What do we know about THE FUTURE OF AGRIFOOD SYSTEMS IN LATIN AMERICA AND THE CARIBBEAN?

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Key messages

- **Heterogeneity and inequality:** Latin America and the Caribbean's (LAC) agrifood systems are marked by significant disparities across the region and within countries in production, trade, and access to food, with inequality a central challenge. These disparities not only undermine food security but also hinder the region's ability to develop sustainable and resilient food systems.
- **Sustainability and climate resilience:** The future of LAC's agrifood systems will be shaped by the region's ability to balance agricultural growth with environmental sustainability and the conservation of the stock of natural resources in the long run.
- **Role of policies:** Closing the gap between the rich and poor, between large and small producers, and between urban and rural populations requires targeted action, including investing in rural infrastructure, facilitating access to appropriate technologies, and encouraging regional cooperation.
- **Specialization and governance:** The region's continued specialization in agricultural exports presents both opportunities and challenges. Strengthening food security governance frameworks and promoting inclusive policies will be essential to ensure that the benefits of agricultural growth are shared more equitably and that agrifood systems are resilient in the face of climate change and other global challenges.

- **Foresight research** can help address these challenges, focusing on the consequences of structural transformation, the trade-offs between agricultural productivity and sustainable management of LAC natural resources, the long-term effects of climate change, and how disruptors and drivers of agrifood systems transformation can affect the different LAC regions and countries.

RECENT TRENDS AND CHALLENGES

The Latin America and the Caribbean region (LAC) is highly heterogeneous, marked by stark contrasts in agricultural production, food security, trade, and natural resource distribution. This diversity, both in terms of geography and socioeconomic contexts, presents a range of challenges and opportunities for the region's agrifood systems. To effectively address these, it is crucial to understand the regional trends shaping agriculture and food security and consider the ways in which they affect efforts to promote equitable and sustainable agrifood systems transformation.

The LAC region is a major global player in agricultural production and trade. Several countries, including Brazil and Argentina, are among the world's largest producers and exporters of commodities such as soybeans, coffee, sugar, and beef (Figure 1) (see also Chapter 23). LAC accounts for a larger share of global agricultural production than the European Union or the United States plus Canada. Large amounts of cropland, relatively low domestic consumption, and favorable policies have made LAC the world's largest net food exporter, so the region plays a critical role during global food crises.

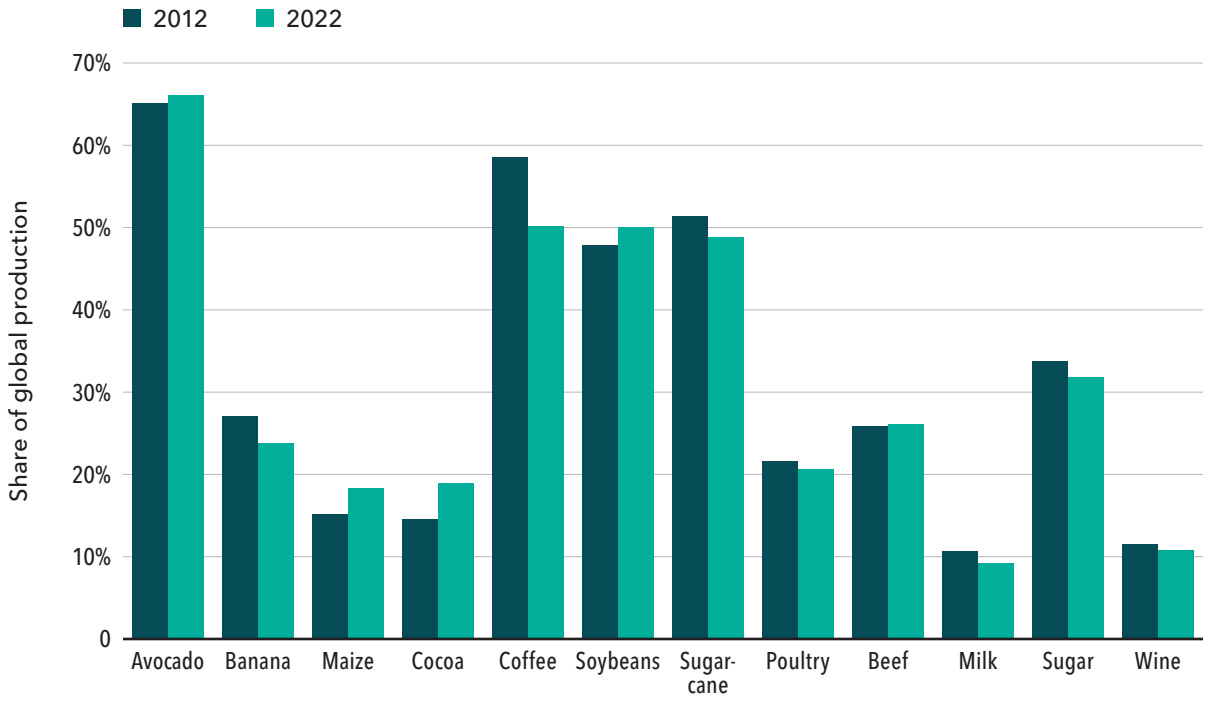
The region boasts a wealth of natural resources, including vast arable lands, forests, and savannahs; freshwater reserves; and biodiversity hotspots, which collectively position it as a key contributor to shaping global weather patterns, mitigating climate change, and improving global food security.

However, this apparent abundance coexists with significant food insecurity, particularly in poorer and more vulnerable populations. For instance, countries such as Haiti and Venezuela experience some of the highest levels of food insecurity in the region, with widespread malnutrition and limited access to sufficient, safe, and nutritious food. In the Andean highlands, highly productive valleys coexist with poverty pockets where people barely meet their daily needs. At the same time, LAC countries face rising rates of obesity and diet-related noncommunicable diseases, particularly in urban populations, creating a paradox of undernutrition and overnutrition within the same populations. This dual burden reflects the deep-rooted inequalities that characterize the region, where access to resources, technology, and markets is unevenly distributed.

Trade is another critical factor shaping LAC's food systems. The region is highly integrated into global markets, with significant portions of its agricultural output destined for export. To enhance resilience, it is essential for LAC to diversify both its sources of production and the destinations for its products. Relying too heavily on a few key markets or commodities leaves the region vulnerable to external shocks, such as fluctuating global commodity prices, trade policy shifts, and global disruptions including political instability, conflicts, and the COVID-19 pandemic. The pandemic, in particular, exposed inefficiencies in food supply chains and underscored the need for diversified, resilient, and equitable agrifood systems capable of weathering future disruptions. By broadening its trade relationships and promoting regional markets, LAC can reduce risks and foster more sustainable food systems.

LAC's rich biodiversity, ecological diversity, and water reserves are vital to its agricultural systems. The Amazon rainforest, for example, is not only a crucial carbon sink but also supports a wide variety of ecosystem services that are essential for sustainable agriculture. Yet environmental degradation, deforestation, and unsustainable farming practices are increasingly threatening these natural resources, leading to concerns about the long-term sustainability of the region's food production systems.

FIGURE 1 **LAC's share of global production, selected commodities, 2012 and 2022**



Source: Authors' elaboration based on FAOSTAT. https://www.fao.org/statistics/en

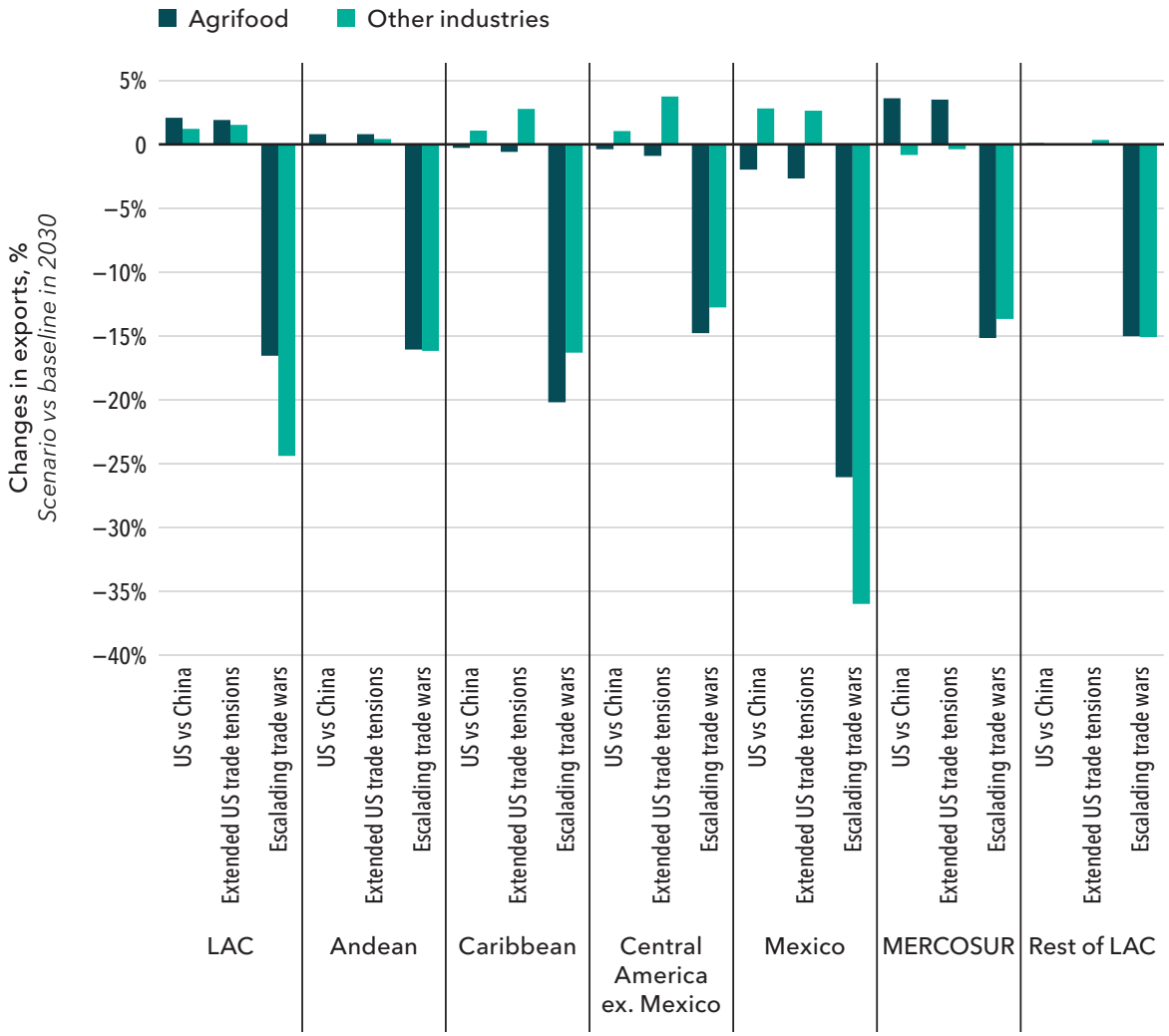
LATEST FORESIGHT RESEARCH

One of the most recent comprehensive studies on the future of food systems in LAC (Morris et al. 2020) examines the complex trade-offs between growing the economy, reducing poverty, feeding the population, and preserving vital ecosystems. Managing these trade-offs will be essential to avoid extremely high costs to the region and the world. While LAC's population is projected to grow modestly – from around 660 million in 2024 to around 730 million by 2050 – demand for food, particularly animal-source food, is expected to rise significantly due to changing diet patterns and demand from international markets. The authors recognize four distinct groups of countries based on size, location, ecological and climatic characteristics, and agricultural economies: (1) Mexico and Central America, (2) the Caribbean States, (3) the Andean Zone, and (4) the Southern Cone (including Brazil). This heterogeneity is also evident in the different types of food systems (traditional, transitional, and integrated) that are present in all countries with varying relative importance. They identify nine drivers of agriculture and food systems transformation (population growth, urbanization, migration, income growth, changing tastes and dietary preferences, productivity growth, emerging technologies, climate change, and policies) and create five scenarios, with different drivers influencing each of them: The Age of Exodus; Healthy Diets Rule; Fragmented World; LAC Agro-Export Powerhouse; and Agri-food 4.0. In light of recent developments, one of the drivers missing from this report is the political instability in several LAC countries, which indirectly influences agricultural policies (Figure 2).

Four insights are drawn from these scenarios: (1) the importance of both supply and demand-side factors; (2) the degree of openness of the global trading system; (3) technology as a double-edged sword that could leave millions behind if some population groups are unable to gain access to it; and (4) the unpredictable effects of climate change. The study proposed a set of 20 actions, some imperative and others more strategic, to address the challenges posed by these scenarios.

Modeling projections from Rosegrant et al. (2024) show that by 2050 total production of selected groups of commodities are expected to grow in LAC between 40 percent (roots and tubers, animal products, and fruits and vegetables)

FIGURE 2 Changes in exports under three trade war scenarios, LAC countries



Source: Morris et al. (2020), based on IFPRI MIRAGRODEP CGE simulations (for background information, see Piñeiro et al. 2020).

and 83 percent (cereals), the world's highest increase. Yields grow between 19.9 percent (fruits and vegetables) and 39.7 percent (pulses), while area grows between 14.4 percent (roots and tubers) and 38.3 percent (cereals). The combination of area and yield growth increases LAC's share in global cereal production by 2050, although this includes production of maize as animal feed and for industrial purposes (Kruseman et al. 2020). A major outcome projected by this modeling scenario is that LAC also reduces the number of hungry people by 2050, although it does not reach the 5 percent target of Sustainable Development Goal (SDG) 2.1 until 2040. Challenges to achieving SDG goals in LAC relate to food affordability rather than availability, reflecting a combination of issues such as income distribution, inflation, widespread rural poverty, and macroeconomic instability in many countries (OECD 2024).

Patrouilleau, Taraborrelli, and Alonso (2022) focus on policies governing future food systems for different LAC countries, highlighting that different models of agricultural development and inequality in natural resources distribution have led to the deterioration of the food security situation for some rural groups, and note that the future of trade agreements in the region is diverse and uncertain. To provide a more adequate analytic framework given the region's heterogeneity, the authors propose that future food systems studies move from the regional to a subregional or country scale. Similar conclusions are drawn by Schneider et al. (2025), who propose a system to track governance of food systems at a regional or subregional scale. Rivera (2023), analyzing policies that affect the transformation of food systems in LAC, proposes that country studies integrate

joint analysis with other policies such as social protection. The Inter-American Development Bank also found divergence between LAC countries in terms of trends in agricultural policies such as producer and consumer price support and carbon-neutral emissions, although it does not provide foresight analysis for these policies (Conroy et al. 2023).

While domestic policies to increase export-oriented food production continue in the short and even medium term, helping governments address for example, food security and poverty, trade-offs between food production and the environment (including keeping the biodiversity stock) are among the most pressing challenges the region faces to realize its comparative advantage in world food markets and to sustain its dominant position in global food markets in the long term.

One of the most pressing challenges facing LAC's agrifood systems is the persistent inequality that defines the region. Inequality in access to resources, opportunities, and outcomes continues to widen the gap between the rich and the poor, between smallholder farmers and large-scale agribusinesses, and between rural and urban populations. This inequality is mirrored in the region's agrifood systems, where the benefits of agricultural growth are not evenly distributed, leaving many vulnerable populations behind.

Closing this gap will require targeted and comprehensive action on multiple fronts. First, there is a need to address structural inequalities that limit access to land, credit, technology, and markets for smallholder farmers and marginalized communities. These groups are often excluded from the benefits of modern agricultural advancements and remain trapped in low-productivity, subsistence farming. Empowering these farmers through inclusive policies, investments in rural infrastructure, and access to financial services can help unlock their potential and drive more equitable growth.

Second, enhancing regional integration and cooperation is critical to overcoming the fragmentation that characterizes LAC's food systems. Although countries in the region share similar challenges — such as climate change, market volatility, and social inequality — their responses to these issues are often disconnected. Greater coordination among governments, regional organizations, and international partners is needed to harmonize policies, share best practices, and foster collaboration on shared priorities, such as climate resilience and sustainable development.

Third, innovation and technological advancement hold the key to transforming the region's agrifood systems. Precision agriculture, digital platforms, and climate-smart technologies have the potential to boost productivity, reduce environmental footprints, and improve farmers' livelihoods. However, these innovations must be accessible to all, not just to the wealthiest and most technologically advanced players. Public and private sector investments in R&D, along with capacity-building programs for smallholder farmers, are essential to ensuring that these technologies benefit the entire region.

KEY GAPS AND OPPORTUNITIES FOR FORESIGHT RESEARCH

Looking ahead, the future of agriculture and food systems in LAC is shaped by several key trends, including the increasing specialization of agricultural production, evolving governance structures, structural transformation due to domestic migration, and the growing importance of sustainability in food systems.

While specialization, driven by comparative advantage and global market demands, will continue to dominate the region's agricultural landscape, there is growing need for diversification. Countries such as Argentina, Brazil, and Mexico will likely continue to be major exporters of food commodities, while smaller countries may develop niche markets for high-value crops (such as Peru for fruits and vegetables). However, all countries may seek to broaden their production base to enhance resilience, reduce dependency on specific markets, and create more inclusive opportunities for smallholder farmers within global value chains.

Governance will play a critical role in shaping the future of LAC's agrifood systems. As the region faces growing pressures from climate change, population growth, and environmental degradation, governments will need to strengthen their regulatory frameworks and policies to promote sustainable agriculture and food security. This will require a shift from short-term, market-driven

solutions to long-term, inclusive strategies that prioritize social equity, environmental protection, and economic resilience.

Structural transformation is rapidly reshaping the rural landscapes in LAC. Rural–urban migration and the reduction in the average size of rural families are leaving communities in certain areas as ghost towns, where farmers only show up to help with their crops during the peak demand for labor. At the same time, this demographic change drives technological change that is not yet fully understood.

Four relevant research questions are proposed for future foresight research in LAC food systems transformation:

1. What consequences will the ongoing structural transformation in LAC (including rural–urban migration) have for food systems (both export and domestic market-oriented)? And how do other policies, such as social protection and agricultural programs, influence these trajectories?

2. What strategies can be implemented to enhance agricultural productivity in LAC while ensuring the sustainable management of natural resources such as land, water, biodiversity, and carbon stocks? And what are the potential benefits to other regions of the rich genetic diversity in the LAC region?

3. How will climate change affect long-term agricultural production in LAC?

4. How will current and future trends and disruptors of major drivers of the agrifood system affect the different LAC regions (Mexico and Central America, the Caribbean States, the Andean Region, and the Southern Cone)?

The future of LAC's food systems hinges on the region's capacity to address its deep-seated inequalities and navigate the growing challenges of climate change and the vulnerability of the region to shocks. Without targeted interventions, persistent disparities in access to resources, technology, and markets will continue to fuel cycles of poverty, food insecurity, and environmental degradation. However, with coordinated efforts from governments, the private sector, and civil society, LAC can transform its agrifood systems into more inclusive, resilient, and sustainable models. By embracing innovation, climate-smart agriculture, and sustainable resource management, the region can both enhance its contribution to global food security and also position itself as a leader in building climate-resilient food systems capable of thriving in the face of future challenges.

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Related chapters on the future of food system drivers and impacts, regional and national perspectives, food commodities, and foresight tools are available in our Table of Contents.

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