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Trade of agricultural commodities

2005-2021

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HIGHLIGHTS

- → The monetary value* of global agricultural exports in 2021 was 2.7 times higher in nominal terms than in 2005, while the share of agriculture in total merchandise trade value increased from 6.6 percent in 2005 to 7.9 percent in 2021.
- → World meat exports have slightly increased between 2020 and 2021. The leading region in poultry meat exports was the Americas, while Europe and the Americas were the leading exporters of pig meat.
- → The Americas is the largest net food exporter, and Asia is the largest net food importer. Europe became a net food exporter in 2013.**
- → The value of Oceania's food exports surged in 2021. New Zealand became the second largest net exporter of food excluding fish in 2021 and Australia the fifth largest.
- → Europe's wheat exports decreased by 14.5 million tonnes between 2020 and 2021 due to an 11.5 percent reduction in the wheat production of the Russian Federation for the same period.

* Throughout this brief, all values are measured in current prices.

** Regional and subregional values exclude intra-trade.

FAOSTAT CROPS AND LIVESTOCK TRADE

INTRODUCTION

Trade is a vital part of agrifood systems, as it ensures the flow of agricultural commodities across the globe and especially to countries that may not produce enough of these commodities to meet domestic demand. The variability of international prices, which are affected by the fundamentals of supply and demand, makes trade flows susceptible to significant changes from year to year.

This analytical brief looks at the overall trade of agricultural products, food excluding fish and the main commodity groups for the period 2005–2021 as covered in the FAOSTAT database.

FOOD (EXCLUDING FISH)

The monetary value of global agricultural exports in 2021 was USD 1 754 billion, which is 2.7 times higher in nominal terms than in 2005 (Figure 1). Food (excluding fish) accounted for most of this increase, and its share in the total agricultural trade increased during the same period, from 83 percent in 2005 (USD 531 billion) to 85 percent (USD 1 495 billion). Trends in the value of exports mirror to a large extent changes in international prices, which surged in 2007/2008 during the food security crisis (that saw, in particular, the price of cereals reach record levels) and remained high between 2011 and 2014. The share of agricultural products in total merchandise trade value went from 6.6 percent in 2005 to 7.9 percent in 2021. Peaks in 2009 (7.6 percent) and 2020 (8.5 percent) are

due, respectively, to the 2008 financial crisis and the COVID-19 pandemic, which affected global trade and resulted in a decrease of the overall value of merchandise traded due to reduced flows or price variations while the value of agricultural products trade increased, resulting in an artificial increase in the share.

The COVID-19 pandemic had unprecedented effects on global supply chains. Yet, the global trading system proved it could facilitate access to food commodities as it provided flexibility, diversification and support to the economic recovery in 2021. This resulted in increasing values of the total merchandise trade and all food commodity groups (Figure 2). However, although the effects of the pandemic remained limited to short-term disruptions in the earlier stages, supply chains have since adapted rapidly and food trade levels in all major economies have returned to their pre-pandemic levels of 2019 (FAO, 2022b).



Figure 1: Value of world agricultural products exports by group and share in total merchandise trade

Source: FAO. 2022. FAOSTAT: Trade: Crops and livestock products. In: *FAO*. Rome. Cited December 2022. https://www.fao.org/faostat/en/#data/TCL

Fruit and vegetables accounted for 21 percent of the total value of food (excluding fish) exports in 2021, followed by cereals and preparations (16 percent) and meat and meat preparations (12 percent) (Figure 2). The United States of America was the largest exporter of food (excluding fish) in 2021 with USD 146.6 billion (10 percent of the total), followed by Brazil (USD 87.6 billion, or 6 percent) and the Netherlands (USD 87.5 billion, or 6 percent).



Figure 2: Value of global food (excluding fish) exports by group

Source: FAO. 2022. FAOSTAT: Trade: Crops and livestock products. In: *FAO*. Rome. Cited December 2022. https://www.fao.org/faostat/en/#data/TCL

Comparative advantage in producing agricultural commodities may depend on many factors including differences in climate, availability of the productive agricultural land, policy factors and population. All these factors taken together play a key role in determining trade flows between regions and countries. Over the coming decade, the differentiation between net exporting and net importing regions is expected to intensify. Established net exporters (defined as the nominal value of exports minus that of imports) of agricultural commodities are expected to increase their trade surpluses while regions with important population growth or land or other natural resource constraints are expected to see their trade deficit widen (OECD/FAO, 2021).

Two regions stand out in terms of net trade: the Americas as the largest net exporter with a USD 147 billion surplus in 2021, and Asia as the largest net importer, with a USD 64 billion deficit in 2021 (Figure 3). It is important to note that these values exclude intra-regional trade: for example, the values for Asia include only Asian countries' imports (from) and exports (to) of countries outside the region. Oceania remained a net exporter of food during the 2005–2021 period and Africa a net importer. While the Americas' and Oceania's surplus, as well as Africa's and Asia's deficit increased between 2005 and 2021, Europe, a net importer of food (excluding fish) during most of the period, became a net exporter in 2013 and overtook Oceania in 2020. In 2021, Oceania's net trade peaked due to a surge in the export value and the region became the second biggest net exporter again.



Source: FAO. 2022. FAOSTAT: Trade: Crops and livestock products. In: *FAO*. Rome. Cited December 2022. https://www.fao.org/faostat/en/#data/TCL

The largest net food (excluding fish) exporting countries in 2021 were Brazil (+USD 76.9 billion), New Zealand (+USD 39.2 billion) and Spain (+USD 26.2 billion) (Figure 4). Brazil's top export was soya beans, which represented 50 percent of the country's total food (excluding fish) net export value, while it was whole milk powder (24 percent) for New Zealand and meat of pig (14 percent) for Spain. The largest net importing countries in 2021 were China, mainland (-USD 132.4 billion), Japan (-USD 42.7 billion), and the United Kingdom of Great Britain and Northern Ireland (-USD 30.1 billion) (Figure 5). China, mainland's top import was soya beans, accounting for 40 percent of the country's total food (excluding fish) net import value, Japan's was maize (11 percent) and the United Kingdom's was wine (14 percent).

Figure 3: Food (excluding fish) net trade by region



Figure 4: Top net exporters and their largest partners and trade flows

Source: FAO. 2022. FAOSTAT: Trade: Crops and livestock products. In: *FAO*. Rome. Cited December 2022. https://www.fao.org/faostat/en/#data/TCL and FAO. 2022. FAOSTAT: Detailed trade matrix. In: *FAO*. Rome. Cited December 2022. https://www.fao.org/faostat/en/#data/TM



Figure 5: Top net importers and their largest partners and trade flows

Source: FAO. 2022. FAOSTAT: Trade: Crops and livestock products. In: *FAO*. Rome. Cited December 2022. https://www.fao.org/faostat/en/#data/TCL and FAO. 2022. FAOSTAT: Detailed trade matrix. In: *FAO*. Rome. Cited December 2022. https://www.fao.org/faostat/en/#data/TM

Divergent productivity growth, together with animal diseases, policy factors, climate change (which impacts on production, affecting supply) as well as socioeconomic and cultural-driven changes in consumption behaviour are all also transforming the profile of demand in countries. Trade plays a vital role here to diversify the risk for importer countries to smoothen the fluctuations and creates comparative advantage for exporting countries. Although the differentiation between the net exporter and net importer countries is expected to intensify, the ranking among them is not static. As mentioned above, the trade surplus of Oceania increased significantly in 2021, driven by Australia and New Zealand. The latter became the second largest net exporter with a surplus of USD 39.2 billion in 2021, up 95 percent from USD 19.9 billion in 2020. Whole milk powder, meat of sheep and cattle facilitated this expansion. Australia became the fifth largest exporter as its surplus was USD 23.6 billion in 2021, up 64 percent from USD 14.4 billion in 2020 – growth in the production of wheat drove this increase (Figure 6).



Figure 6: Top net exporters of food (excluding fish)

Source: FAO. 2022. FAOSTAT: Trade: Crops and livestock products. In: *FAO*. Rome. Cited December 2022. https://www.fao.org/faostat/en/#data/TCL

Trade flows vary considerably between regions and commodity groups (Figure 7). The largest individual flows in 2021 were observed for cereal and cereal preparations, Asia's imports, (USD 75.4 billion), and Europe's exports (USD 45.4 billion). Asia was the largest importer for cereals and preparations, dairy products and eggs, fats and oils, meat and meat preparations, and sugar and honey; for beverages, the largest importer was the Americas, and while for fruit and vegetables, it was Europe. The largest exporter of beverages, cereals and preparations, was Europe; the Americas led the exports of fruit and vegetables, meat and meat preparations, and sugar and honey, while Asia was the largest exporter of fats and oils. For dairy and eggs, Oceania was the largest exporter, almost doubling in value compared to the previous year.

The Americas and Europe were the main net exporters of all commodity groups except one. The Americas was a net importer of beverages (-USD 18.7 billion) and Europe was a net importer of fruit and vegetables (-USD 37.9 billion). Oceania is a net exporter in all commodity groups, Asia a net importer of all commodity groups, and Africa a net exporter of only fruit and vegetables.

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Figure 7: Food (excluding fish) imports and exports by main categories and region (2021)

Source: FAO. 2022. FAOSTAT: Trade: Crops and livestock products. In: *FAO*. Rome. Cited December 2022. https://www.fao.org/faostat/en/#data/TCL

FRUIT AND VEGETABLES

As seen in Figure 2, fruit and vegetables were the commodity group with the largest export value in 2021: USD 308.4 billion, up 175 percent from USD 112 billion in 2005. The top four items (aggregated by their base product) are tomato products (USD 15.8 billion, or 5.1 percent of the fruit and vegetables total in 2021), bananas (USD 12.7 billion, or 4.1 percent), potatoes (USD 12.5 billion, or 4.1 percent) and grapes (USD 9.6 billion, or 3.1 percent) (Figure 8). The relatively low individual shares are in part due to the large number of products (more than 100) included in the fruit and vegetables aggregate.



Figure 8: World exports of fruit and vegetables by main commodity

Note: Tomato products include tomatoes; tomatoes, paste; tomatoes, peeled; and juice, tomato.

Source: FAO. 2022. FAOSTAT: Trade: Crops and livestock products. In: *FAO*. Rome. Cited December 2022. https://www.fao.org/faostat/en/#data/TCL

CEREALS

The global wheat exports reached 198.1 million tonnes (Mt) in 2021, 0.4 Mt lower than in 2020 (Figure 9). This reduction was due to unfavourable climate conditions that lowered production in the Russian Federation, the United States of America and Canada (Figure 13). In contrast, exports of maize, rice and barley showed an increase of 3.1 Mt, 5 Mt and 6.1 Mt for the same period, respectively. For maize, the main driver for this increase was China, mainland whose maize imports reached record-high levels in 2021, due to the gradual rebuilding of its pig herds in the wake of the Africa swine fever (ASF) outbreak and improving trade relations with the United States of America (FAO, 2022a).





Source: FAO. 2022. FAOSTAT: Trade: Crops and livestock products. In: *FAO*. Rome. Cited December 2022. https://www.fao.org/faostat/en/#data/TCL



Figure 10: China, mainland's maize imports by major partners

Source: FAO. 2022. FAOSTAT: Detailed trade matrix. In: *FAO*. Rome. Cited December 2022. https://www.fao.org/faostat/en/#data/TM

Traditionally, the Americas and Europe supply cereals (which are important sources of food and feed) to Asia and Africa, where rising populations and expanding livestock make demand expand faster than domestic production. The observed reduction of about 8.5 Mt in wheat exports from the Americas between 2020 and 2021 was caused by reductions of 8 percent and 17.5 percent in wheat exports from the United States of America and Canada, respectively due to drought conditions in 2021 (FAO, 2022a). In Europe, the 14.9 Mt reduction between 2020 and 2021 was mainly driven by the reduction of exports from the Russian Federation, which follows from reduced wheat production, while the increase in Oceania (around 21 Mt) was due to a dramatic increase in Australia's wheat exports, which followed a production increase from 14.5 Mt in 2020 (its lowest level in more than a decade) to 31.9 Mt in 2021 (its highest level in more than a decade). This made Australia the second largest wheat exporter in 2021 with 25.5 Mt, or 13 percent of global wheat exports.



Figure 11: Global wheat exports by region

Source: FAO. 2022. FAOSTAT: Trade: Crops and livestock products. In: *FAO*. Rome. Cited December 2022. https://www.fao.org/faostat/en/#data/TCL

The global export unit value indices¹ of the main cereals except rice increased in 2021 to their highest level since 2013–2014 (Figure 12). For wheat, the global export unit value index rose by 22 percent in 2021 compared with 2020, following reduced harvests in several major exporting countries, mainly the Russian Federation, the United States of America and Canada as mentioned above (Figure 13). Looking beyond 2021, the ongoing conflict has reduced the Russian Federation's and Ukraine's export capacities, which caused prices to rise sharply in the first half of 2022 (FAO, 2022).

¹ Export unit values are used as a proxy for international prices that are further analysed in FAO's *Food Outlook* series.



Source: Based on FAO. 2022. FAOSTAT: Trade: Crops and livestock products. In: *FAO*. Rome. Cited December 2022. https://www.fao.org/faostat/en/#data/TCL



Figure 13: Production and share of net exports in the top net wheat exporters

Source: FAO. 2022. FAOSTAT: Trade: Crops and livestock products. In: *FAO*. Rome. Cited December 2022. https://www.fao.org/faostat/en/#data/TCL and FAO. 2022. FAOSTAT: Production: Crops and livestock products. In: *FAO*. Rome. Cited December 2022. https://www.fao.org/faostat/en/#data/QCL

The global export unit value indices of barley and maize rose by 22 percent and 37 percent in 2021 compared with 2020, respectively. This is partially due to the substantial reduction in maize exports of major exporters such as Brazil (with exports falling from 34.4 Mt in 2020 to 29.4 Mt in 2021) and Ukraine (from 27.9 Mt to 24.5 Mt in the same period) (Figure 11).





Figure 14: Production and share of net exports in the top net maize exporters

Source: FAO. 2022. FAOSTAT: Trade: Crops and livestock products. In: *FAO*. Rome. Cited December 2022. https://www.fao.org/faostat/en/#data/TCL and FAO. 2022. FAOSTAT: Production: Crops and livestock products. In: *FAO*. Rome. Cited December 2022. https://www.fao.org/faostat/en/#data/QCL

The global export unit value index of rice went down by 9 percent between 2020 and 2021, which is due to a noticeable increase in rice paddy production between 2020 and 2021 in major producing countries, especially India, Bangladesh and China, mainland where production went up 8.9 Mt, 2 Mt and 0.9 Mt, respectively.

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Focus on the Russian Federation–Ukraine conflict

As the conflict is unfolding, the global food system is already weakened by the COVID-19 pandemic, energy shocks and the impact of climate change. Geopolitical frictions and tightening policies are expected to negatively affect both volumes and values of global trade in 2022. The Russian Federation and Ukraine are major exporters of cereals and sunflower oil, accounting together for 17 percent and 60 percent of the global total, respectively (Figures 15 and 16).



Figure 15: Wheat exports from the Russian Federation and Ukraine by partner, 2021

Source: FAO. 2022. Trade: Crops and livestock products. In: *FAO*. Rome. Cited December 2022. https://www.fao.org/faostat/en/#data/TCL

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Figure 16: Sunflower oil exports of from the Russian Federation and Ukraine by partner, 2021

Source: FAO. 2022. Trade: Crops and livestock products. In: *FAO*. Rome. Cited December 2022. https://www.fao.org/faostat/en/#data/TCL

MEAT

The global meat unit value indices increased to an all-time high for bovine and ovine meat, and to their highest level since 2015 for pigmeat and poultry meat (Figure 17). Between 2020 and 2021, the export unit value index increased by 17 percent for bovine and poultry meat, by 19 percent for ovine meat, and were stable for poultry meat. The international prices of meat rose due to a combination of factors including sharply rising feed prices, which affected poultry meat producers in leading exporting countries due to outbreaks of the highly pathogenic avian influenza (HPAI), while outbreaks of ASF affected international pig meat prices (FAO, 2021 and 2022a).

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Figure 17: Export unit value index for meats

Source: FAO. 2022. Trade: Crops and livestock products. In: *FAO*. Rome. Cited December 2022. https://www.fao.org/faostat/en/#data/TCL



Figure 18: World exports of meat by commodity

Source: FAO. 2022. Trade: Crops and livestock products. In: *FAO*. Rome. Cited December 2022. https://www.fao.org/faostat/en/#data/TCL

World meat exports have slightly increased between 2020 and 2021. Exports of poultry meat rose by 0.4 Mt, due to a small increase in production in the top producers, notably Brazil (Figures 18 and 19). Over the same period, pig meat exports increased by 0.6 Mt, while bovine and ovine meat exports both went up by 0.2 Mt.



Figure 19: Production and share of net exports in top five net poultry meat exporters

Source: FAO. 2022. FAOSTAT: Trade: Crops and livestock products. In: *FAO*. Rome. Cited December 2022. https://www.fao.org/faostat/en/#data/TCL and FAO. 2022. FAOSTAT: Production: Crops and livestock products. In: *FAO*. Rome. Cited December 2022. https://www.fao.org/faostat/en/#data/QCL

The leading region in poultry meat exports was the Americas, especially with Brazil and the United States of America as the main exporting countries. Even though China, mainland produced about 17 percent of the global poultry production, almost all this production presumably was for domestic consumption, and the country was not a top exporter.

Europe and the Americas were the leading exporters of pig meat; the two regions experienced a decrease of about 0.2 Mt and 0.5 Mt between 2020 and 2021. At the country level, the top five net exporter countries of pig meat (which together account for 58 percent of global pig meat exports) had lower exports in 2021 compared to 2020. On the other hand, China, mainland's pig meat production in 2021 increased by 29 percent compared to 2020, reaching 53 Mt, due to China's regional control system for ASF and other animal diseases (FAO, 2022a).

OILSEEDS

Export unit value indices of oilseeds continued to rise in 2021, reaching their highest level in several years in the case of soya beans, rapeseed and sunflower seed, which the high international prices for these products shown in FAO (2022a) confirm. The increasing trend of the global unit value indices mainly reflects rising international soya bean values, linked primarily to sustained imports by China, mainland (despite a slight reduction of 3.8 percent in 2021), as the country has continued reconstituting its pig herds following past outbreaks of ASF. The decrease in the export unit value index of sesame seed in 2016/2017 could be associated with exceptional yield levels and recovering production levels of oilseeds in that period (FAO, 2021).



Source: FAO. 2022. Trade: Crops and livestock products. In: *FAO*. Rome. Cited December 2022. https://www.fao.org/faostat/en/#data/TCL

The global exports of the top four oilseeds declined in 2021. In the case of soya beans (which account for 81 percent of world oilseed exports, in quantity), exports dropped by 12.1 Mt between 2020 and 2021. With Brazil and the United States of America as the main exporters of soya beans and Canada as the main exporter of rape or colza seed (Figures 22 and 23), the Americas accounted for 75 percent of total oilseeds exports in 2021.



Figure 21: World exports of oilseeds by main commodity

Source: FAO. 2022. Trade: Crops and livestock products. In: *FAO*. Rome. Cited December 2022. https://www.fao.org/faostat/en/#data/TCL



Figure 22: Production and share of net exports in top net soya beans exporters

Source: FAO. 2022. FAOSTAT: Trade: Crops and livestock products. In: *FAO*. Rome. Cited December 2022. https://www.fao.org/faostat/en/#data/TCL and FAO. 2022. FAOSTAT: Production: Crops and livestock products. In: *FAO*. Rome. Cited December 2022. https://www.fao.org/faostat/en/#data/QCL

While the observed reduction in the exports of rapeseed is partially due to lower production of the same commodity in Canada (from 19.4 million tonnes in 2020 to 13.7 million tonnes in 2021) because of the protracted drought conditions.



Figure 23: Production and share of net exports in top net rape or colza seed exporters

Source: FAO. 2022. FAOSTAT: Trade: Crops and livestock products. In: *FAO*. Rome. Cited December 2022. https://www.fao.org/faostat/en/#data/TCL and FAO. 2022. FAOSTAT: Production: Crops and livestock products. In: *FAO*. Rome. Cited December 2022. https://www.fao.org/faostat/en/#data/QCL

OILS

After a steady downward trend, which started in 2012 and was briefly interrupted in 2017, the export unit value index for the four major vegetable oils traded worldwide peaked in 2021 (with increases of 45–60 percent), almost reaching the 2011 values (Figure 24). These increases are linked with the ones observed for oilseeds described in the previous section.



Figure 24: Export unit value index for main oils

Source: FAO. 2022. Trade: Crops and livestock products. In: *FAO*. Rome. Cited December 2022. https://www.fao.org/faostat/en/#data/TCL

The increase in export unit values in 2021 took place as the global exports of sunflower-seed oil dropped by 19 percent compared with 2020, while those of palm oil and soya bean oil decreased by 2.4 percent and 2.3 percent, respectively. Only rapeseed oil experienced a 6 percent increase (Figure 25).

The most globally traded vegetable oil is palm oil, with 46 Mt in 2021 that accounted for 57 percent of the global vegetable oils exports. The observed decrease in 2021 was mainly due to exports from Malaysia, which fell by 7.3 percent as a result of a 5 percent downturn in production. Soya bean oil and sunflower-seed oil accounted for 15.7 and 15.6 percent, respectively, of the global vegetable oils exports in 2021 (Figure 25).

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Figure 25: World exports of vegetable oils by main commodity

Source: FAO. 2022. Trade: Crops and livestock products. In: *FAO*. Rome. Cited December 2022. https://www.fao.org/faostat/en/#data/TCL

The origin of exports shows great concentration for palm oil, which is mainly exported from Asian countries and sunflower-seed oil, for which exports mostly originates from European countries. The leading countries for palm oil exports are Indonesia and Malaysia. The Russian Federation and Ukraine are the top two exporters for sunflower-seed oil and recorded both a 25 percent fall in their net exports quantities in 2021 compared with 2020 (Figure 26). Asia is the major importer for all vegetable oils except palm oil, for which the top importer is Europe. India and China, mainland remained the largest importers of sunflower-seed oil despite major declines in their imports for 2021 (by 26 and 34 percent, respectively).



Figure 26: Top net exporters of sunflower-seed oil

Source: FAO. 2022. Trade: Crops and livestock products. In: *FAO*. Rome. Cited December 2022. https://www.fao.org/faostat/en/#data/TCL

EXPLANATORY NOTES

The FAOSTAT Trade data domain disseminates statistics on the international trade of food and agricultural products for the period of 1961–2021. The food and agricultural trade datasets are collected, processed and disseminated by the Food and Agriculture Organization of the United Nations (FAO) according to the standard international merchandise trade statistics methodology. The detailed tariff line data for reporting countries (import and export quantities, animal numbers and dollar values for total and bilateral flows) are mainly obtained from the United Nations Statistics Division (UNSD) for the world excluding the European Union, while the raw data from European countries are obtained from Eurostat and national authorities as needed. Trade partner data are used for non-reporting countries together with other alternative data sources.

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