



International trade and the resilience of national agrifood systems

International trade is key to building absorptive capacity to shocks

The increasing frequency of shocks, many of which are unpredictable, aggravated by longer-term stresses, threaten both agricultural production and other vital segments of agrifood systems. In the face of multiple risks and uncertainty, diversity in sourcing of food is essential to build absorptive capacity to shocks, one of the main capacities of resilience.

One possibility is to diversify sourcing of food products through international trade. Food supply chains that import from different sources of supply or export towards diverse demand outlets are less vulnerable to domestic shocks and to a specific shock in one place, which may impact other regions and sectors.

On the other hand, through trade, countries may become more exposed to outside shocks, in particular policy-induced shocks such as trade restrictions imposed by other countries. This tension between managing domestic and external risks can be resolved by diversifying production and, more importantly, trading partners, both in terms of their number and of their socio-economic and climatic profiles, to buffer against shocks that hit specific countries or regions.

This is particularly important for countries with a narrow agricultural base where climate or lack of land or water limits diversification, as in small island developing States and landlocked developing countries, as well as in the Near East and North Africa.

Enhancing diversity of commodities is also essential for ensuring the supply of food necessary for healthy diets. In many low-income countries, consumption diversity relies on the diversity of foods produced domestically because imports are limited and imported foods generally not accessible to the poor.

Measuring the capacity of national agrifood systems to absorb shocks

Countries can better understand their absorptive capacity to shocks (or lack thereof) only when they are able to measure it.

KEY MESSAGES

- ▶ Diversifying trade partners and commodities traded is crucial for buffering agrifood systems against external and domestic shocks.
- ▶ Countries adopt different strategies and succeed to different degrees in diversifying their sources of food.
- ▶ Trade openness and country coordination of international trade measures can facilitate trade and enhance its contribution to agrifood systems resilience.

FAO developed an indicator – the **dietary sourcing flexibility index (DSFI)** – to measure the diversity of food supply in terms of sourcing channels and food commodities. It captures the different pathways a country has at its disposal to absorb a shock through diversification of food supplies. A high value indicates multiple possible sourcing pathways, i.e. redundancy of sources. In short, the DSFI measures the capacity of agrifood systems to absorb shocks and ensure food availability to consumers. It also highlights the role of international trade in enhancing absorptive capacity in the face of domestic and external disruptions.

The DSFI is composed of three different elements that contribute to diversity of sourcing of food: domestic production, imports and stocks. Figure 1 illustrates, for selected countries, the three components for all food items (measured for kilocalories) and for tonnes of fruits and vegetables. The horizontal axis indicates the contribution of each component to the total value of the DSFI.

Figure 1 shows that countries diversify their sources of food in different ways. Countries relying on imports but with high diversification across trade partners and multiple commodities are better at buffering supply shocks and attain some of the highest DSFI scores (e.g. Italy, Japan, the Netherlands and

the Republic of Korea [Figure 1a]; Canada, France, Germany and the Netherlands [Figure 1b]).

For fruits and vegetables, which are key to a healthy diet, the DSFI is strongly associated with a country's income level, because of logistical constraints in transport and storage of perishable commodities.

Low-income countries, such as in sub-Saharan Africa, are among those with lowest diversity of imports. In these countries, the flexibility of a food system is mostly determined by what is internally produced for the domestic market. Thus, shocks must be absorbed through reliance on domestic production diversity or on existing food stocks. Countries with higher DSFI values when measured for overall kilocalories than for tonnes of fruits and vegetables, such as China, Ethiopia and Uganda, are likely to have greater absorptive capacity for shocks affecting staple foods than for shocks affecting fruits and vegetables.

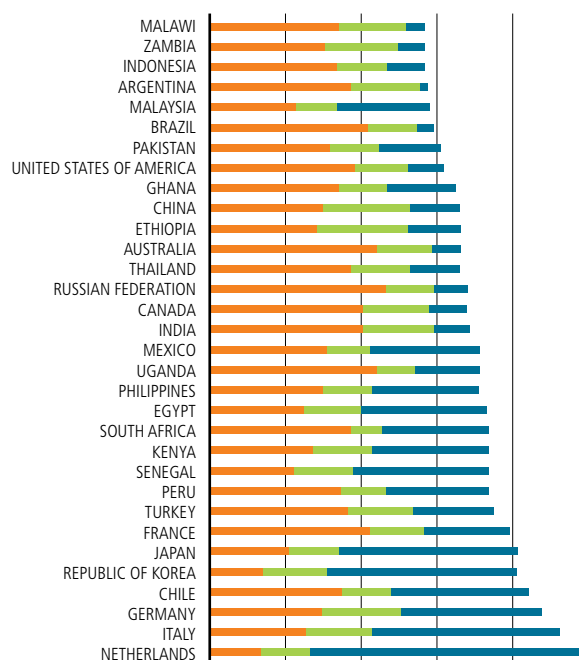
Facilitating international trade to ensure diversified food availability

The DSFI illustrates the importance of international trade in building resilience, but it also shows that its potential is not equally well exploited in all countries. Where international trade is constrained, policies and investments are needed. The following policy recommendations highlight important areas of focus.

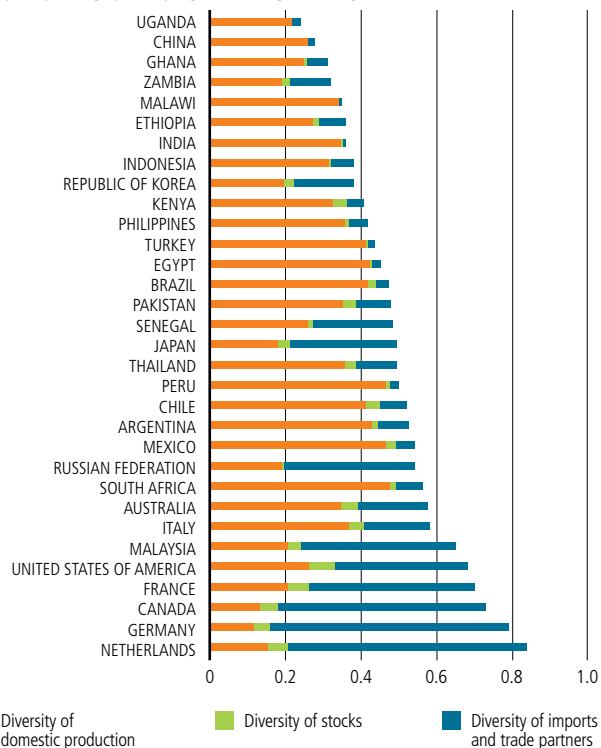
- ▲ **Reducing trade barriers.** Diversifying trading partners and traded foods is key to building absorptive capacity to supply shocks. Countries are, therefore, encouraged to eliminate or reduce trade-restricting measures that prevent or constrain trade in food, and should refrain from introducing them in times of crisis. Ways of reducing trade barriers include digitalization of trade procedures (e.g. accepting electronic phytosanitary and veterinary certificates), improved transparency in trade policies, and strengthened international governance and coordination mechanisms to prevent adverse use of trade policies.
- ▲ **Encouraging new free trade areas and/or expanding the commodity and product coverage of existing ones** can unleash the further growth potential of trade. The effectiveness depends on the design, implementation and enforcement of such measures. Ensuring stability, transparency and consistency of national trade policy interventions is also important for managing expectations and building trust. Free trade areas can commit countries to avoid introducing measures adverse to trade partners, especially during shocks.
- ▲ **Promoting collaboration and coherence between countries and the international community** can enhance transparency in market conditions and policies and avoid policy responses and actions that jeopardize the food security situation in other countries.

FIGURE 1. DSFI for kilocalories and for tonnes of fruits and vegetables, 2016–2018, selected countries ranked by DSFI value

A. FOR KILOCALORIES OF ALL FOOD ITEMS



B. FOR TONNES OF FRUITS AND VEGETABLES



Source: FAO. 2021. *The State of Food and Agriculture 2021. Making agri-food systems more resilient to shocks and stresses*. Rome.



The findings in this brief have been adapted from the FAO report *The State of Food and Agriculture 2021. Making agri-food systems more resilient to shocks and stresses* (available at www.fao.org/publications/sofa).