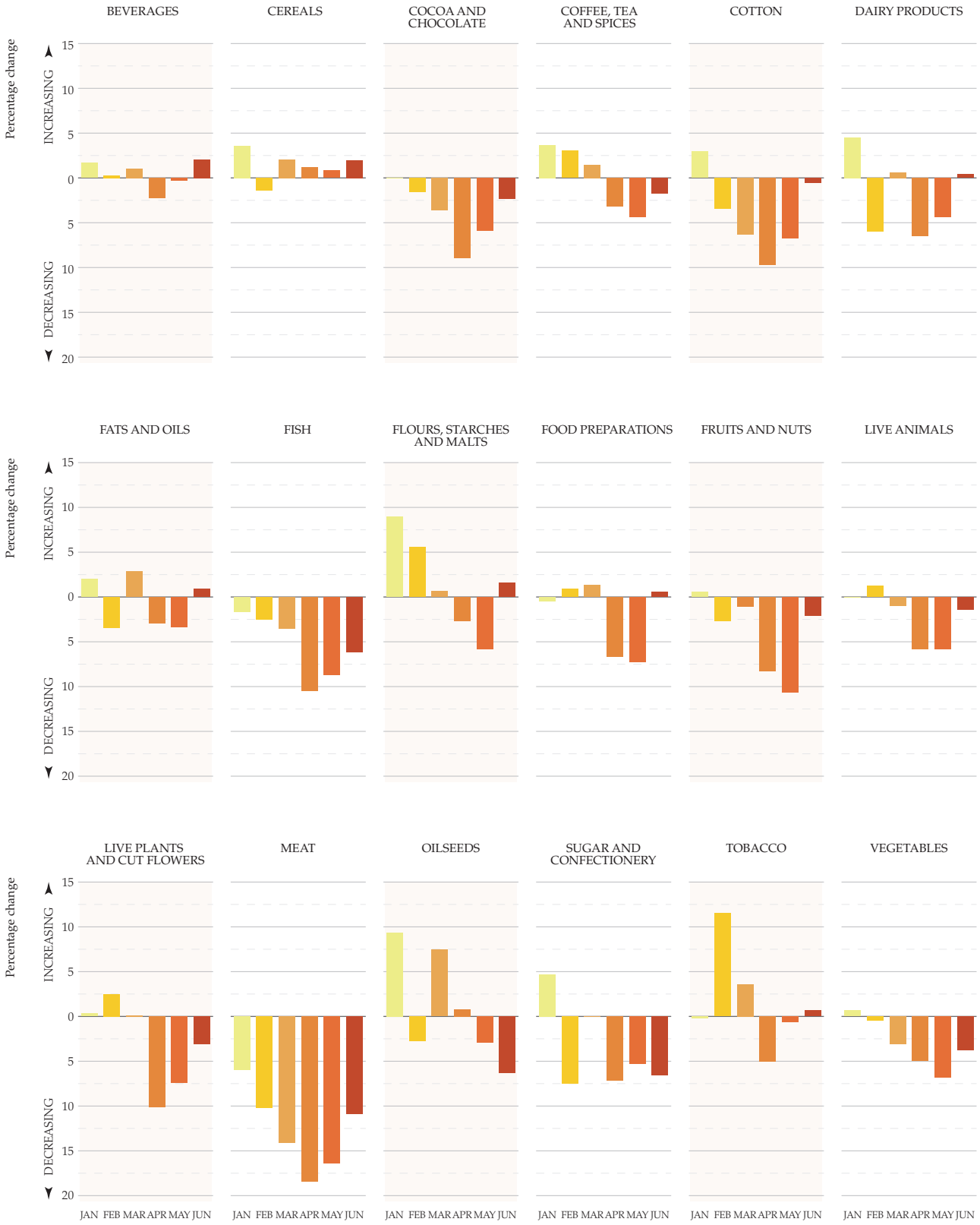
[9] Trade diversification is measured by the Theil index. The Theil index as an overall diversification measure can be further decomposed into extensive export/import diversification, that is an increase in the number of flows through an increase in exported/imported products or trading partners, and intensive export/import diversification showing the distribution of export/import values across the existing trade flows (Cadot, Carrère and Strauss-Kahn, 2010; IMF, 2014). Very similar patterns as the ones reported for the Theil index were obtained using two alternative concentration/diversification measures, the Gini and Herfindahl index. All diversification indices have been calculated at HS 6-digit product level.

Figure 14. Percentage change of an index of export and import diversification across agricultural and food products and markets, 2020 compared to the same month average in 2018/19, by region.



Source: Estimates based on Trade Data Monitor (accessed October 2020).

Figure 15. Percentage change of an index of import diversification across agricultural and food products and markets by commodity group, world, 2020 compared to the same month average in 2018/19.



Source: Estimates based on Trade Data Monitor (accessed October 2020).

The aggregate patterns at global and regional level suggest that the impact of the first wave of the COVID-19 pandemic and related containment measures had a clear, but very short-lived effect on agricultural and food trade. In fact, trade in food and agriculture proved very resilient to the shock induced by the pandemic. This also underlines the importance of agricultural trade for food security and nutrition in the world. Most governments, various institutions, organizations and business stakeholders actively supported the seamless continuation of all food system activities and the smooth functioning of agricultural trade and value chains. Chapters 2 and 3 provide a stocktaking and discussion of policy responses that were taken by governments worldwide to ensure food availability and accessability for their populations during the pandemic.

CHAPTER 2

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Agricultural trade and related policy responses to COVID-19 (January to May 2020)

The pandemic and its unprecedented effects on agricultural value chains and the global trading system induced concerns over food security and food safety worldwide. Many countries reacted immediately to apply policy measures with the aim to curb potentially adverse effects on their domestic markets. These covered a wide range of measures, including trade restrictions, lowering of import barriers and domestic measures to ensure stability of production, logistics and access to food (Figure 16). However, many of these responses were temporary.

Figure 16. Main policy responses to COVID-19 impacts on markets and trade.

TRADE RESTRICTIONS	MEASURES TO LOWER IMPORT BARRIERS	DOMESTIC MEASURES
A **limited number of countries** imposed trade related restrictions (very few import restrictions). Many of the export bans were **transformed into export quotas,** and most of them were soon **repealed.** **Import** restrictions mainly addressed trade of **live animals, fish, and some horticultural products.**	Several countries **lowered import barriers,** mainly in the form of suspending import tariffs and, in limited cases, raising tariff rate quotas (TRQs). Selected countries also **lowered technical barriers to trade (TBT)** measures to facilitate imports of critical food items. **Most measures were temporary,** put in place in March/ April and aiming to last until the end of the year.	**Producer support** measures were provided to ensure production. Some countries provided **logistics and marketing** support. **Several countries increased domestic food procurement targets,** and/or **increased imports** to build national reserves, ensure availability. Some countries implemented **ceiling prices,** while others **expanded food distribution programmes** to ensure economic access.

2.1 Trade-restricting measures

2.1.1 Limited use of export restrictions by major exporters

Compared to the global food price crisis in 2007/08, when major exporters such as Argentina and Ukraine imposed export restrictions on wheat, and India and China on rice, these major players refrained from similar measures in the pandemic. While some other important exporting countries have imposed export restrictions (such as the Eurasian Economic Union (EAEU), the Russian Federation, and Kazakhstan for wheat and some flours; Viet Nam, Cambodia and Myanmar for rice), such measures have generally been short-lived (see Box 7 for an overview of export and import developments in Belarus and the Russian Federation). Good production prospects and high stocks-to-use ratios (for cereals) at the beginning of the year have played a role in strengthening the buffer capacity of the global food market and reducing the risks of food shortages, and consequently the incidence and duration of trade-restricting measures so far. Many countries have also committed to keeping supply chains alive and refraining from using export restrictions (Box 6). In fact, on the contrary, some major exporters lowered export duties to boost exports (e.g. Argentina for wheat and maize, Indonesia and Malaysia for palm oil), in a bid to support traders whose revenues were already severely hit by transportation and logistics disruptions due to COVID-19 containment measures.

Box 6. Joint ministerial statements and declarations to avoid trade-restricting measures during COVID-19.

Throughout the spread of the pandemic, through joint ministerial declarations and statements, many countries have made non-binding commitments to refrain from trade-restricting measures.

Table 2. Joint ministerial statements and declarations between March and May 2020.

MINISTERIAL STATEMENTS AND DECLARATIONS	DATE
"Joint Ministerial Statement by Australia, Brunei Darussalam, Canada, Chile, Lao People's Democratic Republic, Myanmar, New Zealand, Singapore and Uruguay affirming commitment to ensuring supply chain connectivity amidst the COVID-19 situation"; Followed by "Declaration on Trade in essential goods for combating the COVID-19 pandemic" by WTO Members Singapore and New Zealand	25 March (Joint statement); 16 April (Singapore, New Zealand Declaration)
"Declaration on Food Security and Nutrition during the COVID-19 pandemic" by Ministers for Agriculture of the African Union Member States	16 April
G20 Ministerial Statement on COVID-19	21 April
Joint Statement "Responding to the COVID-19 pandemic with open and predictable trade in agricultural and food products. Statement from: Australia; Brazil; Canada; Chile; Colombia; Costa Rica; European Union; Hong Kong, China; Japan; Republic of Korea; Malawi; Mexico; New Zealand; Paraguay; Peru; Qatar; Singapore; Switzerland; The Separate Customs Territory of Taiwan, Penghu, Kinmen and Matsu; Ukraine; United Kingdom; United States and Uruguay", at the WTO General Council	22 April
Association of Southeast Asian Nations (ASEAN) Declaration and Statements on COVID-19 at the WTO General Council	1 May
Communication of the LDC Group on "Securing LDCs emergency access to essential medical and food products to combat the COVID-19 pandemic", at the WTO General Council	4 May
Statement on "COVID-19 and the multilateral trading system by Ministers responsible for the WTO from Afghanistan; Australia; Barbados; Benin; Cambodia; Canada; Chile; Colombia; Costa Rica; Ecuador; El Salvador; Guatemala; Guyana; Hong Kong, China; Iceland; Israel; Jamaica; Japan; Kenya; Republic of Korea; The State of Kuwait; Lichtenstein; Madagascar; Mauritius; Mexico; Republic of Moldova; Montenegro; Nepal; New Zealand; Nigeria; North Macedonia; Norway; Peru; Saint Lucia; Kingdom of Saudi Arabia; Singapore; Solomon Islands; Switzerland; Ukraine; United Arab Emirates; United Kingdom and Uruguay" at the WTO General Council	5 May
Statement on COVID-19 by Asia-Pacific Economic Cooperation (APEC) Ministers responsible for trade, at the WTO General Council	8 May

Source: Bibliography, section "Joint ministerial statements and declarations".

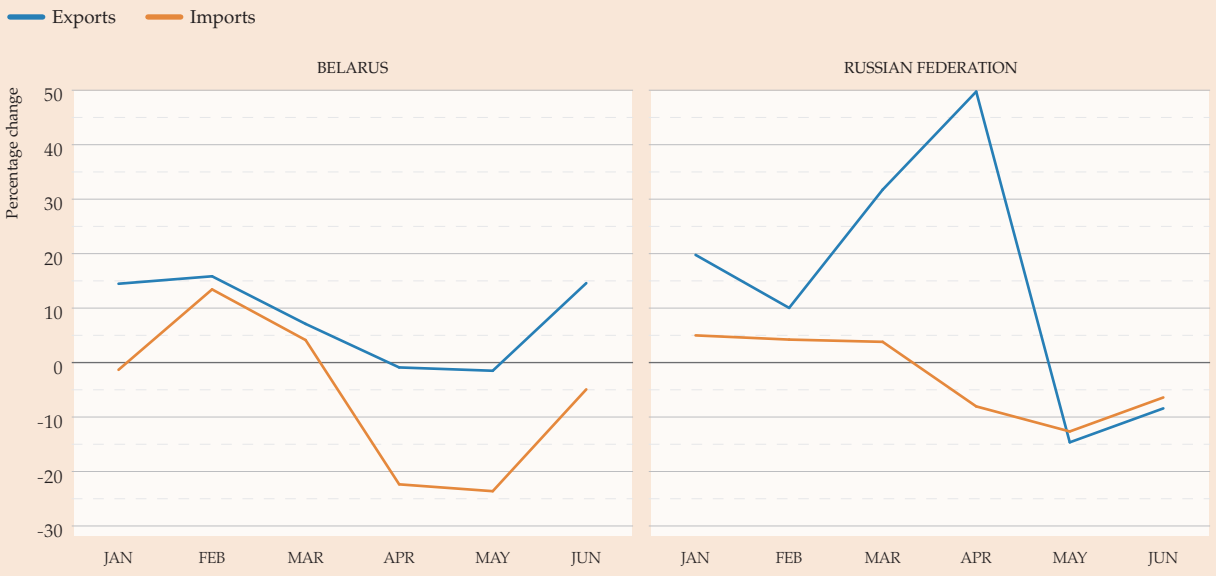
Such international political commitments can play an important role in coordinating a global response to the crisis and deterring countries from taking unilateral measures that may harm the food security situation in other countries. However, despite these commitments, countries may still implement export restrictions in the face of tightening of demand and supply conditions, as was the case for medical equipment during this pandemic. Going forward, efforts to further strengthen market transparency and cooperation among countries can prevent such policy responses in the agri-food sector.

The actions of major exporters are important because they can affect global supplies and prices, with adverse impacts on farmers in exporting countries and consumers in importing countries. Over the last decade, a positive development for global maize, wheat, beef, poultry and dairy markets has been that the concentration of trade in these products has decreased (i.e. both a greater number of exporters and importers of these products today), which should make these markets more resilient to shocks. At the same time, there are some commodities for which export concentration has increased, such as palm oil (Indonesia and Malaysia make up roughly 82 percent of exports), and rice (India, Thailand, Viet Nam, and Pakistan make up roughly 62 percent of exports) (Schmidhuber and Qiao, 2020b).

Box 7. A closer look at markets in Europe.

Agricultural and food exports from Belarus, a member of the EAEU, were higher than in previous years in the first quarter of 2020 but dropped to 2018/19 levels in April and May with a strong rebound effect in June 2020 (Figure 17). Belarussian imports, however, fell strongly in April and May 2020 compared to previous years. They also recovered strongly in June 2020, but without having reached previous years' levels yet. Exports by the Russian Federation saw a strong increase in March and April 2020, but plummeted to 2019 levels in May and June, an effect possibly accelerated by export restricting measures on several products. Russian agricultural and food imports were slightly above average in January to March 2020, and remained somewhat below the 2018/19 average in the second quarter of 2020.

Figure 17. Percentage change in agricultural and food export and import values in selected countries in Europe, January to June 2020 compared to the same month average in 2018/19.



Source: Estimates based on Trade Data Monitor (accessed February 2021).

Many net importing countries put in place export restrictions during the first months of the pandemic. For instance, countries characterized by high food import dependency ratios, such as Algeria, Kuwait, Jordan, and to a lesser extent Angola, responded to the pandemic by temporarily banning exports of several product categories (Algeria) or all food products (Kuwait, Jordan, Angola). Notably, Pakistan, which is a net importer of some food products and exporter of others, also put in place a similar ban on exports of all "edible items" for fifteen days. Several net importers (Tajikistan, Kyrgyzstan, Kazakhstan, North Macedonia, Sudan, Philippines, Mali, Syrian Arab Republic, and Kazakhstan) also put in place export restrictions on specific products, described further in Chapter 3. Although export restrictions by smaller net-importing countries have limited impacts on global supplies and prices, they can nevertheless impact regional markets, and their actions can also signal a lack of confidence in global food markets as a source of food supplies, thus aggravating overall market uncertainty.

2.1.2 Sanitary and phytosanitary (SPS)-related import restrictions

In several instances of infectious disease outbreaks in the past, countries have responded by banning imports of food products from affected countries due to concerns that the disease can be transmitted through food supply chains. For instance, following a plague outbreak in India in 1994, Bangladesh, Oman, Qatar, Italy and United Arab Emirates stopped importing all foodstuffs from India; during a cholera outbreak in Peru in 1991, Bolivia (Plurinational State of), Chile, and Ecuador banned imports of Peruvian perishable foods, and the European Community banned all imports from Peru; and most recently following the Ebola outbreak in Guinea in 2014, Senegal, Côte d'Ivoire, Guinea Bissau, Sierra Leone and Liberia closed their borders with Guinea (Cash and Narasimhan, 2000; Brahmbhatt and Dutta, 2008; FAO, 2016).

Similar policy responses were also observed early in the spread of COVID-19, whereby some countries imposed import restrictions, or introduced requirements for certificates proving negative COVID-19 test results for the consignments (Table 3). In most cases, such measures were imposed on a narrow range of products from specific countries (e.g. live animals, fish, fruits and vegetables from China) and were temporary in their application.

Table 3. Examples of countries adopting SPS-related import restrictions or certification requirements.

COUNTRY	PRODUCTS AND EXPORTING JURISDICTIONS
Bhutan	Meat, fruits, vegetables, betel nut
Egypt	Garlic, carrot and green ginger from China
Georgia	Live animals and fish from China
Jordan	All animal and plant-based products from China
Mauritius	Live animals and fish from China, Italy, Iran (Islamic Republic of), Republic of Korea, Switzerland, Reunion Island and the European Union
Russian Federation	Exotic and decorative animals, including insects, arthropods, amphibians, reptiles and other, live fish and hydrobionts from China
Indonesia	Certification requirement for mammals and pets from China, Hong Kong SAR and China

To date, there is no evidence that domestic food producing animals or food of animal origin can transmit the COVID-19 virus to humans (FAO, 2020e). As such, these types of import restrictions may be ineffectual in addressing any food safety concerns, while at the same time have negative implications for the availability and diversity of food in domestic markets.

2.2 Lowering of import restrictions and advances in trade facilitating practices

In order to ensure food supply and the smooth flow of agricultural imports, many countries lowered import-restricting measures, including both tariffs and technical regulations, and increased flexibilities and efficiencies in trade-related procedures.

2.2.1 Lowering of import tariffs, increased tariff rate quotas (TRQs)

Similar to 2007/08, importing countries from almost all regions responded to market uncertainty during this pandemic by suspending or lowering import tariffs and other duties. In some cases, these policies applied to all food products: Qatar exempted all food products from the country's 5 percent customs duty and South Africa allowed for importation of food products free of duty and VAT. Other countries identified lists of "essential" or "basic" products, for which import duties were suspended: Uzbekistan for flour, poultry and dairy, vegetables, sugar, pulses, vegetable oils; Morocco for wheat, lentils, chickpeas, string beans and broad beans; the EAEU for rye, rice, buckwheat, potato, onion, garlic, cabbage, carrot, pepper, juices; Chad for wheat, maize, rice, sorghum, millet, vegetable oils. Finally, in other cases, countries suspended or lowered import tariffs for a smaller subset of products using different instruments e.g. Turkey (rice, grains, and sunflower seed products); Bolivia (Plurinational State of) (wheat); Colombia (maize, sorghum, soybeans); Costa Rica (rice); Guatemala (maize and rice); Panama (rice); Kenya (maize); Mauritania (edible oils); Pakistan (edible oil) – these policy responses are discussed further in Chapter 3. Such measures mainly aim to boost supplies in the domestic market. However, when put in place by several countries suddenly and simultaneously, particularly if they are large net importers, they can increase global demand for these products and exert upward pressure on prices.

2.2.2 Temporary relaxation of technical regulations on food products

To ensure sufficient food availability and address supply chain disruptions that may have impacted the operations of markets, few countries also temporarily relaxed technical regulations on food products, such as content requirements and standards, and food labelling requirements (Table 4).

Table 4. Examples of countries temporarily relaxing technical regulations on food products.

COUNTRY	CHANGES IN REGULATIONS
Indonesia	Suspended fortification and quality requirements on: palm cooking oil (temp. exclusion of Vitamin A and/or Pro Vitamin A content); white crystal sugar (temp. suspension of Mandatory Indonesia National Standard); and wheat flour (temporary exclusion of the addition of Premix (Fe, Zn, Vitamin B1, Vitamin B2 and Folic Acid) in the implementation of the Indonesia National Standard for Wheat Flour)
Japan	Temporary suspension of non-critical food labelling information (e.g. list of ingredients, ingredient country of origin and nutrition)
Switzerland	Relaxed food labelling requirements on all products by allowing food producers, who meet certain conditions, to source alternative ingredients or packaging materials to substitute ingredients or materials in short supply without having to amend packaging information

2.2.3 Flexibilities in trade procedures and advances in trade digitalization

Recognizing that lockdown measures may hamper the normal operations of government authorities involved in the provision of certificates and other licenses and approvals needed for trading agricultural products (e.g. National Plant Protection Offices, Veterinary Offices, Customs Authorities etc.), several countries implemented measures to accept electronic certificates of phytosanitary and veterinary certificates on a temporary basis, and simplify import licensing procedures for selected products (Table 5). Meanwhile, some countries made permanent advances in digitalizing such government procedures (e.g. implementation of the IPPC ePhyto solution,[10] for the provision of electronic SPS certificates), and some regions established corridors that allowed for increased automation and more efficient data sharing among customs and related authorities, at selected border crossings and for a selected list of essential products.

Table 5. Examples of flexibilities in trade procedures and advances in trade digitalization.

TYPE OF MEASURE	COUNTRY/ REGION	DESCRIPTION
Flexibilities in the provision of SPS certificates	Australia, Brazil, Chile, European Union, Philippines, Russian Federation, South Africa	Acceptance of electronic copies of phytosanitary and/or veterinary certificates for import consignments
Flexibilities in import licencing requirements for specific products	China	Simplified import license renewal and other approval procedures for pesticides, fertilizers, feed and feed additives
	Indonesia	Temporary elimination of "import permit letters" from the Trade Ministry and the import recommendations for horticulture products" from the Agriculture Ministry for garlic and brown onions
	Angola	Facilitated procedures on licensing and payments
Advances in trade digitalization	Argentina, Chile	Implementation of the IPPC ePhyto Solution
	Central European Free Trade Area (CEFTA)	CEFTA implemented a regional green corridors system at certain border crossings to ensure rapid flow of essential products (including meat and dairy, fruits and vegetables, cereals and products of milling industry, oilseeds and oils and animal feed). The Systematic Electronic Exchange of Data for Customs Administrations (SEED) system was upgraded to pre-code products from the core product list and send data electronically to customs and other border services (e.g. generate emails automatically forwarded to phytosanitary, veterinary and sanitary services for each crossing)

[10] The International Plant Protection Convention (IPPC) ePhyto Solution is a tool that transitions paper phytosanitary certificate information into a digital phytosanitary certificate (i.e."ePhyto), enabling trade to be safer, faster and cheaper. More information can be found here: https://www.ephytoexchange.org/landing/.

2.3 Domestic measures

Measures to support producers or value chain actors differed among countries depending on their fiscal space and implementation capacities. In high-income countries, policies mainly aimed to protect incomes of farmers and processors through direct transfers and loans, and included also food purchases for domestic food aid (and for some specific products, private storage aid, see Chapter 3). They also aimed to support importers and exporters to overcome international logistics and marketing disruptions through airfreight assistance programmes. Other countries aimed to support specific groups of farmers through input subsidies or direct transfers, to ensure sufficient domestic availability through expansion of food reserves (comprising of both imports and domestic procurement), and to support consumers through domestic price controls and stock release from reserves.

2.3.1 Producer and agribusiness support measures

Despite being declared an essential service in most countries, agricultural production and downstream activities were still affected by lockdown measures due to labour shortages that hampered planting and harvesting functions and transportation disruptions affecting farm to market deliveries, although these impacts differed by commodity.

Direct transfers and loans: protecting farm incomes was a common policy objective globally, which high-income countries aimed to meet primarily through direct transfers and in some cases, by increased coverage and flexibilities in agricultural loans. Among other measures, Canada launched the national AgriRecovery initiative to help producers faced with additional costs incurred as a result of COVID-19; the AgriStability initiative to increase interim payments from 50 to 75 percent to producers who face significant revenue declines; and, announced that Farm Credit Canada (the state-owned agricultural lender) could defer principal and interest payments for specified periods, and provide expanded access to credit lines. The European Union introduced several measures, including lump sum payments, higher advances of direct payments and rural development payments; loans or guarantees at favourable conditions to cover operational costs; state aid for farms and food processing and marketing firms, and emergency assistance from rural development funds. As part of its Emergency Economic Package, Japan's agri-food producers were eligible for cash allowances, and for those whose sales revenues declined by over 30 percent for any month for a specified period, tax relief. Among other measures, the United States of America initiated the Coronavirus Food Assistance Program (CFAP), including provisions for direct payments to producers of eligible commodities, which experienced a 5 percent price decline in prices. Under its Crop Insurance programme, the United States of America also provided additional flexibilities, including deferring interest on premium and other payments, and increased credit options as part of its Farm Loans programme.

Food purchases and/or subsidies for domestic food aid: several high-income countries also supported farmers by purchasing food products, particularly fruits and vegetables, and distributing them to local organizations. Canada launched a program to help redistribute existing and unsold inventories, including for products such as potatoes and poultry, to local food organizations who are serving vulnerable populations. Given excess milk supplies resulting from school closures and falling food service demand, Japan provided support payments to eligible farmers and food manufacturers to supply food banks as donations or to process into certain products. The United States of America, under the Farmers to Families Food Box Program, announced the availability of funds for purchasing and distributing fresh produce and dairy and meat products to non-profit organizations and government agencies to distribute to those in need.

Targeted assistance for smallholders or poor farmers: some developing countries provided farm support mainly in the form of input subsidies. Bangladesh doubled allocations to support purchases of agricultural machinery and announced measures to distribute seeds among affected farmers; while Senegal announced that it had increased funds destined for distribution of agricultural inputs and equipment to smallholders by 50 percent in order to support productive activities during the 2020 season in the context of the COVID-19 pandemic. Other developing countries provided direct transfers to specific target groups: Indonesia provided direct cash transfers to support underprivileged farmers; and Argentina launched the "direct assistance program" for family, peasant and indigenous farmers.

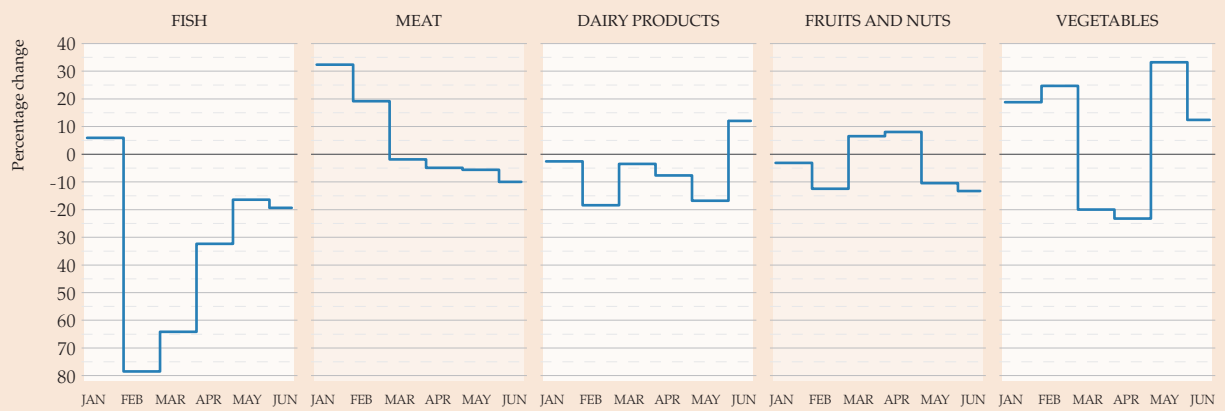
2.3.2 Logistics and marketing support

Airfreight assistance: As the COVID-19 pandemic led to the sudden and widespread grounding of airlines globally, some high-income countries, including Australia, New Zealand and Japan, responded by directly supporting the logistics and marketing of food products that are typically transported by air. Australia launched a temporary assistance programme (the "International Freight Assistance Mechanism") to support exporters of a set of eligible products (including seafood, premium red meat, dairy, horticulture) by meeting a part of their airfreight costs, working with a network of freight forwarders/forwarding agents and air freight service providers for implementation. New Zealand aimed to achieve a similar objective of keeping airfreight affordable for exporters, but unlike Australia, their assistance programme ("International Airfreight Capacity Scheme") financed carriers to make available certain levels of international airfreight capacity on specific routes at specific market rates (see Box 8 for an overview of the development of exports and imports of selected products in Australia and New Zealand). Finally, Japan, in its 2020 Supplementary Budget, announced a programme to support international transportation for perishables in response to decreased international flights.

Box 8. A closer look at markets in Oceania.

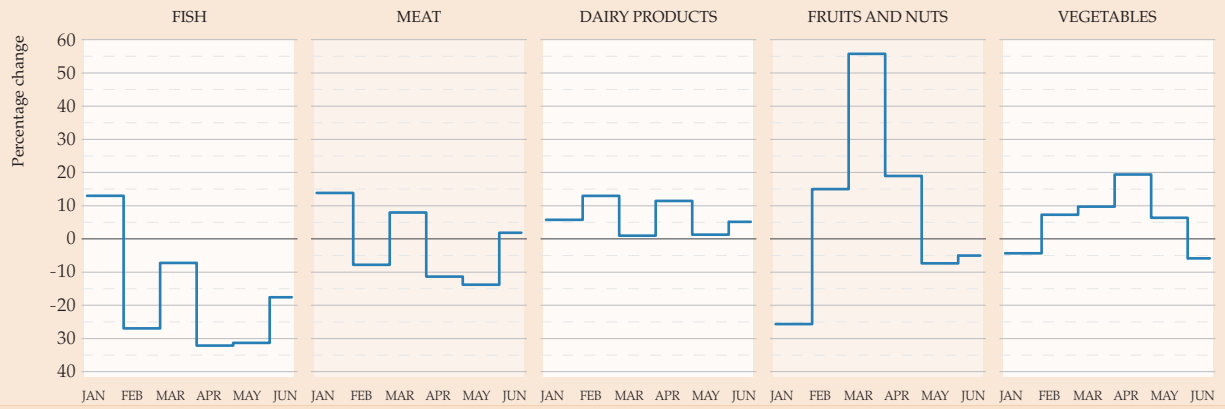
Australia's exports of meat, dairy products, fruits and nuts hovered around average levels of 2018/19, while exports of fishery products declined by almost 80 percent in February (Figure 18). Owing to a bumper harvest of kiwi fruit, New Zealand even managed to increase its fruit exports above average in February to April 2020 (Scoop News, 2020; Vickers *et al.*, 2020). Following global patterns, New Zealand's fish exports clearly remained below average levels (Figure 19).

Figure 18. Australia, percentage change of export values of selected commodities, 2020 compared to the same month average in 2018/19.



Source: Estimates based on Trade Data Monitor (accessed February 2021).

Figure 19. New Zealand, percentage change of export values of selected commodities, 2020 compared to the same month average in 2018/19.



Source: Estimates based on Trade Data Monitor (accessed February 2021).

E-commerce and domestic marketing reforms in developing countries: In other cases, particularly in middle-income countries with significant urban demand, lockdown measures imposed at the height of the initial wave of spread of the disease brought into sharp focus on the need for improving domestic farm to market linkages, potentially providing an impetus for launching or strengthening public e-commerce platforms. For instance, in April 2020, in Turkey, the Ministries of Agriculture, Trade and Finance, together with the Union Chambers of Commodity Exchange, established an online marketplace to facilitate direct transactions between farmers, agribusinesses and buyers, starting with fruit and vegetable products and eventually aiming to include animal products. In India, while the framework for a government e-commerce platform (the "National Agricultural Market" or "e-NAM") had already been launched in 2016, in 2020, the government issued rules (and later passed these as laws) that introduced significant agricultural marketing reforms aimed at facilitating direct links between farmers and buyers and inter-state trade.

2.3.3 Expansion of food reserves

High stocks at the beginning of the pandemic have likely contributed to the confidence in food markets. In 2020, the global stocks-to-use ratio for most commodities was not only substantially higher than in 2007/08, but had also been high for several years compared with multi-year lows in 2007/08 (Figure 20). However, although stock levels, both in absolute terms and relative to their use, have followed an upward trajectory, they are increasingly concentrated in a few countries. China, United States of America, India, Europe, Brazil, Argentina, and the Russian Federation account for 76 percent of all cereal stocks today, with China alone being expected to hold the vast majority (roughly 49 percent) (Schmidhuber and Qiao, 2020b). On the one hand, large stockpiles held by important market players can have a stabilizing effect on international markets, providing reassurance on the availability of supplies. On the other hand, the fact that large stockpiles are held by large countries characterized by strong food consumption trends, such as China and India, can also imply that these stocks may be less responsive to global price signals in the event of shocks that also affect their domestic markets. Some net importing countries, such as Egypt, Bangladesh, Kyrgyzstan, Philippines and El Salvador therefore expanded cereal stock purchase operations (see Chapter 3), including through imports, to build up food reserves, with the objective of meeting the needs for public food distribution programmes, and/or extending support to farmers facing marketing disruptions associated with lockdowns. Meanwhile, China, despite holding large reserves has reportedly expanded its purchases of rice.

Figure 20. Stocks-to-use ratios for cereals (%).

Source: Data underlying FAO (2020a).

2.3.4 Stock release and price controls

Countries with sizable stockholding operations, such as China, India, and to lesser extent Nigeria, released stocks from their reserves to increase domestic market availability, and in the case of India to support vulnerable populations through public distribution programmes (see Chapter 3). Other countries, such as Senegal, provided food aid (in the form of rice, sugar, vegetable oil, pasta) to low-income families.

By far the main market-based domestic instruments to support consumers were price control measures, which were extensively used in many different regions, particularly in sub-Saharan Africa, South-eastern Asia, Latin America and the Caribbean, and Central Asia. While controls on retail prices may have been used even before the pandemic, their widespread use for a broad range of commodities has been a common policy instrument during this crisis to prevent hoarding in the face of market uncertainty.

- **Sub-Saharan Africa:** Côte d'Ivoire set price caps on several products and deployed agents to ensure compliance; Gambia issued a regulation under which retail and wholesale prices of essential goods were frozen at their 18 March 2020 level, and fines and penalties were set out to prohibit exorbitant pricing and hoarding; Madagascar set a ceiling on rice prices to counter a sudden rise in local quotations; Mali set ceiling prices on four food stuffs, including rice; Rwanda instructed retailers and wholesalers to refrain from setting prices of food stuffs (including both domestic and imported food) above prescribed levels.

- **South-eastern Asia:** Cambodia announced the establishment of a task force to monitor daily demand and supply of "strategic goods", and to assess quality and ensure appropriate pricing to avoid abrupt price increases; Indonesia signed a Memorandum of Understanding (MoU) with key food suppliers and distributors to ensure food supply and price stabilization for 11 prioritized food commodities; Philippines introduced retail price freezes, at their March 8 levels, of 9 food items deemed as necessities, including both local and imported products; Thailand reached an agreement with manufacturers, wholesalers and retailers under which 72 necessities would be sold to consumers with discounts of up to 58 percent.

- **Latin America and the Caribbean:** Argentina fixed ceilings on prices of various basic goods but also specifically for milk (discussed in Chapter 3); Barbados announced a list of 48 products that would be protected from exorbitant pricing or shortages: Colombia put in place a price monitoring and inspecting mechanism; El Salvador issued an agreement to fix maximum prices of several basic food items; Honduras set ceiling prices on 30 basic food stuffs.

- **Central Asia:** Kazakhstan established price ceilings for several socially significant food products; Kyrgyzstan set maximum levels of wholesale and retail prices for a number of food items; Ukraine introduced state regulation for prices of 20 products.

- **Southern Asia:** Sri Lanka lowered maximum retail prices on rice.

CHAPTER 3

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Commodity-specific overview of market conditions and policy responses

This chapter takes stock of COVID-19-related market and supply chain disruptions reported for cereals (wheat, maize, rice), meat and dairy, vegetable oils, fruits and vegetables, and corresponding policy responses in the period January to May 2020. For each commodity, the discussion distinguishes between net exporters and net importers, based on their net trade position of the commodity under examination (on average, 2015-2017) calculated using FAOSTAT data.

3.1 Cereals (wheat, maize, rice)

3.1.1 Market situation and supply chain disruptions

The market situation at the beginning of the pandemic was different from the food price crisis of 2007/08, when there was an upward pressure on world prices of cereals due to both supply and demand shocks. These included, shortage in available supplies due to drought-affected wheat crops in Australia, below-average cereal crop in the European Union, and a low maize crop in the United States of America, together with growing demand for grains for non-food uses such as biofuels, and very low stocks-to-use ratios (as discussed in Chapter 2). By contrast, in 2020, the world cereal output has surpassed the previous year's record by 1.3 percent, and stocks-to-use ratios are comfortable (FAO, 2020f).

Nevertheless, lockdowns, physical distancing and quarantines are still having a significant impact on the supply side, the effects of which may play out in the coming months, depending on the length and extent of countries' COVID-19 containment measures. For instance, in Bangladesh, shortages of labour during the lockdown have been reported to have hindered the harvesting of rice and efforts were made to mobilise labourers across the country to aid harvesting activities (Soreng, 2020; Bhuyan, 2020). Similarly, in some Indian regions, the lack of specialized labour force due to travel limitations pushed producers to move production from one crop to another, and also induced changes in crop establishment methods e.g., moving away from transplanting towards direct seeding (Seth and Mukherjee, 2020).

Further problems have also been recorded regarding transportation, both at the local and international level. Concerning domestic markets, travel and movement restrictions hindered the ability of local traders and farmers to sell the agricultural produce in local markets. This was the case, for instance, in Myanmar (Diao *et al*., 2020). Similarly, in the Philippines, where farmers usually rely on the ability to harvest and rapidly bring the rice to mills, containment measures contributed to post-harvest and income losses for many smallholders (Sanderson *et al*., 2020). Regarding international markets, although bulk shipments have not experienced any major disruptions and freight prices dropped dramatically in the first half of 2020, issues have been experienced during port operations, as countries globally have changed port protocols, ranging from quarantine measures to additional documentation requirements and examination. This led to longer delays in supplying markets (OECD, 2020a). Another issue is the reduced availability of commercial flights, which may hamper the on-time delivery of cereal seed. In fact, seeds are often transported by air, and even though the ones needed for the last sowing season had arrived before the imposition of travel restrictions worldwide, doubts remain concerning the next season (OECD, 2020b). However, as discussed in Chapter 2, some countries have also implemented measures to accelerate the processing of cargo shipments, from SPS electronic certificates to green lanes.

As such, in spite of early projections pointing to a comfortable global cereal supply and demand situation, specific regions and countries may still be vulnerable to supply shocks; for instance, those countries suffering from multiple crises, e.g. plant pests and diseases and desert locusts (Box 9) in addition to COVID-19.

Box 9. Impacts of pests on cereal production in developing countries.

The ***desert locust*** is a species of short-horned grasshoppers known for being one of the most destructive migratory pests in the world. They can consume their own weight per day, affecting both crops production – including on maize, sorghum, wheat, and rice - and forage. Usually, these locusts can be found in the semi-arid and arid deserts of Africa, Western Asia and Southwest Asia. However, in cases where weather and habitat conditions allow it, desert locusts can breed and form swarms that invade areas that do not usually suffer from locust infestations (FAO, 2020g; FAO, 1998).

Between 2018 and 2020, as favourable conditions allowed reproduction, desert locusts have rapidly spread across the Greater Horn of Africa in the worst infestation in decades (FAO, 2020h). Starting in early 2020, the situation deteriorated further, with widespread expansion of the pest in Southwest Asia and the region around the Red Sea (FAO, 2020i).

According to the *2020 Global Report on Food Crises*, the current upsurge is likely to contribute to a reduced agricultural production in the affected areas, adding significant pressure on food security. In fact, the desert locust expansion may lead to major losses during the 2020 main and secondary seasons, resulting in below-average harvests, and potentially leading to a more severe food security outlook (GNFC, 2020).

In addition to desert locust crisis, the spread of the ***Fall Armyworm*** (FAW) also poses a threat to food security in many countries. FAW is a dangerous transboundary insect that has spread across more than 100 countries in less than four years beyond its indigenous territory in the tropical and subtropical Americas, and it is now present in Africa and Asia. The spread of the FAW may be a serious threat to the food security and livelihoods of millions of smallholder farmers, as it can devastate the harvest or significantly reduce yields of several crops, including maize, sorghum, millet (FAO, 2020j). For instance, a 2018 report from the Democratic Republic of the Congo reported that FAW were responsible for around 45 percent of maize harvest losses in the 2017-2018 season, which resulted in a net loss of almost 1 million tonnes of maize (République Démocratique du Congo, 2018).

In response to the FAW crisis, in December 2019, FAO has launched the Global Action for Fall Armyworm (FAW) Control to prevent further propagation of the pest, reverse the trend of infestation, and reduce yield losses by strengthening national capacities for FAW sustainable management. The Global Action established a coordination mechanism that aims at connecting national response efforts directly with global, political-level support, and facilitating adoption of new control technology with a long-term sustainability perspective (FAO, 2020k).

The COVID-19 outbreak is posing new challenges to the control and management of both pests, further exacerbating the food insecurity situation in several developing countries in ways no one could have anticipated, and the situation may only worsen if actions are not taken (FAO *et al.*, 2020). Concerning FAW, the implementation of the different containment measures globally – including travel restrictions within and across borders, curfews, physical distancing and quarantine measures – has endangered the execution of the Global Action for Fall Armyworm Control. In many FAW-affected countries, pest management activities including monitoring, field management activities, capacity development initiatives, and distribution and application of pest management products have been reduced or even stopped (FAO, 2020l). Similarly, the countries hit by the locust upsurge, as much as the many humanitarian and development agencies engaged in the area, are experiencing new problems in the provision of monitoring and pest control operations. For instance, because of disruptions in the supply chains, some delays have been reported in the delivery of pesticides to the affected areas (FAO, 2020i).

3.1.2 Policy measures adopted

During the first wave of the COVID-19 outbreak, grains such as wheat, buckwheat, maize and sorghum as well as rice have been the subject of many policy measures worldwide, involving both major net-importing and exporting countries.

3.1.2.1 Wheat and wheat flour

Net exporting countries

Large wheat exporters such as Canada, the United States of America, and the European Union mainly provided farm support in the form of direct payments and loans, not exclusive to wheat farmers (see Chapter 2), and did not undertake any border measures impacting wheat (see Table 6 for an overview of policy measures affecting markets for wheat and wheat flour).[11] The notable export restricting measures came from the EAEU, which imposed an export ban on whole meal flour, and additional unilateral measures imposed by some of its members, such as Russian Federation (export quota on wheat) and Kazakhstan (export quotas on wheat and wheat flour),[12] and Serbia (export ban on wheat flour, although this was removed shortly after it was imposed). With wheat being an important part of the food basket in this region, the Russian Federation also announced the sale of additional stocks from state reserves to increase supplies to the domestic market, while Kazakhstan implemented price ceilings for several products including flour.[13] Pakistan, which is a smaller global wheat supplier, but important in regional markets, also briefly restricted exports of all edible items (see Chapter 2), and implemented restrictions on intra-district movements of wheat crop and a ban on private sector purchases until public sector targets were achieved. By contrast, Argentina lowered export duties on wheat flour (from 9 to 7 percent) to facilitate exports during the same period.

Net importing countries

Some net-importing countries from Northern Africa and Western Asia (Algeria, Jordan, and Kuwait), Central Asia and Southern Europe (Tajikistan, Kyrgyzstan and North Macedonia) and sub-Saharan Africa (Angola) implemented export restrictions to ensure sufficient domestic supplies. More commonly, several countries implemented measures to eliminate import tariffs on wheat and/or wheat flour (Morocco, Qatar, EAEU,[14] Uzbekistan, Bolivia (Plurinational State of), Chad) or reduce them (El Salvador, South Africa).[15] Other countries built up strategic reserves of wheat, including through imports; for instance Egypt approved a financing agreement with the International Islamic Trade Finance Corporation (ITFC) for the purchase of essential commodities including wheat; Bangladesh increased its wheat procurement target by 50 percent, and Kyrgyzstan announced funding to purchase wheat and wheat flour as emergency stocks for market and price stabilization.

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[11] An exception is Romania, which announced export restrictions on wheat (and other grains) to non-EU countries, but this was lifted within one week (Marinas 2020, see Bibliography, section Policy Measures).

[12] Kazakhstan also introduced a temporary export ban on buckwheat.

[13] In Eastern Europe, Ukraine also temporarily implemented a ban on buckwheat exports (Ministry for Development of Economy, Trade and Agriculture of Ukraine 2020, see Bibliography, section Policy Measures). This was soon transformed into an export quota set at the maximum limit of wheat exports for the 2019/20 season (implying a typical export volume for the remainder of the marketing year).

[14] EAEU also temporarily removed duties on buckwheat.

[15] On the other hand, some countries also sought to restrict imports to support domestic producers. For example, in Sri Lanka, imports of several products, including wheat grain, were allowed under a credit basis to counter the economic impact of COVID-19 (Galappattige, 2020, see Bibliography, section Policy Measures).

Several countries also aimed to stabilize markets by releasing wheat stocks on the market. India increased the monthly quota of subsidized food grains, including wheat, to beneficiaries of the Public Distribution System and also free monthly rations of wheat for the vulnerable); and Kyrgyzstan dispersed 10 000 tons of flour to disburse to socially vulnerable groups. Countries also implemented price controls, e.g. Georgia, which, due to trade restrictions by countries in the region, provided importers with a subsidy as long as they sold wheat flour at a specified price. To support farmers, countries generally provided sector-wide support to farmers in the form of input subsidies or direct transfers (Bangladesh and Indonesia respectively).

Table 6. Policy measures affecting markets for wheat and wheat flour.

		BORDER MEASURES			DOMESTIC MEASURES			
		Export restrictions	**Lowering export duties**	**Lowering import restrictions/ subsidizing imports**	**Domestic market controls**; stock release/ food aid**	**Food reserves**	**Market price support/ producer subsidy**	**Non-product-specific producer subsidy**
Net Exporting Countries	**Americas** (Argentina, Canada, United States of America)		(Argentina)					(Argentina, Canada, United States of America)
	Asia (Kazakhstan, Pakistan)	(Pakistan, Kazakhstan*)		(Kazakhstan*)	(Pakistan, Kazakhstan)			
	Europe (European Union, Russian Federation, Serbia)	(Russian Federation*, Serbia)		(Russian Federation*)	(Russian Federation)			(European Union)
Net Importing Countries	**Africa** (Algeria, Angola, Chad, Egypt, Morocco, South Africa)	(Algeria, Angola)		(Chad, Morocco, South Africa)		(Egypt)		
	Americas Bolivia (Plurnational State of), El Salvador)			(Bolivia (Plurnational State of), El Salvador)				
	Asia (Armenia, Bangladesh, Georgia, India, Indonesia, Jordan, Kuwait, Kyrgyzstan, Qatar, Tajikistan, Uzbekistan)	(Armenia*, Jordan, Kuwait, Kyrgyzstan*, Tajikistan)		(Armenia*, Kyrgyzstan*, Qatar, Uzbekistan)	(India, Georgia, Kyrgyzstan)	(Bangladesh, Kyrgyzstan)		(Bangladesh, Indonesia)
	Europe (Belarus, North Macedonia)	(Belarus*, North Macedonia)		(Belarus*)				

*Notes: *Refers to measures applied by the Eurasian Economic Union (EAEU). Any additional measures implemented unilaterally by the concerned EAEU countries are described above.*

***Only reported if in the sources, wheat and/or wheat flour were explicitly listed among the food products upon which domestic market controls were applied.*

3.1.2.2 Maize

Policy measures applied to maize were similar to the policy response in wheat in terms of limited use of export restricting measures and more widespread easing of imports (see Table 7 for an overview of policy measures affecting maize and maize flour).

Net exporting countries

Among net exporters, developed countries provided non-product specific forms of support. For example, the United States of America implemented the CFAP described in Chapter 2. The Russian Federation adopted a quota prohibiting exports of selected grains (maize, wheat, meslin, rye, barley) outside the EAEU. By contrast, Argentina lowered export taxes on maize flour from 9 to 5 percent in a bid to boost exports. It also provided non-product-specific domestic support to family

farmers. African net exporters of maize mainly aimed to boost domestic supplies and control prices. For example, South Africa provided VAT exemptions on critical products, while Malawi raised the farmgate price of maize.

Net importing countries

In addition to the broad-ranging export restrictions by Pakistan, Angola, Algeria, Jordan, and Kuwait already described above, Sudan specifically banned maize exports. At the same time, and as observed for wheat, many countries suspended import tariffs (Chad for maize and flour, Colombia for maize, Guatemala for 200 000 tonnes of white maize, and Qatar for all products), or lowered them (El Salvador for white maize and Kenya for maize, reducing the duty for maize from outside the East African Community from 50 percent to 14 percent for white maize and 10 percent for yellow maize, for 4 million 90 kg bags).[16] Saudi Arabia approved financing loans to import agricultural products, including maize, to secure food supplies. Maize, like wheat was also subject to a number of measures aimed at controlling its domestic availability. This was achieved through release of stocks from state reserves. Nigeria announced the release of 70 000 tonnes of grains, including maize, and China announced the sale of approximately 3 million tonnes of maize in February, followed by the announcement of auctioning another 4 million tonnes in May, to address domestic shortages in certain parts of the country. By contrast, some smaller net importers like El Salvador purchased 50 000 tonnes of maize to boost its national strategic reserves, specifically to guarantee supplies during COVID-19. Importing countries also implemented price controls for several commodities, including maize and/or maize flour to protect consumers: El Salvador (for white maize), Indonesia (for maize), Rwanda (for maize flour), and Barbados (for corn meal flour). Among other net importers, the European Union and Canada provided non-product-specific forms of support, as described in Chapter 2.

Table 7. Policy measures affecting markets for maize and maize flour.

		BORDER MEASURES			DOMESTIC MEASURES			
		Export restrictions	Lowering export duties	Lowering import restrictions/ subsidizing imports	Domestic market controls*; stock release/ food aid	Food reserves	Market price support/ producer subsidy	Non-product-specific producer subsidy
Net Exporting Countries	**Africa** (Malawi, South Africa)			(South Africa)	(South Africa)		(Malawi)	
	Americas (Argentina, United States of America)		(Argentina)					(Argentina, United States of America)
	Europe (Russian Federation)	(Russian Federation)						
Net Importing Countries	**Africa** (Algeria, Angola, Chad, Kenya, Nigeria, Rwanda, Sudan)	(Algeria, Angola, Sudan)		(Chad, Kenya)	(Rwanda, Nigeria)			
	Americas (Barbados, Canada, Colombia, El Salvador, Guatemala)			(Colombia, Guatemala, El Salvador)	(Barbados, El Salvador)	(El Salvador)		(Canada)
	Asia (China, Indonesia, Jordan, Kuwait, Pakistan, Qatar, Saudi Arabia)	(Jordan, Kuwait, Pakistan)		(Qatar, Saudi Arabia)	(China, Indonesia)	(China)		(Indonesia)
	Europe (European Union)							(European Union)

*Notes: *Only reported if in the sources, maize and/or maize flour were explicitly listed among the food products on which domestic market controls were applied.*

[16] On the other hand, some countries sought to restrict imports to support domestic producers e.g. Namibia announced that maize imports will be temporarily suspended until local harvest had been taken up (FAO, 2020, p. 85).

3.1.2.3 Rice

Net exporting countries

Rice, compared to other cereals, saw a greater number of export restrictions by relatively major net exporters, together with policies to boost food reserves, and in some cases, with price controls (see Table 8 for an overview of policy measures applied to rice). Early in the spread of the disease, Viet Nam, Myanmar and Cambodia implemented export restrictions on rice, which were soon lowered or removed completely. In late March, Viet Nam announced that it would not permit any new rice export contracts to be signed, pending an assessment of the domestic market situation; on April Viet Nam established a 400 000 tonne export quota which was successively increased to 500 000 tonnes; and in late April it declared that rice exports would resume unrestricted as of 1 May. In March, Viet Nam additionally announced plans to purchase 190 000 tonnes of rice and 80 000 paddy for its national reserve. Myanmar similarly reportedly suspended the issuance of rice export permits in late March, and introduced an export quota of 150 000 tonnes for May, requiring that rice exporters sell 10 percent of the volume they intended to export to the government for its reserves. Cambodia, in April, put in place an export ban on non-fragrant rice and paddy (allowing exports of fragrant rice unrestricted), which was lifted in May, and announced that the government would monitor market developments and release funds to rice processors to assist them to purchase supplies for storage, aiming to stabilize local paddy prices. The EAEU banned rice exports, but this ban did not apply to Kazakhstan. Notably, major exporting countries such as India, Thailand, the United States of America, and others did not impose export restrictions on rice, which had a stabilizing effect on international markets. In India – the largest rice exporter in the world – ample public stockpiles ensured the domestic availability of rice, and even though logistical disruptions slowed delivery of existing contracts, India exported record volumes in 2020 (Jadhav and Bhardwaj, 2020). Similarly to wheat, the main instrument used by India for stabilizing local supplies and prices of rice, was expanding the monthly quota of subsidized food grains, including rice, to beneficiaries of the Public Distribution System and providing free monthly rations of rice for the vulnerable. In a separate move, India approved a plan under which surplus rice stocks would be converted to ethanol for use as hand sanitizers. Lastly, some rice exporting countries implemented price controls for several products including rice (for example, Cambodia and Kazakhstan).

Net importing countries

In addition to the broad ranging export restrictions by Angola, Algeria, Jordan and Kuwait already reported in Chapter 2, other net rice importing countries also put in place export restrictions specific to the trade of rice. In the Philippines, the province of Bukidnon announced that it would stop exporting rice to ensure food security; Mali banned exports and re-exports of rice; and in addition to export bans on wheat and/or wheat flour already reported above, the EAEU banned rice exports for approximately three months (April to June); Kyrgyzstan implemented a six-month ban on rice exports (March to September); and Tajikistan also banned exports of rice. As observed for other commodities, net importers in almost all regions lowered import barriers to increase domestic supplies: some countries temporarily suspended import duties on rice (Qatar, Chad, EAEU), others lowered them and/or raised tariff rate quotas (TRQs) e.g. El Salvador lowered duties on milled rice and rice flour; Panama raised TRQs on rice; Costa Rica allowed imports of 50 000 tonnes of rice at a reduced tariff of 6.5 percent, down from 35 percent; and Guatemala allowed duty-free imports of 152 000 tonnes of rice (consisting of a mix of paddy/ husked/ milled and broken rice) and Turkey, for 100 000 tonnes of paddy rice, and yet others provided VAT exemptions on essential commodities including rice (South Africa). Saudi Arabia provided financing loans to import agricultural products, including rice. During this period, several countries also increased their food reserves, both through domestic procurement and imports. China increased state purchasing of middle- and late-season rice by 350 000 tonnes; Bangladesh announced that it intended to increase volumes procured from

the 2020 Boro harvest and raise the share of paddy purchased directly from farmers to 800 000 tonnes; Philippines approved a contingency import plan for 300 000 tonnes of rice to be purchased on a Government-to-Government basis with ASEAN trading partners, and/or from all other sources at the ASEAN tariff level; a plan eventually shelved. El Salvador prepared a national reserve of basic grains including rice. Several of these countries also provided price support or other producer subsidies to support farmers and/or boost production. Some of these policies were specific for rice (China increased the government purchase prices of early indica rice and mid-late indica rice; Philippines approved a COVID-19 related agricultural program "Plant, Plant, Plant" to boost local production, including under which input and technical assistance would be provided to rice producers; and Côte d'Ivoire announced the Emergency Rice Programme in response to COVID-19, to boost rice production through promoting access to inputs and mandating rice purchases from the leaders of rice development poles),[17] while others were agriculture-wide support measures (e.g. Indonesia, Bangladesh, Senegal, as already reported above). Finally, rice being a staple in many regions of the world, several countries sought to stabilize domestic supplies and prices by releasing food stocks (e.g. China released upwards of 10.14 million tonnes of grain to the market, a 43 percent increase from a year ago; and/or putting in place ceiling prices and price monitoring mechanisms for multiple products including rice (e.g. Indonesia, El Salvador, Philippines (for both local and imported rice) Sri Lanka (for steamed Nadu and white/red raw rice) Honduras (for white rice), Colombia, Côte d'Ivoire, Senegal.

Table 8. Policy measures affecting markets for rice.

		BORDER MEASURES		DOMESTIC MEASURES			
		Export restrictions	Lowering import restrictions/ subsidizing imports	Domestic market controls**; stock release/food aid	Food reserves	Market price support/producer subsidy	Non-product-specific producer subsidy
Net Exporting Countries	**Asia** (Cambodia, India, Kazakhstan, Myanmar, Viet Nam)	(Cambodia, Myanmar, Viet Nam)	(Kazakhzstan*)	(Cambodia, India, Kazakhstan, Pakistan)	(Myanmar, Viet Nam)		
Net Importing Countries	**Africa** (Algeria, Angola, Chad, Côte d'Ivoire, Madagascar, Mali, Rwanda, Senegal, South Africa)	(Algeria, Angola, Mali)	(Chad, South Africa)	(Côte d'Ivoire, Gambia, Madagascar, Mali, Rwanda, Senegal)		(Côte d'Ivoire)	(Senegal)
	Americas (Colombia, Costa Rica, El Salvador, Guatemala, Honduras, Panama)		(Costa Rica, El Salvador, Guatemala, Panama)	(Colombia, El Salvador, Honduras)	(El Salvador)		
	Asia (Armenia*, Bangladesh, China, Indonesia, Jordan, Kuwait, Kyrgyzstan*, Philippines, Qatar, Saudi Arabia, Sri Lanka, Tajikistan, Turkey)	(Armenia*, Jordan, Kuwait, Kyrgyzstan*, Philippines)	(Armenia*, Kyrgyzstan*, Qatar, Saudi Arabia, Turkey)	(China, Indonesia, Philippines, Sri Lanka)	(Bangladesh, China, Philippines)	(China, Philippines)	(Bangladesh, Indonesia)
	Europe (Belarus, Russian Federation)	(Belarus*, Russian Federation*)	(Belarus*, Russian Federation*)				

*Notes: *Refers to measures applied by the Eurasian Economic Union (EAEU). Any additional measures implemented unilaterally by the concerned EAEU countries are described above.*
***Only reported if in the sources, rice was explicitly listed among the food products on which domestic market controls were applied.*

[17] The national territory is divided into ten production basins with a production potential of at least 200 000 tons of milled rice per year. Each basin is further divided into 48 rice development poles, each with a "pole leader" i.e., private operators around whom medium and small capacity processors are associated in contractual relations with producers (WFP, 2019).

3.2 Meat and dairy

3.2.1 Market situation and supply chain disruptions

Due to a combination of problems including the spread of animal diseases, for example the African swine fever (Box 10), and COVID-19-related disruptions, world meat output fell by 0.5 percent in 2020 (FAO, 2020c).

COVID-19 restrictions have had widespread impacts on markets of all types of meat, as access to labour represented a significant challenge for both production and processing. For instance, operations in slaughterhouses and meat-packing plants in various countries, including Canada, Germany and the United States of America, were temporarily suspended or reduced to minimize the community transmission of the virus (Mano and Spring, 2020; Food Dive, 2020). Similarly, COVID-19 restrictions resulted in a reduction in food service sales, which led in turn to a rise in volumes of unsold meat products. As lockdowns took momentum globally, restaurant reservations fell dramatically, affecting the demand for certain high value products, including meat and dairy (OECD, 2020b). In fact, the pandemic is said to have had an impact on changing consumption habits worldwide, including shifting demand away from restaurants, cafeterias and other "food away from home" type of meals toward home consumption. As a consequence, while some products were diverted to retail sales, the bulk - especially premium meat products – either ended up in cold storage, where available, or perished (FAO, 2020a).

Overall, this situation pushed international meat prices down by 8.6 percent between January and May 2020, with the sharpest drop in ovine meat (FAO, 2020a). On the contrary, and despite market disruptions caused by the COVID-19 pandemic, world milk production showed resilience, growing by 1.4 percent in 2020 and reflecting production increases in key producing countries (FAO, 2020c).

Box 10. Animal disease outbreaks affecting meat production.

Adding to the effects of the COVID-19 pandemic, other shocks related to animal diseases risk further disrupting supply chains, with adverse effects on producers' income and consumers' diet diversity.

Meat production and consumption has faced significant slowdowns as a consequence of the closure of several meat processing plants and the reduction of operations globally. However, while the COVID-19 pandemic may have had severe impacts in the short and medium term, some analysts suggest that the effect of certain animal diseases, such as the ***African swine fever*** (ASF), can have more severe effects in the longer term (Rabobank, 2020).

The ASF is a contagious fatal viral disease affecting hogs and wild boars, leading to the death of millions of pigs worldwide, thus posing a serious threat to the livelihood of large numbers of people who rely on their production and processing. ASF particularly spread in Eastern and South-eastern Asia, where pork meat accounts for almost half of the meat quantity produced and is a key source of animal protein and income (FAO, 2019).

During the COVID-19 pandemic, ASF continued to spread, intensifying the negative effects on production and food security. In fact, exacerbated by COVID-19 containment measures and the economic crisis, many countries affected by ASF face significant constraints in terms of sufficient human, financial or technical resources to rapidly detect, respond and contain animal diseases.

As such, building upon the experience of the long-standing collaboration for the management of animal health related risks, the OIE and FAO made a call on countries and partners to join forces against this disease by adopting the new *Initiative for the Global Control of ASF*. The initiative aims at fostering national, regional, and global partnerships, to strengthen control measures and to minimize the impact of the disease (FAO, 2020m).

3.2.2 Policy measures adopted

Net exporting countries

In contrast to cereal markets, only a minority of countries that are net exporters of meat, dairy, eggs, and meat products implemented export restrictions. With the exception of Thailand, which restricted exports of eggs to ensure domestic availability, the other exporters such as Argentina supported family farmers, not specific to meat and dairy producers; and Canada, the European Union, and the United States of America provided direct payments and loans to farmers to cover their costs. Canada and the United States of America also launched programmes for food purchases/ subsidies for domestic food aid, to help redistribute food, including meat and dairy produce, from farmers to NGOs or government organizations serving vulnerable populations (see also Chapter 2). Canada and the European Union provided private storage aid for meat and dairy products: Canada increased the borrowing limit of the Canadian Dairy Commission to finance the purchase and storage of surplus butter and cheese, and the European Union granted private storage aid for dairy (skimmed milk powder, butter, cheese) and meat (beef, sheep and goat meat) products. Other smaller exporting countries such as Serbia, under a special emergency framework, announced a program of one-off payments to certain types of producers, including producers of cattle, sheep and goat. Some net-exporting countries also implemented price controls. For example, Ukraine implemented price controls on poultry meat and butter; and Argentina provided compensation to sellers of milk and derived food products to guarantee that the consumer price would not be increased.

Net importing countries

Among net-importing countries, the export restrictions reported earlier (Algeria, Jordan, Kuwait, Angola, Pakistan, Tajikistan, Kyrgyzstan, Mali) also applied to meat and dairy products. In addition, the Syrian Arab Republic implemented a one-month export ban on eggs and cheese. Similarly, the suspension of import tariffs (Qatar, Uzbekistan), VAT exemptions (South Africa) also apply to meat and dairy products, and in addition, China reduced tariffs on agricultural and meat products. Moreover, large net importers like Japan and the United Kingdom of Great Britain and Northern Ireland provided farm income support measures: Japan increased support payments for wagyu beef under the Beef Livestock Stabilization Program, and compensated dairy farmers and processors for lost income from the suspension of school meal programs (see Chapter 2); the United Kingdom of Great Britain and Northern Ireland enacted a scheme to cover 70 percent of dairy farmers' lost income for the months of April and May, up to a certain limit. Other countries provided subsidies for producers and/or processors: China provided input subsidies, supplying over 8 000 tonnes of soybean meal to poultry farmers below market prices in the Hubei province in order to address animal feed shortages; the Philippines approved a COVID-19-related agricultural program "Plant, Plant, Plant" to boost local production, including components to ensure resilience of the integrated livestock and maize sectors, and expanded small ruminants and poultry projects; and Saudi Arabia, under the "Working Capital Funding Initiative" approved a number of loans to finance automatic slaughterhouses for poultry, and production of broiler poultry and eggs. Finally, many of the price control measures reported earlier also applied to meat and dairy products, e.g. Kazakhstan (beef and eggs), Philippines (pork and chicken), Cambodia (meat), and Indonesia (beef, chicken and eggs).

Table 9. Policy measures affecting meat and dairy markets.

		BORDER MEASURES		DOMESTIC MEASURES			
		Export restrictions	Lowering import restrictions/ subsidizing imports	Domestic market controls*; stock release/food aid	Food reserves	Market price support/producer subsidy	Non-product-specific producer subsidy
Net Exporting Countries	**Americas** (Argentina, Canada, United States of America)			(Argentina)	(Canada)		(Argentina, Canada, United States of America)
	Asia (Thailand)	(Thailand)					
	Europe (European Union, Serbia, Ukraine)			(Ukraine)	(European Union)	(Serbia)	(European Union)
	Oceania (Australia)						(Australia)
Net Importing Countries	**Africa** (Algeria, Angola, Chad, Mali, South Africa)	(Algeria, Angola, Mali)	(South Africa)				
	Asia (Cambodia, China, Indonesia, Japan, Jordan, Kazakhstan, Kuwait, Kyrgyzstan, Pakistan, Philippines, Qatar, Saudi Arabia, Syrian Arab Republic, Tajikistan, Uzbekistan)	(Jordan, Kuwait, Kyrgyzstan, Pakistan, Tajikistan, Syrian Arab Republic)	(China, Qatar, Uzbekistan)	(Cambodia, Indonesia, Kazakhstan, Philippines)	(China)	(China, Japan, Philippines, Saudi Arabia)	(Indonesia)
	Europe (United Kingdom)					(United Kingdom)	

*Notes: *Only reported if in the sources, meat and dairy products were explicitly listed among the food products on which domestic market controls were applied.*

3.3 Vegetable oils

3.3.1 Market situation and supply chain disruptions

Following a significant contraction in oilseeds production mainly owing to persistently unfavourable weather conditions in key growing regions (including the Americas, Europe, and South-eastern Asia), with supply increasing slower than demand, vegetable oil prices consistently increased between October 2019 and January 2020 (FAO, 2020a).

The measures to limit the spread of the virus added further stress to the supply of vegetable oils. Various containment measures at the field level and outbreaks at oilseed crushing facilities caused delays in delivery, as for example in Malaysia (FAO, 2020a). In Argentina, problems have been reported also in the context of port operations, where a slowdown in shipments was caused by port employees testing positive to the novel Coronavirus (Gilbert and Almeida, 2020). Temporary disruptions in domestic vegetable oil supply chains were also reported in India, as lockdowns affected port operations and inland operations, and in China, where delays have been recorded following increased controls at port unloading activities (FAO, 2020n).

However, as of February 2020, vegetable oil prices began to fall sharply, due to a substantial reduction in demand. On the one hand, the loss of purchasing power shifted dietary patterns away from certain ingredients of higher value foods, including vegetable oils (WFP, 2020). On the other hand, the closure of food and accommodation services including hotels and restaurants heavily reduced demand for some cooking oils (India Times, 2020; FAO, 2020a). In addition, because of the reduction

in energy prices and the contraction in demand for biofuels, the demand for certain vegetable oils, such as soybean and palm oil, that are used in the production of fuels collapsed (Heath, 2020; FAO, 2020a; Schmidhuber, 2020).

3.3.2 Policy measures adopted

Net exporting countries

In the case of palm oil, rather than restricting exports, major net exporters, such as Indonesia and Malaysia, reduced export duties to boost exports. As market prices declined further, Malaysia reduced its export duty on crude palm oil from 4.5 to zero percent; Indonesia suspended the variable export tax on foreign palm oil sales, and also revoked a 2018 regulation that required exporters of palm oil to use exclusively Indonesia-flagged vessels for their shipments. As reported in Chapter 2.2, Indonesia also provided flexibilities in technical regulations, allowing for temporary suspension of Vitamin A and/or provitamin A fortification in palm cooking oil. By contrast, for sunflower seed oil, export restrictions were put in place by major exporters e.g. Russian Federation, as part of the EAEU export ban on several products, and Serbia, which added sunflower seeds and oil to its original export ban on several types of goods deemed essential for the public. Domestic measures affecting vegetable oils focused on non-product specific producer subsidies, for example, in Indonesia (cash aid) and Argentina (support to family farming), as well as domestic price controls, for example, Indonesia (all cooking oils), Argentina, and Thailand (government requested entrepreneurs to lower the price of 1-litre bottles of palm oil and collaborated with refiners to ensure that palm oil deliveries to factories remained adequate amid movement restrictions).

Net importing countries

Among net-importing countries, export restrictions reported earlier also applied to cooking oils (Pakistan, EAEU for sunflower seeds and soybeans, Kyrgyzstan, Kazakhstan, Angola, Jordan, Kuwait, and Algeria). Several countries lowered or suspended import tariffs to boost domestic supplies. Turkey lowered the tariff for crude sunflower seed oil from 30 to 18 percent, and on sunflower seeds from 13 to 9 percent (in response to the increased prices brought about by the Russian sunflower seed product export ban), while others suspended them completely (Pakistan, from originally 2 percent duty on soy, rape, palm and sunflower oils; Uzbekistan, Chad, Mauritania for vegetable oils; Qatar for all products), and yet others provided VAT exemptions (South Africa). Cooking oil was also among the products subject to price controls by many importing countries (e.g. Kazakhstan, Rwanda). One country (Myanmar) also purchased 12 000 tonnes of palm oil to boost national emergency reserves.

Table 10. Policy measures affecting vegetable oils.

		BORDER MEASURES			DOMESTIC MEASURES			
		Export restrictions	Lowering export duties	Lowering import restrictions/ subsidizing imports	Domestic market controls**; stock release/ food aid	Food reserves	Market price support/ producer subsidy	Non-product-specific producer subsidy
Net Exporting Countries	**Americas** (Argentina)				(Argentina)			(Argentina)
	Asia (Indonesia, Malaysia, Thailand)		(Indonesia, Malaysia)	(Indonesia (TBT))	(Indonesia, Thailand)			(Indonesia)
	Europe (Russian Federation, Serbia)	(Russian Federation*, Serbia)						
Net Importing Countries	**Africa** (Algeria, Angola, Chad, Mauritania, Rwanda, South Africa)	(Algeria, Angola)		(Chad, Mauritania, South Africa)	(Rwanda)			
	Asia (Armenia, Jordan, Kazakhstan, Kuwait, Kyrgyzstan, Myanmar, Pakistan, Qatar, Turkey, Uzbekistan)	(Armenia*, Jordan, Kazakhstan*, Kuwait, Kyrgyzstan*, Pakistan)		(Pakistan, Qatar, Turkey, Uzbekistan)	(Kazakhstan)	(Myanmar)		
	Europe (Belarus)	(Belarus*)						

*Notes: *Refers to measures applied by the Eurasian Economic Union (EAEU). Any additional measures implemented unilaterally by the concerned EAEU countries are described above.*

***Only reported if in the sources, oils were explicitly listed among the food products on which domestic market controls were applied.*

3.4 Fruits and vegetables

3.4.1 Market situation and supply chain disruptions

Fruits and vegetables have been among the most significantly affected sectors during the pandemic, as their production is highly labour-intensive, and their perishable nature requires efficient logistics and transportation.

Restrictions within and across borders reduced the movement of seasonal workers and, in turn, affected harvests (Fairtrade, 2020; Becerril and Walljasper, 2020). For instance, in Myanmar, significant concerns surrounded potential losses of chili pepper, as their harvest coincided with COVID-19 lockdown restrictions (Diao *et al*., 2020). Similarly, in the United States of America, many migrant workers were uncertain about their ability to secure a visa for the watermelon harvest. In some countries, such as Canada, even when access of seasonal workers was not hampered, there have been reports of outbreaks of COVID-19 among workers employed in the field, that led to interruptions of farming operations (CBC, 2020). Likewise, COVID-19 outbreaks forced, many fruit and vegetable processing plants including in the United Kingdom of Great Britain and Northern Ireland to slow down their operations (Rosenberg, Cooke and Walljasper 2020; BBC, 2020).

At the same time, because of a substantial reduction in commercial flights, which usually account for most of the air cargo capacity, the price of air transportation increased, affecting in turn the distribution of many high-value perishable agricultural goods (Schmidhuber and Qiao, 2020b; Fairtrade, 2020; OECD, 2020c). For instance, cases of reduced exports of tropical fruits have been

reported, for example, in relation to papayas from Brazil, or mangos from Cote d'Ivoire and India (Mano, 2020; Freshplaza, 2020a; Freshplaza, 2020b).

Disruptions affecting the timely transportation of perishable goods were also reported for port operations (OECD, 2020c) and in relation to container and truck transport, with reduction in service operations due to additional screening and mandatory quarantines (Schmidhuber, 2020).

3.4.2 Policy measures adopted

To boost domestic availability, countries generally implemented measures to either restrict exports or lower import tariffs, as also observed for other commodities. Export restricting measures included the following: the EAEU banned exports of onions, garlic and turnips; Kazakhstan separately banned exports of carrots, turnip, beet, onion, potatoes and white cabbage, and later converted this ban to an export quota; and Turkey banned exports of lemons, of which it is the third largest supplier in the world. At the same time, several countries suspended import duties (EAEU on potato, onion, garlic, cabbage, carrot, pepper and juices; Anguilla, on fresh or chilled vegetables and fruits; Saint Kitts and Nevis on vegetables, fruits and juices; and Uzbekistan on all vegetables), while others expanded import quotas (Switzerland on potatoes) or lowered duties (El Salvador on homogenized vegetables). On the other hand, to promote domestic availability, Saudi Arabia approved a number of loans to finance production of vegetables in greenhouses under its "Working Capital Funding Initiative".

Fruit and vegetable sales (domestic and exports) were particularly affected by lockdown measures due to their labour-intensive production and perishable nature. As such, some countries implemented import restrictions to support local producers in the face of declining retail prices. For instance, Sri Lanka allowed imports of dried leguminous vegetables only on credit basis, and increased the special commodity levy on imported oranges, grapes, apples and pears. Following an appeal from the Fruit and Vegetables Union on account of falling prices, the Russian Federation added imported tomatoes and cucumbers (which make up 50 percent of total supply) to a list of food products ineligible for purchase for state and municipal needs implying that more local production would be procured, and domestic farmers supported. Other countries such as Serbia supported vegetable growers through a one-off payment per square meter of planted area up to a certain threshold.

CONCLUDING REMARKS & MEDIUM-TERM RISKS FOR FOOD SECURITY

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Measures adopted around the world to contain the COVID-19 outbreak helped curb the spread of the virus and lowered the pressure on health systems globally. However, they affected global economic activity, hampering employment and reducing household incomes. Still, current market conditions for the major food commodities show that both global agricultural production and trade have proved resilient to the shock induced by the pandemic.

Efforts of governments and agricultural sector stakeholders worldwide to ensure the smooth functioning of domestic and global food value chains, including production, processing, distribution, and trade, have contributed to the resilience of the sector. Disruptions to food and agricultural trade were mainly felt during the initial months at the very beginning of the imposition of strict virus containment measures worldwide. These disruptions primarily affected specific commodities, such as beverages and fish. For these products, shifts in consumption patterns caused by the closure of the hospitality and tourism sector in many countries led to declining demand and, in turn, significantly reduced trade. Also non-food commodities such as cotton, live plants and cut flowers were affected by weak demand and trade disruptions. Pandemic-related effects on trade in other commodities, especially basic foods such as cereals, oilseeds, fruits and vegetables, remained very limited and short-lived.

Nevertheless, during the first wave of the pandemic in 2020, uncertainty about the market impacts of the COVID-19 lockdowns led several countries to adopt trade-restricting measures. A number of countries put in place import restrictions due to food safety concerns. However, in most cases

these were imposed on a narrow range of products from specific countries and temporary in their application. Several countries also imposed export restrictions due to concerns about food availability in domestic markets. On aggregate across all commodities, however, and particularly when compared to the 2007-08 global food price crisis, major exporting countries were less inclined to resort to export restrictions, and where imposed, they were also short-lived. Ample supplies, comfortable stocks-to-use ratios (for cereals) and positive production prospects at the beginning of 2020 may have played a role in reducing the risks and fears of food shortages, and consequently the incidence and duration of trade-restricting measures.

Some major exporters actually lowered export duties to boost exports, aiming to support producers and traders whose revenues were hit due to COVID-19 containment measures and declining demand. Some high-income countries provided airfreight assistance to mitigate the effects of logistics disruptions, while others provided an array of domestic support measures to protect incomes of farmers and processors, e.g., through direct transfers and loans as well as procurement for domestic food aid. Moreover, several countries implemented measures to facilitate trade. For instance, recognizing the role of lockdowns in hampering normal operations of government authorities involved in the provision of certificates and other licenses and approvals needed for trading agricultural products, governments implemented measures to accept electronic certificates of phytosanitary and veterinary certificates on a temporary basis, simplify import licensing procedures for selected products, and implement green corridors to expedite movement of essential products across borders.

Many countries also suspended or lowered import tariffs and, in some cases, even lowered technical barriers to trade to ensure sufficient food availability domestically. In low- and middle-income countries, particularly those dependent on food imports, policymakers also adopted a mix of domestic measures to support both producers and consumers; for instance, increasing food purchases for reserves (both through domestic procurement and imports), and adopting price ceilings on a wide range of food products.

In the medium term, the challenge of food security continues to be one of food access, rather than availability. While extreme weather events, such as those caused by the 2020/21 La Niña episode, animal and plant diseases are expected to put pressure on food production and supplies, COVID-19-related risks to food systems are more likely to be caused by demand side effects (FAO, 2020o). The loss of employment and declining incomes associated with the global economic recession are expected to lead to more profound changes in food demand, away from higher value foods, such as animal-sourced products, to relatively cheaper staples.

As estimated by the International Labour Organization (ILO), during the first months of the pandemic little less than 70 percent of workers globally were living in countries with some sort of workplace closure measures in place, with total working hours having declined by almost 10.5 percent in the second quarter of 2020 (ILO, 2020). In a recent survey covering 30 000 households in nine low- and middle-income countries in Africa and Latin America, 67 percent of the survey respondents reported a reduction in their incomes since April 2020 (Egger *et al.*, 2021). In such situations that are caused by exogenous shocks, social safety nets, including unemployment benefits and cash and in-kind transfers, represent a fundamental means to protect incomes and secure access to food for the poor and vulnerable. However, developing countries with large informal sectors, reduced fiscal resources, limited social protection measures and little consumer savings, continue to be highly exposed to the threats of the pandemic (Schmidhuber, Pound and Qiao, 2020; Egger *et al.*, 2021; Besley and Persson, 2014).

Moreover, reduced incomes also pose a threat to many developing countries that are highly reliant on remittances from workforce abroad. As economies globally entered a period of recession and unemployment, this has likely limited the capacity to send remittances back home (GNFC, 2020). In fact, half of the countries in which migrant remittances inflows account for more than five percent of GDP are net food-importing developing countries (NFIDCs). As the flow of remittances were projected to decline by about 20 percent in 2020 globally (World Bank, 2020), many of these NFIDCs were faced with reduced incomes, thus aggravating access to food.

Similarly, Small Island Developing States (SIDS) that are dependent on tourism are likely to be severely affected by the economic consequences of the COVID-19 pandemic. International tourism accounts – on average – for 30 percent of SIDS' GDP. However, in some countries - including the Maldives, Seychelles, Sain Kitts and Nevis, and Grenada - this share can even exceed 50 percent (UNCTAD, 2020). Following the implementation of travel restrictions worldwide, international tourist arrivals declined by 70 percent in the first eight months of 2020, implying substantive reductions in revenues and increases in unemployment rates in both the accommodation and food services sectors (UNWTO, 2020a; UNWTO 2020b; CCSA, 2020).

A combination of these factors implies that several countries could face increased levels of food insecurity. To limit such risks, governments would need to put in place appropriate measures to bridge income losses and support vulnerable consumer groups. For instance, domestic food aid and cash transfers can support consumption during times of growing unemployment and reduced income. Likewise, targeted domestic support measures can play a key role in ensuring that producers maintain adequate production levels and that their assets and incomes are protected.

Countries globally are working to digitalize trade procedures and supply chain operations, a process that was expedited by the COVID-19 pandemic; for instance, the establishment of corridors that allowed for increased automation and digital data sharing among customs and related authorities, as well as electronic exchange of SPS certificates. Continued support to promote digitalization in production, processing, distribution and trade will play an important role in enhancing efficiency along agricultural and food supply chains and in facilitating trade and border procedures.

Finally, international commitments to keep trade flowing and promote smooth functioning of food supply chains contributed to a coordinated global response during the first wave of the pandemic in 2020 and prevented a global health crisis from becoming a global food crisis. Such political commitments are very important and can play a significant role in ensuring access to food as countries refrain from applying trade restrictions and instead take actions to facilitate trade. Improving transparency on markets and policies, including the availability of up-to-date data and information on market conditions and trade, and strengthening international governance and coordination mechanisms are crucial efforts in this regard (FAO, 2020p).

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Policy measures

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	Flexibilities in import licensing	2.2.3	**Banco National de Angola**. March 2020. Instrutivo 5/2020. Isenção Temporária de Limites por Instrumento de Pagamento na importação de bens alimentares, medicamentos e material de biossegurança. *BNA*. [online]. 30 March 2020. https://www.bna.ao/uploads/%7Bfa96de48-a0c4-43ba-84f8-91b3dd293a3f%7D.pdf
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	Lowering of export duties/taxes	3.1.2.1; 3.1.2.2	**Boroughs, B**. 2020. New export tax rates in Argentina. Report No. AR2020-0008, 5 March 2020. USDA Foreign Agricultural Service. [online]. 5 March 2020. https://apps.fas.usda.gov/newgain-api/api/Report/DownloadReportByFileName?fileName=New%20Export%20Tax%20Rates%20in%20Argentina_Buenos%20Aires_Argentina_03-02-2020
	Price controls	3.2.2	**Boletín Oficial de la República Argentina**. Abril 2020. Emergencia Alimentaria Nacional. Decreto 418/2020. [online]. 30 April 2020. https://www.boletinoficial.gob.ar/detalleAviso/primera/228441/20200430
Australia	Flexibilities in trade procedures	2.2.3	**World Trade Organization (WTO)**. 2020. Committee on Sanitary and Phytosanitary Measures - Notification. G/SPS/N/AUS/497. *WTO*. [online]. 7 April 2020. https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=q:/G/SPS/NAUS497.pdf
	Airfreight assistance	2.3.2	**Australian Trade and Investment Commission, Australian Government**. 2020. International Freight Assistance Mechanism. *Austrade*. [online]. 12 May 2020. https://www.austrade.gov.au/news/news/international-freight-assistance-mechanism **Department of Agriculture, Water and the Environment, Australian Government**. 2020. Air freight support. *Australian Government Department of Agriculture*. [online]. 26 May 2020. https://www.agriculture.gov.au/coronavirus/export/air-freight
Bangladesh	Input subsidies	2.3.1	**FAO.** 2020. *Food Outlook - Biannual Report on Global Food Markets: June 2020. Food Outlook, 1.* Rome, FAO. p. 88. https://doi.org/10.4060/ca9509en
	Wheat procurement	3.1.2.1	**FAO.** 2020. Bangladesh sets "Boro" procurement target. In *FAO Food Price Monitoring and Analysis*. [online]. Rome. 10 April 2020. http://www.fao.org/giews/food-prices/food-policies/detail/en/c/1271082/

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Bhutan	Import restrictions	2.1.2	**Northeast Now News**. 2020. Bhutan bans import of betel nut and betel leaf. *Northeast Now News*. [online]. Thimphu. 25 March 2020. https://nenow.in/health/bhutan-bans-import-of-betel-nut-and-betel-leaf.html
Bolivia (Plurinational State of)	Lowering import tariffs	3.1.2.1	**Aduana Nacional.** Abril 2020. Circular No. 094/2020. Aduana Nacional, Gerencia Nacional Jurídica. *Aduana.gob*. [online]. La Paz. 13 April 2020. https://www.aduana.gob.bo/aduana7/sites/default/files/kcfinder/files/circulares/circular0942020.pdf
Brazil	Flexibilities in trade procedures	2.2.3	**World Trade Organization (WTO)**. 2020. Committee on Sanitary and Phytosanitary Measures - Notification of emergency measures. G/SPS/N/BRA/1642. *WTO*. [online]. 9 April 2020. https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=q:/G/SPS/NBRA1642.pdf
Cambodia	Price controls	2.3.4	**Khmer Times.** 2020. Retailers told to not price gouge from panic buying. *Khmer Times Business*. [online]. 24 March 2020. https://www.khmertimeskh.com/705054/retailers-told-to-not-price-gouge-from-panic-buying/
	Export restrictions; market assistance	3.1.2.3	**FAO.** 2020. *Food Outlook - Biannual Report on Global Food Markets: June 2020. Food Outlook, 1*. Rome, FAO. p. 89. https://doi.org/10.4060/ca9509en
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Central European Free Trade Agreement (CEFTA)[18]	Green corridors	2.2.3	**Maslac, T.** 2020. *Green corridors among CEFTA Countries to facilitate trade During COVID-19 pandemic.* Report No. RB2020-0004, 22 May 2020. USDA Foreign Agricultural Service. https://apps.fas.usda.gov/newgainapi/api/Report/DownloadReportByFileName?fileName=Green%20Corridors%20Among%20CEFTA%20Countries%20to%20Facilitate%20Trade%20During%20COVID-19%20Pandemic_Belgrade_Serbia_05-04-2020
Chad	Lowering import tariff	2.2.1	**Ministère des finances et du budget, République du Tchad**. April 2020. Arrêté n. 076 PR/MFB/DGSDD/2020 Portant exonération des droits et taxes à l'importation des produits (alimentaires et médicaux) et des matériels médicaux. *Direction générale des douanes et droits indirects*. [online]. 24 April 2020. https://documentcloud.adobe.com/link/track/?uri=urn%3Aaaid%3Ascds%3AUS%3Adf004257-0e5d-41fd-b37e-568e5c244ed4&pageNum=1#pageNum=3
Chile	Flexibilities in trade procedures	2.2.3	**World Trade Organization (WTO)**. 2020. Committee on Sanitary and Phytosanitary Measures - Measures concerning phytosanitary certificates aimed at the facilitation of trade in view of issues arising from the COVID-19 pandemic. G/SPS/GEN/1770. *WTO*. [online]. 2 April 2020. https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=q:/G/SPS/GEN1770.pdf
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	Flexibilities in import licensing	2.2.3	**Ministry of Agriculture and Rural Affairs**. February 2020. Announcement 2020 No. 1. *The State Council The People's Republic of China.* [online]. 12 February 2020. http://www.gov.cn/zhengce/zhengceku/2020-02/13/content_5478044.htm
Colombia	Price controls	2.3.4	**AS.** 2020. Coronavirus en Colombia: lista de productos de la canasta básica bajo control de precios. *AS*. [online]. 9 April 2020. https://colombia.as.com/colombia/2020/04/09/actualidad/1586448732_789703.html#menu
	Lowering import tariffs	3.1.2.2	**Ministerio de Agricultura y Desarrollo Rural, Gobierno de la República de Colombia.** Abril 2020. MinAgricultura anuncia suspensión de aranceles de maíz, sorgo y soya para reducir los costos de producción en el sector agropecuario. *MinAgricultura.* [online]. 9 April 2020. https://www.minagricultura.gov.co/noticias/Paginas/MinAgricultura-anuncia-suspensi%C3%B3n-de-aranceles-de-ma%C3%ADz,-sorgo-y-soya-para-reducir-los-costos-de-produc-ci%C3%B3n-en-el-sector-agr.aspx
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Côte d'Ivoire	Producer subsidy	3.1.2.3	**FAO**. 2020. *Food Outlook - Biannual Report on Global Food Markets: June 2020. Food Outlook, 1*. Rome, FAO. p. 90. https://doi.org/10.4060/ca9509en
	Price controls	2.3.4	**Gouvernement de Côte d'Ivoire**. 2020. Coronavirus: 300 agents deployes pour veiller au respect du plafonnement des prix. *Portail Officiel du Gouvernement*. [online]. 11 May 2020. http://www.gouv.ci/_actualite-article.php?recordID=11125&d=1#p
Egypt	Wheat purchases	3.1.2.1	**FAO.** 2020. *Food Outlook - Biannual Report on Global Food Markets: June 2020. Food Outlook, 1.* Rome, FAO. p.82. https://doi.org/10.4060/ca9509en
	Import ban	2.1.2	**ITC Market Access Map**. 2020. COVID-19 Temporary Trade Measures. Egypt. *International Trade Centre*. [online]. https://www.macmap.org/covid19

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El Salvador	Price control	2.3.4	**Defensoría del Consumidor.** 2020. Acuerdo número 39. Fijación y modificación de precios máximos de granos básicos, huevos, fruta, verduras, grasas, leche en polvo. In *Portal de Trasparencia - el Salvador*. [online]. February 2021. https://www.transparencia.gob.sv/institutions/dc/documents/otros-documentos-normativos
	Lowering import tariffs	3.1.2.1; 3.4.2	**Diario Oficial de la República de El Salvador.** Marzo 2020. Tomo 426 no. 58. *Diario Oficial* [online]. 20 March 2020. https://www.diariooficial.gob.sv/diarios/do-2020/03-marzo/20-03-2020.pdf
▸**El Salvador**	Lowering import duties (maize, rice)	3.1.2.2; 3.1.2.3	**Ministerio de Hacienda, República de El Salvador.** Abril 2020. Boletín Informativo No. DGA-009-2020. *Dirección General de Aduanas*. [online]. 2 April 2020. https://www.mh.gob.sv/downloads/pdf/700-DGA-BO-2020-22093.pdf
	Food reserves (maize, rice)	3.1.2.2; 3.1.2.3	**Ministerio de Agricultura y Ganadería de El Salvador**. Abril 2020. Govierno inverte $30-millones para reserva nacional de granos básicos, garantizando abastecimiento ante la emergencia por COVID-19. *Mag.gob.sv*. [online]. 17 April 2020. https://www.mag.gob.sv/gobierno-invierte-30-millones-para-reserva-nacional-de-granos-basicos-ante-la-emergencia-por-covid-19/
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	Domestic measures	2.3.1	**Consilium**. 2020. Infographic - COVID-19: EU support to agriculture and fisheries. *European Council*. [online]. https://www.consilium.europa.eu/en/infographics/covid-19-agrifish/
	Private storage aid	3.2.2	**World Trade Organization (WTO)**. 2020. Committee on Agriculture - Ad hoc report on COVID-19 measures taken by the EU (including by its Member States) in the agricultural sector prepared for the Special Meeting of the Regular Committee on Agriculture, 18 June 2020. G/AG/GEN/159. *WTO*. [online]. 4 June 2020. https://docs.wto.org/dol2fe/Pages/FE_Search/FE_S_S006.aspx?FullTextHash=1&MetaCollection=WTO&SymbolList=%22G/AG/GEN/1%22+OR+%22G/AG/GEN/1*%22

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	Export restrictions	3.1.2.1; 3.1.2.3; 3.3.2	**Customs Documents**. 2020. Decision of the EEC Board dated 21 April 2015 No. 30 "On measures of non-tariff regulation". *Customs Documents online directory* [online]. https://www.alta.ru/tamdoc/15kr0030/
Gambia	Price controls	2.3.4	**FAO**. 2020. *Food Outlook - Biannual Report on Global Food Markets: June 2020. Food Outlook, 1.* Rome, FAO. p.90. https://doi.org/10.4060/ca9509en
Georgia	Subsidy for wheat imports	3.1.2.1	**FAO.** 2020. *Food Outlook - Biannual Report on Global Food Markets: June 2020. Food Outlook, 1.* Rome, FAO. p.83. https://doi.org/10.4060/ca9509en
	Import restrictions	2.1.2	**Agenda.Ge**. 2020. Georgia bans import of live animals from China. *Agenda.ge.* [online]. 28 January 2020. https://agenda.ge/en/news/2020/274#:~:text=The%20Ministry%20of%20Agriculture%20stated,the%20free%20zone%20of%20coronavirus
Guatemala	Lowering import tariffs	3.1.2.2; 3.1.2.3	**Ministerio de Economía, Gobierno de la República de Guatemala**. Marzo 2020. Acuerdo Gubernativo número 46-2020. *Secretaría General de la Presidencia*. [online]. 21 March 2020. https://sgp.gob.gt/wp-content/uploads/2020/03/AG-046-2020.pdf
Honduras	Price controls	2.3.4	**Despacho de Communicaciones y Estrategia Presidencial.** Marzo 2020. Acuerdo Ministerial No. 025-2020. *Secretaría de Estado en el Despacho de Desarrollo Económico* [online]. 26 March 2020. https://covid19honduras.org/precios-en-pulperias
India	Agricultural marketing reforms	2.3.2	**Singh, S.K. & Rosmann, M.** 2020. *Government of India issues three ordinances ushering in major agricultural market reforms.* Report No. N2020-0074, 29 June 2020. USDA Foreign Agricultural Service. https://apps.fas.usda.gov/newgainapi/api/Report/ownloadReportByFileName?fileName=Government%20of%20India%20Issues%20Three%20Ordinances%20Ushering%20in%20Major%20Agricultural%20Market%20Reforms_New%20Delhi_India_06-27-2020
	Stock release/ distribution	3.1.2.1	**FAO.** 2020. *Food Outlook - Biannual Report on Global Food Markets: June 2020. Food Outlook, 1.* Rome, FAO. p. 84, 90. https://doi.org/10.4060/ca9509en

[19] EAEU countries: Armenia, Belarus, Kazakhstan, Kyrgyzstan, Russian Federation.

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India	Food subsidies; stock release	3.1.2.3	**FAO**. 2020. *Food Outlook - Biannual Report on Global Food Markets: June 2020. Food Outlook, 1.* Rome, FAO. p. 90. https://doi.org/10.4060/ca9509en
Indonesia	Certificate requirement	2.1.2	**World Trade Organization (WTO)**. 2020. Committee on Sanitary and Phytosanitary Measures - Notification of emergency measures. G/SPS/N/IDN/132. *WTO*. [online]. 20 March 2020. https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=q:/G/SPS/NIDN132.pdf&Open=True
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	Relaxation of technical regulations	2.2.2	**World Trade Organization (WTO)**. 2020. Committee on Technical Barriers to Trade. G/TBT/N/IDN/1/Add.4. *WTO*. [online]. 14 April 2020. http://tbtims.wto.org/en/ModificationNotifications/View/164419
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Indonesia	Lowering of export duty	3.3.2	**FAO**. 2020. *Food Outlook - Biannual Report on Global Food Markets: June 2020. Food Outlook, 1.* Rome, FAO. p. 100. https://doi.org/10.4060/ca9509en
	Flexibilities in import licensing	2.2.3	**Ministry of Trade, Republic of Indonesia.** February 2020. Regulation 27/2000. *Ministry of Trade*. [online]. 23 February 2020. http://jdih.kemendag.go.id/peraturan/detail/1970/2
Japan	Relaxation of technical regulations	2.2.2	**Sasatani, D**. 2020. *Japan provides food labeling flexibility in response to COVID-19*. Report No. JA2020-0082, 17 April 2020. USDA Foreign Agricultural Service. https://apps.fas.usda.gov/newgainapi/api/Report/DownloadReportByFileName?fileName=Japan%20Provides%20Food%20Labeling%20Flexibility%20in%20Response%20to%20COVID-19_Tokyo_Japan_04-14-2020
	Domestic measures, direct transfers and loans	2.3.1	**United States Department of Agriculture (USDA)**. 2020. Japan: Farmers eligible for COVID-19 cash allowance. *USDA Foreign Agricultural Service*. [online]. 1 May 2020. https://www.fas.usda.gov/data/japan-farmers-eligible-covid-19-cash-allowance **Fujibayashi, K.** 2020. *Japanese farmers eligible for COVID-19 related tax relief*. Report No. JA2020-0092, 1 May 2020. USDA Foreign Agricultural Service. https://apps.fas.usda.gov/newgainapi/api/Report/DownloadReportByFileName?fileName=-Japanese%20Farmers%20Eligible%20for%20COVID-19%20Related%20Tax%20Relief_Tokyo_Japan_04-25-2020
	Domestic measures, food purchases, food aid	2.3.1	**Imaizumi, A.** 2020. *MAFF Increases COVID-19 dairy support payments*. Report No. JA2020-0099, 13 May 2020. USDA Foreign Agricultural Service. https://apps.fas.usda.gov/newgainapi/api/Report/DownloadReportByFileName?fileName=MAFF%20Increases%20COVID-19%20Dairy%20Support%20Payments_Tokyo_Japan_05-11-2020
	Logistics and marketing support	2.3.2	**Fujibayashi, K.** 2020. *MAFF 2020 Supplementary budget for COVID-19 response*. Report No. JA2020-0085. 26 April 2020. USDA Foreign Agricultural Service. https://apps.fas.usda.gov/newgainapi/api/Report/DownloadReportByFileName?fileName=MAFF%202020%20Supplementary%20Budget%20for%20COVID-19%20Response_Tokyo_Japan_04-19-2020

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	Import restrictions	2.1.2	**Lim, G.Y**. 2020. COVID-2019: Egypt and Jordan suspend import of Chinese food products, Saudi and UAE remain calm. *Food navigator-Asia.* [online]. 4 March 2020. https://www.foodnavigator-asia.com/Article/2020/03/04/COVID-2019-Egypt-and-Jordan-suspend-import-of-Chinese-food-products-Saudi-and-UAE-remain-calm
Kazakhstan	Price controls	2.3.4	**United States Department of Agriculture (USDA)**. 2020. *Kazakhstan COVID-19 updates and impacts.* Report No. KZ2020-0009, 15 May 2020. USDA Foreign Agricultural Service. https://apps.fas.usda.gov/newgainapi/api/Report/DownloadReportByFileName?fileName=Kazakhstan%20COVID-19%20Updates%20and%20Impacts_Nur-Sultan%20(Astana)_Kazakhstan%20-%20Republic%20of_05-15-2020
	Export quota, wheat and wheat flour	3.1.2.1	**Ministry of Agriculture of the Republic of Kazakhstan**. April 2020. The Ministry of Agriculture clarified which goods are allowed to be exported under quotas. *Gov.kz.* [online]. 13 April 2020. https://www.gov.kz/memleket/entities/moa/press/news/details/msh-razyasnilo-kakie-imenno-tovary-razresheno-eksportirovat-po-kvotam?lang=ru
	Export ban and quota, vegetables	3.4.2	**Ministry of Agriculture of the Republic of Kazakhstan**. March 2020. Order of the Minister of Agriculture of the Republic of Kazakhstan dated March 22, 2020 No. 103. *Online.zakon.kz.* [online]. 22 March 2020. https://online.zakon.kz/Document/?doc_id=35410193#pos=3;-106
Kenya	Lowering import tariffs	3.1.2.2	**Ministry of Agriculture, Livestock, Fisheries and Cooperatives of the Republic of Kenya**. June 2020. Food Balance Sheet. *Ministry of Agriculture, Livestock, Fisheries and Cooperatives*. [online]. 31 June 2020. https://kilimo.go.ke/food-balance-sheet/
Kuwait	Export restrictions	2.1.1	**ITC Market Access Map.** 2020. COVID-19 Temporary Trade Measures. Kuwait. *International Trade Centre*. [online]. 12 March 2020. https://macmap.org/OfflineDocument/Covid19/COVID_KWT_1.pdf
Kyrgyzstan	Price controls	2.3.4	**FAO.** 2020. *Food Outlook - Biannual Report on Global Food Markets: June 2020. Food Outlook, 1.* Rome, FAO. p.84. https://doi.org/10.4060/ca9509en

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	Wheat purchase fund	3.1.2.1	**FAO.** 2020. *Food Outlook - Biannual Report on Global Food Markets: June 2020. Food Outlook, 1*. Rome, FAO. p.85. https://doi.org/10.4060/ca9509en
Madagascar	Price controls	2.3.4	**FAO**. 2020. *Food Outlook - Biannual Report on Global Food Markets: June 2020. Food Outlook, 1*. Rome, FAO. p.91. https://doi.org/10.4060/ca9509en
Malawi	Raise farmgate prices	3.1.2.2	**FAO.** 2020. Malawi raises farmgate price for maize grain. In *Food Price Monitoring and Analysis*. [online]. Rome. 10 April 2020. http://www.fao.org/giews/food-prices/food-policies/detail/en/c/1271438/
Malaysia	Lowering export duty	3.3.2	**Malaysian Palm Oil Council**. 2020. Malaysia cuts crude palm oil export duty for June to zero. *MPOC*. [online]. http://mpoc.org.my/malaysia-cuts-crude-palm-oil-export-duty-for-june-to-zero/
Mali	Price controls	2.3.4	**FAO**. 2020. *Food Outlook - Biannual Report on Global Food Markets: June 2020. Food Outlook, 1*. Rome, FAO. p.91. https://doi.org/10.4060/ca9509en
	Export restriction	3.1.2.3	**Ministère de l'Économie et des Finances du Mali**. 2020. Interdiction d'exportation et de réexportation. Message Rac. 0026. *Direction générale des douanes*. [online]. 17 April 2020. https://documentcloud.adobe.com/link/track?uri=urn%3Aaaid%3Ascds%3AUS%3A5be4d525-66e7-4529-bb42-760d5dd58cd2#pageNum=1
Mauritius	Import restrictions	2.1.2	**World Trade Organization (WTO)**. 2020. Notification of Emergency measures. G/SPS/N/MUS/18. *WTO*. [online]. 23 March 2020. https://docs.wto.org/Dol2FE/Pages/FormerScriptedSearch/directdoc.aspx?DDFDocuments/t/G/SPS/NMUS18.DOCX

COUNTRY/REGION	MEASURE	CHAPTER	REFERENCE
▸**Mauritius**			**World Trade Organization (WTO)**. 2020. Committee on Sanitary and Phytosanitary Measures -Notification of Emergency measures. G/SPS/N/MUS/18/Add.1. *WTO*. [online]. 4 June 2020. https://docs.wto.org/Dol2FE/Pages/FormerScriptedSearch/directdoc.aspx?DDFDocuments/t/G/SPS/NMUS18A1.DOCX
Morocco	Lowering import tariff	2.2.1	**Ministère de l'Economie et des Finances et Administration des Douanes et Impôts Indirects, Royaume du Maroc**. March 2020. Circulaire 6030/211. [online]. 27 March 2020. http://www.douane.gov.ma/dms/adDocument?documentId=81276&application=circulaire
Myanmar	Export restrictions; food reserves	3.1.2.3	**FAO**. 2020. *Food Outlook - Biannual Report on Global Food Markets: June 2020*. *Food Outlook, 1*. Rome, FAO. pp. 91-92. https://doi.org/10.4060/ca9509en
	Emergency reserves, oil	3.3.2	**Global New Light of Myanmar**. April 2020. MoC Union Minister remarks rice reserve scheme. *Myanmar News Agency*. [online]. 23 April 2020. https://www.globalnewlightofmyanmar.com/moc-union-minister-remarks-rice-reserve-scheme/
New Zealand	Airfreight assistance	2.3.2	**Ministry of Transport, New Zealand Government**. 2020. Government support for the transport sector. *Ministry of Transport*. [online]. 4 April 2020. https://www.transport.govt.nz/area-of-interest/air-transport/government-support-for-the-transport-sector/#:~:text=The%20%24330m%20scheme%20provides,Zealand%20to%20key%20export%20destinations
Nigeria	Grains stock release	3.1.2.2	**FAO.** 2020. *Food Outlook - Biannual Report on Global Food Markets: June 2020*. Food Outlook, 1. Rome, FAO. p. 85. https://doi.org/10.4060/ca9509en
North Macedonia	Export restriction	3.1.2.1	**World Trade Organization (WTO).** 2020. Committee on Market Access - Notification pursuant to the decision on notification procedures for quantitative restrictions (G/L/59/REV. 1). G/MA/QR/N/MKD/1. *WTO*. [online]. 1 April 2020. https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=Q:/G/MAQRN/MKD1.pdf
Pakistan	Export restrictions	2.1.1	**Ministry of Information and Broadcasting, Government of Pakistan.** April 2020. PR No. 187. *Ministry of Information and Broadcasting, Press Information Department*. [online]. Islamabad. 28 April 2020. http://pid.gov.pk/site/press_detail/13573

COUNTRY/REGION	MEASURE	CHAPTER	REFERENCE
Pakistan			**ITC Market Access Map.** 2020. COVID-19 Temporary Trade Measures. Pakistan. *International Trade Centre.* [online]. https://www.macmap.org/covid19
	Domestic trading restrictions	3.1.2.1	**FAO.** 2020. *Food Outlook - Biannual Report on Global Food Markets: June 2020. Food Outlook, 1.* Rome, FAO. p.85. https://doi.org/10.4060/ca9509en
	Lowering import duties	3.3.2	**FAO**. 2020. *Food Outlook - Biannual Report on Global Food Markets: June 2020. Food Outlook, 1.* Rome, FAO. p. 102. https://doi.org/10.4060/ca9509en
Panama	Raising tariff rate quotas (TRQs)	3.1.2.3	**Gaceta Oficial Digital, República de Panama**. Marzo 2020. Jueves 19 de marzo de 2020. N° 28984-B. *Gaceta Oficial Digital.* [online]. 19 March 2020. https://www.gacetaoficial.gob.pa/pdfTemp/28984_B/GacetaNo_28984b_20200319.pdf
Philippines	Flexibilities in trade procedures	2.2.3	**World Trade Organization (WTO)**. 2020. Committee on Sanitary and Phytosanitary Measures - Notification of emergency measures. G/SPS/N/PHL/460. *WTO.* [online]. 6 April 2020. https://docs.wto.org/dol2fe/Pages/FE_Search/FE_S_S009-DP.x?language=E&CatalogueIdList=263109,263111,263110,263112,263095,263102,263096,263113,263101,263114&CurrentCatalogueIdIndex=2&FullTextHashTrue&HasFrenchRecord=False&HasSpanishRecord=False
			World Trade Organization (WTO). 2020. Committee on Sanitary and Phytosanitary Measures - Notification of emergency measures. G/SPS/N/PHL/458. *WTO*. [online]. 16 April 2020. https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=Q:/G/SPS/NPHL458.pdf
			World Trade Organization (WTO). 2020. Committee on Sanitary and Phytosanitary Measures - Notification of emergency measures. G/SPS/N/PHL/459. *WTO*. [online]. 16 April 2020. https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=Q:/G/SPS/NPHL459.pdf
			World Trade Organization (WTO). 2020. Committee on Sanitary and Phytosanitary Measures - Notification of emergency measures. Addendum. G/SPS/N/PHL/458/Add.1. *WTO*. [online]. 8 May 2020. https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=q:/G/SPS/NPHL458A1.pdf&Open=True

COUNTRY/REGION	MEASURE	CHAPTER	REFERENCE
▸**Philippines**	Price controls	2.3.4	**Department of Agriculture, Republic of the Philippines.** 2020. DA to implement "food resiliency plan" for stable MM food supply. *DA News*. [online]. 14 march 2020. https://www.da.gov.ph/da-to-implement-food-resiliency-plan-for-stable-mm-food-supply/
	Export/ domestic trade restriction	3.1.2.3	**ITC Market Access Map.** 2020. COVID-19 Temporary Trade Measures. Pakistan. *International Trade Centre.* [online]. https://www.macmap.org/covid19
	Rice imports (government to government basis)	3.1.2.3	**Presidential Communications Operations Office, Republic of the Philippines**. March 2020. Inter-Agency task force briefing with Cabinet Secretary Karlo Alexei Nograles. *Press Briefing, GOVPH*. [online]. 27 March 2020. https://pcoo.gov.ph/press-briefing/inter-agency-task-force-briefing-with-cabinet-secretary-karlo-alexei-nograles-2/
	Producer subsidy	3.1.2.3	**Department of Agriculture, Republic of the Philippines**. March 2020. IATF approves P31-B add'l budget to increase food sufficiency level. *Department of Agriculture*. [online]. 29 March 2020. https://www.da.gov.ph/iatf-approves-p31-b-addl-budget-to-increase-food-sufficiency-level/
Qatar	Lowering import tariff	2.2.1	**United States Department of Agriculture (USDA)**. 2020. Qatar exempts food products from customs duty for six months. *USDA Foreign Agricultural Service*. [online]. 2 April 2020. https://www.fas.usda.gov/data/qatar-qatar-exempts-food-products-customs-duty-six-months
Romania	Export restrictions	3.1.2.1	**Marinas, R**. 2020. Romania lifts all wheat export restrictions - Interior Minister. In *Markets Newswire*. [online]. Bucharest. 16 April 2020. https://www.agriculture.com/markets/newswire/romania-lifts-all-wheat-export-restrictions-interior-minister
Russian Federation	Import restrictions, SPS related	2.1.2	**World Trade Organization (WTO)**. 2020. Committee on Sanitary and Phytosanitary Measures - Notification of Emergency measures. G/SPS/N/RUS/178. *WTO*. [online]. 3 February 2020. https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=Q:/G/SPS/NRUS178.pdf
			World Trade Organization (WTO). 2020. Committee on Sanitary and Phytosanitary Measures - Notification of Emergency measures. Corrigendum. G/SPS/N/RUS/178/Corr.1. *WTO*. [online]. 31 March 2020. https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=q:/G/SPS/NRUS178C1.pdf&Open=True

COUNTRY/REGION	MEASURE	CHAPTER	REFERENCE
Russian Federation			**World Trade Organization (WTO)**. 2020. Committee on Sanitary and Phytosanitary Measures - Notification of Emergency measures. G/SPS/N/RUS/178. WTO. [online]. 20 April 2020. https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=q:/G/SPS/NRUS178A1.pdf&Open=True
	Flexibilities in trade procedures	2.2.3	**World Trade Organization (WTO)**. 2020. Committee on Sanitary and Phytosanitary Measures - Notification. G/SPS/N/RUS/184. *WTO*. [online]. 3 April 2020. http://spsims.wto.org/en/RegularNotifications/View/164210?FromAllNotifications=True
	Export restrictions	3.1.2.1; 3.1.2.2	**Government of the Russian Federation.** March 2020. Decree of the Government of the Russian Federation of 31 March 2020 No. 385 "On the introduction of a temporary quantitative restriction on the export of grain crops outside the territory of the Russian Federation to states that are not members of the Eurasian Economic Union, and the establishment of a case in which temporary periodic customs declaration of goods is not applied". *Official internet portal of legal information*. [online]. 31 March 2020. http://publication.pravo.gov.ru/Document/View/0001202004020024
	Stock release	3.1.2.1	**FAO.** 2020. *Food Outlook - Biannual Report on Global Food Markets: June 2020. Food Outlook, 1*. Rome, FAO. p.86. https://doi.org/10.4060/ca9509en
	Import restrictions, vegetables	3.4.2	**United States Department of Agriculture (USDA)**. 2020. *Russia restricts imports of cucumbers and tomatoes for state and municipal purposes*. Report no. RS2020-0015, 10 April 2020. https://apps.fas.usda.gov/newgainapi/api/Report/DownloadReportByFileName?fileName=Russia%20Restricts%20Imports%20of%20Cucumbers%20and%20Tomatoes%20for%20State%20and%20Municipal%20Purposes_Moscow_Russian%20Federation_04-08-2020
Rwanda	Price controls	2.3.4	**Ministry of Trade and Industry, Republic of Rwanda.** 2020. Public Announcement. The Ministry of Trade and Industry urges all traders (retailers and wholesalers) to avoid increasing prices of goods, whether imported or domestically produced. *Twitter*.[online]. 22 March 2020. https://twitter.com/RwandaTrade/status/1241672944461451264/photo/1
Saint Kitts and Nevis	Import duties	3.4.2	**St Kitts Nevis Customs and Excise Department**. 2020. Memorandum to importers, customs brokers and customs clerks. *SKN Customs, Comptroller's Office*. [online]. 26 March 2020. https://skncustoms.com/pdf1/COVID19TAXES.pdf

COUNTRY/REGION	MEASURE	CHAPTER	REFERENCE
Saudi Arabia	Loans (import financing, agriculture)	3.1.2.2; 3.1.2.3; 3.4.2	**Agricultural Development Fund (ADF)**. 2020. The Agricultural Development Fund approves agricultural loans worth 296 million riyals to finance 35 projects in a number of regions of the Kingdom. *Agricultural Development Fund*. [online]. https://adf.gov.sa/ar/MediaCenter/News/Pages/news0017.aspx
Senegal	Input subsidies	2.3.1	**FAO**. 2020. *Food Outlook - Biannual Report on Global Food Markets: June 2020. Food Outlook, 1*. Rome. FAO, p.93. https://doi.org/10.4060/ca9509en
	Domestic food aid	2.3.4	**Sylla, F.** 2020. *Government of Senegal's support for tourism and other key sectors affected by COVID-19* Report No. SG2020-0008, 1 July 2020. USDA Foreign Agricultural Service. https://apps.fas.usda.gov/newgainapi/api/Report/DownloadReportByFileName?fileName=Government%20of%20Senegal%27s%20Support%20for%20Tourism%20and%20Other%20Key%20Sectors%20Affected%20by%20COVID-19_Dakar_Senegal_06-24-2020
Serbia	Export restrictions	3.1.2.1; 3.3.2	**Government of the Republic of Serbia**. March 2020. Decision on temporary export prohibition on essential products important to the population. Official Gazette of RS, no. 28 of 14 March 2020, 33 of 17 March 2020, 37 of 19 March 2020, 39 of 21 March 2020, 41 of 24 March 2020, 43 of 27 March 2020. In *Pravno Informacioni Sistem*. [online]. 14 March 2020. http://www.pravno-informacioni-sistem.rs/SlGlasnikPortal/eli/rep/sgrs/vlada/odluka/2020/28/2/reg
	Producer subsidy	3.2.2; 3.4.2	**Government of the Republic of Serbia.** April 2020. Regulation on financial assistance to agricultural holdings for the purpose of mitigating the consequences of COVID-19 disease caused by SARS-COV-2. Official Gazette of RS, no. 57 of April 16, 2020. In *Pravno Informacioni Sistem*. [online]. 16 April 2020. http://www.pravno-informacioni-sistem.rs/SlGlasnikPortal/eli/rep/sgrs/vlada/uredba/2020/57/2/reg
South Africa	Lowering import tariffs and VAT	2.2.1	**South African Revenue Service**. 2020. Mapping of essential goods with reference to Annexure B of the Regulations (R.398, Government Gazette No. 43148 of 25 March 2020) under the Disaster Management Act, 2002. *SARS*. [online]. 25 March 2020. https://www.sars.gov.za/AllDocs/LegalDoclib/SecLegis/LAPD-LSec-COVID19-Reg-2020-003a%20-%20SARS%20VAT%20412.11%20Mapping%20of%20ESSENTIAL%20GOODS%20re%20COVID-19%20-%20Updated%206%20May%202020.pdf

COUNTRY/REGION	MEASURE	CHAPTER	REFERENCE
South Africa	Flexibilities in trade procedures	2.2.3	**World Trade Organization (WTO)**. 2020. Committee on Sanitary and Phytosanitary Measures - Notification. G/SPS/N/ZAF/67. *WTO*. [online]. 16 April 2020. https://macmap.org/OfflineDocument/Covid19/COVID_SAF_3.pdf **World Trade Organization (WTO)**. 2020. Committee on Sanitary and Phytosanitary Measures - Notification of emergency measures. G/SPS/N/ZAF/66. *WTO*. [online]. 9 April 2020. https://docs.wto.org/dol2fe/Pages/FE_Search/FE_S_S009-DP.x?language=E&CatalogueIdList=262940,262942,262949,262979,262975,262978,262980,262981,262983,262985&CurrentCatalogueIdIndex=2&FullTextHashTrue&HasFrenchRecord=False&HasSpanishRecord=False
	Lowering customs duties, wheat products	3.1.2.1	**Global Trade Alert.** 2020. SACU: Customs duty decrease on wheat and wheaten products (March 2020). *Global Trade Alert*. [online]. 2 March 2020. https://www.globaltradealert.org/intervention/78653/import-tariff/sacu-customs-duty-decrease-on-wheat-and-wheaten-products-march-2020 **Government Gazette.** March 2020. Customs and Excise Act, 1964. Amendment of Schedule No. 1 (No.1/1/1638). In *Government Gazette No. 43061. No.R.237*, South Africa Revenue Service. [online]. 2 March 2020. https://www.sars.gov.za/AllDocs/Embargo/Tariffs/LAPD-LSec-CE-TA-2020-18%20-%20R237%20GG43061%20Sch1P1%20Wheat%20-%202%20March%202020.pdf
Sri Lanka	Price controls	2.3.4	**FAO.** 2020. *Food Outlook - Biannual Report on Global Food Markets: June 2020. Food Outlook, 1*. Rome, FAO. p. 93. https://doi.org/10.4060/ca9509en
	Import restrictions	3.4.2	**The Gazette of the Democratic Socialist Republic of Sri Lanka Extraordinary.** April 2020. Imports and Exports (Control) Act No. 1 of 1969. *Government Notifications*. Part: Section (I) - General, No. 2171/5. [online]. 16 April 2020. http://www.documents.gov.lk/files/egz/2020/4/2171-05_E.pdf **Galappattige, A.** 2020. *Sri Lanka - Temporary suspension of imports due to COVID-19*. Report no. CE2020-0004, 27 April 2020. USDA Foreign Agricultural Service. https://apps.fas.usda.gov/newgainapi/api/Report/DownloadReportByFileName?fileName=Sri%20Lanka%20-%20Temporary%20Suspension%20of%20Imports%20Due%20to%20COVID-19%20_Colombo_Sri%20Lanka_04-15-2020

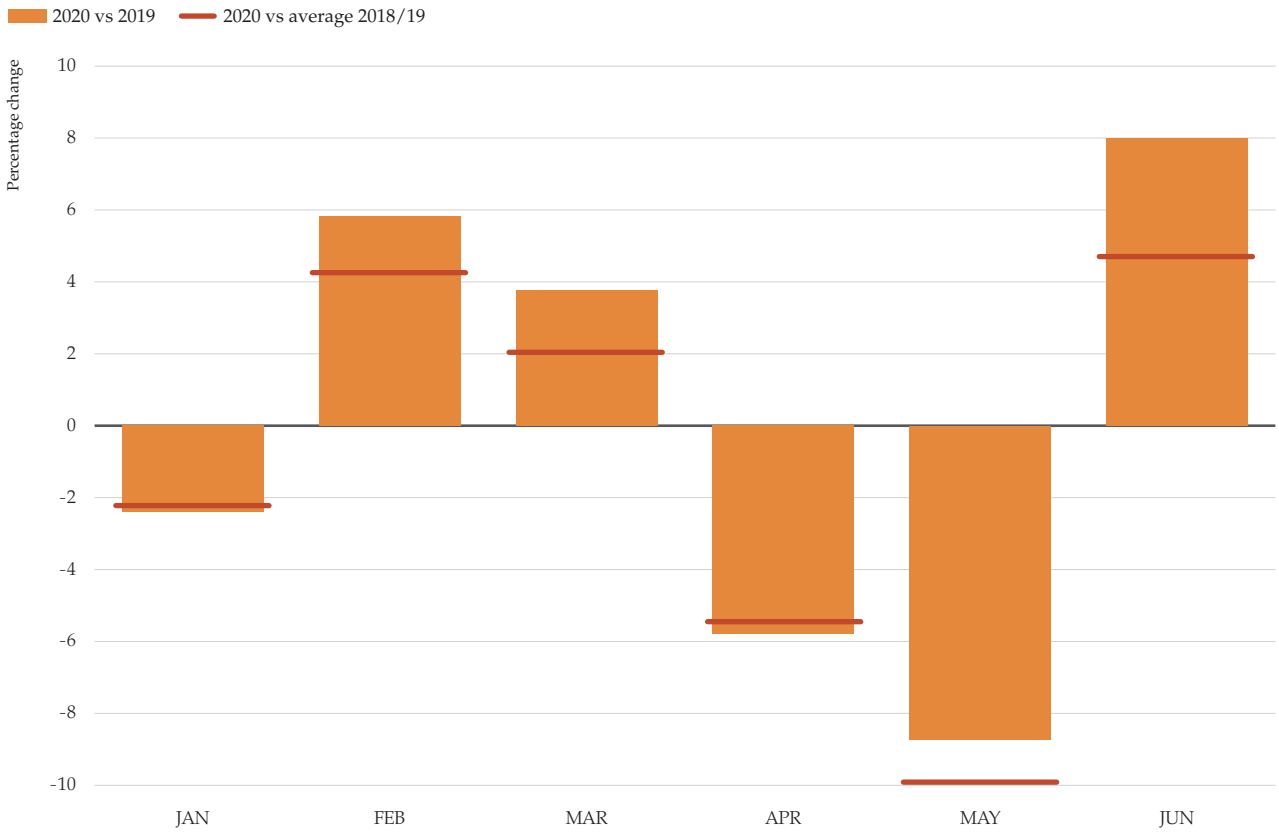
COUNTRY/REGION	MEASURE	CHAPTER	REFERENCE
Sudan	Export restrictions	3.1.2.2	**Middle East Monitor.** 2020. Sudan bans maize exports over fear of coronavirus food shortage. *MEMO*. [online]. 3 April 2020. https://www.middleeastmonitor.com/20200403-sudan-bans-maize-exports-over-fear-of-coronavirus-food-shortage/
Switzerland	Import quotas	3.4.2	**Confédération Suisse**. Avril 2020. Ordonnance sur les mesures visant à atténuer les conséquences économiques du coronavirus dans le secteur de l'agriculture [online]. 1 April 2020. https://www.newsd.admin.ch/newsd/message/attachments/60796.pdf
	Relaxation of technical regulations	2.2.2	**World Trade Organization (WTO)**. 2020. Committee on Sanitary and Phytosanitary Measures - Notification of emergency measures. G/SPS/N/CHE/84. *WTO*. [online]. 24 April 2020. https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=q:/G/SPS/NCHE84.pdf&Open=True **World Trade Organization (WTO)**. 2020. Committee on technical barriers to trade - Notification. G/TBT/N/CHE/246. *WTO*. [online]. 24 April 2020. http://tbtims.wto.org/en/RegularNotifications/View/164665
Syrian Arab Republic	Export restriction	3.2.2	**Global Trade Alert**. 2020. Syria: The government prohibits export of certain food products and sterilization materials (April 2020). *Global Trade Alert*. [online]. 4 April 2020. https://www.globaltradealert.org/intervention/79661/export-ban/syria-the-government-prohibits-export-of-certain-food-products-and-sterilization-materials
Tajikistan	Export restriction	3.1.2.1	**KAZINFORM.** 2020. Export ban on cereals, concerts and vacations: Tajikistan introduces measures due to coronavirus. *Kazinform*. [online]. Dushanbe. 26 April 2020. https://www.inform.kz/ru/zapret-na-eksport-zernovyh-koncertov-i-kanikuly-tadzhikistan-vvodit-mery-iz-za-koronavirusa_a3642903
	Rice export restriction	3.1.2.3	**ITC Market Access Map.** COVID-19 Temporary Trade Measures. Tajikistan. *International Trade Centre*. [online]. https://www.macmap.org/covid19
Thailand	Price controls	2.3.4; 3.3.2	**FAO.** 2020. *Food Outlook - Biannual Report on Global Food Markets: June 2020. Food Outlook*, 1. Rome, FAO. p.94. https://doi.org/10.4060/ca9509en
	Export restriction	3.2.2	**World Trade Organization (WTO)**. 2020. Committee on Agriculture - Notification. G/AG/N/THA/107. 30 March 2020. *WTO*. [online]. https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=q:/G/AG/NTHA107.pdf&Open=True

COUNTRY/REGION	MEASURE	CHAPTER	REFERENCE
Thailand			**World Trade Organization (WTO)**. 2020. Committee on Agriculture - Notification. Addendum. G/AG/N/THA/107/Add.1. *WTO*. [online]. 2 April 2020. https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=q:/G/AG/NTHA107A1.pdf&Open=True
Turkey	Digital agriculture market; Lowering import duties	2.3.2; 3.1.2.3; 3.3.2	**Mumma, C.** 2020. *Turkey: Update on effects of COVID-19 on food and agriculture*. Report No. TU2020-0012, 4 May 2020. USDA Foreign Agricultural Service. https://apps.fas.usda.gov/newgain-api/api/Report/DownloadReportByFileName?fileName=Update%20on%20Effects%20of%20COVID-19%20on%20Food%20and%20Agriculture%20_Ankara_Turkey_04-24-2020
	Export restrictions	3.4.2	**West Mediterranean Exporters Association**. 2020. Announcement to the Members of the West Mediterranean Exporters Association. *BAIB*. [online]. 26 March 2020. https://www.baib.gov.tr/tr/koronavirus-covid19-bilgi-edinme-merkezi-limon-ihracati.html
Ukraine	Price controls	2.3.4; 3.2.2	**FAO.** 2020. *Food Outlook - Biannual Report on Global Food Markets: June 2020. Food Outlook, 1*. Rome, FAO. pp. 109, 111. https://doi.org/10.4060/ca9509en
United Kingdom of Great Britain and Northern Ireland	Domestic measures, farm income support	3.2.2	**FAO.** 2020. *Food Outlook - Biannual Report on Global Food Markets: June 2020. Food Outlook, 1*. Rome, FAO. p. 111. https://doi.org/10.4060/ca9509en
United States of America	Domestic measures, CFAP	2.3.1	**United States Department of Agriculture (USDA)**. 2020. Coronavirus Food Assistance Program – Additional Assistance. *USDA Farmers.org*. [online]. https://www.farmers.gov/cfap
	Domestic measures, farm loans	2.3.1	**World Trade Organization (WTO)**. 2020. Committee on Agriculture - Ad hoc report on COVID-19 measures taken by the United States of America in the Agricultural Sector. G/AG/GEN/161. *WTO*. [online]. 27 July 2020. https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=q:/G/AG/GEN161.pdf&Open=True
	Domestic measures, purchases for domestic food aid	2.3.1	**United States Department of Agriculture (USDA)**. 2020. USDA Farmers to Families Food Box. *USDA Agricultural Marketing Service*. [online]. 24 July 2020. https://www.ams.usda.gov/selling-food-to-usda/farmers-to-families-food-box
Uzbekistan	Lowering import tariff	2.2.1; 3.4.2	**Gazeta**. 2020. Duties and excise taxes have been cancelled on 20 goods. *Gazeta*. [online]. 3 April 2020. https://www.gazeta.uz/ru/2020/04/03/zero-duties/

COUNTRY/REGION	MEASURE	CHAPTER	REFERENCE
Viet Nam	Export restrictions, rice	3.1.2.3	**FAO**. 2020. Viet Nam stops signing new rice export contracts amid COVID-19 pandemic. 2 April 2020. In: *FAO GIEWS - Global Information and Early Warning System*. [online]. Rome. http://www.fao.org/economic/est/est-commodities/commodity-policy-archive/detail/en/c/755041/ **Ministry of Industry and Trade of the Socialist Republic of Viet Nam**. April 2020. Information announced rice export quota in April 2020. *Moit.gov.vn*. [online]. 11 April 2020. https://www.moit.gov.vn/tin-chi-tiet/-/chi-tiet/thong-tin-cong-bo-han-ngach-xuat-khau-gao-trong-thang-4-nam-2020-18375-22.html **FAO.** 2020. *Food Outlook - Biannual Report on Global Food Markets: June 2020. Food Outlook, 1*. Rome, FAO. p. 95. https://doi.org/10.4060/ca9509en **Online Newspaper of the Government, the Socialist Republic of Viet Nam**. April 2020. Gov't to resume rice exports next month. *Online Newspaper of the Government*. [online]. 28 April 2020. http://news.chinhphu.vn/Home/Govt-to-resume-rice-exports-next-month/20204/39922.vgp
	Food reserves	3.1.2.3	**FAO**. 2020. *Food Outlook - Biannual Report on Global Food Markets: June 2020. Food Outlook, 1*. Rome, FAO. p. 95. https://doi.org/10.4060/ca9509en

TECHNICAL ANNEX

Figure 21. Percentage change of world agricultural and food import values, January to June 2020 compared to the same month in 2019 and the average in 2018/19.



Source: Estimates based on Trade Data Monitor (accessed October 2020).

Table 11. Regional grouping of countries considered in the analysis.

REGION	COUNTRIES
Africa	Botswana, Côte d'Ivoire, Egypt, Ethiopia, Kenya, Madagascar, Mauritius, Morocco, Mozambique, Namibia, Senegal, South Africa, Zambia
Americas	Argentina, Belize, Bolivia (Plurinational State of), Brazil, Canada, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Panama, Paraguay, Peru, United States of America, Uruguay
Asia	Armenia, Bahrain, Brunei Darussalam, China, Cyprus, Georgia, India, Indonesia, Israel, Japan, Jordan, Kazakhstan, Malaysia, Myanmar, Pakistan, Philippines, Qatar, Republic of Korea, Saudi Arabia, Singapore, Sri Lanka, Thailand, Turkey
Europe	Albania, Austria, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Montenegro, Netherlands, North Macedonia, Norway, Poland, Portugal, Romania, Russian Federation, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Ukraine, United Kingdom of Great Britain and Northern Ireland
Oceania	Australia, New Zealand

Note: The regional grouping follows the M49 standard of the United Nations Statistics Division (UNSD). The table shows only countries which had reported monthly trade data for January to June 2020 at the time of extracting the data (accessed October 2020). The data as reported by the countries include exports to and imports from their trading partners, even if these had not reported data themselves.

Table 12. Correspondence between commodity groups and HS2/4/6 digit levels.

COMMODITY GROUPS	DESCRIPTION	HS 2-DIGITS 01-24 AND HS 4/6-DIGITS
Live animals	Animals; live	01
Meat	Meat and edible meat offal	02
Fish	Fish and crustaceans, molluscs and other aquatic invertebrates	03
Dairy products	Dairy produce; birds' eggs; natural honey; edible products of animal origin, not elsewhere specified or included	04
Others	Animal originated products; not elsewhere specified or included; lac; resins and other vegetable saps and extracts; vegetable plaiting materials; vegetable products not elsewhere specified or included; food industries, residues and wastes thereof; prepared animal fodder; miscellaneous agricultural products	05, 13, 14, 23; 290543, 290544, 3301, 3501-3505, 380910, 382460, 4101-4103, 4301, 5001-5003, 5101-5103, 5301, 5302
Live plants and cut flowers	Trees and other plants, live; bulbs, roots and the like; cut flowers and ornamental foliage	06
Vegetables	Vegetables and certain roots and tubers; edible	07
Fruits and nuts	Fruit and nuts, edible; peel of citrus fruit or melons	08
Coffee, tea and spices	Coffee, tea, mate and spices	09
Cereals	Cereals	10
Flours, starches and malts	Products of the milling industry; malt, starches, inulin, wheat gluten	11
Oilseeds	Oil seeds and oleaginous fruits; miscellaneous grains, seeds and fruit, industrial or medicinal plants; straws and fodder	12
Fats and oils	Animal or vegetable fats and oils and their cleavage products; prepared animal fats; animal or vegetable waxes	15
Food preparations	Meat, fish or crustaceans, molluscs or other aquatic invertebrates; preparations thereof; preparations of cereals, flour, starch or milk; pastry cooks' products; preparations of vegetables, fruit, nuts or other parts of plants; miscellaneous edible preparations	16, 19, 20, 21
Sugar and confectionery	Sugars and sugar confectionery	17
Cocoa and chocolate	Cocoa and cocoa preparations	18
Beverages	Beverages, spirits and vinegar	22
Tobacco	Tobacco and manufactured tobacco substitutes	24
Cotton	Cotton	5201-5203

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