

AGRIFOOD TRADE

Changing Challenges, Changing Perspectives on Policy and Policy Research

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Key messages

- Global agrifood trade has tripled since 1975, driven in part by a growing trade in processed foods.
- Agricultural policies in developing countries have shifted from taxing agriculture to providing positive support and protection, converging to the lower levels of trade protection of developed economies and helping to spur trade.
- IFPRI has been a leader in measuring trade protection provided to agriculture and food sectors and in assessing its impacts on food supplies, poverty, and food security and nutrition.
- IFPRI's research has highlighted the critical role agrifood trade can play in mitigating the adverse impacts of global market shocks and adapting to climate change.
- Negotiations to achieve a fairer multilateral regime for agricultural trade have stalled, but existing rules provide developing countries with space to use trade policy and domestic support measures to simultaneously promote food security and sustainable agriculture.

Looking ahead, policy research is needed to help achieve a trading system that facilitates sustainable agrifood system transformation, including:

- **Deepen analysis of national and international policy coherence**, as trade policy alone will not drive sustainable food systems transformation. This should include research on the “repurposing” of existing large-scale support to agriculture to increase market actors’ incentives to adopt sustainable and productivity-enhancing practices, while also considering the influence of exchange rate, fiscal, and monetary policies.
- **Identify and address the distributional consequences of domestic policy reforms and trade**—both between and within countries—for incomes, livelihoods, natural-resource use, and access to food. These consequences determine the political feasibility of policy reform.
- **Expand analysis of food standards** to determine how to align them for safety, dietary quality, and sustainability and how to embed these regulatory measures in World Trade Organization (WTO) rules. Such measures as well as reform of price incentives are needed to induce timely and pervasive food systems change.

Recent global events have highlighted the crucial connections between trade and food security. During the COVID-19 pandemic, restrictions on mobility and trade strained global and national food systems. Russia’s war on Ukraine revealed the vulnerability of many food-importing countries to breadbasket failures, resulting, in this case, from dependence on both cereals and fertilizers produced in the Black Sea region. Climate change is placing greater pressure on food systems as more frequent and intense weather shocks—such as the excessive rainfall that affected rice harvests in India and other parts of South Asia in 2023—cause simultaneous crop failures, thus threatening both local and global food security. In response to these events, some affected countries immediately imposed restrictive trade policies that exacerbated food price surges and volatility, instead of providing insulation against these shocks, as was intended (Martin et al. 2024).

Agrifood trade¹ can thus be a double-edged sword. It supports resilience by diversifying supply and making up for local supply shortages, but it also exposes local food systems to global shocks. Agrifood trade serves a number

1 Agrifood products include all agricultural, livestock, fisheries, forestry and related products that are covered under the WTO Agreement on Agriculture.

of objectives. Beyond the big ships, ports, and other infrastructure that bring food to consumers, trade is also about smallholders and rural traders receiving better prices for their products in bigger and higher-value markets in cities and abroad, improving efficiency in the production and use of natural resources, and increasing consumer access to safer and more diversified and nutritious foods. Trade does not always serve each of these objectives equally well, stirring controversy about which trade policies best contribute to food security, better nutrition, and (sustainable) agricultural development.

Among IFPRI's mandates when it was created was to advise on proper policy responses to the global food price shocks of the early 1970s. Since then, IFPRI has remained a leader in research on agrifood trade policies, with its researchers' analyses both influencing and evolving alongside changing perspectives on how trade can help address global challenges. This chapter reviews the evolution of trade research, with a focus on the contributions of IFPRI and others, as well as priorities for future research. Figure 16.1 provides a simplified timeline of the main events in international markets and trade policies and changes in IFPRI's research priorities since 1975, discussed in detail in the next sections.

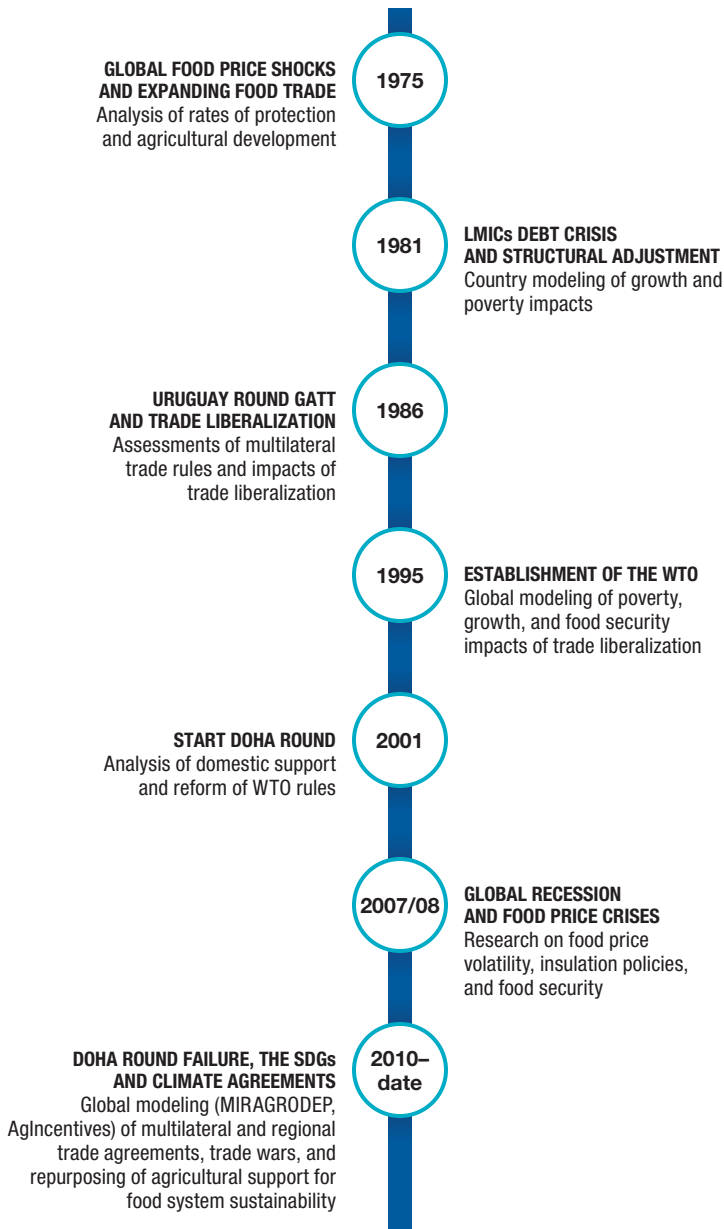
Major trends in agrifood trade and policies since 1975

Shift in agrifood trade from raw to processed and specialty products

Driven by rising incomes in emerging economies, population growth, changing consumption patterns, and decreasing trade and transportation costs, global agrifood trade has grown continuously since 1975—at an average annual rate of 5.8 percent—and its value has almost tripled (measured in constant dollars). Over the past two decades, the expansion of global trade accelerated, with its value quadrupling in current prices between 2003 and 2023 to reach US\$1.9 trillion (Figure 16.2). In addition, the quality of trade data has improved with computerization of customs, especially in developing countries, while IFPRI researchers have played a key role in improving measurement of informal trade flows in Africa (Bouët et al. 2018).

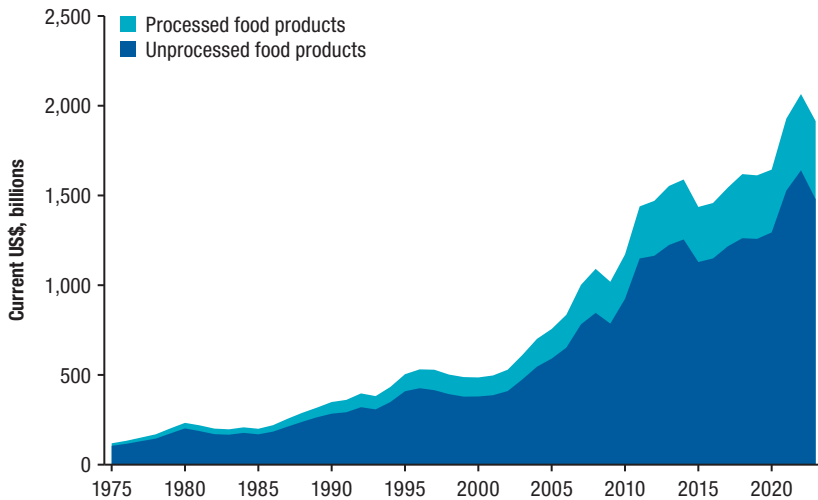
The composition of agrifood trade is also shifting. The share of primary (raw) agricultural commodities in agrifood exports dropped from 88 percent in the 1970s to 77 percent at present, while trade in processed products increased. In developed countries, this share now represents half

FIGURE 16.1 IFPRI’s research on agricultural trade



Source: Authors’ depiction.

Note: GATT = General Agreement on Tariffs and Trade; LMICs = low- and middle-income countries; SDGs = Sustainable Development Goals; WTO = World Trade Organization.

FIGURE 16.2 The shifting composition of expanding world agrifood exports, 1975–2023

Source: Authors' calculations based on Comtrade data. <https://comtradeplus.un.org/>

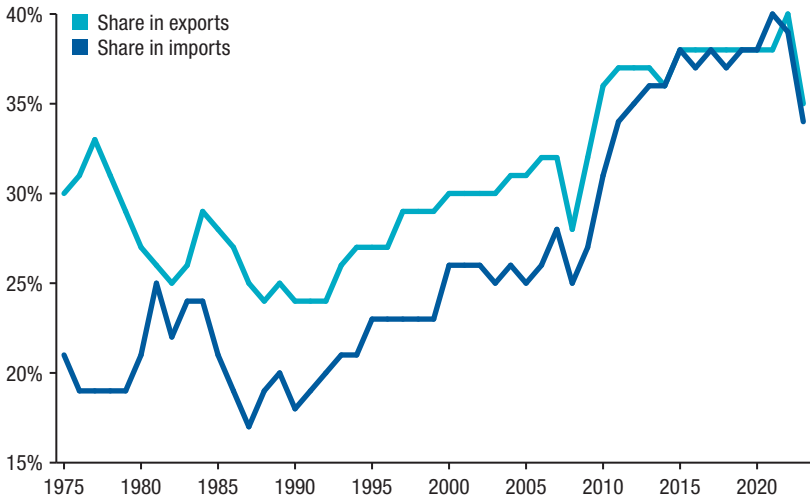
of agrifood imports (UNCTAD 2024). Nonetheless, the trade intensity of agrifood products (that is, the share of traded products in total production) is relatively low—only 13 percent of agrifood products are traded internationally, compared to 30 percent of nonagricultural goods (Gagné and Gouel 2022).

The share of developing countries in world trade of both processed and unprocessed agrifood products has grown substantially since 1975, as these countries have become major suppliers (exporters) and markets (importers). Their share in global agrifood exports increased from 30 percent in 1975 to 35 percent in 2023, while their share in global imports almost doubled, from 20 percent to more than 35 percent during the same period (Figure 16.3). The trend is largely driven by South–South trade (Aksoy and Ng 2010) and by a few emerging economies, including Argentina, Brazil, Chile, China, India, and, to a lesser extent, South Africa. The Least Developed Countries (LDCs) are lagging far behind (FAO 2018, 2021).

Major changes in agrifood trade policies

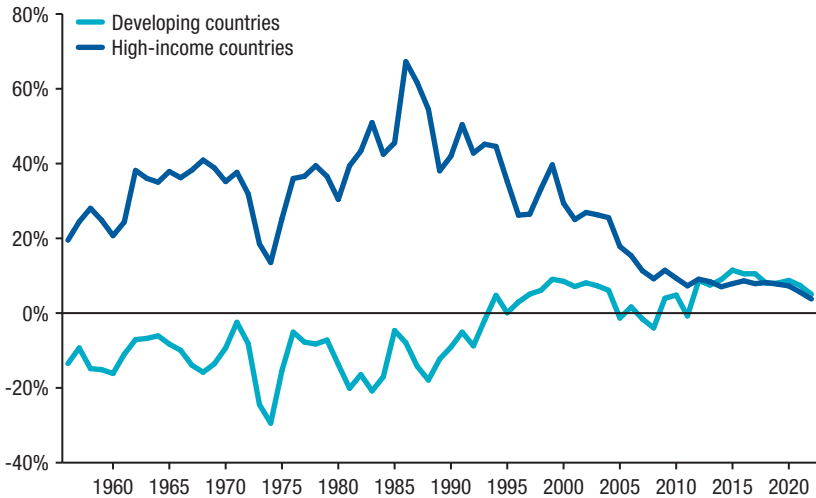
These trade trends were accompanied by changing policies for agricultural trade and domestic support (Figure 16.4). In the 1970s, policy approaches differed markedly between rich and poor nations, reflecting differences in

FIGURE 16.3 Developing country share in world agrifood trade, 1975–2023 (percentage)



Source: Authors' calculations based on Comtrade data. <https://comtradeplus.un.org/>

FIGURE 16.4 Protection rates for agriculture in high-income and developing countries, 1957–2022



Source: AgIncentives Consortium database. www.agincentives.org

Note: Rates refer to the nominal rate of protection (NRP), as defined in footnote 2 to this chapter.

their level of development. Developed countries provided strong support to their farm sectors, as reflected in an average nominal rate of protection² of close to 40 percent, while developing countries taxed their agriculture sectors at about 12 percent on average. Many developing countries prioritized import-substituting industrial development to stimulate growth (see Chapters 3 and 18), and for many low-income countries, import tariffs and taxes on exports were also important sources of fiscal revenues. But, as assessed by studies on the political economy of agricultural protection (for example, Anderson et al. 2013), developing countries' taxation of agriculture decreased as their incomes grew. Furthermore, the Uruguay Round helped to reduce protection in the developed countries (Hathaway and Ingco 1996), as Figure 16.4 shows.

Globally, short-term fluctuations in average protection rates have been strongly influenced by policies enacted to insulate domestic prices and markets from global food price shocks. For instance, both developing and developed food-importing countries lowered protection rates by more than 20 percentage points in attempts to insulate themselves against the food price surge of 1975. Similar responses were observed during the global food price shocks of 2007/08, 2010/11, and 2021/22. As World Bank and IFPRI research has demonstrated, these responses came in tandem with export restrictions imposed by major producer countries, which were also intended to provide insulation from higher prices but which, in practice, exacerbated the rise in world market prices and the volatility of both domestic and world prices (Anderson et al. 2014; Martin et al. 2024).

Protecting or “unprotecting” agriculture? Research on trade policy practice

Two issues have been central to the research agenda on agrifood trade policy over the past 50 years: the measurement of trade and the stance of trade policy—that is, whether agricultural trade was protected or taxed. Guided by measurement of trade and policy impacts, policy reforms have been formulated at country, regional, and global levels. Over time, both the thinking about those reforms and the policy research agenda have evolved, along with perceptions about the key challenges facing agriculture and food systems.

2 The nominal rate of protection (NRP) measures the extent to which a set of agricultural policies affect the market price of a commodity relative to world prices. It is computed as the price difference, expressed as a percentage, between the farmgate price received by producers and an undistorted reference price at the farmgate level. For further explanation, see the AgIncentives Consortium. www.agincentives.org/nominal-rate-of-protection

Early research on agricultural protection and taxation

Much of the initial research relied on simple data and tools, though the level of analytical sophistication has advanced over time. Early work on country policies pointed to the adverse impacts of agricultural taxation in low- and middle-income countries on development prospects and the poor. Pathbreaking work by IFPRI researchers used simple measures of agricultural protection in high-income countries to show that, by subsidizing and protecting their farmers, these countries were depressing farm prices in developing countries, which would stand to benefit from reductions in such protection (Valdés and Zietz 1980). This award-winning research³ underpinned further work that applied an economywide model to analyze the impact of macroeconomic and trade policies in Argentina and Chile (Cavallo and Mundlak 1982). This line of work reflected a growing interest in how trade and macroeconomic policies were creating biases in price incentives that worked against agricultural development.

IFPRI research indicated that many developing countries were taxing agriculture (Figure 16.4), either explicitly or implicitly, as part of “cheap food” policies intended to keep real wages down to support industrial growth strategies (see Chapter 18).⁴ In many instances, these policies held back agricultural productivity growth and rural transformation, which in turn hampered poverty reduction and food security. Development was found to be more successful where policies supporting public investments in rural infrastructure and R&D were implemented alongside trade and domestic food policies that provided incentives for productivity-enhancing agricultural technologies and practices (see Chapter 17) (Bautista and Valdés 1993; Díaz-Bonilla 2017).

As Figure 16.4 shows, high-income countries’ protection of agriculture—which included domestic subsidies, import tariffs, and export subsidies—peaked during the mid-1980s, when world prices of agricultural products were extremely low, partly because export subsidies were depressing world prices. Although the political-economy pressures for agricultural protection suggested that increases in protection would continue in high-income countries (Anderson 1995; Anderson et al. 2013), the high cost of export subsidies finally turned the tide against these policies. From the mid-1990s, multilateral trade negotiations

3 The paper received the Quality of Research Discovery Award from the Agriculture & Applied Economics Association in 1983.

4 A compilation of that work using a partial equilibrium framework can be found in Bautista and Valdés (1993). Later IFPRI analyses using a general equilibrium framework re-estimated the presumed bias against agriculture with more varied results (Jensen et al. 2002; Robinson et al. 2001).

under the Uruguay Round made progress in reducing this protection (Hathaway and Ingo 1996). These developed-country reforms also appear to have reduced the problem of protection, though it typically resurfaces in periods of surging food prices because governments tend to use trade policies to insulate consumers against global food price shocks, even though such responses are typically counterproductive (Martin and Anderson 2011; Martin et al. 2024).

Many developing countries grew rapidly during the period of sharp global economic convergence in income levels between 1996 and 2017 (Martin 2019). This rapid economic growth, together with reforms motivated by a recognition of the costs of taxing agriculture, contributed to the shift from taxation to support of agriculture in these countries (Figure 16.4). However, the relatively weak limits (“disciplines,” in the language of trade agreements) accepted on developing country agricultural support in the Uruguay Round may have allowed policymakers to repeatedly use trade policies that insulate their markets during periods of high global food prices.

Prominence of research on trade liberalization

The global shift toward trade liberalization and the evolution of the Uruguay Round, which led to the establishment of the World Trade Organization (WTO) in 1995, created a demand for influential agricultural trade policy research at IFPRI that combines broad analysis of global impacts of trade liberalization with detailed assessments of impacts in particular developing countries or regions (Díaz-Bonilla and Robinson 2001; Hewitt 2008).⁵ Most of this research favored openness and market orientation—as a means to drive economic efficiency and growth—over interventions and policy-induced trade distortions. But IFPRI’s analysts have not shied away from reporting negative consequences of market liberalization for particular countries or undesired collateral outcomes for poverty, food insecurity, and income inequality (for example, Bouët 2006; Vos et al. 2004, 2006) and suggesting tools other than trade policies to address them. The critical issues of links between trade and agrifood safety, product attributes, and quality regulations

5 Trade analysis in the 1990s and early 2000s focused on some of the key issues raised in what was supposed to be the continuation of the negotiations called for by Article 20 of the Agreement on Agriculture. Because food security was invoked as a special consideration in the negotiations, IFPRI’s research aimed to clarify and quantify the trade implications with a focus on the special country groups that were considered in the negotiations (such as LDCs and net food-importing developing countries) (Díaz-Bonilla et al. 2000). Another topic was domestic support, including the “development box” or “food security box,” with some simulations using a global general equilibrium model showing the potentially negative impacts of some of the proposed instruments (for example, see Díaz-Bonilla et al. 2004; Díaz-Bonilla, Thomas, and Robinson 2002).

have been examined in a number of studies (see Josling et al. 2004; Maertens and Swinnen 2009; Swinnen 2016). This work highlights the double-edged nature of these measures, which, if well designed, can result in improvements in economic welfare but, if not, can lead to interest-group capture and covert protection.

Climate change, food security, and the repurposing of farm support and trade policies

More recent work considers how market distortions that induce inefficiencies in food systems may exacerbate the “hidden costs” associated with the food system (Brooks and Díaz-Bonilla 2025). Recognizing these costs highlights the imperative of transforming food systems to deliver better outcomes for people and the planet, as well as the economy. IFPRI’s modeling work, including use of the MIRAGRODEP model (see Box 16.1), captures impacts of policy reform not only on economic efficiency and the terms of trade but also on poverty, hunger, diets, and global greenhouse gas (GHG) emissions (see Chapter 4). This has enabled influential work assessing opportunities and trade-offs of various trade reforms, including (1) regional trade integration such as the African Continental Free Trade Area (AfCFTA) (for example, see Bouët et al. 2022); (2) the repurposing of agricultural support policies (both protective border measures and domestic support) toward fighting climate change in ways aligned with improving food security and diets and reducing poverty (Gautam et al. 2022; Glauber and Laborde 2022; Laborde et al. 2021); (3) identifying the adverse consequences of trade wars (Bouët and Laborde 2018); and (4) assessing the impacts of restrictive food trade policies on global and domestic markets and price stability (for example, Anderson et al. 2014). This modeling work is built upon methodological innovations that have proven useful for both researchers and policymakers. These include the development of better ways to summarize complex trade policy measures (Laborde et al. 2016) and the potentially dangerous consequences of allowing negotiators to exempt sensitive products from reductions in trade negotiations (Jean et al. 2010).

The work on repurposing agricultural support gained prominence at several global forums, including the G20, the G7, and the United Nations (UN) climate negotiations. As an outcome of the UN COP28 in 2023, 159 countries signed the Declaration on Sustainable Agriculture, Resilient Food Systems and Climate Action, committing to “revisit or orient policies and public support related to agriculture and food systems to promote activities which increase incomes, reduce greenhouse gas emissions, and bolster

BOX 16.1 Evolution of the MIRAGRODEP model

Contributed by **Antoine Bouët**, director of the Centre d'Etudes Prospectives et d'Informations Internationales (CEPII), Paris, and non-resident senior fellow, Markets, Trade, and Institutions Unit, IFPRI; and **David Laborde**, director, Agrifood Economics Division, Food and Agriculture Organization of the United Nations (FAO), Rome.

MIRAGRODEP is a dynamic, multisector, multicountry computable general equilibrium model. Calibrated on the Global Trade Analysis Project (GTAP) database, it can incorporate up to 65 sectors and 160 countries or regions into simulations of the world economy. To keep simulations flexible and relatively rapid, scenario analyses generally include just 25 to 30 sectors and 25 to 30 countries or regions. The model has been adapted and elaborated over time in response to changing trade policy environments and to address new food systems challenges. User groups, such as the African Growth and Development Policy (AGRODEP) Modeling Consortium, have been instrumental in ensuring the model's relevance in responding to real-world policy challenges.

MIRAGRODEP has primarily been used to carry out *ex ante* evaluations of multilateral agreements (the Doha Development Agenda) and regional trade agreements, including various possible trade agreements in Peru, the South Asian Free Trade Area agreement (Bouët et al. 2010), and preferential schemes, such as the European Union's Economic Partnership Agreement with African regional economic communities and the African, Caribbean, and Pacific countries. It has also been used to simulate various trade war scenarios, with and without conclusion of the Doha Development Agenda, to evaluate the impact of a trade war and determine the opportunity cost of not concluding the Agenda (Bouët and Laborde 2017, 2018). The model has also been used to study the overall impact of export restrictions (Laborde et al. 2013) and their impact on food prices (Bouët and Laborde 2010).

Three specific MIRAGRODEP developments stand out. First, the bio-fuels version of the model has made it possible to detail the use of crops for energy generation, such as manufacturing of fuels from sugarcane, cereals such as maize (ethanol), or vegetable oils (biodiesel) (Laborde 2011; Valin et al. 2010). This research measured the impact of interventions to support the development of the biofuels sector on world agricultural markets, showing adverse impacts in terms of rising food prices, increased food insecurity, and deforestation.

Second, connecting MIRAGRODEP with a household module (POVANA) based on survey data for large numbers of households with different sources of income and consumption structures has facilitated measurement of the impacts of global market shocks and trade reforms on poverty, food

security, and nutrition (Laborde et al. 2013). This version was useful for measuring the poverty and food-security impacts of the COVID-19 pandemic (Laborde et al. 2021) and Russia's invasion of Ukraine (Laborde et al. 2023).

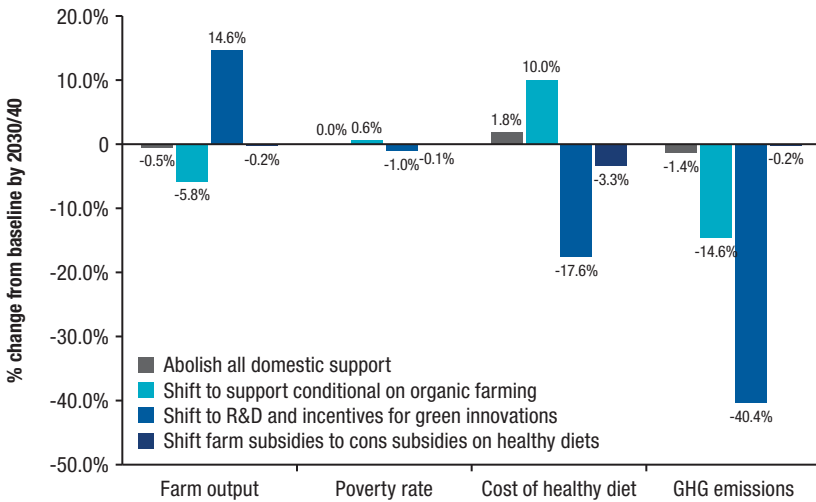
Third, a static version of MIRAGRODEP with little sectoral disaggregation is useful for conducting repeated simulations of a trade reform, each over a very short time period, to evaluate all the possible outcomes of a multilateral trade negotiation. It can also be used to estimate costs and benefits and winners and losers of trade reform measures, helping to identify the likely support and opposition to reform proposals on the negotiation table and, hence, the likelihood of successful negotiations (Bouët and Laborde 2010). The same approach has been used to assess options for negotiated plurilateral agreements (Bouët and Laborde 2021).

resilience, productivity, livelihoods, nutrition, water efficiency and human, animal and ecosystem health while reducing food loss and waste, and ecosystem loss and degradation” (COP28 UAE 2023).

This call for action was influenced by the joint work of IFPRI, the World Bank, and the Food and Agriculture Organization of the United Nations (FAO et al. 2022; Laborde et al. 2021; Gautam et al. 2022; Glauber and Laborde 2022). This work modeled approaches to bringing about transformational reductions in agrifood GHG emissions, while also serving objectives of poverty reduction, better diets, and biodiversity conservation through appropriate reorientation of agricultural support (Figure 16.5). The analyses concluded that many popular approaches—such as providing conditional payments to farmers or eliminating all support—would do little to achieve these goals. For instance, conditioning farm support on the adoption of organic farming practices could lead to sizable reductions in emissions where this support is provided, but such gains would be undercut by increased emissions from land-use change, due to the presumed loss of agricultural productivity associated with existing organic farm practices. The more promising approach to repurposing support that generates the necessary transformational reductions in emissions is their use for development of new technologies that both reduce emissions intensities and raise productivity.

When taking account of the range of goals that policymakers must consider, the selection of policy interventions becomes more complex. Important trade-offs need to be considered when trying to align the objective of reducing emissions from agriculture with economic and social goals, including poverty reduction, food security, income growth, and better diets. Global removal

FIGURE 16.5 Global implications of repurposing agricultural support



Source: Gautam et al. (2022) and Glauber and Laborde (2022).

Note: Results for the policy scenario are reported as a percentage change from the baseline scenario in 2040 for all indicators, except for the poverty rate, which shows changes in percentage points from the baseline in 2040. The fourth scenario for repurposing existing support toward consumer subsidies shows changes relative to the baseline for 2030. GHG = greenhouse gas.

(that is, removal by all countries) of existing domestic support and trade protection has only a marginal impact on poverty reduction, while global environmental conditionality (requirements linking farm payments to adoption of environment-friendly practices) increases poverty, partly because it raises the cost of healthy diets. Policies that both improve productivity and reduce emissions intensities have the greatest potential for making progress on all these goals (Figure 16.5).

Shaping multilateral and regional trade reforms

Over the past 50 years, trade research by IFPRI and others was largely undertaken to inform regional and multilateral trade negotiations that aimed to facilitate trade in agricultural and food commodities for greater market efficiency and stability. This policy agenda changed substantially over time, with IFPRI’s research agenda evolving along with it.

At the beginning of the 1980s, IFPRI researchers developed a global multilateral model to measure the impact of a hypothetical 50 percent across-the-board reduction in tariffs and other trade barriers for 99 commodities

in 17 developed countries belonging to the Organisation for Economic Co-operation and Development (OECD) (Valdés and Zietz 1980). Subsequent analyses using general equilibrium models found that (1) trade protection in OECD countries tends to lower world prices and reduce the volume of exports from both developing and developed exporters, while liberalization increases world prices and expands export volumes; (2) tariff escalation (that is, higher tariffs on more processed goods) in developed countries discourages manufacturing growth in developing countries; and (3) food-importing countries are affected by higher world market prices following food trade liberalization in OECD countries, but the final results depend on the response of their own agriculture sectors to improved price incentives (Diao et al. 2005). These findings highlight the food-price dilemma inherent in trade policy: trade protection harms consumers through higher prices while benefiting food producers, whereas trade liberalization benefits consumers through lower prices but harms food producers.

The Uruguay Round (1986–1994), the largest-ever successful international trade negotiation, sought to convert countries' myriad forms of agricultural border protection—such as export bans, licensing, and quotas—into tariffs. But its success was only partial, and these restrictions continue to be imposed in many countries, as do specific tariffs whose protective impact depends on the product price. As a result, assessing the protective impact of complex agricultural trade policies continues to require laborious price comparison approaches (for example, see Josling and Tangermann 2015). To address the need for this information, the AgIncentives Consortium, coordinated by IFPRI, provides an updated and consistent database with measures of agricultural trade protection and domestic support in a comparative format available for researchers and policymakers (Laborde et al. 2024).

Following the Uruguay Round, negotiations on agricultural trade continued under what became known as the Doha Development Agenda (2001–2015). Research supporting this effort resulted in the development of new modeling techniques that could better account for the welfare impacts of the complex policy proposals put forward in these negotiations (Anderson et al. 2005). Using these techniques, it became clear that potential gains could be very large from a Doha Development Agenda that built on the Uruguay Round reductions in protection (Laborde et al. 2017).

Unfortunately, the negotiating modalities developed for Doha failed to recognize the shift in many developing countries' policies—away from taxation and toward protection of agriculture—and collided head-on with the desire of many developing countries to be able to provide this protection.

Despite much careful analysis of the potential adverse impacts of these policies on the welfare of the poor (Anderson and Martin 2006), strong support for allowing developing countries to maintain or increase agricultural protection remained a key source of tension and contributed to the failure of these negotiations (Grant and Mielke 2011).

Fueling some of the debates, IFPRI's trade analysis in the 1990s and early 2000s focused on the implications of special considerations—in particular, food security—that could justify flexible application of trade rules. The research pointed out that, given varying degrees of food insecurity, the country classifications in general use needed to be refined beyond the standard categories of net food importers and LDCs, as many other developing countries also experience significant food insecurity. In addition, the suggested refinements accounted for net food importers that are also large exporters of non-food products, as in these cases, food import bills tend to be small relative to total export earnings (Díaz-Bonilla 2017).

In addition, IFPRI researchers have assessed the failure of the negotiations for the Doha Round and the WTO Agreement on Agriculture (Brink and Orden 2023; Martin and Mattoo 2011; Orden et al. 2011). Box 16.2 explains some of the controversies and tensions between the WTO multilateral trading system and domestic support for food and agriculture, as well as how IFPRI research helped to outline possible ways out of the impasse.

A specific area of contention relates to public stockholdings (reserves) held for food security reasons. Analyses of the legal and economic aspects, conducted by IFPRI, suggest several ideas that could advance those negotiations (Díaz-Bonilla 2014, 2017; Díaz-Bonilla and Laborde 2015; Glauber and Sinha 2021). This work also found that the existing Agreement on Agriculture already allows developing countries to address most food security issues using public food stockholding, although with some constraints.

The assessments of the failed Doha Round also led to new research on alternative trade arrangements. First, recent IFPRI theoretical research has shown that plurilateral agreements (either exclusive or open variants)⁶ can improve welfare if certain conditions are met (Bouët and Laborde 2021). To be approved by WTO members, plurilateral agreements must either include a most-favored nation (MFN) clause or demonstrate that they improve the welfare of non-members. The IFPRI study concludes that inclusive plurilateral

6 The WTO's plurilateral agreements are defined in Annex 4 to the Marrakesh Agreement. These are negotiated and agreed to by subsets of WTO members and bind only those members who have signed them.

BOX 16.2 WTO challenges to facilitating sustainable food systems transformation

Contributed by **David Orden**, professor of Agricultural and Applied Economics, Virginia Polytechnic Institute and State University, Blacksburg, Virginia.

The 1994 World Trade Organization (WTO) Agreement on Agriculture, negotiated when world markets were severely distorted, commits members to limits on tariffs, export subsidies, and trade-distorting domestic support to agriculture. Export subsidies are now prohibited by the Agreement, and many countries have shifted toward less distorting policies. Despite this progress, further negotiations have proved unsuccessful. Limits (disciplines) on domestic support continue to be contested, with China and India along with the European Union, the United States, and Japan providing the highest amounts of support.

The Agreement divides domestic support policies into two broad categories: those with at most minimal or no distorting effects (the “Green Box”) and those that are distorting. Green Box policies face no limitations, contributing to the growth in this support globally and marking a step toward repurposing subsidies. Most trade-distorting support is subject to limits. Developing countries generally face constraints on such support when it exceeds 10 percent of production value (*de minimis* 10 percent). The Agreement sets the limit for such support by developed countries at 5 percent of the value of production, but instead of being more restrictive, the rules are more flexible, as for most developed countries, the actual limits are based on their sum of historical support. This allows support levels that can exceed 10 percent of output value. Unsurprisingly, this bifurcation in applying *de minimis* rules has been highly contentious. Developing countries other than China, which joined after the Agreement, have leeway on paper to provide, in addition, unlimited input and investment subsidies to foster rural development, but many lack the resources to do so, while developed countries can continue providing support. Amid this controversy, India has argued for exempting market price support from limits when provided in developing countries for food-security public stockholding programs.

Throughout these complex negotiations, IFPRI research has informed negotiations and public debate. During the Doha Round deliberations in the 2000s, IFPRI studies focused on the price support issues and on options to strengthen support for development (Díaz-Bonilla et al. 2002, 2004). Later work provided shadow projections for key countries’ notifications of trade-related measures, which were made available to WTO and the countries involved. These identified policy reforms needed to comply with proposed new commitments and highlighted the severe limits on market price

support, as calculated under the WTO, that developing countries could face (Orden et al. 2011).

A decade later, the domestic support issues remain unresolved, and policies in Canada, China, the European Union, India, Korea, and the United States have been challenged in WTO disputes. Recent research has further disentangled the legal and economic aspects of market price support (Díaz-Bonilla 2017; Glauber and Sinha 2021). Other efforts have tracked the implementation, negotiation, and dispute outcomes and have outlined suggestions for reform, including making the rules more consistent across WTO membership, improving how price support is measured, and modifying the rules to address biosecurity, biodiversity, and climate change mitigation (Brink and Orden 2023; Glauber 2022, 2023). These analyses provide an evidence base to draw upon as WTO members seek to move forward toward the still-relevant objective of reducing protection and market-distorting support under the changed market and policy context that has arisen in intervening years.

agreements are the most promising but difficult to achieve, as the addition of an MFN clause reduces the value of the plurilateral agreement for its members, suggesting there is a trade-off between efficiency and acceptability. Second, the rise of bilateral and regional trade agreements has raised important questions about whether “regionalism is a building block or a stumbling block to multilateralism,” as Bhagwati (1993) characterized the long-standing debate among economists, policymakers, and trade negotiators. But while multilateralism is stalled, there seems to be considerable potential for continued progress with regional agreements such as the AfCFTA (see Chapter 19 on Africa) (Bouët et al. 2022; Maliszewska and Ruta 2020). The AfCFTA agreement entered into force in May 2019 for the 24 countries that had deposited their instruments of ratification by this date. By the end of December 2022, 54 of the 55 African Union member countries had signed the agreement (only Eritrea has not signed). However, while implementation of the AfCFTA agreement formally began in January 2021, it still faces many operational challenges. Among these are overlapping memberships across the various African regional economic communities, which create inconsistencies in the trade rules. In addition, the substantial informal (agricultural) trade characterized by undocumented cross-border transactions poses a challenge to formalizing intra-Africa trade. Infrastructure deficiencies, inadequate transportation networks, and border facilities further hamper full implementation of the AfCFTA agreement.

Policy challenges and research needs

IFPRI's analytical tools have advanced dramatically over the past 50 years. Key aspects of agricultural trade policy have also improved enormously, most notably the trade opening brought about by the Uruguay Round and the shift of developing country policies away from heavy taxation of agriculture. In terms of products traded, a key change has been a shift away from basic commodities toward processed agricultural products, which typically have lower and less volatile protection rates. However, little progress has been made in reducing the use of trade policies to insulate countries' home markets from changes in world prices—with consequent destabilizing impacts on world prices and, frequently, on countries' domestic prices as well.

Unfortunately, the current political winds are shifting views on trade policy away from the widespread consensus that prevailed during most of the past half-century—a consensus that emphasized the benefits of using markets to raise incomes, buttressed by targeted transfer mechanisms to address income distribution and specific interventions to manage externalities and other market failures. Today, a more interventionist, but still poorly defined, set of policy norms is emerging. Moving forward, priorities in trade policy research should include:

Continuing investigation of the actual impacts and trade-offs of policy interventions, taking advantage of the rapid advances in analytical tools for trade policy analysis, including not only trade and trade-related measures but also macroeconomic policies that affect trade, such as exchange-rate policies (Díaz-Bonilla 2015; Martin 2018). This will require analysis of the effects of policy interventions and clear exposition of their impacts—good and bad—including the consequences of using trade policies to insulate farmers and consumers against global shocks or to advance geopolitical strategies.

Deepening analysis of policy effectiveness and policy coherence at the national and international level. Context-specific assessments of the effectiveness of different trade and domestic policy instruments (and their combinations), which constitutes a vast policy research agenda, will be critical (Vos and Martin 2025). But trade policy alone cannot achieve sustainable food systems transformation. This transformation will require alignment of an array of policies that consider complementarities, potential adverse impacts, and international spillovers. As recent research on repurposing of existing support has concluded, win-win-win gains for people, planet, and prosperity are only possible with strong international policy coordination and domestic policy coherence (Gautam et al. 2022).

Increasing attention to the distributional impacts of trade and domestic policy reforms on incomes, livelihoods, natural resource use, and access to food both between and within countries. For example, climate change in poor countries is much more likely to threaten the livelihoods of very poor people. Such distributional consequences will influence the political feasibility of policy reform. With many pressing questions and new tools available to address them, international agrifood trade must be a very active research area in the coming years.

Ramping up analysis of countries' food standards for safety, dietary quality, and sustainability. These regulatory measures are gaining importance as reliance on price incentive policies alone is unlikely to induce timely and pervasive food system change (Papendick and McNamara 2024). Addressing these standards is an added challenge in WTO implementation and negotiations, and for other key international institutions.

For all these priorities, reaching the policymakers whose decisions would benefit from the evidence and analysis provided by research is critical. The gold standard for researchers is to identify key policy questions and engage with decision-makers before conducting research, and to recognize political-economy constraints and, if necessary, try to address them. This implies both continuous analysis of the political economy of trade policy reform (see Resnick and Swinnen 2023) and deep understanding of decision-makers' needs, which are central not only to refining research questions but also to communicating the answers more effectively for greater impact.

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