



联合国
粮食及
农业组织

Food and Agriculture
Organization of the
United Nations

Organisation des Nations
Unies pour l'alimentation
et l'agriculture

Продовольственная и
сельскохозяйственная организация
Объединенных Наций

Organización de las
Naciones Unidas para la
Alimentación y la Agricultura

منظمة
الأغذية والزراعة
للأمم المتحدة

COMMITTEE ON COMMODITY PROBLEMS

Seventy-fifth Session

Rome, 13–15 July 2022

IN BRIEF

**THE STATE OF AGRICULTURAL COMMODITY MARKETS
(SOCO) 2022**

**The Geography of Food and Agricultural Trade: Policy approaches for
sustainable development**



Food and Agriculture
Organization of the
United Nations

2022

IN BRIEF

THE STATE OF **AGRICULTURAL COMMODITY MARKETS**

**THE GEOGRAPHY OF FOOD
AND AGRICULTURAL TRADE:
POLICY APPROACHES FOR
SUSTAINABLE DEVELOPMENT**

Required citation:

FAO. 2022. *In Brief to The State of Agricultural Commodity Markets 2022. The geography of food and agricultural trade: Policy approaches for sustainable development*. Rome, FAO.
<https://doi.org/10.4060/cc0475en>

This booklet contains a summary of the key messages and content from the publication *The State of Agricultural Commodity Markets 2022*. The numbering of the boxes and figures corresponds to that publication.

COVER PHOTOGRAPH ©Shutterstock.com/atk work
THAILAND. Rice fields in Chiang Mai during harvest.

CONTENTS

FOREWORD

KEY MESSAGES

SUMMARY

The geography of food and agricultural trade

Globalization and regionalization

FIGURE 1.4 The evolution of food and agricultural trade links, 1995–2019

FIGURE 1.7 The food and agricultural trade network and trade hubs in 1995 and 2019

The resilience of global food and agricultural trade to shocks to the system

The fundamental drivers of trade in food and agriculture

4	BOX 1.3 The war in Ukraine and the resilience of the global food and agricultural trade network	13
7	FIGURE 1.16 Distribution of connectivity across products and countries, normalized, 1995–2019	13
9	FIGURE 1.17 Connectivity across products and countries at country level, 2019	14
9	FIGURE 2.1 Productivity in agriculture and non-agriculture sectors, 2019	17
10	FIGURE 2.8 Bilateral trade costs and intraregional averages (<i>ad valorem</i> equivalent), 2017	18
11	The environmental impacts of food and agricultural trade	19
11	FIGURE 3.1 The relationship between water stress and net trade positions, 2018 and 2019	20
12	Multilateral and regional trade policies for sustainable growth	21
12		

FOREWORD

Since its first edition in 2004, the Food and Agriculture Organization of the United Nation's (FAO) flagship report *The State of Agricultural Commodity Markets* (SOCO), has addressed emerging developments, long-term trends and structural changes in food and agricultural markets. While this goal still stands, and has been reinforced by new developments, the world has changed significantly over the past 18 years.

The global food and agricultural market has expanded since 1995. While all nations have strengthened their participation in the global market, emerging economies and developing countries are playing a greater role. Trade, originally viewed as purely economic exchange, has today become an essential tool used to advance economic, social and environmental outcomes.

The outbreak of the COVID-19 pandemic in early 2020 demonstrated how a robust and well-integrated global agrifood system could help countries withstand unprecedented challenges. Indeed, global trade in food and agricultural products proved to be remarkably resilient to the disruptions caused by the pandemic. Disruptions were striking but generally short-lived, proving that by working together we are stronger.

The war in Ukraine is affecting a region of significant importance for global food security and nutrition. With the situation protracting, there is much uncertainty around Ukraine's ability to farm, harvest and trade crops in both the current and upcoming agricultural seasons. For trade, the impending risk of fragmenting global food and agricultural markets poses additional threats to world food security.

Such events emphasize the need for more breakthrough research, a deeper understanding of trade networks, and better approaches to facilitate integration and promote well-functioning food and agricultural markets. Currently, the trade policy environment is characterized by a deadlock in multilateral trade negotiations under the World Trade Organization (WTO) and by a proliferation of more profound regional trade agreements that, in addition to market access, aim to promote convergence in domestic policies and regulation among their signatories. The 2022 edition of SOCO examines how mutually reinforcing multilateral and regional efforts can address the sustainable development challenges of today and those of the future.

The 2030 Agenda for Sustainable Development recognizes international trade as an engine for inclusive economic growth and poverty reduction, and as an important means to achieve the Sustainable Development Goals. Trade can contribute to building a better world, free of hunger and malnutrition.

Trade can move food from where it can be produced at a relatively low cost to where it is needed. In this way, trade can promote world food security and healthy diets – it helps many countries in the world meet their food requirements in terms of both quantity and diversity at levels above those which their domestic production could sustain. Trade could help agriculture across the world to use natural resources, such as land and water, more efficiently. It can also be an avenue to diffuse knowledge worldwide. Global value chains create opportunities for technology transfer and can promote agricultural productivity improvements. Increasing productivity is important for developing countries.

There is no doubt that open, rules-based, predictable and well-functioning global markets benefit all countries. In the aggregate, global markets improve efficiency in agriculture and offer consumers a wider choice of food at more affordable prices. At the same time, food and agricultural trade can result in negative environmental or social outcomes. Producing for export can result in more pollution, deforestation and greenhouse gas emissions. Cheaper food imports could leave smallholder farmers in developing countries unable to compete. Women farmers who have limited access to capital and inputs could be affected the most. Trade policies alone cannot, and should not, be expected to fully address the trade-offs among economic, environmental and social objectives. They must be complemented by other, more targeted measures.

How we decide on trade policies and the complementary measures that can promote sustainable agrifood systems is also important. Multilateral trade rules provide the most fundamental pillars of global food and agricultural trade. Often, deeper and extensive regional trade agreements are built on the multilateral framework to promote further trade integration. These agreements can promote regional food and agricultural value chains by allowing for additional norms for cooperation and harmonizing food regulation and standards. The importance of trade agreements does not only emanate from economic gains. Trade integration can also reduce the probability of conflict. For

example, when it was created in 1958, the European Common Market aspired to unite Europe and preserve peace in a continent torn by successive wars.

Today, global food and agricultural markets are more integrated than ever; however, with the increasingly complex challenges we face, our primary focus should be on safeguarding the essential and beneficial functions of those markets. A fragmentation of global food trade could threaten food security in many parts of the world. At times of crises, export restrictions can add to extreme price volatility and harm low-income food-deficit countries, particularly those that depend on global markets for their food security. They can also have adverse medium-term impacts.

SOCO 2022 examines multilateral and regional approaches to agricultural trade policy in terms of agrifood systems resilience, economic growth and environmental outcomes. Multilateral and regional trade integration can be mutually supportive in making food and agricultural trade an engine for growth. But when it comes to global challenges such as climate change, it is multilateral cooperation that will be effective with trade policies that help climate mitigation efforts to have global reach. Global challenges require global solutions.

Food and agricultural trade policies should aim to safeguard global food security, help to address the trade-offs between economic and environmental objectives, and strengthen the resilience of the global agrifood system to shocks, such as conflicts, pandemics and extreme weather. This report offers timely and invaluable insights for policymakers and other key actors to assist them in taking concrete actions.



Qu Dongyu
FAO Director-General

KEY MESSAGES

→ Food and agricultural trade expanded rapidly in the 2000s. The network of food and agricultural trade became denser, with more countries trading with each other and greater participation of low- and middle-income countries. One of the catalysts for this process of globalization was trade liberalization at the multilateral and regional levels. Since the financial crisis in 2008, the globalization process has been stagnant.

→ The global network of food and agricultural trade became more balanced. Today, more countries are connected with more trade partners, which can strengthen the buffer capacity and resilience of the network. Nevertheless, only a few countries still account for most of the value traded and only some countries source a large variety of food and agricultural products from many different exporters.

→ Comparative advantage, trade policies and trade costs shape global food and agricultural markets. These fundamental drivers determine trade partners and the trade flows between them, the value of food and agricultural products traded and the gains from trade.

→ High trade costs in food and agriculture can offset the influence of comparative advantage. These costs can be significant due to the bulk and perishability of food and the high costs of compliance with non-tariff measures, such as sanitary and phytosanitary standards.

→ Natural resource endowments, such as land and water, contribute to shaping comparative advantage in food and agriculture. Trade ensures food security and helps countries overcome constraints in land and water, meeting their food requirements in terms of quantity and diversity at levels above what domestic production could sustain.

→ In the long run, as production will have to increase to meet growing food demand, policies that promote open global food and agricultural markets can help alleviate pressure on natural resources. But trade policies alone cannot easily address environmental externalities. Multilateral trade rules, such as those provided by the World Trade Organization (WTO) framework, together with national regulation, can help address trade-offs between economic and environmental objectives.

→ Regional trade agreements (RTAs) are increasingly used to foster sustainable practices through environment-related provisions and to encourage trade partners to adopt third-party voluntary sustainability certification schemes. To effectively address environmental externalities, RTAs should be equipped with legally binding environmental provisions and well-developed institutions.

→ Today's trade policy environment in food and agriculture, as shaped by the WTO, has discouraged unfair practices, reduced uncertainty and facilitated coordination between countries. The multilateral framework also provides a basis for regional trade agreements. Both multilateral and regional liberalization have contributed to expanding global trade.

→ Localized environmental externalities generated by trade can be addressed by trade policies complemented by national regulation. When these externalities are global, such as greenhouse gas emissions, unilateral or even regional actions will not be effective. Although difficult to negotiate and implement, only multilateral agreements can effectively address global environmental externalities. Trade rules can help expand the reach of policies that take into account the social costs of such externalities.

SUMMARY

THE GEOGRAPHY OF FOOD AND AGRICULTURAL TRADE

The 2022 edition of *The State of Agricultural Commodity Markets* (SOCO 2022) looks at different cooperation approaches in trade integration for sustainable growth by providing a systematic framework to assess the geography of food and agricultural trade. The analysis focuses on the patterns of food and agricultural trade across geographic space, their drivers and their role in shaping today's trade policy environment.

Looking at the geography of trade offers numerous valuable insights for analysing sustainable development. First, mapping food and agricultural trade make it easier to understand the evolution of trends such as globalization and regional integration and their relationship with economic growth. These trends can also help assess the resilience of global food and agricultural markets to shocks, such as the current war in Ukraine, and its implications for food security and nutrition.

Second, the geography of trade highlights the significant gaps that exist across countries. Global wealth has

grown, but the share of this wealth claimed by low-income countries is not much changed. The agricultural productivity gap is also enormous. Relative differences in productivity across countries can determine the influence of comparative advantage in food and agricultural markets and can shape trade patterns. Trade costs, which are also shaped by geography, are significant and can partly insulate low-income countries, limiting opportunities for growth and development.

Third, looking at trade through a geographical lens reveals the uneven distribution of natural resources. Land and water are key factors of production that also contribute to shaping comparative advantage. Although trade helps regions with low resource endowments, such as water-stressed countries, to ensure food security, it can also affect the environment. With food being increasingly consumed far from where it has been produced, trade can generate environmental externalities worldwide. Production for exports can add pressure to already depleted natural resources and affect forests and biodiversity.

This analysis of the geography of food and agricultural trade sheds light on the trade-offs between different sustainable development objectives and helps discuss a complex policy environment. Multilateralism, as reflected by the WTO Doha Round of negotiations, has stalled and deeper regional trade blocs are on the rise. Both approaches aim to promote trade integration and economic growth, while addressing the impacts of trade on the environment. Within these approaches, SOCO 2022 examines the effectiveness of trade policies for addressing today's global challenges.

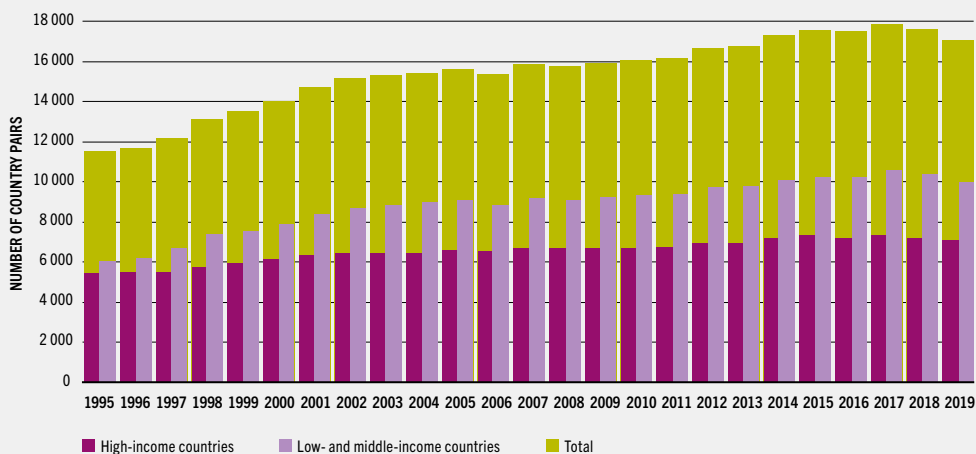
GLOBALIZATION AND REGIONALIZATION

Trade connects agrifood systems and people. Today, more countries trade with each other. The total value of food and agricultural products traded grew strongly between 2000 and 2008, but this trend was abruptly interrupted in 2009 as a result of the financial crisis. Globalization, the expansion of food and agricultural trade and the evolution of global value chains were catalysed by a series of trade agreements, at multilateral and regional levels, which reduced tariffs and other trade barriers. The share of global exports originating in low- and middle-income countries increased from around 30 percent in 1995 to 40 percent in 2011, and since then remained constant with high-income countries making up 60 percent of the share of exports.

More countries expanded their participation in global food and agricultural trade and the landscape and geography of trade has changed. The specific patterns in which countries trade with each other give rise to a “network” of trade which reflects the relative position of each country but also important features of the global market. Globally, the number of trade links, that is the number of trade flows between countries, increased from around 11 000 in 1995 to more than 17 000 at the end of the second decade of the millennium (Figure 1.4). Over time and leveraging the increasing openness of the global market, low- and middle-income countries increased their connectivity more rapidly than high-income countries, accounting for around 60 percent of global trade links in 2019.

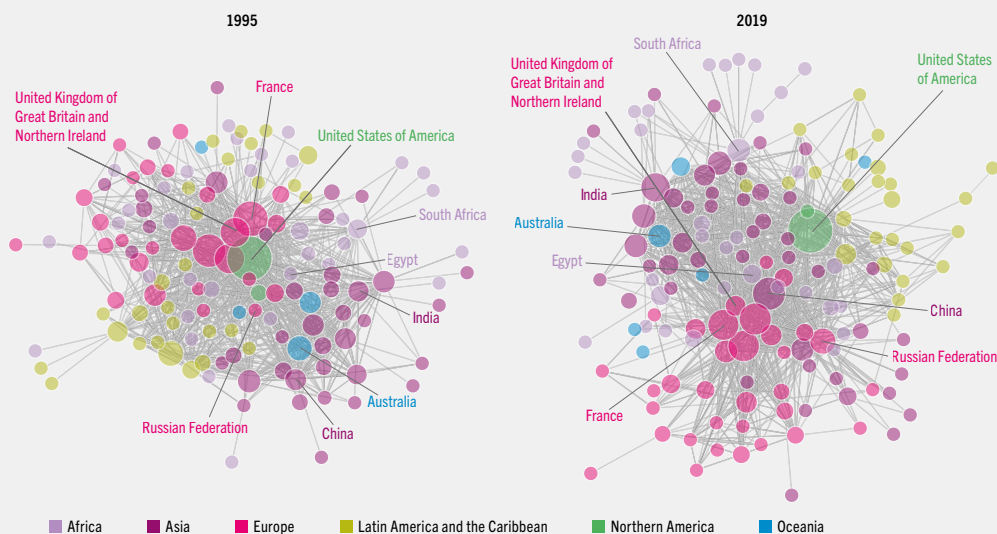
The expansion of food and agricultural trade and the emergence of new players in global markets has changed the structure of the trade network. In 1995, there were a few large trading hubs – that is countries that are connected to many trade partners and characterized by a large number of trade links, many of which are of high value (Figure 1.7). Over time, together with the expansion of trade and the emergence of new players, the number of hubs increased while the dominance of the individual hubs weakened. These structural changes reflect a relatively even playing field and a global food market conducive to economic growth. For example, today, low- and middle-income countries are »

FIGURE 1.4 THE EVOLUTION OF FOOD AND AGRICULTURAL TRADE LINKS, 1995–2019



SOURCE: Jafari, Y., Engemann, H. & Zimmermann, A. 2022. The evolution of the global structure of food and agricultural trade: Evidence from network analysis. Background paper for *The State of Agricultural Commodity Markets 2022*. Rome, FAO.

FIGURE 1.7 THE FOOD AND AGRICULTURAL TRADE NETWORK AND TRADE HUBS IN 1995 AND 2019



NOTE: The circles denote countries. Large circles can be trade hubs. When trade hubs are located in (outside) the core of the network, the network is more centralized (decentralized). Countries with trade values lower than 0.01 percent of the overall trade are excluded. Measured on the basis of trade intensity.

SOURCE: Jafari, Y., Engemann, H. & Zimmermann, A. 2022. The evolution of the global structure of food and agricultural trade: Evidence from network analysis. Background paper for *The State of Agricultural Commodity Markets 2022*. Rome, FAO.

- » more likely to trade with high-income economies than two decades ago. This is important as trade facilitates the diffusion of technology and knowledge and promotes productivity and growth.

However, within this global context, regional markets continue to play an important role. The regionalization of food and agricultural trade – the tendency of countries to trade more within a region than with countries outside the region – has become more pronounced.

THE RESILIENCE OF GLOBAL FOOD AND AGRICULTURAL TRADE TO SHOCKS TO THE SYSTEM

The outbreak of the COVID-19 pandemic tested the resilience of the network of trade in food and agriculture in 2020 and 2021. The pandemic, and the measures taken by governments worldwide to contain it, posed a simultaneous shock on all aspects of the agrifood system. On average, and despite the multiple challenges, the food and agricultural trade network proved remarkably resilient to the shock. In fact, the only visible effects at the global level were short-lived disruptions of trade at the beginning of the pandemic and when the worldwide restrictions in movement were imposed during March–April 2020.

For a country, domestic food production shocks, such as those arising from extreme weather events or geopolitical

crises, can be effectively buffered by adjustments in the quantities traded, ensuring food security. In this way, shocks that are specific to individual countries or regions can be partly cancelled out at the global level. Trade is, therefore, a potentially powerful engine to even out supply fluctuations across the world and as a result reduce price volatility.

At the global level, the extent to which countries are vulnerable to external trade shocks depends on many factors. An important determinant is the structure of the trade network. If a few large players dominate the network and many other countries are connected to these hubs, but are not connected among each other, shocks affecting these large players can easily transmit through the whole network and possibly be magnified by global value chains (see [Box 1.3](#) on the potential implications of the war in Ukraine on food security).

THE FUNDAMENTAL DRIVERS OF TRADE IN FOOD AND AGRICULTURE

Trade in food and agriculture has been an essential part of our history and is important to societies. For a country, many factors can influence trade in food and agricultural products, but the most influential factor is comparative advantage – a country's ability to produce a particular good at a lower opportunity cost than its trading partners. »

BOX 1.3 THE WAR IN UKRAINE AND THE RESILIENCE OF THE GLOBAL FOOD AND AGRICULTURAL TRADE NETWORK

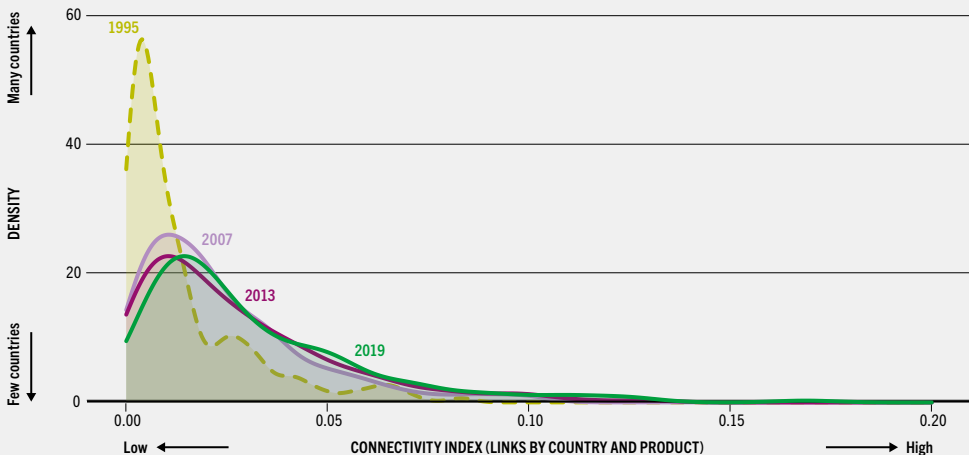
At the aggregate level, for all food and agricultural products, resilience to disruptions in a major exporter can be better balanced through increased imports from other countries than at the individual product level. For a single product, such as wheat, only a few countries have a comparative advantage and are main exporters, which may imply a high dependency of other countries in the network on these key exporters.

While global food and agricultural trade became more balanced and resilient on

the aggregate, there are still considerable dependencies at the product level, especially in staple foodstuffs. **Figure 1.16** shows that, despite an increase in resilience between 1995 and 2007, trade links at the product level are still much less evenly distributed than aggregate trade links at the country level. Only a few countries source a large variety of food and agricultural products from many different exporters. The imports of most countries are more concentrated on a fewer number of products from a limited number of trade partners.



FIGURE 1.16 DISTRIBUTION OF CONNECTIVITY ACROSS PRODUCTS AND COUNTRIES, NORMALIZED, 1995–2019



NOTE: Countries with many links by country and product, which source a large variety of food and agricultural products from many different exporters, are located on the right tail of the curves, and those that source their imports from fewer exporters are located on the left tail. Trade was highly concentrated on a few products and countries in 1995. Since then, import resilience at the country and product level has improved, but dependencies still exist.

SOURCE: Jafari, Y., Engemann, H. & Zimmermann, A. 2022. The evolution of the global structure of food and agricultural trade: Evidence from network analysis. Background paper for *The State of Agricultural Commodity Markets 2022*. Rome, FAO.

BOX 1.3 (Continued)

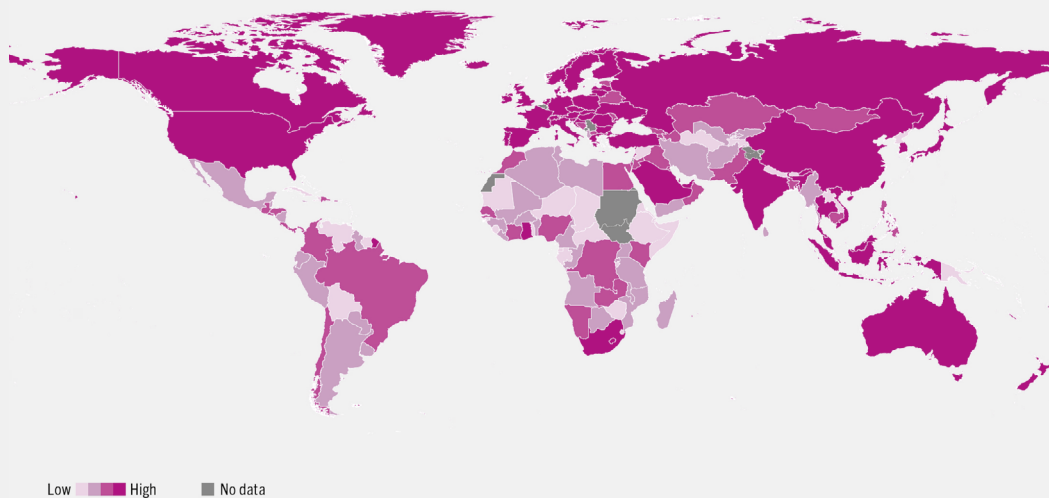
Figure 1.17 shows that countries in Africa and Latin America and the Caribbean tend to have relatively few trade links in terms of food and agricultural products. While many countries in Latin America and the Caribbean are net food exporters, countries in Africa tend to be net food importers, especially those located in Northern Africa. For these countries, relying on imports of a small range of products and from few exporters can pose a risk to their resilience to supply shocks in the exporting countries.

Relying on a few trade partners can lead to imbalances and vulnerabilities to shocks in both

importing and exporting countries. A study found that countries are least resilient to disruptions in the grain trade network, which consists of only a few major exporters, and this was the case during the 2007–2008 world food crisis and the high-price phase during 2010–2011 when several major producers imposed export restrictions.⁷⁶

In fact, the wheat trade network has been identified as one of the most vulnerable trade networks at the product level if shocks occur in one of the major exporters, such as Ukraine, the Russian Federation and some Northern American and Western European countries. >>>

FIGURE 1.17 CONNECTIVITY ACROSS PRODUCTS AND COUNTRIES AT COUNTRY LEVEL, 2019



NOTE: The darker colours indicate countries with many product-country links, which source a large variety of food and agricultural products from many different exporters. A lighter shade indicates countries that source a narrower range of products from fewer exporters.

SOURCE: Jafari, Y., Engemann, H. & Zimmermann, A. 2022. The evolution of the global structure of food and agricultural trade: Evidence from network analysis. Background paper for *The State of Agricultural Commodity Markets 2022*. Rome, FAO. Conforms to Map No. 4170 Rev. 19 United Nations (October 2020).

BOX 1.3 (Continued)

Analyses of the global wheat network have shown that its resilience increased between 2009 and 2013, but some developing countries became more import-dependent and thus more vulnerable to the shocks in exporting countries. Countries in Northern Africa and Western and Eastern Asia were found to be most sensitive to supply shocks in wheat. For example, heatwave-induced yield losses in the Russian Federation and resulting export restrictions are thought to have contributed to increased wheat prices, which were associated with social unrest in some of these countries in the early 2010s.

The Russian Federation and Ukraine are among the most important exporters of some agricultural products in the world. In 2021, either the Russian Federation or Ukraine (or both) ranked among the top three global exporters of wheat, barley, maize, rapeseed and rapeseed oil, sunflower seed and sunflower oil. The Russian Federation was also one of the world's top three exporters of fertilizers. This sparked concerns about the risks of the war in Ukraine, which began in February 2022, spreading beyond the region.

By the end of March 2022, the war had already caused extensive damage and loss of life in key population centres in Ukraine, had spread across rural areas and had caused massive displacement. While the violence escalated rapidly, it remains extremely difficult to predict the evolution of the conflict and its effect on lives, livelihoods, food security and nutrition. At the time of writing this report, it was also uncertain whether Ukraine would be able to harvest existing crops, plant new ones or sustain livestock

production as the war evolves. The war has already led to port closures, the suspension of oilseed crushing operations and the introduction of export restrictions for some crops and food products. All of these are taking a toll on the country's exports of grains and vegetable oils.

Much uncertainty also surrounds the Russian Federation's export prospects, given sales difficulties that may arise as a result of economic sanctions imposed on the country and their impact on future planting decisions.

The Russian Federation and Ukraine are key suppliers to many countries that are highly dependent on imported foodstuffs and fertilizers. Several of these countries fall into the Least Developed Country group, while many others belong to the group of Low-Income Food-Deficit Countries.

For example, Eritrea sourced the entirety of its wheat imports in 2021 from both the Russian Federation (53 percent) and Ukraine (47 percent). Many countries in Northern Africa and Western and Central Asia are also highly dependent on wheat imports from the Russian Federation and Ukraine. Overall, more than 30 net importers of wheat are dependent on both countries for over 30 percent of their wheat import needs.

Many of these countries were already grappling with the negative effects of high international food prices before the war. Globally, if the war results in a sudden and prolonged reduction in food exports by Ukraine and the Russian Federation, it will exert additional upward pressure on international food prices to the detriment of economically vulnerable countries in particular.



BOX 1.3 (Continued)

The war is also set to increase humanitarian needs in Ukraine, while deepening those of millions of people who, prior to its escalation, were already displaced or requiring assistance due to the more than eight-year conflict in the eastern part of the country. By directly constraining agricultural production, limiting economic activity and raising prices, the war has further undercut the purchasing power of local populations, with consequent increases in food insecurity and malnutrition. Humanitarian needs in neighbouring countries, where displaced populations are seeking refuge, have also increased substantially.

Ensuring and enhancing market transparency is crucial to providing timely information on potential bottlenecks and shortcomings and for offering alternative solutions. Policy dialogue should be strengthened to ensure that global food and agricultural markets continue to function properly and that trade in food and agricultural products flows smoothly. Countries that depend on food imports from Ukraine and the Russian Federation must find alternative export suppliers. They should also use existing food stocks and enhance the diversity of their domestic production bases.

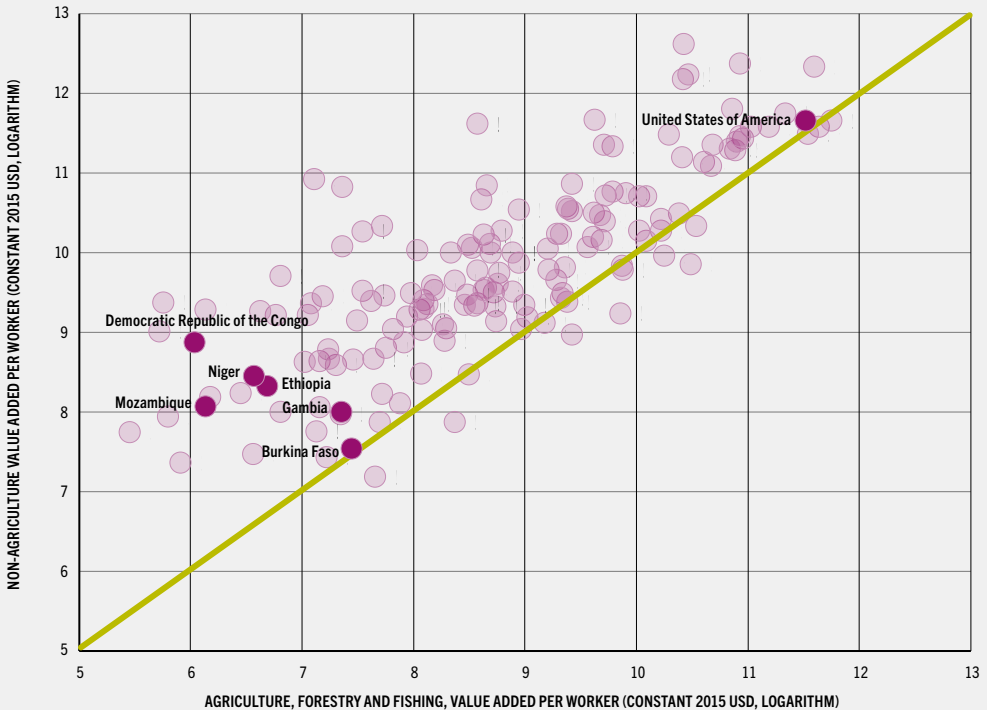
Adapted from FAO. 2022. *The importance of Ukraine and the Russian Federation for global agricultural markets and the risks associated with the war in Ukraine*. Information Note, 10 June 2022 Update. Rome, FAO; FAO. 2022. *Ukraine: Note on the impact of the war on food security in Ukraine*. 25 March 2022. Rome, FAO; Torero, M. 2022. Op-Ed: Russia's invasion of Ukraine should not cause a hunger crisis. *Los Angeles Times*, 4 March 2022.

» The productivity gap in agriculture is huge. [Figure 2.1](#) suggests that agricultural productivity per worker – measured as value added per worker – is much lower than in non-agriculture for most countries (as most observations lie above the diagonal line). On average, the top 10 percent of the richest countries produce about 70 times as much agricultural value added per worker as countries in the bottom 10 percent of the income distribution. Many lower-middle- and low-income countries face significant constraints in technology adoption and access to improved inputs. Many other factors, including small average farm size and limited access to insurance, credit and education,

especially for women, contribute to lower agricultural productivity in the developing world.

Agricultural and trade policies, such as subsidies and border measures, can weaken the underlying role of comparative advantage in determining trade flows. They could even reverse the relationship between comparative advantage and trade, causing particular goods that would have otherwise been imported, to be exported and vice versa. For example, this could happen with policy measures such as export subsidies, which have been eliminated for agricultural products by the Tenth WTO Ministerial Conference held in Nairobi in

FIGURE 2.1 PRODUCTIVITY IN AGRICULTURE AND NON-AGRICULTURE SECTORS, 2019



NOTE: Relationship between value added per worker in agriculture, forestry and fishing and non-agriculture, that includes manufacturing, mining and quarrying, construction and utilities, across countries.
 SOURCE: World Development Indicators, World Bank Group.

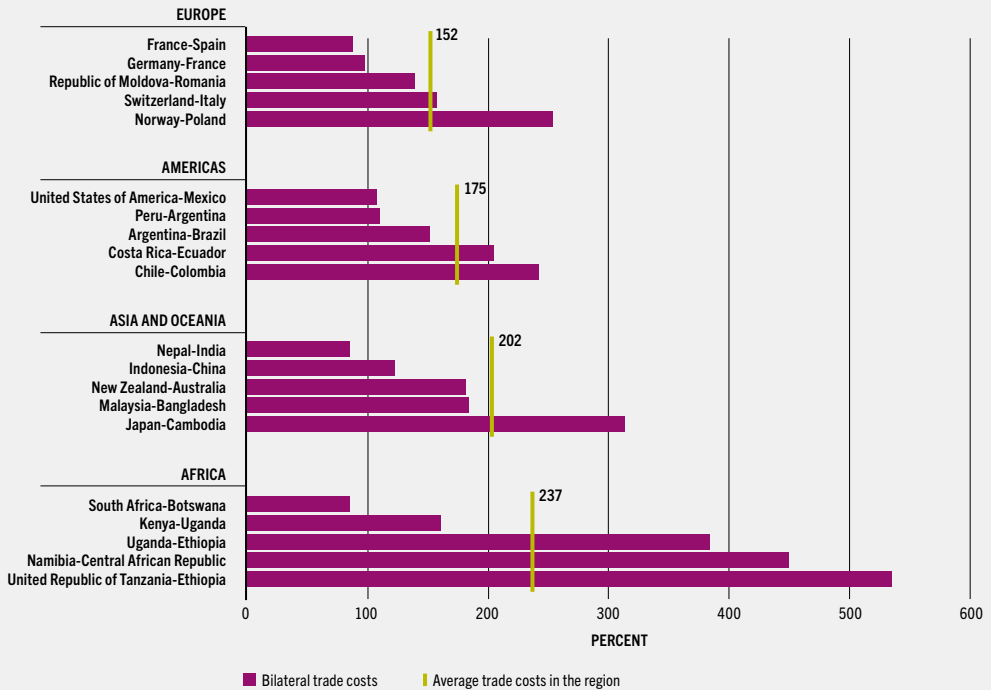
2015. Other policies, such as non-tariff measures, including sanitary and phytosanitary standards, could also affect the influence of comparative advantage on trade flows. On average, a food product faces eight different non-tariff measures and standards, and compliance significantly increases the cost of trade.

Trade can be costly, and distance generally increases transport costs. Other costs include search and communication costs, or costs associated with documentation, procedures and clearance delays at the borders. Trade costs are also significantly higher in developing countries where transport and communication infrastructure are

relatively poor, thus limiting the opportunities to trade that would potentially arise due to comparative advantage. In low-income countries, trade costs are estimated to be up to 400 percent in *ad valorem* equivalent. Such high costs inhibit trade integration.

In terms of intra-regional trade, food and agricultural trade costs in sub-Saharan Africa are estimated to amount to 237 percent *ad valorem* equivalent on average, compared to 152 percent for Europe (Figure 2.8). For example, in sub-Saharan Africa, the

FIGURE 2.8 BILATERAL TRADE COSTS AND INTRAREGIONAL AVERAGES (*AD VALOREM* EQUIVALENT), 2017



NOTE: Trade costs are estimates, refer to food and agricultural trade and are expressed in an *ad valorem* equivalent of the price index in the destination country (the importer - first in the country pair label). They denote the cost associated with purchasing all food and agricultural products from a given source (the exporter - second in the country pair label).

SOURCE: Kozłowska, M.K., Rapsomanikis, G. & Zimmermann, A. 2022. Comparative advantage and trade costs in a Ricardian model of global food and agricultural trade. Background paper for *The State of Agricultural Commodity Markets 2022*. Rome, FAO.

weak influence of comparative advantage and high trade costs result in a low intensity of intra-regional trade. Countries in the region trade more with countries outside the region than among themselves. High trade costs could also result in a country not trading as much as if trade costs were lower. Especially for low-income countries, which are characterized by relatively low agricultural productivity, high trade costs and less trade could result in an expanded agricultural sector relative to other sectors of the economy, necessary to meet the population's food subsistence needs. This could hinder the structural transformation of the economy.

Policies should aim not only to improve agricultural productivity but also reduce trade costs to reap the benefits of trade. Lower trade costs will make a country more open to trade and let comparative advantage play out, resulting in gains from trade. However, in countries with low agricultural productivity, trade openness could also entail losses, especially by those smallholder farmers who are not able to increase their efficiency and compete in more open markets. Complementary policies will be needed to improve access to technology and modern inputs, as well as to facilitate the reallocation of labour to other sectors through labour markets.

THE ENVIRONMENTAL IMPACTS OF FOOD AND AGRICULTURAL TRADE

Natural resources form an integral part of a country's factors of production and while agriculture also relies on labour, machinery and technology improvements that can help producers cope with resource constraints, land and water remain fundamental inputs. For agriculture, differences in natural resource endowments across countries contribute to determining comparative advantage and to shaping trade patterns. For countries with low natural resource endowments and where climate conditions are unfavourable to agricultural production, trade contributes to food security and nutrition in terms of quantity and diversity at levels above what domestic production could sustain.

Globally, trade and comparative advantage strengthen the efficiency of natural resources use. Trade helps allocate agricultural production to regions where the amount of water and land used per unit of food is relatively lower. For example, a study estimates that food and agricultural trade could generate between 40–60 m³ of annual water savings per capita.

Trade accounts for part of the resources used for agricultural production, with the larger part being used to meet domestic demand. Countries with relatively high-stress levels of renewable water resources tend to import

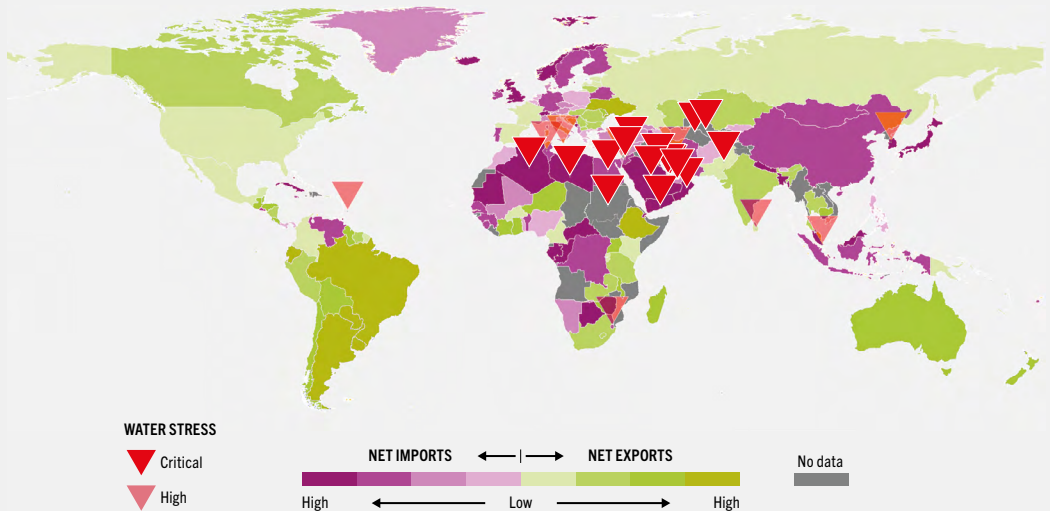
relatively more water-intensive goods and, thus, are net-importers of agricultural products (see [Figure 3.1](#)).

Although open global food and agricultural markets can help alleviate the pressure on natural resources, production for exports can generate negative environmental externalities, such as unsustainable freshwater withdrawals, pollution, biodiversity loss, deforestation and greenhouse gas

emissions (GHG). For example, agricultural production of cattle, soybeans and palm oil – all products with sustained global demand – accounted for 40 percent of tropical deforestation between 2000 and 2010.

Often, these negative environmental impacts arise due to local conditions and a poorly regulated environment. This means that trade policies, on their own, cannot easily tackle

FIGURE 3.1 THE RELATIONSHIP BETWEEN WATER STRESS AND NET TRADE POSITIONS, 2018 AND 2019



NOTE: This figure depicts only high and critical water stress levels based on 2018 data. The level of water stress is determined by the share of freshwater withdrawals from available freshwater resources and is reported by FAO under Sustainable Development Goal indicator 6.4.2. Net trade refers to the trade of primary crops. This figure shows net trade positions (exports minus imports) normalized by total trade (exports plus imports) based on 2019 data.

SOURCE: FAO. Conforms to Map No. 4170 Rev. 19 United Nations (October 2020).

environmental externalities. Multilateral trade rules, such as the WTO framework, together with national regulation, can address the trade-offs between economic and environmental objectives. The scope of trade agreements is also evolving to include environmental provisions. Between 1957 and 2019, out of 318 agreements that were concluded, 131 included at least one environmental-related provision and 71 of the agreements incorporated provisions that displayed the interaction between the environment and agriculture. Such agreements provide incentives to producers to adopt sustainable practices to gain and maintain access to markets.

In general, several studies suggest that environmental provisions in RTAs have a positive effect in addressing environmental externalities generated by trade when these are due to local conditions. Deeper trade agreements foster policy convergence in signatory countries on many issues, including the environment. These often establish specific mechanisms to discuss and oversee the implementation of environment-related commitments.

Trade agreements can encourage trade partners to adopt sustainable practices when environmental provisions are legally binding and trade between signatories are equipped by well-developed institutions, such as dispute settlement procedures and environmental impact assessments.

MULTILATERAL AND REGIONAL TRADE POLICIES FOR SUSTAINABLE GROWTH

Since the beginning of the new millennium, globalization and regionalization have evolved in parallel, with each process complementing the other. Today's trade policy environment in food and agriculture, as shaped by the WTO, has discouraged unfair practices, reduced uncertainty and facilitated coordination between countries. This multilateral framework is also complemented by a multitude of RTAs. Both multilateral and regional trade liberalization have contributed to expanding global trade.

Although WTO members agreed on eliminating agricultural export subsidies following the Tenth Ministerial Conference held in Nairobi in 2015 and established the Trade Facilitation Agreement, which entered into force in February 2017, among others, several areas related to agriculture, such as the treatment of public food stockholding and domestic agricultural support, contributed to stalling the negotiations. At the same time, the number of RTAs in force have multiplied from fewer than 25 in 1990 to more than 350 in 2022. This has raised concerns about whether discrimination in the global market has increased and is leading toward the fragmentation of global trade in competing blocs.

RTAs create trade between the signatories but can also divert trade from

non-members. For their signatories, deeper trade agreements improve market access through preferential tariffs and reduce trade costs through domestic regulation convergence and harmonization of standards. This can promote regional value chain development and spur growth. Although RTAs, on average, can generate gains globally, some countries may lose. Particularly, low-income countries with a limited capacity to negotiate and implement complex trade provisions may be left out of the regional trade integration process. Multilateral trade liberalization can result in larger gains globally and can be the most efficient way to promote market access and economic growth for all.

Although comparative advantage appears to be more conducive multilaterally, it would be difficult to address the trade-off

between economic and environmental objectives in the same way. Environmental externalities generated by trade, when localized, can be addressed by trade policies complemented by regulation at the national or regional level.

Unilateral or even regional actions will not be effective when these externalities are global, such as with climate change. A multilateral agreement will be necessary, but it may be challenging to achieve consensus mainly due to diverging views held by countries on the impact of GHG emissions and their cost to society. Nevertheless, global environmental externalities can only be addressed effectively through multilateralism with trade rules helping to expand the reach of policies that take into account the social costs of such externalities.



2022

THE STATE OF

AGRICULTURAL

COMMODITY

MARKETS

THE GEOGRAPHY OF FOOD AND AGRICULTURAL TRADE: POLICY APPROACHES FOR SUSTAINABLE DEVELOPMENT

The State of Agricultural Commodity Markets 2022 (SOCO 2022) discusses how trade policies, based on both multilateral and regional approaches, can address today's challenges for sustainable development. Trade policies in food and agriculture should aim to safeguard global food security, address the trade-offs between economic and environmental objectives, and strengthen the resilience of the global agrifood system to shocks, such as conflicts, pandemics and extreme weather. The report discusses the geography of trade, analysing food and agricultural trade and its patterns across countries and regions, its drivers and the trade policy environment. Comparative advantage, trade policies and trade costs shape the patterns of trade in food and agriculture. When comparative advantage plays out in the global market, trade benefits all countries. Lowering tariff barriers and reducing trade costs can promote trade and economic growth. Both multilateral and regional trade agreements can facilitate the process of making trade an avenue for growth but the gains of trade are distributed unevenly. When global environmental impacts, such as climate change, are considered, a multilateral approach to trade can help expand the reach of mitigation measures.



*The State of Agricultural Commodity
Markets 2022 (full text)*



Some rights reserved. This work is available
under a CC BY-NC-SA 3.0 IGO licence



©FAO, 2022
CC0475EN/1/06.22