THE NEW GEOPOLITICS OF FOOD

Navigating policies for resilient self-reliance

A Special Report

iPES FOOD
INTERNATIONAL PANEL OF EXPERTS ON SUSTAINABLE FOOD SYSTEMS

THE NEW GEOPOLITICS OF FOOD

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KEY MESSAGES

A new geopolitics of food is reshaping global food security

The world is entering a new geopolitics of food. Conflicts, trade wars, climate shocks, aid cuts, and the breakdown of international institutions are destabilizing global food markets. This is exposing the fragility of a food system built on just-in-time supply chains and dependence on global markets – and driving food price volatility, corporate profiteering, debt, and rising hunger.

This geopolitical shift, driven by strategic power plays among major economies, is upending free market norms that have dominated industrial food systems for the past 50 years – layering new shocks onto a system already prone to instability, and reinforcing existing power asymmetries.

Countries in the Global South, made structurally dependent on food imports, are particularly exposed to volatile food and input prices, rising debt burdens, and food being used as a geopolitical weapon. At the same time, powerful firms are leveraging the instability to raise prices and consolidate control, while tightly optimized supply chains prove unable to absorb shocks.

This special report argues that governments must respond by building *resilient self-reliance* – strengthening domestic food systems, and reclaiming policy tools that can stabilize markets and protect food access in an increasingly unstable world. This means prioritizing food systems that ensure fair livelihoods for farmers and stable access to food for consumers even in times of disruption.

Market management tools can help stabilize food systems

To respond to this new geopolitics, governments must bolster domestic food systems and reduce exposure to global shocks. **Market management tools are now receiving renewed attention as a key way to achieve this. These include public food reserves, supply management systems, marketing boards, and production quotas.**

Drawing on case studies from India, West Africa, Canada, and Norway, this special report shows how **public food stockholding and supply management can stabilize prices, buffer countries from supply disruptions, and support farmers.** Governments worldwide can learn from these experiences.

Crucially, these tools highlight the need to move beyond a narrow focus on economic efficiency as the primary objective of food policy. When designed with equity, sustainability, and democratic participation in mind, market management tools can contribute to the stability and resilience of food systems – forming part of a broader shift towards building resilient self-reliance.

Building resilient self-reliance in food systems

Resilient self-reliance offers a roadmap for addressing the multiple challenges of the present moment – strengthening the domestic foundations of food production, reducing excessive reliance on imports, and improving the ability to withstand external shocks.

This shift must avoid isolationism and harmful forms of protectionism, as well as further entrenching industrial, input-intensive models of food production that undermine resilience. Instead, it should **promote more diverse, just, and locally rooted agroecological food systems that reduce dependence on fossil fuels and external inputs, and support smaller-scale producers and local and territorial markets.**

Resilient self-reliance does not mean cutting off trade completely, but calls for reshaping it around fair, cooperative, and diversified partnerships, particularly to protect the most vulnerable countries and communities from volatility, corporate concentration, and climate change impacts. At its core, resilient self-reliance must be grounded in principles of solidarity, equity, diversity, and agency.

A critical moment for food policy

This is a historic moment to rethink how food systems are governed – and to strengthen local food systems against geopolitical shocks.

With the right policy choices – including market management, public procurement, and fairer trade arrangements – governments can seize this opportunity to rebuild food systems that are more resilient, more equitable, and better able to ensure food access in an increasingly unstable world.

The choices they make now will determine whether food systems can become more resilient, equitable, and self-reliant – or more vulnerable, more unequal, and more exposed to future shocks.

IPES-Food calls on governments to:

- Support agroecological transitions to **bolster domestic food provision**,
- Build infrastructure to **support local and territorial food supply chains**,
- Use market management tools to **stabilize food markets**,
- Strengthen **cooperative partnerships** on trade and aid.

INTRODUCTION

Food systems are caught in the crossfire of a new geopolitical era.[i] Over recent years, major political and economic shifts between powerful governments have disrupted global markets, with consequences for food and farming. Tariffs, aid cuts, military conflicts, and the weakening of global institutions are disrupting food supply chains and exacerbating food price volatility that has persisted since the COVID-19 pandemic and the Russian invasion of Ukraine.

These developments are further weakening food security and impacting the livelihoods of food producers around the world.[1] Combined with ongoing challenges associated with climate change and growing concentration across food and agriculture markets, this new geopolitical landscape is amplifying existing pressures in food systems.

For more than half a century, **global food systems have been shaped by free market policies and "just-in-time" supply chain norms.** While these models have been justified on the basis of efficiency, they have long been critiqued for heightening market volatility and externalizing social and ecological costs.[2] They have undermined food systems' resilience by reducing their capacity to absorb shocks in times of crisis. Current geopolitical shifts are introducing new disruptions and compounding this volatility.

Countries that were required to fall in line with free market norms over the past 40 years are increasingly recognizing their vulnerability under this model. Since structural adjustment programs were imposed by the IMF and World Bank across the Global South in the 1980s, many of the world's poorest countries have become progressively reliant on food imports.

As a result, these countries have become especially susceptible to the impacts of food and agricultural market swings resulting from geopolitical instability, as powerful countries shift economic and political alliances and impose punitive tariffs.[3] Failure to respond to this new reality will only deepen the vulnerability of countries that are highly dependent on global markets. But how should governments respond?

This report examines how a new geopolitics of food is reshaping food systems and explores policy opportunities for governments to navigate this changing landscape. We begin by outlining the forces currently upending the dominant free trade-oriented market order that has dominated food and agricultural systems for over 40 years, their immediate impacts on food systems, and how governments have been responding (Section 1). We then focus on market management tools as a possible policy response that can help countries shield their food systems from external disruptions (Section 2). Ultimately, we argue how management tools can provide more market stability for producers and consumers, while supporting more resilient and self-reliant food systems (Section 3).

The data and analysis presented below reflect dynamics at the time the report was being drafted and should be understood in the context of an ongoing and rapidly evolving situation.

i By geopolitics, we are referring to major shifts in the world political order – in terms of alliances and tensions among countries along both economic and security axes – and how these play out in different geographies. We draw our understanding from: Tuathail, G. Ó., Dalby, S., & Routledge, P. (1998). The geopolitics reader. Psychology Press.

THE NEW GEOPOLITICS OF FOOD

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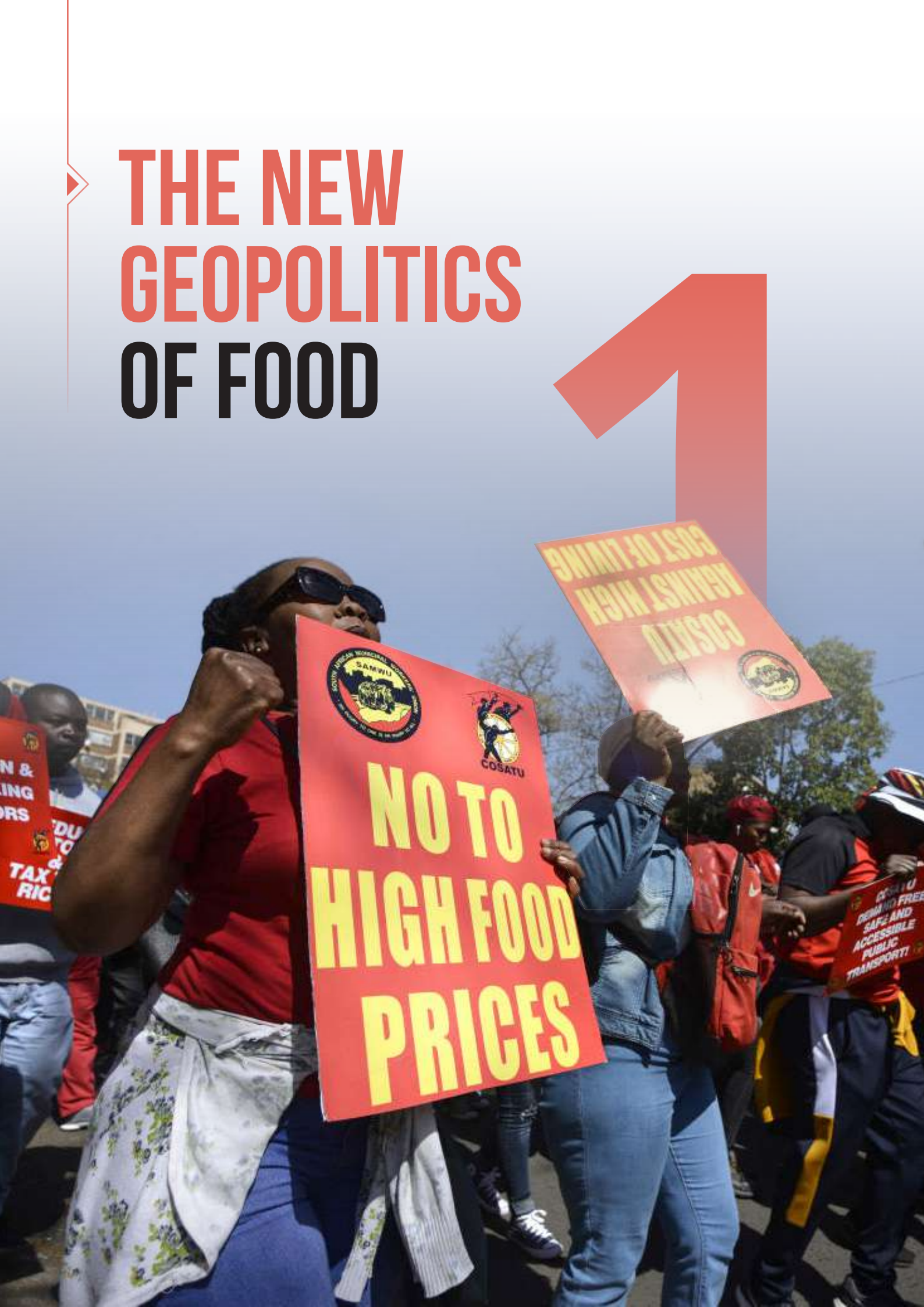


What is driving this new geopolitics of food?

A number of interrelated factors are currently reshaping the new geopolitics of food. Trade wars, military conflict, declining development assistance, and the weakening of multilateral institutions are all contributing to disruption in food and farming systems. (See Figure 1.)

A key driving factor of this shift is the trade wars instigated by the US. Since coming to office in January 2025, the Trump administration has focused on aggressively raising tariffs in a bid to reduce the US trade deficit and extract political concessions from trading partners. The US "liberation day" tariffs announced in April 2025 imposed punitive tariffs on imports from almost all countries, including some of the poorest countries in the world.[4] Although some of these measures were later softened and bilateral deals were reached with several trading partners, the effective US tariff rate has risen sharply – from 2% at the start of 2025 to 14.4% by January 2026, the highest rate since the late 1930s.[5]

In February 2026, the US Supreme Court ruled that some of these tariffs were illegal. The Trump Administration subsequently set a 10% global tariff for a 150-day period, with the possibility of this rate rising to 15% under the rules being used to justify these measures. At the same time, uncertainty persists across global markets as the Trump administration continues to threaten additional tariffs on trading partners for both trade and non-trade related reasons.[6]

The character of trade warfare is highly asymmetric. While the US taxes imports, countries in the Global South are bound by WTO accession requirements to keep tariffs low. This significant shift in US tariff policy is having far-reaching implications for global food and agriculture systems. Countries exporting agricultural products to the US – including coffee, orange juice, beef, bananas, and avocados – saw their export markets quickly collapse in early 2025. For example, Brazil, one of the largest suppliers of coffee, orange juice, and beef to the US, saw a massive decline in international demand for these products after the US imposed a 50% tariff on Brazilian imports, although some exemptions were later granted amid public complaints in the US about rising food prices.[7,8]

Retaliatory tariffs have also reshaped food and agricultural trade flows. For example, China set steep tariffs on US soybeans in the first ten months of 2025, with major implications for US producers reliant on export markets.[9] China lifted those tariffs once it reached a trade deal with the US in late 2025. These developments are part of broader and ongoing trade tensions between the US and China since the beginning of Donald Trump's first term in 2018, and have fueled the gradual reorientation of Chinese trade toward Latin America. Although tensions have recently eased, it is uncertain how long the US-China trade truce will last.[10]

At the same time, **ongoing military conflicts fueled by geopolitical tensions have intensified globally in recent years.** Major examples include recent military attacks in the Gulf region, as well as wars affecting Gaza, Sudan, South Sudan, and Ukraine. While many of these conflicts have deep historical roots that stretch back years, if not decades, the most recent increase in violent conflicts has revealed the vulnerabilities of the global industrial food systems. These systems both affect and are affected by geopolitical conflict. They are reliant on global trade flows that are highly susceptible to disruptions caused by violent conflict, sanctions, and political instability. At the same time, food itself can be used as a political tool in conflict situations – with worldwide repercussions.[11,12,13]

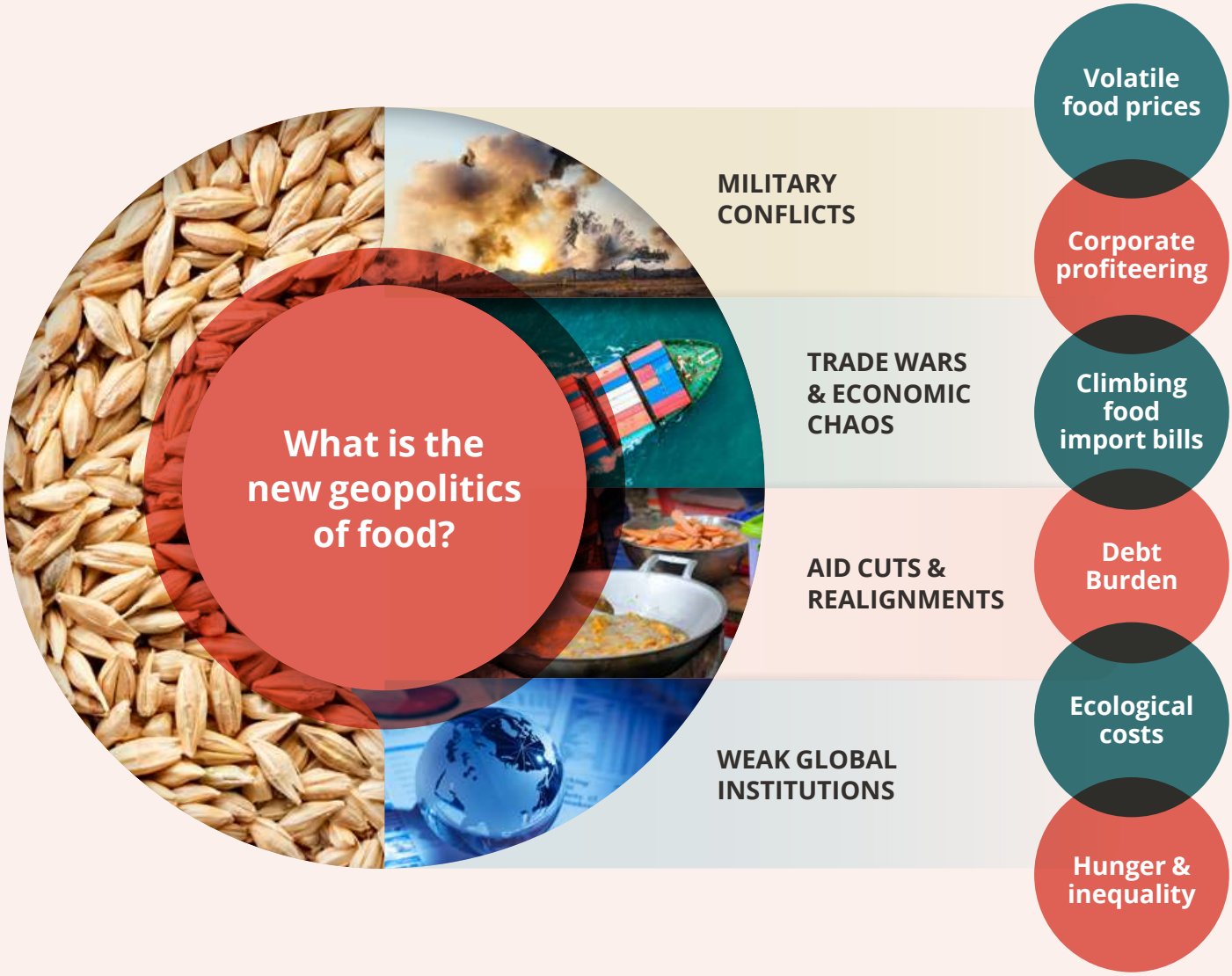
For instance, Ukraine is a major global exporter of wheat, maize, and sunflower. Russia's invasion in 2022 disrupted grain supply chains, triggering shortages in many importing countries.[14] These impacts were felt hardest in countries in the Global South, where food prices rose sharply.[15] More recently, military attacks on Iran by the US and Israel, along with Iran's retaliation across the region, will likely have global consequences due to rising oil prices that could spill over into food and fertilizer prices. Over one-third of global urea and sulfur exports – key ingredients for nitrogen and phosphate fertilizers, respectively – pass through the Strait of Hormuz. Disruptions to this passage have already ground shipping to a halt, leading to widespread fears of higher food prices, especially if the conflict becomes protracted.[16] **Food has also been increasingly used as a weapon of war and coercion**, both contributing to and deepening crises in the world's "hunger hotspots" as already observed in Palestine and Sudan.[17]

Amidst these crises, **several major donor countries** – including the US, the United Kingdom, Canada, Germany, Sweden, and France – **have reduced their contributions to international food and development aid in recent years.**[18,19] In some cases, aid has been cut off completely. While international aid programs have long been criticized for reinforcing donor interests and creating dependencies,[20] their abrupt withdrawal has had lethal consequences in countries heavily reliant on external aid.

In protracted crisis situations in Afghanistan, the Democratic Republic of the Congo, Palestine, and Sudan, international food aid often serves as the only short-term source of food for vulnerable populations, and a last line of defense before famine conditions.[21,22,23]

FIGURE 1

THE FORCES RESHAPING GLOBAL FOOD SYSTEMS



These developments are unfolding alongside a crisis of multilateralism and the weakening of global governance bodies. Global institutions promoting intergovernmental cooperation, including the United Nations, are facing both budget shortfalls and a crisis of legitimacy as powerful states scale back their contributions and increasingly prioritize their own economic and political interests.[24] Some states are setting aside international law altogether, basing their foreign policy on coercion. For example, the UN has been largely unable to put an end to geopolitical conflicts, such as the war in Ukraine and the genocide in Gaza, in part because key members of the UN Security Council are directly involved or allied with parties to these wars. As a result, dominant powers are pursuing alternative avenues to negotiate peace, but with limited success thus far.[25,26]

Meanwhile, **international economic institutions are also increasingly losing legitimacy.** The World Trade Organization (WTO), for example, has struggled to hold sway in the global economy as states ignore trade rules, as demonstrated by US tariffs and subsequent counter-tariffs introduced by other countries.[27]

Lastly, global environmental and climate governance has also become more fraught, as **governments increasingly prioritize their economic interests over environmental concerns, and collaborate with corporate actors seeking to water down climate commitments.** At the 2025 UN Climate Change Conference (COP30) in Brazil, for example, one in four of over 300 corporate lobbyists attended as part of a government delegation.[28]

What is at stake for food systems?

Recent geopolitical turmoil has exacerbated and extended already high and volatile food prices. Food price inflation since 2020 was initially driven by supply chain disruptions during the COVID-19 pandemic, followed by energy price shocks that increased the costs of key agricultural inputs such as fertilizers. Russia's invasion of Ukraine in February 2022 further destabilized global grain markets, driving additional price spikes.[29]

These developments increased global agricultural market volatility that had already been shaped by several structural factors, including financial speculation and growing corporate concentration, both enabled by the 2008 Great Recession.[30,31] Since 2020, global food price inflation has remained well above overall inflation rates, with food prices averaging more than 35% higher than in 2019.[32,33]

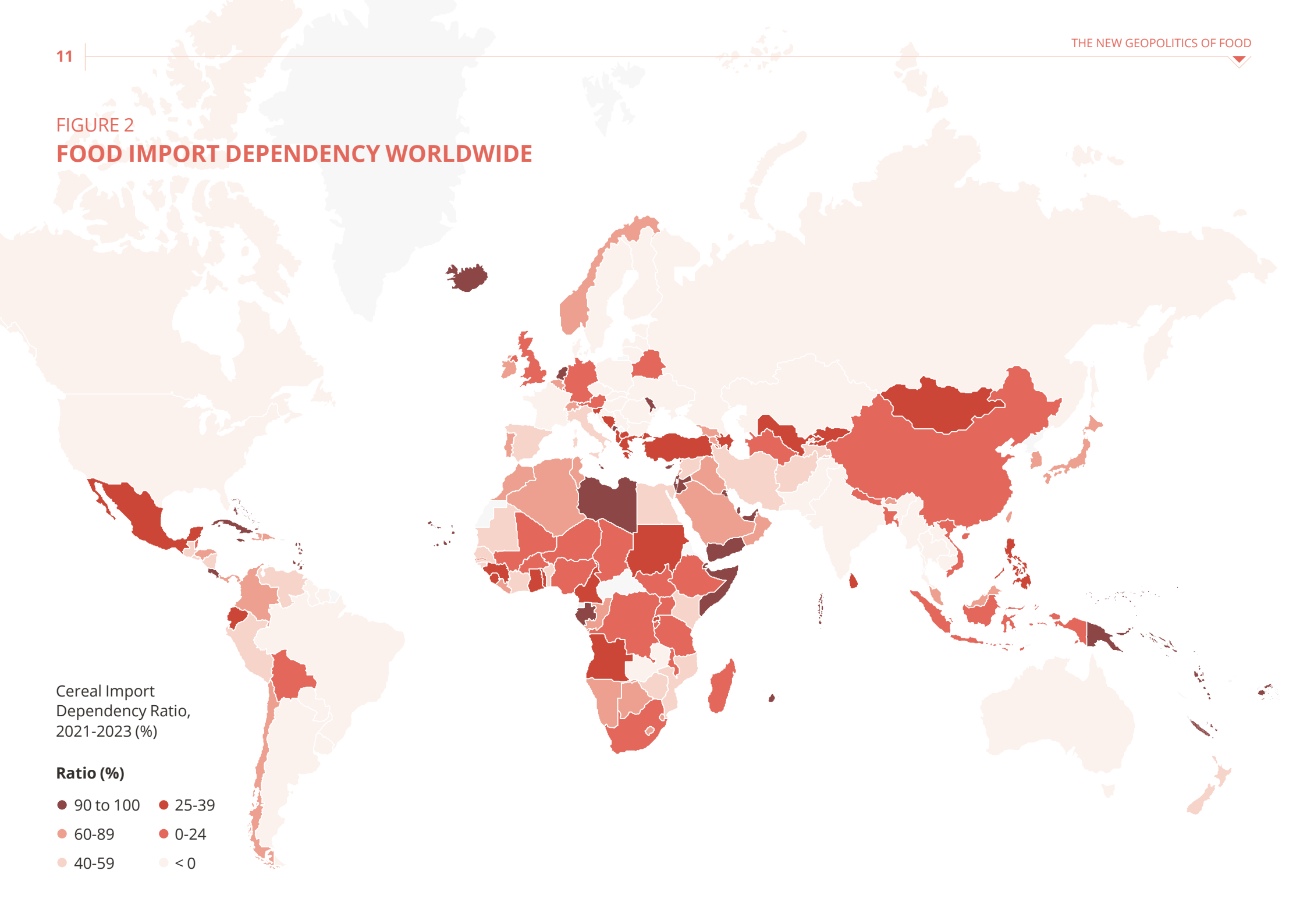
The impacts of rising food prices are highly uneven. Net food-importing countries in the Global South have been hit the hardest, with inflation peaks reaching up to 30% in May 2023. This trend has been driven in part by rising agricultural input prices – such as for fertilizers and seeds – which also spiked during the same period, significantly increasing production costs for farmers.

According to the World Bank, between May and August 2025, food price inflation exceeded 5% in approximately half of all low-income countries, compared to only one in five high-income countries.[34]

Higher food prices, coupled with dependencies on food imports, have also worsened many low- and middle-income countries' levels of indebtedness. The global food import bill rose to a record USD 2.2 trillion in 2025, with the sharpest increases concentrated in developing countries already struggling to service debts to international creditors. For example, the Least Developed Countries (LDCs) saw their food import bill rise from USD 41 billion in 2020 to USD 59.4 billion in 2024. Net Food Importing Developing Countries (NFIDCs) experienced a similar increase, from USD 108 billion to USD 155.9 billion over the 2020-2025 period.[35] Higher debt loads and rising import costs are forcing many governments to make difficult trade-offs between paying for food, education, and healthcare[36] or repaying debts.[37] (See Figure 2.)

FIGURE 2

FOOD IMPORT DEPENDENCY WORLDWIDE



Geopolitical shifts have also **opened opportunities for dominant firms in concentrated agrifood sectors to expand their market power by further raising prices and driving out their competitors.** Since 2008, consolidation across a number of sectors has only intensified. A series of mega-mergers reduced the number of leading seed and agrochemical companies from six to four, while concentration ratios have risen across nearly every other segment of the food supply chain.[38,39] As food price inflation took hold after 2020, some dominant firms appear to have raised consumer prices beyond their own production cost increases due to a lack of competition in those markets. For example, grocery retailers in the US, Canada, and Japan recorded profit increases during the 2020-2022 period, suggesting that firms were able to leverage market instability to further increase their margins.[40,41]

Some corporations have even acknowledged some of these dynamics. For example, in its failed attempt to purchase rival US food retail firm Albertson's, Kroger admitted that it had inflated the consumer price of milk and eggs beyond the level of its own cost increases.[42] Similarly, the spike in fertilizer prices over the course of 2021 and 2022 coincided with rising total and marginal profits for leading firms in this concentrated sector.[43] In its 2021 annual report, the fertilizer giant Nutrien explicitly reported raising fertilizer prices beyond the increase in its own production costs.[44] At the same time, large, dominant firms are much better able to absorb rising costs than smaller firms, reinforcing consolidation in different sectors.

Geopolitical shifts have also reshaped supply chains in ways that can amplify ecological costs. For example, trade disputes between the US and China have contributed to China seeking alternative soybean suppliers in South America. Brazil has responded by expanding its soy production, contributing to deforestation and increased agricultural chemical use in important biodiversity hotspots such as the Cerrado region.[45,46] This expansion of soy production has also caused human rights violations, higher local food prices, and increased pressures on small-scale farmer livelihoods.[47]

More broadly, **current geopolitical shifts are interacting with the climate crisis.** Increasing climate shocks and changing weather patterns are leading to greater volatility in agricultural production, in turn driving higher and more volatile prices in commodity markets, exacerbating the impact of ongoing geopolitical shifts.[48,49]

The livelihoods of food producers who rely on exports have also been affected by global trade turmoil. For example, high US tariffs imposed globally since 2025 have affected the livelihoods of small-scale coffee producers across a range of countries in the Global South. Farmers in Brazil, Colombia, and Vietnam faced sharply higher tariffs on coffee exports to the US, with direct implications for the profitability of their production and their income.[50] Producers of a number of agricultural goods across Africa faced similar impacts. Madagascar, for example, which relies on vanilla production for over 20% of its export earnings, faced a 47% tariff on its vanilla exports to the US. Other countries, such as Namibia and South Africa, also saw their fruit exports hit by high tariffs.[51] Farmers in North America were also impacted, as US tariffs increased the cost of inputs such as seeds, machinery, and fertilizers, while retaliatory tariffs adopted by some countries – including Chinese tariffs on US soybeans – hit farmer incomes.[52]

Together, **these new geopolitical dynamics are exacerbating hunger levels that have remained persistently high over the past decade, while deepening regional inequalities.** According to recent data from the Food and Agriculture Organization (FAO), the African region is currently facing the highest hunger rates globally, while acute hotspots such as Palestine, Yemen, and Afghanistan are experiencing severe food insecurity.[53]

Hunger is most prevalent in regions affected by conflict and/or severe climate change impacts, where vulnerable populations are often the first to experience its consequences. These trends highlight how poorer countries face a range of compounding pressures that leave them particularly exposed when global crises and food supply chain disruptions undermine food availability and accessibility.

How should countries respond?

As trade wars and geopolitical tensions expose the fragility of the global food system, **governments face growing pressure to safeguard domestic food security and reduce the vulnerability of their food systems.** These challenges are prompting renewed debate about what 'resilience' means in the context of food systems, including the role that greater self-reliance might play to ensure it.

A range of policy tools is now being considered to reduce vulnerability, including boosting domestic production and creating buffers against international market volatility. Market management tools, including public food stockholding and supply management, are among several policy measures that can strengthen and stabilize domestic food systems. These tools can be accompanied by other measures, including support for sustainable food production, land reform, capital controls, public supply chains, and competition policies.

While all of these policy instruments merit consideration, this report focuses on market management measures – and public stockholding and supply management in particular – which can play a role in reducing price volatility for consumers while also providing stable income for producers.

Market management policies are not new. Historically, high- and low-income countries alike have employed a range of policy tools to regulate, stabilize, and strengthen domestic food and agricultural markets, support producer livelihoods, and ensure food security amid uncertainty and volatility in the global political economy.

Market management measures were also once widespread at the international level. Beginning in the early 20th century, both exporting and importing countries adopted international commodity agreements that established quotas and set prices to insulate countries from market volatility for key crops such as wheat, coffee, cocoa, and sugar.[54,55] However, from the 1980s onward, many countries were pressured to dismantle market management policies at the domestic and international levels as trade liberalization and reduced government regulation of markets became dominant norms under neoliberal economic policies (see Box 1).

BOX 1

THE UNWINDING OF MARKET MANAGEMENT TOOLS

With the rise of neoliberal market ideology in the 1980s, market management tools came under attack, often on the grounds that they were inefficient and politically fraught. International commodity agreements were largely abandoned in the 1980s based on similar critiques. Neoliberal foundational tenets included deregulation, trade and financial liberalization, industry liberalization, and the privatization of state-owned enterprises.[56] Under pressure from powerful states and international economic institutions such as the IMF and World Bank, many countries in the Global South were forced to abandon domestic market management policies as part of structural adjustment reforms in the 1980s-90s. As a result, from the 1980s onwards, countries have become more exposed to price volatility for internationally traded agricultural commodities, affecting both producers and consumers.

Calls for market management measures have been put forward by many social movements and civil society organizations to support food systems governance reform. These actors have stressed that such measures, if well designed, can benefit producers and consumers as well as support the adoption of more ecologically sustainable agricultural practices.[57,58,59]

In today's volatile geopolitical context, national and regional market management tools are gaining renewed attention to help reduce market volatility, bolster national self-sufficiency and local markets, ensure fair terms of exchange, and promote more resilient agrifood systems overall. At the national level, a growing number of countries – including China,[60] Ethiopia,[61] India,[62] Indonesia,[63] and Japan[64] – are already pursuing policies to boost domestic food production and insulate their economies from agricultural price volatility. As trust in global markets and trade relationships weakens, governments – including Brazil, India, Indonesia, and Sweden – are also building up strategic food stockpiles as emergency reserves.[65]

Other countries like Canada, India, and Norway have maintained market management policies despite decades of sustained pressure to abandon them. These policies have often endured because they continue to achieve politically and economically important goals, including reducing price volatility at both the national and regional levels and supporting farmers' livelihoods.

Governments navigating today's geopolitical tensions and associated volatile market dynamics can learn from past and present policy experiences with market management policies to help inform their own policy decisions. The following section takes a closer look at several examples of real-world implementation of public stockholding and supply management, and helps highlight their potential not only to insulate farm sectors from global market turmoil, but also to open up pathways toward more sustainable and resilient food systems.

MARKET MANAGEMENT TOOLS TO ADDRESS VOLATILITY

2

In this section, we consider several policy tools that can be used to manage or regulate physical food and agricultural markets.[ii] In Section 2.1, we consider public stockholding policies, focusing particularly on cases from India and West Africa. Public stockholding systems are arguably the longest-standing form of market management and one of the most widely used market management tools today.

In Section 2.2, we turn to various forms of supply management, including marketing boards and production quotas. We consider how these tools have been used at the national and regional (transnational) level, and with what impacts. Finally, in Section 2.3, we acknowledge some of the operational limitations and critiques associated with these policies.

2.1 PUBLIC FOOD STOCKHOLDING

Credit: Sharada Prasad CS / Flickr

ii We use the term "physical food and agricultural markets" to refer to the markets on which agricultural commodities are bought and sold. This is in contrast to financial markets such as agricultural futures or derivatives trading.

Public food stockholding (PSH) has deep historical roots as a component of agricultural policy (see Box 2).[iii] While the prevalence of PSH programs has fluctuated throughout history, public food reserve and redistribution systems have appeared over time at various scales and in diverse geographic contexts.[iv]

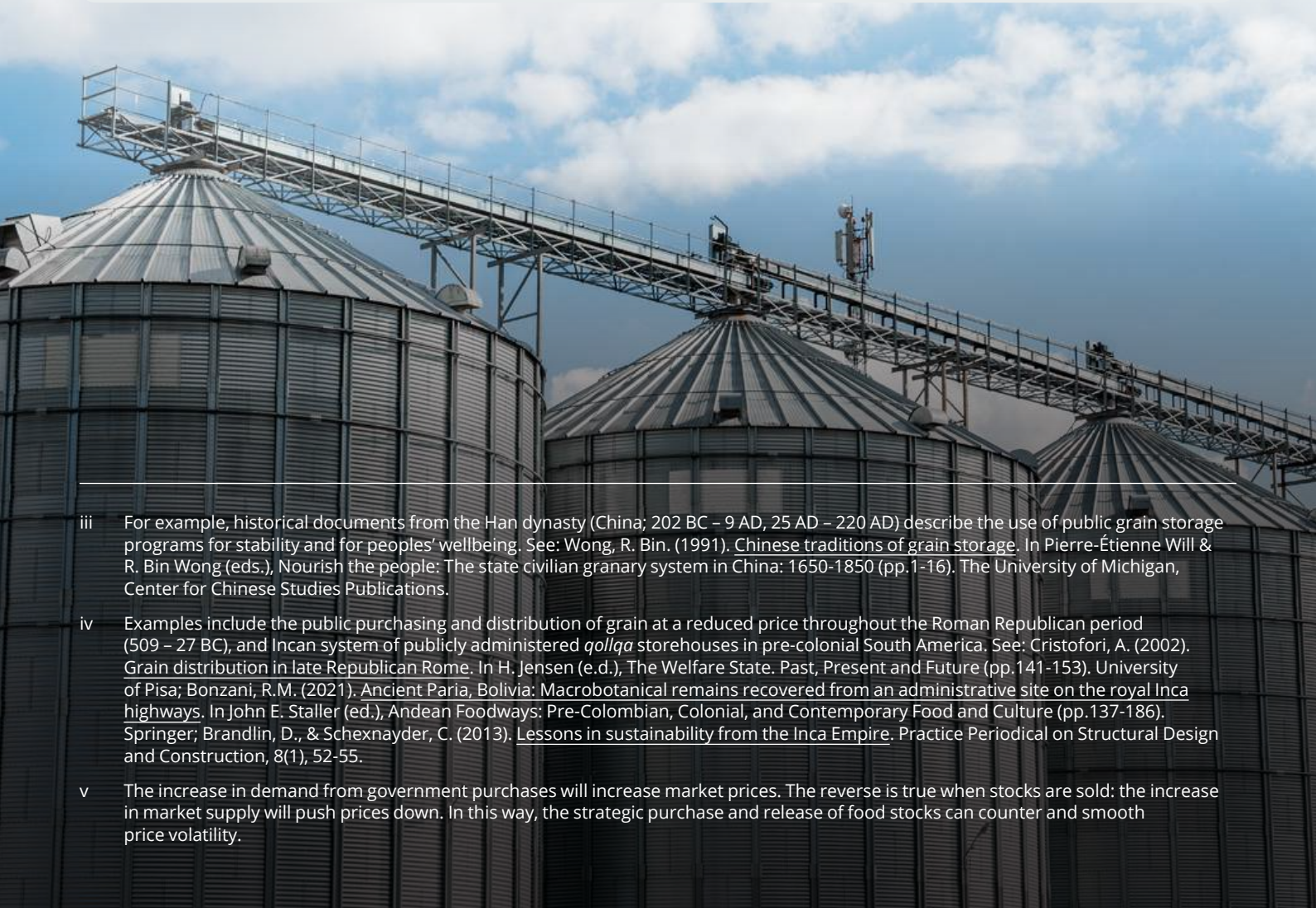
In the 1980s and 1990s, many countries reduced or eliminated their PSH programs during the period of structural adjustment and market liberalization.

However, interest in public food procurement and distribution programs re-emerged in recent decades, particularly following the 2007-2008 food price crisis and subsequent market disruptions, including the COVID-19 pandemic and Russia's invasion of Ukraine.[66,67] Below, we draw on the cases of India and West Africa.

BOX 2

PUBLIC FOOD STOCKHOLDING PROGRAMS

Public food stockholding (PSH) programs typically consist of three elements: (i) the strategic procurement of food by a public entity; (ii) the storage and management of those stocks; and (iii) the release of stocks via mechanisms such as auctions or public food distribution programs.[68] PSH programs may function as emergency stocks, providing safeguards for consumers against short-term, disaster-related food price shocks. Alternatively, they may operate as buffer stocks designed to stabilize domestic market prices for both consumers and producers.[69,70] In many cases, buffer stocks establish a price floor and a price ceiling: when domestic prices fall below the price floor, the government or program administrator purchases stocks;[v] when prices rise above the ceiling, stocks are released.[71]



iii For example, historical documents from the Han dynasty (China; 202 BC – 9 AD, 25 AD – 220 AD) describe the use of public grain storage programs for stability and for peoples' wellbeing. See: Wong, R. Bin. (1991). Chinese traditions of grain storage. In Pierre-Étienne Will & R. Bin Wong (eds.), Nourish the people: The state civilian granary system in China: 1650-1850 (pp.1-16). The University of Michigan, Center for Chinese Studies Publications.

iv Examples include the public purchasing and distribution of grain at a reduced price throughout the Roman Republican period (509 – 27 BC), and Incan system of publicly administered *qollqa* storehouses in pre-colonial South America. See: Cristofori, A. (2002). Grain distribution in late Republican Rome. In H. Jensen (e.d.), The Welfare State. Past, Present and Future (pp.141-153). University of Pisa; Bonzani, R.M. (2021). Ancient Paria, Bolivia: Macrobotanical remains recovered from an administrative site on the royal Inca highways. In John E. Staller (ed.), Andean Foodways: Pre-Colombian, Colonial, and Contemporary Food and Culture (pp.137-186). Springer; Brandlin, D., & Schexnayder, C. (2013). Lessons in sustainability from the Inca Empire. Practice Periodical on Structural Design and Construction, 8(1), 52-55.

v The increase in demand from government purchases will increase market prices. The reverse is true when stocks are sold: the increase in market supply will push prices down. In this way, the strategic purchase and release of food stocks can counter and smooth price volatility.

India's public stockholding system

India's public stockholding system has deep roots in the failures of market-based food distribution under British colonial rule.[72] During World War II, prioritization of wartime extraction over the needs of the local population resulted in the Bengal Famine of 1943. The subsequent wartime rationing system introduced by the British authorities represented a first attempt by the colonial state to recognize food as a social need. In the decades that followed, India's public distribution system therefore emerged from a combination of agrarian class tensions, anti-colonial mobilization, and the lethal consequences of leaving food security to unregulated market forces.

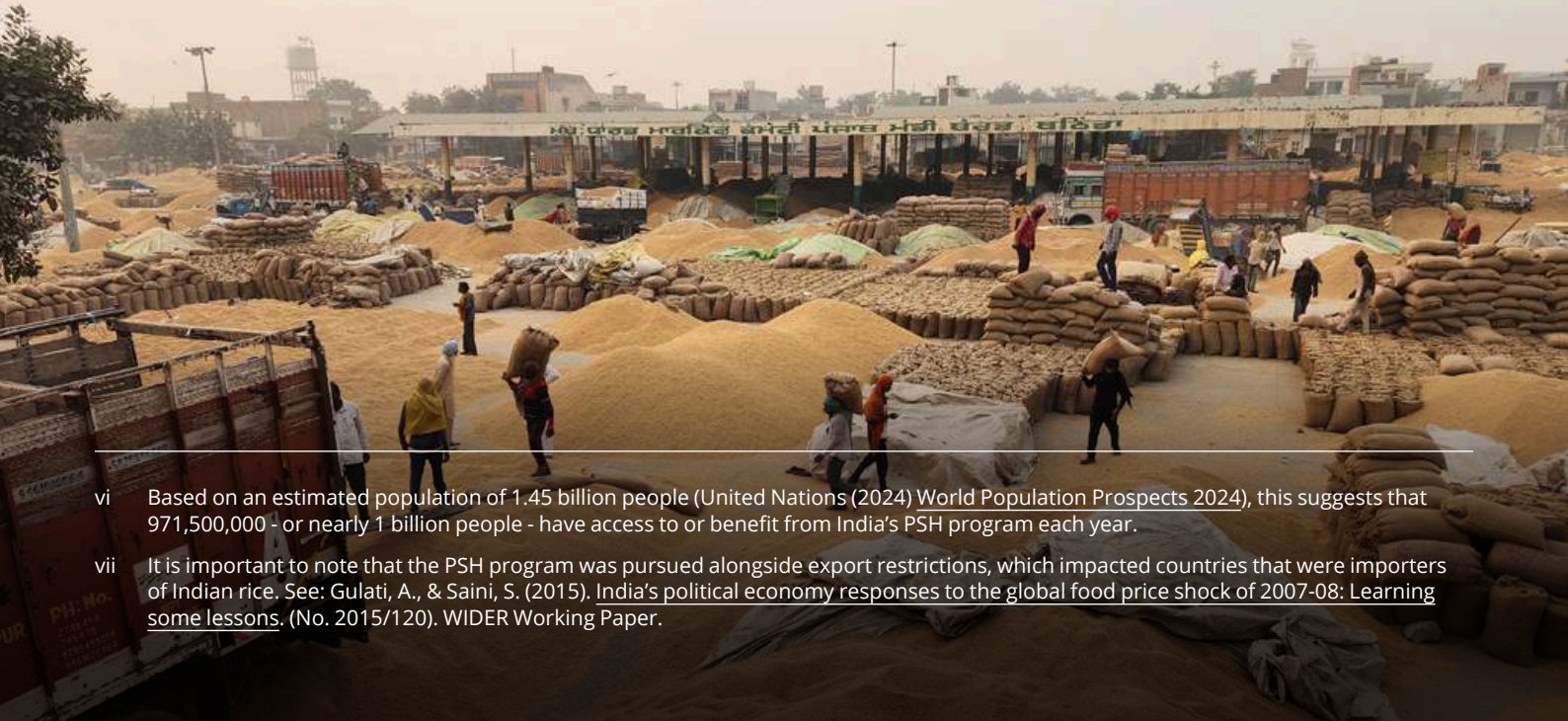
In 1965, the Food Corporation of India (FCI) was established, recasting public distribution as a national system. An additional turning point for India's public distribution system came in 2001, when India's Supreme Court ruled the right to food as a constitutional guarantee, transforming food distribution from a discretionary welfare program into a legally enforceable entitlement.[73]

India's current public food stockholding and distribution system was legislated as a formal policy commitment through the National Food Security Act of 2013, with the explicit aim of supporting the right to food.[74] Managed by a national government agency, the Food Corporation of India (FCI), **India's PSH program is among the most comprehensive in the world.** Alongside state agencies, the FCI purchases wheat and rice from domestic farmers at minimum support prices set prior to harvest, which incentivizes increased production.[75,76,77] By 2015-2016, the procurement network included more than 40,000 rice procurement centers and 20,000 wheat centers nationwide.[78]

Procurement initiatives focus primarily on purchasing grains from smallholder farmers, with strict regulations prohibiting the participation of large-scale farmers and traders.[79,80]

Grains procured from farmers are held in two types of stocks: operational stocks, which support social safety nets and other welfare programs, and food security stocks, which are periodically released to counter food price volatility and address food shortages.[81] Through India's public distribution system, the FCI supplies food from operational stocks to each state at subsidized prices. Under the Targeted Public Distribution system (TPDS), introduced in 1997, access to public food distribution is determined according to household income levels relative to the poverty line.[82,83] The poorest households are eligible to purchase 35kg of grain per month, while households just above or below the poverty line can access 5kg per month.[84] In total, an estimated 67% of the Indian population benefits from public food distribution,[vi],[85] making it the world's largest subsidized food distribution system.[86]

Despite implementation challenges (discussed below) and high operational costs, **India's PSH program played an important role in the country's response to the market uncertainties of the 2007-2008 food price crisis and the COVID-19 pandemic**, helping to buffer domestic markets during a period of global market volatility.[87,88] For example, as global rice prices soared by 230% between 2005 and 2006 and by 75% between October 2007 and March 2008, wholesale rice prices in India increased by just 16% and 14% over the same periods.[vii,89] Additionally, price support through the PSH scheme supported farmers' livelihoods by allowing them to sell directly to the FCI at guaranteed prices.[90]



vi Based on an estimated population of 1.45 billion people (United Nations (2024) World Population Prospects 2024), this suggests that 971,500,000 - or nearly 1 billion people - have access to or benefit from India's PSH program each year.

vii It is important to note that the PSH program was pursued alongside export restrictions, which impacted countries that were importers of Indian rice. See: Gulati, A., & Saini, S. (2015). India's political economy responses to the global food price shock of 2007-08: Learning some lessons. (No. 2015/120). WIDER Working Paper.

Regional food security reserves in West Africa

Public food stockholding is not limited to national programs. **Regional reserves can allow countries to pool resources, spread fiscal burdens, collaboratively achieve efficiency gains, and reduce overall stockpile sizes.**[91] In 2012, the Economic Community of West African States (ECOWAS) implemented a collaborative food storage program in response to growing climatic threats, pest infestations, and ongoing regional food security challenges.

The program operates across four complementary levels: local community stocks overseen by producer organizations or decentralized authorities; national stocks managed by state governments, sometimes alongside financial partners; the Regional Food Security Reserve (RFSR) managed by ECOWAS; and collective mechanisms for mobilizing international aid if no other solutions are feasible.[92]

ECOWAS members contribute a share of their national stocks to the RFSR, which has a capacity of 42,000 metric tonnes of cereals and utilizes national warehouses for grain storage throughout the region.[93] Where feasible, the program prioritizes local sourcing: 87% of the stocks are produced in West Africa and procured directly from producer organizations rather than large conglomerates or private traders.[94]

To date, **the RFSR has provided over 55,000 metric tonnes of cereals through 19 interventions to six countries in the region** (Burkina Faso, Cabo Verde, Ghana, Mali, Niger, and Nigeria).[95] Depending on national circumstances, stock releases may be freely distributed or sold at reduced prices. More specifically, cereals might be distributed by targeting specific administrative areas or municipalities, particular geographic areas, or through other self-targeting mechanisms.[96] Landlocked countries, low-income nations, and those facing the most severe crises have priority access to communal regional stocks.[97] In addition, the RFSR provides assistance and training to support the development of national reserve policies.[98]

Credit: Sheyi Owolabi

2.2 SUPPLY MANAGEMENT MECHANISMS

Supply management mechanisms are another policy tool that governments use to address food market volatility, improve farmers' incomes, and promote food security (see Box 3). Supply management schemes were a widely used policy tool in the post-war period but were largely dismantled during the market liberalization period beginning in the 1980s. Nevertheless, some countries, including Canada and Norway, maintain supply management programs in key agricultural sectors.

While Canada and Norway serve as robust examples of supply management, it is important to note that both are high-income countries with comparable climates and relatively small populations. The logistical and structural conditions underlying their supply management policies may differ from other contexts. However, this does not preclude the possibility of implementing supply management in diverse circumstances.

BOX 3

SUPPLY MANAGEMENT

Supply management can take several forms, including marketing boards, which have the exclusive authority to buy and sell a given commodity, and production quotas, which limit the quantity of food commodities that producers can sell in an effort to manage the overall market supply. By restricting supply and/or coordinating marketing, these systems help stabilize or even maintain commodity prices above market levels.[99]

Supply management in Canada's dairy, poultry, and egg sectors

In Canada, several agricultural sectors operate under supply management, including the dairy, poultry, and egg industries.[viii] Dating back to the 1970s, Canada's supply management system was developed in response to a long history of volatile prices and unsustainable surpluses.[100,101] National oversight agencies and provincial marketing boards were established to coordinate production levels and establish quotas to determine how much producers can supply to the market.[ix] Supply management also involves price-setting mechanisms, including the negotiation of minimum farm-gate prices and import control measures necessary to prevent cheaper imports from undercutting the relatively high commodity prices that can result from supply management.[102,103]

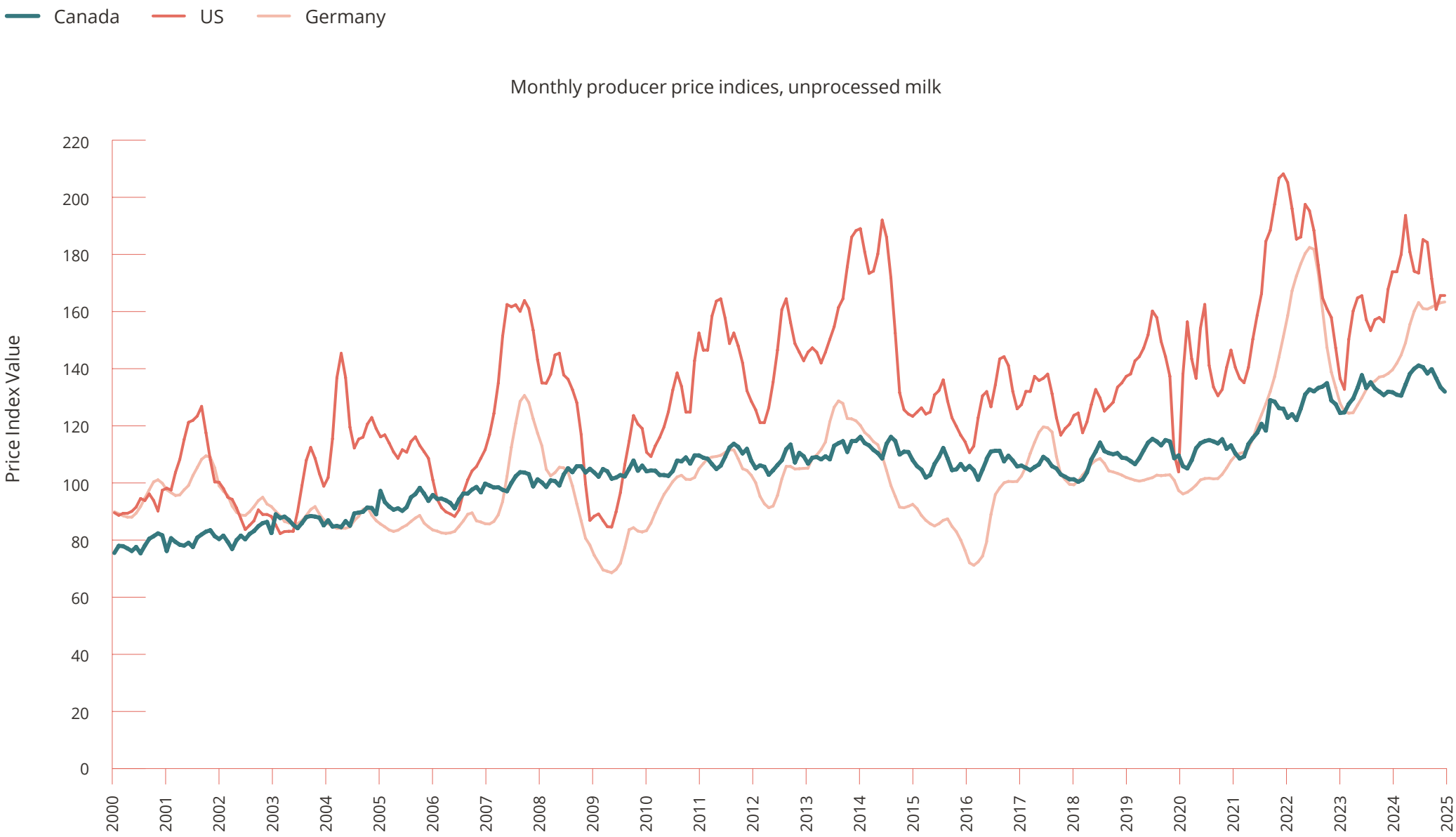
A key goal of supply management mechanisms is to reduce price volatility and the variability of farmer incomes.[104] Evidence suggests that producer price volatility for unprocessed milk in Canada's dairy sector has been lower than in the US, which lacks a comparable system (see Figure 3). The figure also suggests that the volatility of milk prices in Germany increased after the EU phased out its milk production quota program in 2015.[105] Further, during both the 2007-2008 food price crisis and the COVID-19 pandemic in 2020-2023, unprocessed milk prices were highly volatile in both the US and Germany, but remained relatively stable in Canada's supply-managed market.

viii Other Canadian agricultural sectors have had supply management policies in place in the past. For example, the Canadian Wheat Board (CWB) was a single desk marketing board established in the Canadian wheat and barley sector in 1943; however, its authority was removed by the federal government in 2012. See: Brewin, D.G. (2014). Limitations on the market power generated by the single desk of the Canadian Wheat Board. Canadian Journal of Agricultural Economics/Revue Canadienne d'agroeconomie 62(4): 491–517.); Civil society was active in protesting the dismantling of the CWB, including by filing lawsuits seeking to restore the CWB's single desk authority. See: National Farmers Union. (2025). Canadian Wheat Board.

ix In order to produce a supply-managed commodity in Canada, a farmer must hold a quota. The farm-specific allocation of quota specifies how much of the commodity that farm can produce and sell to the requisite marketing board. Farmers that produce more than is specified by their quota may face penalties.

FIGURE 3

CALMING PRICES: CANADA'S MILK SUPPLY MANAGEMENT



Supply management in the dairy sector also appears to have reduced wastage during the early months of the COVID-19 pandemic, when supply chain disruptions forced several countries to dump excess milk supplies. Although some dumping did occur, this was to a lesser extent than in countries without supply management schemes,[106] as the stability afforded by these systems helped to partially mitigate pandemic-related economic disruptions.[107]

Canada's supply management program also contributes to maintaining small and family-run farms as well as the vitality of rural communities.[108] Without these programs, rural depopulation could accelerate, leading to further farmland consolidation and the expansion of large-scale industrial farming, with its associated environmental impacts.[109,110]

Supply management and farmer-owned cooperatives in Norway

Norway offers another example of supply management. Introduced in 1983, Norway's milk quota system was developed through negotiations between the government and farmers' union to stabilize commodity prices, protect farmer incomes, and reduce surplus production with an emphasis on production quotas and support for farmer cooperatives.[111,112,113]

Farmer-owned cooperatives play a major role in Norway's supply management system. For example, the dairy cooperative TINE and the meat and egg cooperative Nortura purchase commodities from farmers and supply retailers and food service outlets throughout the country. While not formal government marketing boards, these cooperatives buy and sell a large proportion of the total production in their respective industries,[x] allowing them to effectively function as a marketing board.

Cooperative ownership also provides opportunities for greater farmer participation in and control over market decisions. For example, members of TINE participate in collective decision-making and the democratic management of the cooperative.[114]

Cooperatives act as both market price regulators and supply managers.[115] Each year, an Agricultural Agreement is negotiated between farmers' unions and the Norwegian government to set target commodity prices and outline subsidies and other support schemes.[116] While they do not attend formal negotiations, major farmers' cooperatives collaborate closely with these unions and are both responsible for establishing target prices and support.[117,118] Through this system, the Norwegian government also provides legal frameworks and import protections for domestic producers.

Norwegian supply management policies also aim to preserve cultural heritage and sustain local livelihoods.[119] For example, TINE collects milk from Norwegian farmers, including those in remote areas and from small and traditional farms, where agricultural production may not otherwise be economically viable.[120] By actively supporting marginalized farmers, Norway's policies may also contribute to greater resilience to climate change and other disruptions.[121,122] The import restrictions associated with Norway's supply management approach may also have protected the farming sector from downward pressure on labour and animal welfare standards, as domestic farmers do not have to compete directly with commodities produced under lower standards elsewhere.[123]

x For example, the dairy cooperative TINE purchases 94% of the raw milk produced in Norway. See: OECD. (2021). Agro-food value chains in Norway. In Policies for the Future of Farming and Food in Norway (pp. 182–196). OECD Publishing.

2.3 PRACTICAL CHALLENGES AND CRITIQUES OF MARKET MANAGEMENT TOOLS

While the market management mechanisms described above may help governments weather geopolitical change and market volatility, they also face several implementation challenges and critiques. Additionally, some international trade rules and regimes have constrained the adoption of such mechanisms (see Box 4).

PSH schemes, for example, can involve important fiscal and infrastructure costs. For example, India's Department of Food and Public Distribution had a budget of approximately USD 24.2 billion,[xi] and these costs may be increasing over time.[124]

In West Africa, the ECOWAS Regional Food Security Reserve (RFSR) has faced similar fiscal and infrastructure obstacles, struggling to meet both its financial and physical stockholding targets.[125,126] In countries such as Nigeria, strategic food reserves continue to suffer from inconsistent funding, poor maintenance, and limited transportation infrastructure, with many facilities rendered partially inoperable due to damage caused by conflict or climate events.[127]

xi Based on a total budget estimate of 213,019.75 ₹ (crores). Converted to USD at 1 crore=113,663.70 USD (official exchange rate, October 17, 2025). See: Ministry of Consumer Affairs, Food and Public Distribution (2025). Notes on Demands for Grants, 2024-2025: Department of Food and Public Distribution; Approximately 96% of the Department of Food and Public Distribution's budget is allocated to food procurement subsidies via the FCI. See: Chakrabarty, T. (2024). Demand for grants 2024-25 analysis: Food and Public Distribution. Policy brief.

In addition, **PSH programs often encounter challenges related to management capacity, coordination across stakeholders, and corruption.**[128] In ECOWAS countries, weak management, political interference, and misallocation of funds have been identified as persistent challenges in building effective strategic food reserves.[129] The diversity of actors involved in ECOWAS (e.g., national and regional policy-makers, and farmers' organizations) has been identified as reducing coordination and policy coherence, while the RFSR's reliance on external financing has sometimes resulted in misalignment between regional goals and donor-driven organizational agendas.[130]

Fragmentation represents an additional concern within the group: the withdrawal of Burkina Faso, Mali, and Niger from ECOWAS in January 2025 will require significant adjustments to the regional food storage strategy, since more than half of the regional food reserves were held in those countries.[131] These challenges, however, are not insurmountable, especially with improved management and policies to insulate these programs from political interference (e.g., robust management, conflict of interest policies).

PSH programs have also been criticized for failing to address hunger. In India, some estimates suggest that nearly 30% of grains – around 20 million tonnes – supplied through the public distribution system fail to reach their intended beneficiaries each year.[132] And despite the existence of public food distribution systems since the 1940s,[133] 12% of India's population is still considered chronically undernourished, with food insecurity remaining prevalent across the country.[xii,134] Nevertheless, without its public distribution systems, the number of people experiencing hunger would likely be substantially higher – highlighting the importance of developing other forms of social protection alongside PDS.

More broadly, the effects of public stocks can vary significantly: for example, they may be effective at preventing farmers from being coerced into selling at excessively low prices, but they may be less effective at curbing price increases for end consumers, and in some cases may even contribute to short-term price spikes.[135,136]

Supply management policies face a different set of critiques, notably regarding their potential to contribute to higher food prices for consumers.[137,138] One Canadian study estimated that supply management imposes a financial burden of CAD 444 per year on the average Canadian household, with low-income households disproportionately affected.[139] However, other researchers have questioned these estimates, including the assumption that price differences are caused solely by supply management policies rather than by broader structural factors related to agrifood market regulation. In addition, food prices for comparable products are also high and rising in less regulated markets elsewhere.[xiii,140]

Critics have also argued that because Canadian dairy farmers are typically wealthier than the average household, supply management policies may function as an income transfer from lower-income consumers to a small number of wealthier farmers.[141,142] Similar concerns have been raised in Norway, where, according to an OECD report, consumers pay 51% more for dairy products compared to other Scandinavian countries.[143] These dynamics suggest that **social protection programs may be necessary to complement supply management policies and ensure that low-income households are not negatively affected.**

xii Based on a current population estimate of 1.45 billion people. (United Nations (2024)) World Population Prospects 2024), 12% of the population is approximately 174 million people.

xiii Note that direct cross-country price comparisons do not necessarily reflect the impact of supply management, as numerous factors can affect retail prices for food, including other direct and indirect subsidies; differences in transportation and distribution networks; divergent product classification schemes; and country-specific rules and regulations. See for example, Muirhead, B., & Campbell, H. (2012). The worlds of dairy: Comparing dairy frameworks in Canada and New Zealand in light of future shocks to food systems. In R. Almås & H. Campbell (Eds.), Research in Rural Sociology and Development (Vol. 18, pp. 147-168). Emerald Group Publishing Limited.

Lastly, supply management policies have also been criticized for their potential inefficiencies and market-distorting effects.[xiv] In Canada, some analysts have expressed concern that supply management mechanisms may support less economically efficient farms.[144] In Norway, critics have argued that production quotas and import protections may dampen incentives for farmers to innovate or improve production efficiency.[145] However, these critiques assume that only the most efficient farms should survive in competitive markets.

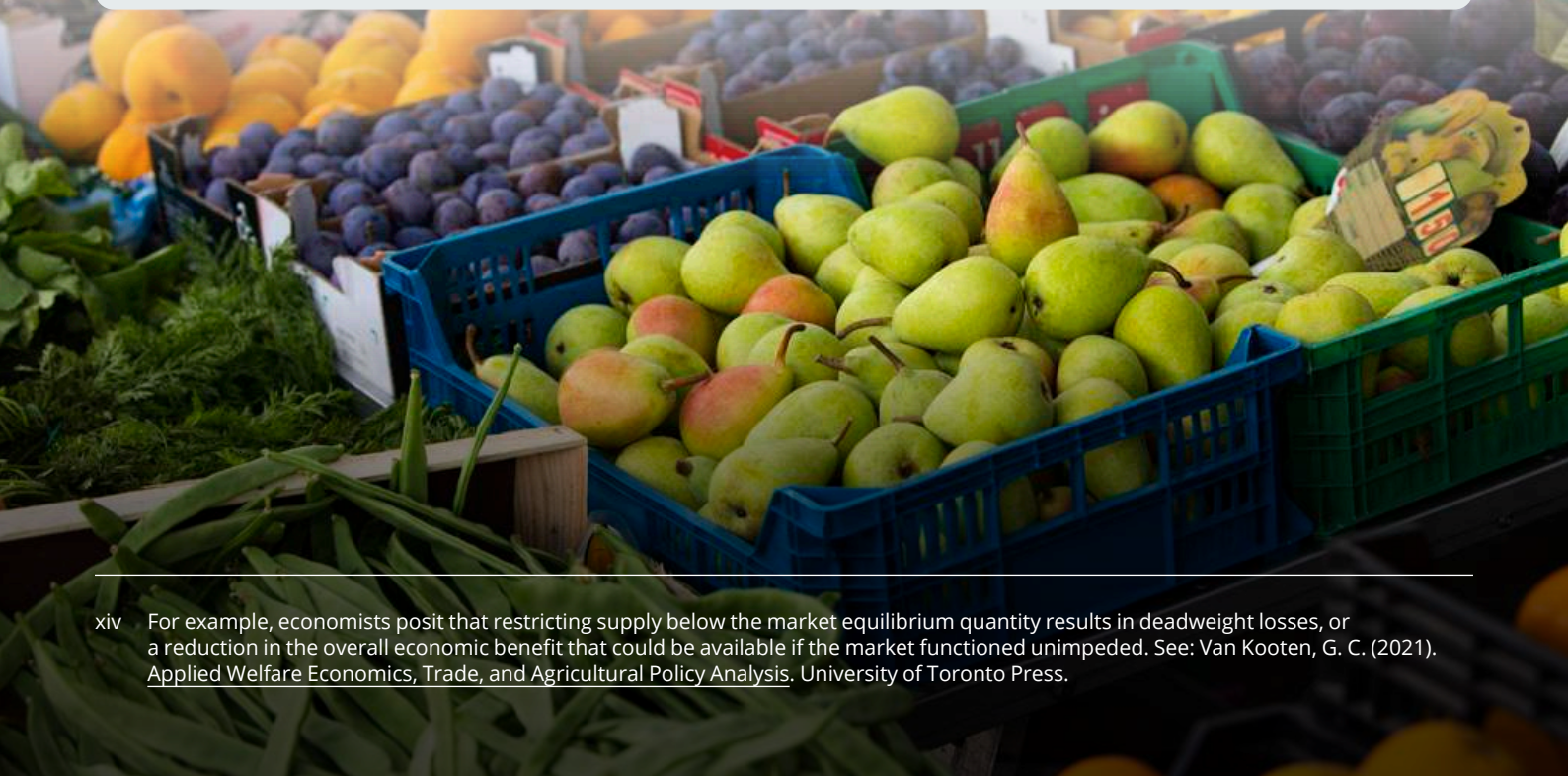
They fail to take into account the positive externalities that result from maintaining a diverse farming landscape, including supporting rural development and rural employment opportunities, as well as the contribution of smaller farms to agrobiodiversity and improved soil health. Moreover, more stable markets can themselves also contribute to greater economic efficiency over the short and long term.[146]

BOX 4

MARKET MANAGEMENT MECHANISMS AND INTERNATIONAL TRADE

International trade rules can present barriers to the implementation of market management programs. Large national PSH programs, for example, have generated tensions at the international level in trade agreements. Some governments have strongly defended their domestic policies, even during the period of increased agricultural trade liberalization under the WTO Agreement on Agriculture (AoA) and various free trade agreements. As a result, the WTO AoA allowed for some, albeit limited, policy space to treat some politically sensitive products differently from overall liberalization commitments.[147] And although WTO rules allow for the public purchasing of food products at market prices, the potential trade distortions that could result from government-administered prices have led to international trade disputes over such policies, some of which remain unresolved.[148]

At the same time, market management policies have been under continuous threat by some governments (such as the US, EU, and Australia) that seek to break into new markets or view such mechanisms as unwarranted protectionism. Market-management policies have often been targets or bargaining chips in trade negotiations, as some governments seek to reduce the use of those measures in other countries. The US, for example, has targeted both Canada's dairy supply management policies and India's public stockholding policies for grains in its recent attempts to bring these countries into trade 'deals' on US terms under the second Trump administration.[149,150]



xiv For example, economists posit that restricting supply below the market equilibrium quantity results in deadweight losses, or a reduction in the overall economic benefit that could be available if the market functioned unimpeded. See: Van Kooten, G. C. (2021). Applied Welfare Economics, Trade, and Agricultural Policy Analysis. University of Toronto Press.

RESILIENT SELF-RELIANCE IN A VOLATILE WORLD

3

As the free trade-based global economic order falters in the face of a new geopolitics, the structural vulnerabilities of global agrifood markets are being exposed. **Growing demands to rethink food systems and domestic food security strategies present an opportunity for governments to (re) claim and expand policy space to pursue market management measures** that strengthen food systems' resilience and support food security.[151]

In this context, many countries are already seeking to insulate themselves from food price volatility by increasing domestic food production, reducing their reliance on global markets, and strengthening their strategic autonomy. Without such measures, countries remain exposed to global market volatility and to the use of food as a political and economic weapon by more powerful states.

However, **not all responses strengthen resilience.** For example, the sole pursuit of food isolationism carries its own risks, especially as the impacts of climate change worsen and an extreme weather event risks wiping out entire crops in a given region.

In particular, efforts to increase food production through the expansion of farmland or the adoption of high-tech, input-intensive digital agriculture may increase dependence on a small number of global corporations.[152] This techno-centric approach may also exacerbate climate change, as these technologies are often designed for large-scale, monoculture production systems.[153,154]

National responses may also be cloaked in exclusionary and nationalist rhetoric. In some cases, responses framed as protecting domestic farmers may obscure impacts that diminish social protections for the poorest and most vulnerable people, including migrant farm workers. Such framings can legitimize inequitable distribution of benefits of policy responses and exacerbate existing inequalities. It is therefore crucial to ensure that any policy response recognizes the need to support both food producers and consumers from market volatility.

Credit: Huy Nguyen

Despite the challenges and critiques discussed in Section 2.3, market management measures can be included as part of a comprehensive strategy to address structural vulnerabilities in food systems. Recognizing the multifunctionality of the agricultural sector,[xv] **market management policies can, in fact, support a range of policy objectives in food systems** beyond supporting farmer livelihoods – whether growing inequality, corporate concentration, or ecological degradation and climate change.

In other words, **it is possible to (re)imagine how market management tools can be part of a wider response to the new geopolitics of food to strengthen what we call "resilient self-reliance".** (See Box 5.)

BOX 5

RETHINKING FOOD SYSTEMS IN A VOLATILE LANDSCAPE: RESILIENT SELF-RELIANCE

Resilience describes the ability of systems to withstand shocks without major destabilization, as well as the ability to quickly recover from disruption. In food markets, resilience refers to a reliable and secure food supply and stable pricing despite shifts in trade, environmental conditions, and geopolitical dynamics.

Resilient food systems are characterized by their ability to: 1) uphold equity, diversity, agency, and social cohesion to support livelihoods, communities, and cultures; 2) promote ecological integrity and biodiversity to support healthy ecosystems; and 3) embody characteristics such as flexibility, connectivity, and preparedness that give them the capacity to weather and adapt to shocks.[155] Together, these attributes – what the High Level Panel of Experts on Food Security and Nutrition (HLPE-FSN) calls "equitable transformative resilience"[156] – improve the ability of communities and countries to ensure the long-term viability of food and agricultural systems, and their ability to weather shocks and rebound in ways that uphold equitable food access, livelihoods, and sustainability. The characteristics of resilient food systems are interconnected with each other, as well as with other key concepts such as food security, food sovereignty, agroecology, and territorial markets.

Self-reliance in food systems typically refers to the ability to rely on one's own efforts and capacities to feed oneself.[157] This concept can apply to individuals, communities, and nations. At the national level, food self-reliance refers to a country's capacity to satisfy the food needs of its own population. Food self-reliance does not necessarily imply 100% food self-sufficiency or autarky, however.[158] It can involve some trade in food, but our interpretation of the term emphasizes the need to support greater domestic food production – both in volume and diversity – to reduce overdependence on food imports that can result in vulnerabilities to shocks.[xvi]

The idea of **resilient self-reliance** brings these concepts together by supporting greater food self-reliance in ways that lead to resilient food systems.

xv The multifunctionality of the agricultural sector can also be seen in some European Union and OECD policies. For example, the European Union emphasizes the preservation of rural landscapes and wellbeing of rural communities in addition to the production of food and fiber. See: European Commission, Directorate-General of Agriculture (1999). Safeguarding the multifunctional role of EU agriculture: Which instruments?. Submission to the Process of Analysis and Information Exchange of the WTO Committee on Agriculture; OECD (2001). Multifunctionality: Towards an analytical framework; OECD (2008). Multifunctionality in agriculture: Evaluating the degree of jointness, policy implications.

xvi Food self-reliance is different from food self-sufficiency, which typically implies that a country relies only on domestic production to meet its food needs. However, some analysts have called for the definition of food self-sufficiency to be understood as more of a continuum, rather than an either/or concept, and as such it can be seen as a similar idea to self-reliance. See: Clapp, J. (2017). Food self-sufficiency: Making sense of it, and when it makes sense. Food Policy, 66, 88-96.

First, **in alignment with a food sovereignty approach, embedding equity, diversity, and agency in the design of market management policies can help support local cultures and communities, while ensuring people can feed themselves appropriately.** This appropriateness refers to sufficient calories and nutrition, but also includes dimensions such as preferences, adequacy of diets, and cultural appropriateness.[159] For example, market management tools can support smallholder farmers who wish to grow a diverse range of traditional crops, improve access to a diversity of culturally appropriate foods, and contribute to food security and sustainability.[160,161] Protecting these crops, recognizing their importance, and supporting producers' ability to choose what they grow are important dimensions of resilience.[162]

Through a PSH program, for example, countries could prioritize the purchase and distribution of a diverse range of food crops (e.g., traditional grains) to meet food security and nutritional needs. Market management measures could therefore be designed in ways that give food producers greater autonomy while encouraging the production of locally-appropriate crops that also provide ecological and health benefits.

Second, and closely linked to these dynamics, **market-management measures can also be combined with strategies that support territorial markets to counter corporate concentration and improve overall food system resilience.** Historically, government-led self-reliance policies have often excluded or overlooked local markets and territorial food systems, prioritizing infrastructure and agricultural policy that favor large-scale corporate-led approaches to agriculture and food security.[163,164] In Canada, however, supply-managed products such as eggs and dairy are typically sold in supermarkets near the farm where they are produced.[165] Similarly, both India's and ECOWAS' PSH programs emphasize local procurement from small-scale producers.

Integrating market management mechanisms with policies that support territorial markets can help build more resilient and better integrated supply chains, incorporating redundancies – i.e., additional and decentralized channels of distribution – that better equip food systems to withstand crises.[166]

Recent crises have also highlighted the crucial role of territorial markets in ensuring that people maintain access to food during periods of uncertainty.[167] Territorial markets remained resilient during supply chain disruptions caused by the COVID-19 pandemic and the Russian invasion of Ukraine.[168,169] The current geopolitical context presents an opportunity to build on these experiences and provide more meaningful support for existing local and regional markets to avoid excessive reliance on highly concentrated food supply chains. This includes working with key actors within these systems – such as local food producers, traders, civil society organizations – to explore ways to better link policies that support territorial food systems with those shaping regional and international trade and strengthen resilient self-reliance over the long term.

Third, **market management measures can amplify efforts to support ecological sustainability when aligned with agroecology.** Although market management tools were not historically developed to address environmental concerns, they can incentivize sustainable farming practices, protect ecological integrity, and support ecosystem biodiversity. For example, supply management programs could prioritize small-scale agroecological producers, while simultaneously reducing farmers' exposure to market volatility.

Fourth, **market-management mechanisms can continue to play a vital role in enabling countries to weather price shocks and global market fluctuations.** By establishing minimum price floors, providing guaranteed markets, and managing producer prices, market management tools can provide price stability that helps ensure producer livelihoods and more steady and reliable food production over time.

For example, supply management for dairy or eggs can support a wide base of small-scale producers, increasing flexibility and resilience within the sector. During the 2024-2025 bird flu outbreak in North America, egg supply chains in the US were heavily disrupted, leading to soaring egg prices as the disease paralyzed large, centralized production systems. By contrast, egg production in Canada – governed by supply management and characterized by a distributed and smaller-scale production model – was much less affected,[170] as was production among less centralized egg producers in the US.[171]

A similar dynamic can be observed in Norway, where supply management in the dairy sector has helped maintain stable and relatively high milk prices for producers. In contrast, the EU's gradual phase-out and eventual abolition of milk quotas in 2015 increased farmers' exposure to global markets.[172] This shift contributed to the 2014–2016 dairy crisis, during which many farmers operated at a loss and faced bankruptcy, and has since led to more volatile milk prices.[173,174,175]

Likewise, PSH mechanisms can function as "shock absorbers," supporting producers and maintaining price stability for consumers, especially in low-income, food-import-dependent countries with vulnerable populations. These kinds of market management measures enable countries to pivot when necessary in the face of shocks, leaving them better prepared and able to meet demand at reasonable prices for consumers, thus ensuring food security and the right to food is upheld.

Finally, **market management mechanisms can be effective within cooperative international trade and aid partnerships.** For example, ECOWAS demonstrates that PSH programs can enhance regional solidarity amongst like-minded states and provide the flexibility required to establish context-appropriate policies. Regional collaboration efforts like the ECOWAS RFSR also show how countries can strengthen both domestic food security *and* international cooperation. These efforts – sometimes referred to as minilateralism – can promote resource pooling, information sharing, and collective responses to address market volatility and other challenges at the local, national, and regional levels.

Taking a cooperative approach that recognizes the potential global impacts of domestic policies can help avoid situations in which national market management policies undercut food security and livelihoods in the poorest countries. For example, India's release of wheat and rice surpluses from its PSH programs onto global markets has raised some concerns that these exports could put downward pressure on global prices, potentially harming small-scale producers in other countries.[176,177] Conversely, food export restrictions imposed by India have at times contributed to higher world prices, impacting consumers in import-dependent countries.[178] For countries heavily dependent on imports, policy diversity and flexibility therefore become key. Likewise, cooperative relationships are important to ensure large market players do not impose costs on smaller countries.

Focusing on exchange – not only of food, but also of knowledge and assistance – with countries that share similar values and commitments can strengthen both national and broader food system resilience. These alliances could establish predictable and mutually beneficial trade norms between members, while supporting the adoption of more sustainable food production and exchange models. They could include cooperation on measures that strengthen and uphold farmers' rights, as recognized in the UN Declaration on the Rights of Peasants and Other People Working in Rural Areas (UNDROP),[179] and as supported by civil society and social movements.

Cooperative approaches are already emerging amid agrifood trade chaos. For example, member states of the Caribbean Community and Common Market (CARICOM) have been exploring more regional food strategies to improve food system resilience within the region and reduce dependence on food imports.[180,181] At the same time, growing calls have been made for price stabilization through the creation of global buffer stocks – both virtual and physical – which could support national and regional public reserves, and enable public actors to engage in market management at the global level through commodity derivatives markets.[182]

Together, these approaches can support a strategy of resilient self-reliance within a broader food sovereignty framework. Food sovereignty initiatives, embedded in a human rights framework, are wide-ranging and include the cultivation and revitalization of Indigenous foodways and knowledge systems,[183] the protection of seed sovereignty, and the defense of the rights to land, territories, forest, water, and productive resources. They also encompass the rights of peasants,[184] pastoralists, and fisherfolk,[185] as well as regional collaborations to build territorial and agroecological markets.[186]

Market management tools could form one important component to advance these efforts. For instance, La Via Campesina has expressed support for public stockholding and market regulation mechanisms.[187] Likewise, the food sovereignty movement is calling for new international trade frameworks based on principled and mutually beneficial trading relationships that support the livelihoods of small-scale food producers and providers, workers, and small-scale export producers.[188,189]

Resilient self-reliance echoes these goals by focusing on trade relationships that promote solidarity and fairness, while strengthening regional food networks and retaining autonomy at the local, national, and regional levels. It also involves protecting the agency of farmers and food producers by fostering collaborative and deliberative policy spaces that encourage learning from existing territorial markets/regional food systems, as outlined in particular by the Nyéléni Forum.[190]

In addition, several initiatives are also seeking to cultivate resilience and agency through systems of knowledge exchange. Farmer-led research initiatives, such as the Soils, Food, and Health Communities in Malawi or the farmer-led research program of the Ecological Farmers Association of Ontario in Canada, demonstrate how collaborative learning can address local knowledge gaps and create resilient self-reliant networks.[191]

These initiatives also foster investment in agroecological transition, encourage the development of locally-adapted innovations, and connect territorial and broader food markets through nested and collaborative networks.

Investing in resilient self-reliance is especially needed in the world's poorest and most marginalized countries, which have been the most disproportionately affected by geopolitical shifts. Sub-Saharan African countries, for example, became net food importers in the 1980s as the world shifted toward agricultural trade liberalization.[192] As a new geopolitical context reshapes the global food system yet again, these countries remain the most vulnerable to global market turmoil. Facing some of the world's highest rates of hunger and undernutrition, there is an enormous opportunity for the world's poorest countries to take the lead in pursuing more resilient self-reliance strategies. However, they also face enormous debt burdens, making debt relief imperative alongside these strategies.[193]

CONCLUSION AND THE WAY AHEAD

The **current geopolitical situation** is forcing a fundamental rethink of food systems. The new geopolitics of food has destabilized an already volatile world food economy. As powerful countries upend the free market agricultural trade norms they once imposed on the rest of the world, more vulnerable countries face greater unpredictability and must respond appropriately. Failing to act will only exacerbate their exposure to growing market instability. Shifting alliances, trade and food aid disruptions, and declining international cooperation, compounded by escalating climate change, market concentration, and heavy debt burdens, have turbocharged instability in global food markets with serious consequences for the lived realities of people around the world.

These disruptions are symptoms of structural vulnerabilities in the global industrial agrifood system. Just-in-time supply chains may be economically efficient, but are poorly equipped to absorb systemic shocks. Vulnerable populations and countries feel the impacts of systemic shocks more immediately and most acutely, particularly when punitive trade policies and liberalization are imposed by powerful countries.

In this context, it is vital for countries to transition away from systemic dependencies and towards more resilient food systems that are better able to withstand geopolitical change.

As countries seek responses to systemic shocks, they are questioning long-standing assumptions on the benefits of trade liberalization. **Governments and other food systems actors are now exploring a range of tools to bolster domestic production, build strategic reserves at the national and regional levels, and manage markets to improve reliability and stability.** Many are exploring options for self-reliance, with market management mechanisms as a key tool to support this shift.[194] Other policy responses include targeted fiscal measures, tax reduction on essential goods, increased social protection programs, global grain reserves, export restrictions, and agricultural production subsidies, among others,[195] with relevance and suitability varying across contexts.

In responding to these shifts, policies should prioritize fostering more resilient food systems. As outlined in this report, **the concept of resilient self-reliance can provide a roadmap to addressing the many challenges of the present moment**, grounded in solidarity, equity, diversity, and agency. (See Figure 4.) Market management mechanisms, such as supply management and public stockholding, provide concrete measures that can improve food system stability and reduce exposure to shocks. While not without their limitations, market management mechanisms act as stabilizing buffers, support smaller-scale and more diverse producers, and improve access to food for marginalized and vulnerable people. The enduring use and relevance of these tools in a range of countries underscores their ability to fulfill these important functions.

Looking ahead, **market management mechanisms can play a particularly important role when grounded in food sovereignty, and combined with agroecological, territorial, and cooperative approaches.** Together, these tools can bolster both the protective and adaptive capacity of national food supply while reducing reliance on highly concentrated global supply chains.

A sequenced approach to policy reform can help countries reduce immediate vulnerabilities while addressing deeper structural drivers of vulnerability and uncertainty, including uneven trade liberalization, corporate concentration, financialization, and over-reliance on just-in-time supply chains.

Addressing these broader issues will require stronger competition policies to curb corporate concentration, financial market regulation to tackle speculation, as well as fundamental reform of trade agreements to expand policy space and uphold food sovereignty principles.

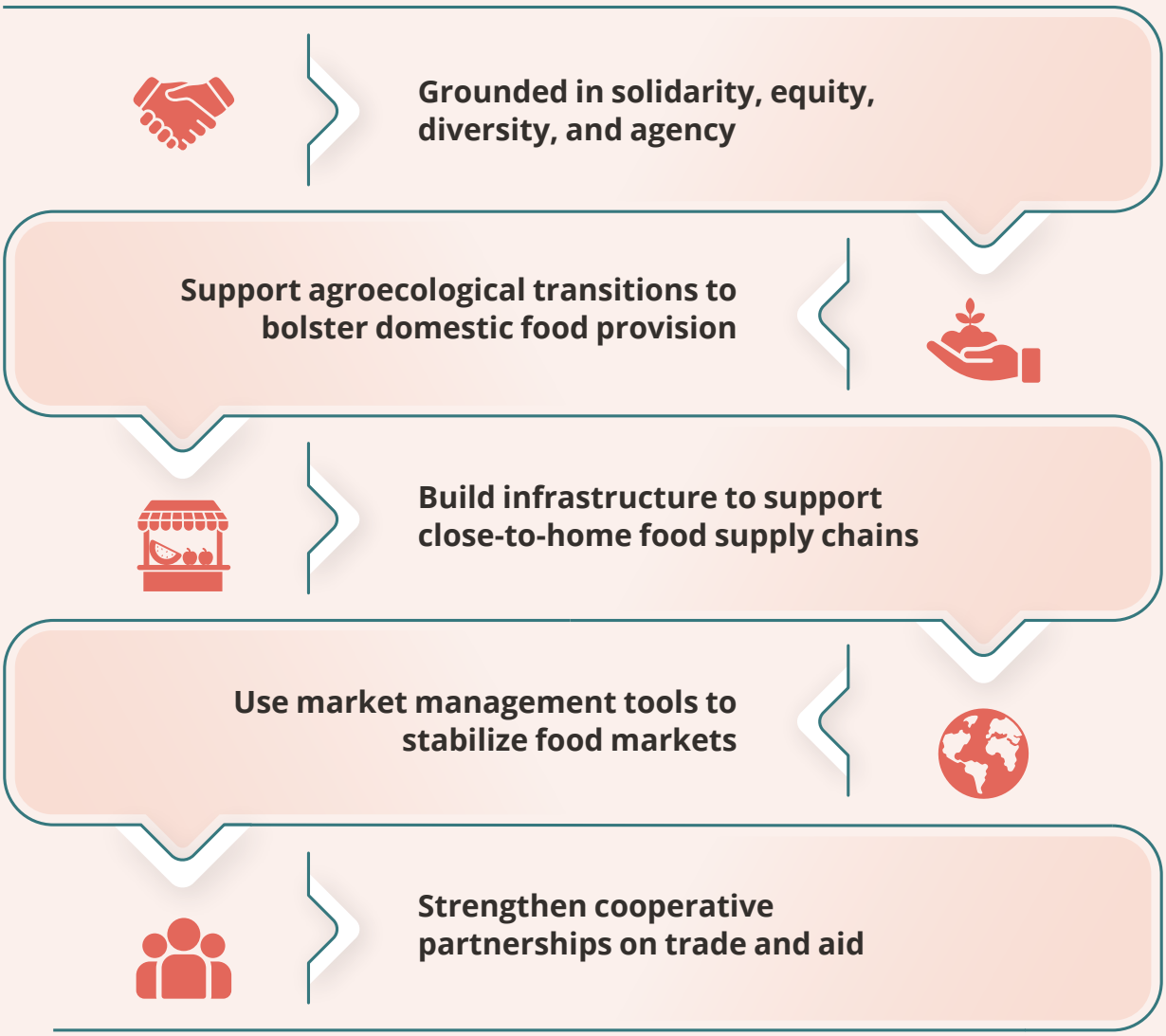
It is also crucial for countries to prioritize the needs of their poorest and most vulnerable people in any reform process, while preventing new groups from falling into poverty.

Under the new geopolitics of food, where the legacies of market liberalization are interacting with new trade and political disruptions, countries are faced with unprecedented market volatility. The world's poorest countries and most marginalized groups have been especially hard hit by these changes. While the most vulnerable countries have the most to lose from the way the current system is organized, they also have the most to gain from leading the transition towards self-reliance and protection from dependency. At the same time, current geopolitical instability offers space for new and different forms of international cooperation, including coordinated food stockholding and other mechanisms to foster cooperative self-reliance.

Many open questions remain about how the path forward might unfold. The geopolitics of food are complex and constantly shifting, yet are also held in place by deeply entrenched interests, actors, and rules. The real and urgent need to reshape food systems is clear – reshaping them in ways that uphold food sovereignty will be critical to build resilient self-reliance. Beyond the need for government action, **civil society and social movement actors are vital agents to mobilize pressure, open debate, build consensus, and generate support for food systems that meet the needs of vulnerable populations and ensure long-term equity and resilience.**

FIGURE 4

MEETING THE MOMENT: BUILDING RESILIENT FOOD SELF-RELIANCE



ENDNOTES

[1] IPES-Food. (2022). Another Perfect Storm?.

[2] Margulis, M. E., Hopewell, K. & Qereshniku, E. (2023). Food, famine and the free trade fallacy: The dangers of market fundamentalism in an era of climate emergency. In Climate Change and Critical Agrarian Studies (pp. 327-351). Routledge.

[3] Bjornlund, V., Bjornlund, H. & van Rooyen, A. (2022). Why food insecurity persists in sub-Saharan Africa: A review of existing evidence. Food security, 14(4), 845-864.

[4] Harithas, B. et al. (2025). "Liberation Day" tariffs explained. Center for Strategic & International Studies, Washington.

[5] Financial Times. (2026, January 19). Trump tariff tracker.

[6] Murphy, C. (2025, April 17). Trump's tariff policy has nothing to do with trade. Financial Times.

[7] Pooler, M & Langella, B. (2025, July 29). Donald Trump's tariffs spread alarm among Brazilian farmers and ranchers. Financial Times.

[8] Politi, J. (2025, November 14). Donald Trump cuts agricultural tariffs in bid to bring down grocery prices. Financial Times.

[9] Murphy, S. (2025, April 1). Tariff mayhem: A shortcut to higher prices, fewer jobs, and broken friendships. IATP.

[10] Hale, T. (2025, November 7). Selling into China: US exporters circle market after Trump deal. Financial Times.

[11] Hassen, B. T. et al. (2025). Editorial: Sustainable and resilient food systems in times of crises. Frontiers in Nutrition, 12, 1564950.

[12] Dowd, C. et al. (2024). Conflict's impacts on food systems: Mapping available evidence of interactions. Journal of International Development, 36(4), 2152–2171.

[13] FSIN & Global Network Against Food Crises (GRFC). (2024). GRFC. Rome.

[14] Mamonova, N., Wengle, S., & Dankevych, V. (2023). Queen of the fields in wartime: What can Ukrainian corn tell us about the resilience of the global food system? The Journal of Peasant Studies, 50(7), 2513–2538.

[15] El Bilali, H., & Hassen, B. T. (2024). Disrupted harvests: How Ukraine – Russia war influences global food systems – a systematic review. Policy Studies, 45(3–4), 310–335.

[16] Savage, S. (2026, March 5). Fertiliser disruption from Iran conflict prompts global food shortage warnings. Financial Times.

[17] WFP & FAO. (2025). Hunger hotspots FAO–WFP early warnings on acute food insecurity: June to October 2025 outlook. WFP. Rome.

[18] Huckstep, S. et al. (2025). Charting the Fallout of Aid Cuts: Which Countries Will be Hit Hardest, as Multiple Donors Cut Budgets? Center for Global Development. June 12.

[19] Vigersky, S. (2025, December 23). The Great Aid Recession: 2025's Humanitarian Crash in Nine Charts. Council on Foreign Relations.

[20] Clapp, J. (2012). Hunger in the Balance: The New Politics of International Food Aid. Cornell University Press. Ithaca NY.

[21] Sova, C. (2024). Starvation crimes and international law: A new era. Center for Strategic & International Studies.

[22] WFP. (2025, October 15). Funding cuts: six critical WFP operations at risk: As humanitarian aid dries up, these countries are especially vulnerable.

[23] Osendarp, S. et al. (2025). The full lethal impact of massive cuts to international food aid. Nature, 640(8057), 35–37.

[24] Watson, D. & Herrera, F.R. (2025, November 13). The UN at 80: repairing the multilateral order. International Institute of Strategic Studies.

[25] Hathaway, O.A. and Patrick, S. (2024, July 2). Can the UN Security Council still help keep the peace? Reassessing its role, relevance, and potential for reform. Carnegie Endowment for International Peace.

[26] International Crisis Group. (2024, September 10). Ten challenges for the UN in 2024-2025. International Crisis Group.

[27] Hopewell, K. (2024, October 7). The world is abandoning the WTO: And America and China are leading the way. Foreign Affairs.

[28] Sherrington, R & Lakhani, N. (2025, November 18). More Than 300 Lobbyists for Industrial Agriculture Attend COP30. DeSmog.

[29] IPES-Food. (2022). Another Perfect Storm?.

[30] Hekman, L. et al. (2022, May 6). Financial speculators make a killing on food prices in regulatory failure. Lighthouse Reports.

[31] Weber, I. M., & Wasner, E. (2023). Sellers' inflation, profits and conflict: why can large firms hike prices in an emergency? Review of Keynesian Economics, 11(2), 183-213.

[32] FAO, IFAD, UNICEF, WFP & WHO. (2025). The state of food security and nutrition in the world 2025 – Addressing high food price inflation for food security and nutrition. Rome.

[33] FAO. (2025, July 22). Low-income countries hit hardest by global price inflation.

[34] The World Bank. (2025, October 31). Food security update.

[35] FAO (2025, November). Food outlook: Biannual report on global food markets. Rome.

[36] One data. (2025, April 18). Net financing flows to developing countries remain precariously low.

[37] IPES-Food. (2023). Breaking the cycle of unsustainable food systems, hunger, and debt.

[38] Clapp, J. (2025). Titans of industrial agriculture: How a few giant corporations came to dominate the farm sector and why it matters. MIT Press.

[39] ETC group & Grain. (2025, June). Top 10 agribusiness giants: Corporate concentration in food & farming in 2025.

[40] Canadian Competition Bureau. (2023). Canada needs more grocery competition: Competition bureau retail grocery market study report. ISED Citizen Services Centre (Ottawa, Canada).

[41] Höhler, J., & Lansink, A. O. (2021). Measuring the impact of COVID□19 on stock prices and profits in the food supply chain. Agribusiness, 37(1), 171–186.

[42] Schweizer, E. (2024, December 11). Why the Kroger-Albertsons Merger Was Blocked. Forbes.

[43] Clapp, J., & Howard, P. (2023, August 8). The hunger profiteers. Project Syndicate.

[44] Nutrien. (2021). Annual report.

[45] Duchiade, A. (2025, April 25). US-China tariff spat could raise Brazil deforestation risk. Dialogue Earth.

[46] Li, H. et al. (2025). Food trade wars have hidden biodiversity costs. Nature Ecology & Evolution, 9(1299).

[47] Santos, M. (2025). Brazilian perspectives on the EUDR, the Cerrado, and respect for family farmers, Indigenous people, and community rights. IATP.

[48] Massimo, Peri. (2017). Climate Variability and the Volatility of Global Maize and Soybean Prices. Food Security 9 (4), 673–83.

[49] Taşkin, D., Cagli, E. C., & Evrim Mandaci, P. (2021). The Impact of Temperature Anomalies on Commodity Futures. Energy Sources 16 (4), 357–70.

[50] Coffee Watch. (2025, July). Unfair Business: How Tariff Wars and Tariffs Crush Coffee-Growing Countries.

[51] Centre for Coordination of Agricultural Research and Development for Southern Africa (2025, July 31). US Tariffs Send Shockwaves Through the Agricultural Sector in the Southern African region.

[52] Draper, K. (2025, August1). How Tariffs Raise Costs for Farmers, Making Food More Expensive. New York Times.

[53] WFP & FAO. (2025). Hunger hotspots FAO–WFP early warnings on acute food insecurity: June to October 2025 outlook. Rome.

[54] Gilbert, C. (1987). International commodity agreements: Design and performance. World Development, 15(5), 591-616.

[55] Shaw, D.J. (2007). International commodity agreements. In World Food Security: a history since 1945 (pp.65-76). London: Palgrave Macmillan.

[56] Steger, M.B., & Roy, R.K. (2021). Neoliberalism: A very short introduction (2nd Ed.). Oxford: Oxford University Press.

[57] Civil Society and Indigenous Peoples Mechanism (CSIPM). (2025). Trade, debt, and financialization: What it has to do with the food on your plate. CSIPM.

[58] Civil Society and Indigenous Peoples Mechanism (CSIPM). (2025, April 16). Food sovereignty is not possible without financial sovereignty, warn small-scale food producers and grassroots organizations. CSIPM.

[59] Ody, M. (2025, April 15). La Via Campesina at CFS dialogue on financing: "Fund public policies that protect and strengthen local food production". LVC.

[60] Reuters. (2025). China Pledges Stronger Financial Support for Key Agricultural Products.

[61] Government of Ethiopia. (2025). Ethiopia's Food Self-Sufficiency Endeavors.

[62] Reuters. (2025, September 5). Toothpaste, McDonald's and Pepsi in the crosshairs as US-India tariff tensions heat up.

[63] Cabinet Secretariat of the Republic of Indonesia. (2025). Food Self-Sufficiency 2025: A Historic Milestone in Indonesia's Food Independence.

[64] Kaneko, K. (2025, July 7). In reversal, Japan now wants rice farmers to produce more. Will it work? Reuters.

[65] Savage, S. (2026, January 14). Why the world has started stockpiling food again. Financial Times.

[66] FAO. (2021). Public Food Stockholding. A Review of Policies and Practices.

[67] World Bank. (2025). Strengthening strategic grain reserves to enhance food security. World Bank.

[68] FAO. (2021). Public Food Stockholding. A Review of Policies and Practices.

[69] IATP. (2024). Public Stocks at WTO.

[70] FAO. (2021). Public Food Stockholding. A Review of Policies and Practices.

[71] Deuss, A. (2015). Review of the performance and impacts of recent stockholding policies. In Issues in Agricultural Trade Policy: Proceedings of the 2014 OECD Global Forum on Agriculture. OECD.

[72] Sarkar, S., & Bhattacharya, S. (2022). Understanding food rationing in colonial India: a prelude to the formation of public distribution system. Critique, 50(4), 685-702.

[73] Birchfield, L., & Corsi, J. (2010). The right to life is the right to food: People's Union for Civil Liberties v. Union of India & others. Human Rights Brief, 17(3), 3.

[74] Lindgren, K-A., & Lang, T. (2022). Understanding the policy discourse within the formulation of the 2013 Indian National Food Security Act. Food Security 12(14):1159-1173.

[75] Banga, R. & Sekhar, C.S.C. (2015). Public stock holding of food in India: Can it distort international trade?. Centre for WTO Studies.

[76] FCI. Food Corporation of India. Accessed October 17, 2025.

[77] Gulati, A., & Saini, S. (2015). India's political economy responses to the global food price shock of 2007-08: Learning some lessons. (No. 2015/120). WIDER Working Paper.

[78] OECD and the Indian Council for Research on International Economic Relations. (2018). Agricultural Policies in India.

[79] Wise, T.A. (2017, December 9). India's Public Stockholding: "Much more than a welfare program". Food Tank.

[80] OECD and the Indian Council for Research on International Economic Relations. (2018). Agricultural Policies in India.

[81] FAO. (2021). Public Food Stockholding. A Review of Policies and Practices.

[82] Banga, R. & Sekhar, C.S.C. (2015). Public stock holding of food in India: Can it distort international trade?. Centre for WTO Studies.

[83] Saini, S., & Kozicka, M. (2014). Evolution and critique of buffer stocking policy of India. Working paper No.283.

[84] OECD and the Indian Council for Research on International Economic Relations. (2018). Agricultural Policies in India.

[85] PRS Legislative Research. (2024, July 31). Demand for Grants 2024-25 Analysis : Food and Public Distribution.

[86] George, N. A., & McKay, F. H. (2019). The Public Distribution System and Food Security in India. International Journal of Environmental Research and Public Health, 16(17), 3221.

[87] M. Demeke, G. Pangrazio & M. Maetz. (2009). Country Responses to the Food Security Crisis: Nature and Preliminary Implications of the Policies Pursued. Initiative on Soaring Food Prices.

[88] FAO. (2021). Public Food Stockholding. A Review of Policies and Practices.

[89] Basu, R. (2022, September 29). India in the Present Global Food Crisis : A Myopic Approach towards Public Stockholding of Foodgrains. Focus on the Global South.

[90] FCI. Food Corporation of India. Accessed October 17, 2025

[91] World Bank, WFP, & FAO. (2025). Strengthening Strategic Grain Reserves to Enhance Food Security.

[92] ECOWAS Commission. (2021). The West African Food Security Storage System: Synthesis of lessons learnt and perspectives.

[93] Manduna, C. (2024). Buffer Food Stocks for Addressing Volatility and Food Security in Developing Countries – Trends and Future Direction. IATP.

[94] ECOWAS Commission. (2021). The West African Food Security Storage System: Synthesis of lessons learnt and perspectives.

[95] Manduna, C. (2024). Buffer Food Stocks for Addressing Volatility and Food Security in Developing Countries – Trends and Future Direction. IATP.

[96] ECOWAS Commission. (2021). The West African Food Security Storage System: Synthesis of lessons learnt and perspectives.

[97] Jaccard, J. (2020). Public food stockholding and the WTO. Humundi.

[98] World Bank, WFP, & FAO. (2025). Strengthening Strategic Grain Reserves to Enhance Food Security.

[99] Van Kooten, G. C. (2021). Applied Welfare Economics, Trade, and Agricultural Policy Analysis. University of Toronto Press.

[100] Muirhead, B. (2014). Crying over spilt milk: The history of dairy supply management and its role in recent trade negotiations. CIGI Papers No. 30. Centre for International Governance Innovation.

[101] Heminthavong, K. (2018). Canada's supply management system (Background Paper). Publication No. 2018-42-E. Library of Parliament.

[102] Ibid

[103] Van Kooten, G. C. (2021). Applied Welfare Economics, Trade, and Agricultural Policy Analysis. University of Toronto Press.

[104] Muirhead, B. (2017). Re-ordering the rural? Canada, dairy supply management and the Trans-Pacific Partnership negotiations. In M. Miele, V. Higgins, H. Bjørkhaug, & M. Truninger (Eds.), Research in Rural Sociology and Development (Vol. 24, pp. 71–93). Emerald Publishing Limited.

[105] Van Kooten, G. C. (2021). Applied Welfare Economics, Trade, and Agricultural Policy Analysis. University of Toronto Press.

[106] Weersink, A. et al. (2021). COVID-19 and the agri-food system in the United States and Canada. Agricultural Systems, 188.103039.

[107] Weersink, A., von Massow, M., & McDougall, B. (2020). Economic thoughts on the potential implications of COVID-19 on the Canadian dairy and poultry sectors. Canadian Journal of Agricultural Economics/Revue Canadienne d'agroeconomie 68(2): 195-200.

[108] Muirhead, B., & Nurse, J. (2023, October 25). In defense of Bill C-282: Canada's supply management supports farmers while safeguarding consumers. The Conversation.

[109] Muirhead, B. (2017). Re-ordering the rural? Canada, dairy supply management and the Trans-Pacific Partnership negotiations. In M. Miele, V. Higgins, H. Bjørkhaug, & M. Truninger (Eds.), Research in Rural Sociology and Development (Vol. 24, pp. 71–93). Emerald Publishing Limited.

[110] Haller, T. (2014). Abolition of the milk quota system in Switzerland: Assessment of the quota abolition and its impact in consideration of accompanying measures. European Milk Board.

[111] Kumbhakar, S. C. et al. (2008). Impacts of Norwegian milk quotas on output growth: A modified distance function approach. Journal of Agricultural Economics 59(2), 350–369.

[112] OECD. (2023). Agricultural Policy Monitoring and Evaluation 2023: Adapting Agriculture to Climate Change. OECD Publishing.

[113] Almås, R., & Brobakk, J. (2012). Norwegian dairy industry: A case of super-regulated co-operativism. In R. Almås & H. Campbell (Eds.), Research in Rural Sociology and Development (Vol. 18, pp. 169–189). Emerald Group Publishing Limited.

[114] TINE. The TINE cooperative. Accessed January 16, 2025.

[115] Almås, R., & Brobakk, J. (2012). Norwegian dairy industry: A case of super-regulated co-operativism. In R. Almås & H. Campbell (Eds.), Research in Rural Sociology and Development (Vol. 18, pp. 169–189). Emerald Group Publishing Limited.

[116] OECD. (2021). Agro-food value chains in Norway. In Policies for the Future of Farming and Food in Norway (pp. 182–196). OECD Publishing.

[117] Ibid.

[118] Norges Bondelag. Making Norway Grow! Norges Bondelag. Accessed February 6, 2025.

[119] Daugstad, K., Rønningen, K., & Skar, B. (2006). Agriculture as an upholder of cultural heritage? Conceptualizations and value judgements—A Norwegian perspective in international context. Journal of Rural Studies 22(1), 67–81.

[120] Bjørkhaug, H., Vik, J., & Richards, C. (2017). The chicken game – Organization and integration in the Norwegian agri-food sector. In M. Miele, V. Higgins, H. Bjørkhaug, & M. Truninger (Eds.), Research in Rural Sociology and Development (Vol. 24, pp. 45–69). Emerald Publishing Limited.

[121] Almås, R., & Bye, V. (2020). Towards sustainable family farming and independent food co-operatives in Cuba? Possible lessons from Norway. Int J Sociol Agric Food 26(1), 26-47.

[122] Almås, R., & Brobakk, J. (2012). Norwegian dairy industry: A case of super-regulated co-operativism. In R. Almås & H. Campbell (Eds.), Research in Rural Sociology and Development (Vol. 18, pp. 169–189). Emerald Group Publishing Limited.

[123] Bjørkhaug, H., Vik, J., & Richards, C. (2017). The chicken game – Organization and integration in the Norwegian agri-food sector. In M. Miele, V. Higgins, H. Bjørkhaug, & M. Truninger (Eds.), Research in Rural Sociology and Development (Vol. 24, pp. 45–69). Emerald Publishing Limited.

[124] Saini, S., & Kozicka, M. (2014). Evolution and critique of buffer stocking policy of India. Working paper (No. 283).

[125] Manduna, C. (2024). Buffer Food Stocks for Addressing Volatility and Food Security in Developing Countries – Trends and Future Direction. IATP.

[126] World Bank, WFP, & FAO. (2025). Strengthening Strategic Grain Reserves to Enhance Food Security.

[127] Salami, M. (2025, May 17). Why Nigeria's strategic grain reserves fail to curb food insecurity. The Guardian (Nigeria).

[128] Manduna, C. (2024). Buffer Food Stocks for Addressing Volatility and Food Security in Developing Countries – Trends and Future Direction. IATP.

[129] Salami, M. (2025, May 17). Why Nigeria's strategic grain reserves fail to curb food insecurity. The Guardian (Nigeria).

[130] Thoto, F. Gbedomon, R.C., & Todome, L. (2025). Evidence-informed agricultural policymaking at regional level within the Economic Community of West African States (ECOWAS). (Preprint).

[131] ECOWAS Commission. (2024, February 24). Extraordinary summit of the ECOWAS authority of heads of state and government on the political, peace and security situation in the region.

[132] Das, R., Roy, R., & Gulati, A. (2024) Rationalising Public Distribution System in India. Indian Council for Research on International Economic Relations.

[133] Mulky, A.G. (2015). The public distribution system in India (1939-2001). Conference on Historical Analysis and Research in Marketing 2015, Long Beach, USA.

[134] FAO, IFAD, UNICEF, WFP & WHO. (2025). The State of Food Security and Nutrition in the World 2025: Addressing high food price inflation for food security and nutrition. Rome.

[135] Gilbert, C. (2011). International Agreements for Commodity Price Stabilisation: An Assessment. OECD Food, Agriculture, and Fisheries Papers No. 53. OECD.

[136] Tripathi, Ashutosh K., & Ashok K. Mishra. (2024). Effect of Public Stockholding on Wheat Price Dynamics in India: A Quantile Autoregression Approach. Australian Journal of Agricultural and Resource Economics, 68.1, 168-85.

[137] Cardwell, R., Lawley, C., & Xiang, D. (2015). Milked and feathered: The regressive welfare effects of Canada's supply management regime. Canadian Public Policy, 41(1), 1–14.

[138] Van Kooten, G. C. (2021). Applied Welfare Economics, Trade, and Agricultural Policy Analysis. University of Toronto Press.

[139] Cardwell, R., Lawley, C., & Xiang, D. (2015). Milked and feathered: The regressive welfare effects of Canada's supply management regime. Canadian Public Policy, 41(1), 1–14.

[140] Doyon, M., Bergeron, S., Tamini, L.D. (2018). Milked and Feathered: The Regressive Welfare Effects of Canada's Supply Management Regime: A Comment. Canadian Public Policy/Analyse de politique, 44(3), 272-277.

[141] Grant, M. et al. (2014). Reforming Dairy Supply Management: The Case for Growth. Conference Board of Canada.

[142] Cardwell, R., Lawley, C., & Xiang, D. (2015). Milked and feathered: The regressive welfare effects of Canada's supply management regime. Canadian Public Policy, 41(1), 1–14.

[143] OECD. (2021). Agro-food value chains in Norway. In Policies for the Future of Farming and Food in Norway (pp. 182–196). OECD Publishing.

[144] Grant, M. et al. (2014). Reforming Dairy Supply Management: The Case for Growth. Conference Board of Canada.

[145] OECD. (2021). Agro-food value chains in Norway. In Policies for the Future of Farming and Food in Norway (pp. 182–196). OECD Publishing.

[146] Weber, I. M., et al. (2025). Food Price Stabilization in an Age of Overlapping Emergencies: The case for multilevel buffer stocks. Political Economy Research Institute, University of Massachusetts Amherst.

[147] World Trade Organization. The WTO agreements: Agreement on Agriculture. Article 6: Domestic support commitments.

[148] Manduna, C. & Murphy, S. (2024, February 23). Public stocks at the WTO: Making sense of food security and agriculture negotiations at MC13. IATP.

[149] Muirhead, B. (2014). Crying over spilt milk: The history of dairy supply management and its role in recent trade negotiations (CIGI Papers No. 30). Centre for International Governance Innovation.

[150] Van Kooten, G. C. (2021). Applied Welfare Economics, Trade, and Agricultural Policy Analysis. University of Toronto Press.

[151] Dommen, C. et al. (2025). Agreement on Agriculture re-imagined: Making the case for new trade rules. Centre for Development and Environment (CDE), University of Bern.

[152] IPES-Food. (2026). Head In The Cloud: Challenging the false promise of digital agriculture and cultivating innovation from the ground up.

[153] Clapp, J., & Ruder, S.-L. (2020). Precision Technologies for Agriculture: Digital Farming, Gene-Edited Crops, and the Politics of Sustainability. Global Environmental Politics, 20(3), 49–69.

[154] Hackfort, S. (2023). Unlocking sustainability? The power of corporate lock-ins and how they shape digital agriculture in Germany. Journal of Rural Studies, 101(103065).

[155] IPES-Food. (2024). Food from somewhere: building food security and resilience through territorial markets. (pp.13-16).

[156] HLPE. (2025). Building resilient food systems. FAO.

[157] FAO. Multilateral Trade Negotiations on Agriculture: A Resource Manual II. Agreement on Agriculture - Trade and Food Security: Options for Developing Countries. Accessed March 20, 2026.

[158] Pieters, H. et al. (2012). Perspectives on relevant concepts related to food and nutrition security (No. 1). LEI Wageningen UR.

[159] Clapp, J., Moseley, W., Burlingame, B. & Termine, P. (2022). The case for a six-dimensional food security framework. Food Policy. 106 (102164).

[160] Weber, I. et al. (2025). Food Price Stabilization in an Age of Overlapping Emergencies: The case for multilevel buffer stocks. Political Economy Research Institute, University of Massachusetts Amherst.

[161] Murphy, S. (2009). Strategic grain reserves in an era of volatility. IATP.

[162] HLPE. (2025). Building resilient food systems. FAO.

[163] Zhan, S. (2022). The Political Economy of Food Import and Self-reliance in China: 1949-2019. Global Food History, 8(3), 194–212.

[164] Deaconu, A. et al. (2024). Food systems innovation to nurture equity and resilience globally (Food SINERGY): Insights from the Food SINERGY network. FACETS, 9, 1-15.

[165] Muirhead, B., & Nurse, J. (2023, October 25). In defense of Bill C-282: Canada's supply management supports farmers while safeguarding consumers. The Conversation.

[166] HLPE. (2025). Building resilient food systems. FAO.

[167] IPES-Food. (2024) Food from somewhere: building food security and resilience through territorial markets.

[168] CSIPM. (2016). Connecting smallholders to markets. Civil Society and Indigenous Peoples Mechanism of the Committee for World Food Security.

[169] CSIPM. (2022). Voices from the ground 2: transformative solutions to the global systemic food crises. Civil Society and Indigenous Peoples Mechanism of the Committee for World Food Security.

[170] Stechyson, N. (2025, April 10). Oeuf! US egg prices hit record high despite Trump's claim they're 'much cheaper'. CBC News.

[171] Byrne, A. (2025, March 5). Are socially distanced chickens laying more affordable eggs? NBC News.

[172] Tropea, F. (2015, October). Measures to support dairy farmers after the end of EU milk quotas. Briefing. European Parliament.

[173] CLAL. EU-27: Weighted average farm-gate milk prices. Accessed March 20, 2026.

[174] European Court of Auditors. (2019). The EU response to the dairy market disturbances of 2014-2017.

[175] Livingstone, E. (2016, July 15). Europe offers €500 million to help dairy farmers. POLITICO.

[176] Manduna, C. & Murphy, S. (2024, February 23). Public stocks at the WTO: Making sense of food security and agriculture negotiations at MC13. IATP

[177] Jadhav, R. (2025, May 7). Global rice prices have hit a floor, but India's supply glut will smother any gains. Reuters.

[178] Gulati, A., & Saini, S. (2015). India's political economy responses to the global food price shock of 2007-08: Learning some lessons. (No. 2015/120). WIDER Working Paper.

[179] UNDROP. (2018). United Nations Declaration on the Rights of Peasants and Other People Working in Rural Areas A/RES/73/165.

[180] CARICOM. (2025, February 25). Food Security Initiative Expanded, Extended to 2030.

[181] CARICOM. (2025, April 4). Statement from the Chair of CARICOM - Impact of the global crises on the Caribbean.

[182] Weber, I. M. et al. (2025). Food Price Stabilization in an Age of Overlapping Emergencies: The case for multilevel buffer stocks. Political Economy Research Institute, University of Massachusetts Amherst.

[183] Global Alliance for the Future of Food. (2021). The Politics of Knowledge: Understanding the Evidence for Agroecology, Regenerative Approaches, and Indigenous Foodways.

[184] Peschard, K. (2025, December 5). Landmark victory for Kenyan peasants and seed sovereignty. Defending Peasants' Rights.

[185] Agana, R. (2025, September 17). Panama Indigenous Fishers Appeal to UN Over Banned Waters. Ghana News.

[186] Alliance for Food Sovereignty in Africa (2020, October). Shaping the Future of Food Markets in Africa: What Kind of Markets Do We Need for the Transition to Agroecology?. AFSA Food Systems Conference Report.

[187] Ody, M., & Shattuck, A. (2023). 'Our struggle is for humanity': a conversation with Morgan Ody, general coordinator of La Via Campesina International, on land, politics, peasant life and a vision for hope in our changing world. The Journal of Peasant Studies, 50(2), 539-558.

[188] Burnett, K., & Murphy, S. (2014). What place for international trade in food sovereignty?. The Journal of Peasant Studies, 41(6), 1065–1084.

[189] Ody, M. (2025). Can the food sovereignty movement really play a role in systemic transformation? Freedom, egalitarian societies, and planetary boundaries. The Journal of Peasant Studies, 1–22.

[190] Nyéléni Forum. (2025). Kandy Declaration from the 3rd Nyéléni Global Forum, Sri Lanka.

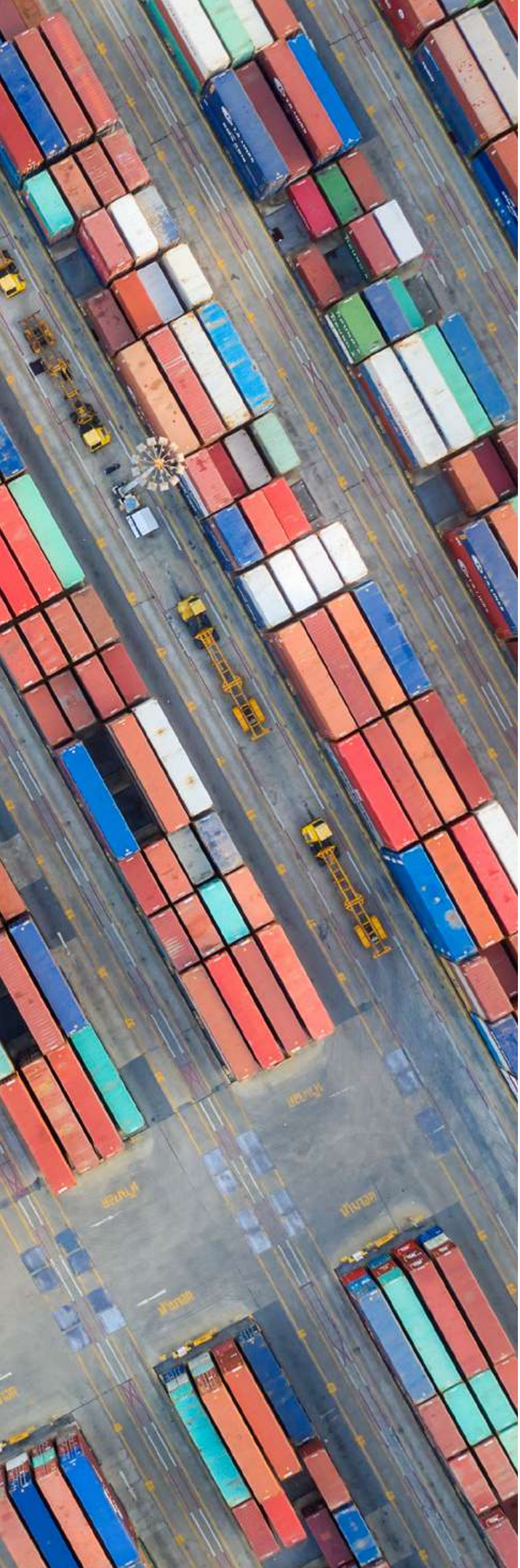
[191] Global Alliance for the Future of Food. (2021). The Politics of Knowledge: Understanding the Evidence for Agroecology, Regenerative Approaches, and Indigenous Foodways.

[192] Rakotoarisoa, M., Iafrate, M. & Paschali, P. (2011). Why has Africa become a net food importer? Explaining Africa agricultural and food trade deficits. FAO.

[193] IPES-Food. (2023). Breaking the Cycle of Unsustainable Food Systems, Hunger, and Debt.

[194] World Bank, FAO, & WFP. (2025). Strengthening Strategic Grain Reserves to Enhance Food Security.

[195] FAO, IFAD, UNICEF, WFP & WHO. (2025). The State of Food Security and Nutrition in the World 2025 – Addressing high food price inflation for food security and nutrition.



ABOUT IPES-FOOD

The International Panel of Experts on Sustainable Food Systems (IPES-Food) is a global think tank and expert group guiding action for sustainable food systems around the world. Bringing together 25 groundbreaking thinkers and practitioners from diverse fields and world regions, we conduct research, provide policy recommendations, and advocate for sustainable, equitable, and healthy food systems worldwide. Rooted in science, and grounded in the realities of those on the front lines of hunger and climate crises, IPES-Food has since 2015 been a leading voice advancing policy solutions and bringing together alliances to address the most pressing questions for food and farming. The panel is co-chaired by Olivier De Schutter, UN Special Rapporteur on extreme poverty and human rights, and Lim Li Ching, Senior Researcher at Third World Network.

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