



TRANSFORMING AGRICULTURAL SUPPORT FOR A SUSTAINABLE FUTURE: A LATIN AMERICA AND CARIBBEAN VIEW¹

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INTRODUCTION

Addressing the complex challenges facing agricultural and food systems requires a detailed and integrated approach that ensures food security, enhances nutrition, protects environmental sustainability, and supports livelihoods. Governments are crucial in guiding this transformation through a range of policy tools, including regulatory measures, market-based mechanisms, price adjustments that reflect true production costs, and the reassessment of agricultural subsidies. Achieving comprehensive solutions to these challenges across the domains of food security, nutrition, and sustainable development hinges on reforming domestic agricultural support.

HISTORICAL CONTEXT

The Uruguay Round Agreement on Agriculture (AoA) achieved a significant milestone by integrating agriculture into a system of multilateral rules and disciplines with a focus on governing domestic agricultural support. This agreement capped domestic support based on historical levels (with the Amber Box) and encouraged Members to reform support towards minimally production- and trade-distorting measures (with the Green Box) as outlined in Annex 2 (Glauber, 2022). The immediate effect prompted reforms among Members, leading to a decline in average producer support estimates among OECD countries from 36.4 percent of the gross farm receipts in 1986 to 19 percent in 2010 OECD (2023).

To measure support, subsidies considered to have a more than minimally production- and trade-distorting effects (those under the Amber Box) are converted into the Aggregated Measurement of Support (AMS) with the methodology outlined in Annex 4. Product-specific and non-product specific subsidies undergo a “de minimis” test: if the level of support is below a specific share of the current production value, the support is considered as “de minimis” and is excluded from the total AMS calculation (“de minimis” threshold of 5% for developed countries, 10% for developing countries).

Under the AoA, countries reporting support levels exceeding the “de minimis” levels at the beginning of the post-Uruguay Round Reform period (1986-1988, also referred as “base period”) are bound by a domestic support reduction commitment: they committed to bind their total AMS at their level


during the base period and reduced further by a defined percentage (for developed countries, by 20 percent over 6 years; for developing countries, by 13 percent over 10 years – cf. Part IV of Schedule and Article 6.3). Subsidies in countries without domestic support reduction commitments are constrained by “de minimis” levels. Additionally, there are some exemptions to reduction commitments under the Development Box and the Blue Box. As specified in article 6.2, the Development Box exempts developing countries from reduction commitments for direct and indirect support measures promoting agricultural and rural development (including input subsidies). The Blue Box exempts “production limiting programs” from reduction commitments, defined in article 6.5, as programs where the payments are based on fixed areas and yields, or a fixed number of livestock.



CHALLENGES AND STAGNATION

Since 2008, reforms among OECD countries have largely stalled, and support levels have increased due to trade wars and the impact of COVID-19. Large emerging economies like China and India have also witnessed a surge in support levels (Mamun, 2020). Worse, current provisions under the AoA give ample leeway for the provision of trade-distorting support. Costa Rica estimated that “potential expenditures on-trade distorting domestic support” exceed USD 910 billion annually (cf. JOB/AG/243, WTO 2023), with 80% of these expenditures coming from just 10 members.

The AoA has been criticized for including exemptions to reduction commitments (cf. Blue Box, Green Box and Development Box), and failing to create a level playing field across countries and commodities. Notably, countries bound by domestic support reduction commitments (cf. Article 6.3) are afforded the latitude to provide support exceeding the “de minimis” threshold imposed on other members. This disparity not only enables them to provide elevated



levels of support overall but also facilitates the allocation of significantly higher support levels to specific commodities (97% of support provided under article 6.3 was product-specific according to JOB/AG/245). Product-specific support for key commodities (rice, cotton, wheat, corn/maize, and bovine) is concentrated among a few WTO Members, with two or three of these members accounting for between 80 and 90% of product-specific support, depending on the commodity. Worse, the Members providing substantial product-specific support for these commodities are often significant global producers and/or exporters of the respective commodity (JOB/AG/245).

Criticism of support under the “de minimis” thresholds is mounting as it is related to the global value of production, resulting in a notable increase as the global value of production rises (cf. JOB/AG/243). Global de minimis entitlements have indeed surged from around USD 182.4 billion in 2001 to USD 631.8 billion in 2019 (JOB/AG/245).

Finally, green support is increasingly under scrutiny particularly as it constituted more than 75% of total domestic support in 2019, with its distribution heavily concentrated among a select few countries (5 members provided over 90% of total green support according to JOB/AG/253 and JOB/AG/253/Rev.1). Notably, green box support has surged by 117% from 2000 to 2019 (as measured in 2019 US dollars) in contrast to a 50% increase for “de minimis” support, a 63% rise for blue box support, a 40% growth for the current total aggregate measure of support, and a marginal 3% increase for Development Box support.

CURRENT LANDSCAPE AND PROPOSALS

The surge in agriculture support in recent years prompted calls to reduce and harmonize domestic support measures under the AoA. WTO members have submitted proposals aiming at sharply reducing and eliminating AMS entitlements (JOB/AG/216/Rev.1 and JOB/AG/242/Rev.1). Most proposals advocate for the harmonization of current support by introducing restrictions on the blue box (cf. JOB/AG/242/Rev.1 that would limit support levels at 2.5% of the value of production for a given product), the development box (cf. JOB/AG/195), and the green box (cf. JOB/AG/243/Rev.1 and JOB/AG/243/Rev.2 that advocate for a review and an update of the criteria set out in Annex 2, and JOB/AG/242/Rev.1 that propose that the total support within

certain categories under the Green Box should not exceed 5% of the value of production).

Some members also advocate for introducing product-specific caps to prevent concentrating domestic support in a handful of commodities. For instance, JOB/AG/243/Rev.1 and JOB/AG/243/Rev.2 proposed a limit measured as a share of the product's total value of production, which would become more stringent the more the member actively engages in the exports of the given product.

Recently, Costa Rica put forth a new comprehensive approach to domestic support, which involves reducing all trade-distorting support. The “potential expenditure on trade-distorting domestic support” (cf. JOB/AG/243) would be used to determine the cap for each country. The cap would therefore extend beyond the AMS to encompass all forms of trade-distorting domestic support, including support under the Blue Box, Development Box, and de minimis entitlements. The individual caps would then be reduced so that the total cap (the sum of all individual caps) undergoes a minimum 50% reduction by 2035. The reduction would be proportional to the size of the individual cap within the total cap. This approach has gained traction and is supported by the Cairns Group and Ukraine (cf. JOB/AG/243/Rev.1 and JOB/AG/243/Rev.2). This approach would be in line with repurposing as it aims to greatly reduce trade-distorting support, thereby encouraging members to implement green box support.

LOOKING FORWARD

As we look to the future of agricultural support policy, it is important to consider evolving challenges and emerging opportunities. Key considerations should include the integration of climate-smart agricultural practices (Glauber, 2022), promotion of digital technologies for sustainable farming, and the equitable distribution of benefits across diverse economies. Additionally, addressing the unique needs of smallholder farmers, enhancing food system resilience, and fostering international cooperation will be key in shaping a sustainable and inclusive global agricultural landscape.



THE IMPACTS OF AGRICULTURAL SUBSIDIES

Globally, agricultural support amounts to USD 630 billion annually (average value over 2013-2018), half of which is provided through subsidies. Agricultural subsidies have adverse economic repercussions by generating deadweight economic losses and distorting trade, undermining the efficient use of countries' comparative advantages. Worse, agricultural producers in affluent countries tend to receive high levels of subsidies, while those in least-developed countries continue to be taxed, hindering their ability to compete. Additionally, agricultural subsidies not only directly affect food security and nutrition by influencing both the quantity and price of nutritious food, but also indirectly impact farmers' income, thereby potentially impeding their access to food. Finally, agricultural subsidies have environmental repercussions since they influence how much is produced, where it is produced (the environmental outcomes of agricultural production differing among countries due to differences in natural endowments, the productivity of the agricultural sector), what is produced (commodities have varying emission intensities) and how it is produced (production processing having different environmental consequences) (Mamun, 2020). Given the complex and multifaceted effects of agricultural subsidies, the impact of their removal on economic, environmental, and food security outcomes remains an open empirical question.

REVIEW OF PREVIOUS MODELLING ON THE EFFECTS OF REPURPOSING AGRICULTURAL SUBSIDIES

Numerous studies have delved into the repercussions of eliminating agricultural subsidies, with a consistent focus on potential adverse outcomes. Laborde *et al.* (2021) employed the static version of the world Computable General Equilibrium (CGE) model MIRAGRODEP to scrutinize the worldwide


removal of coupled producer payments. Their analysis revealed suggested that such removal would decrease agricultural GHG emissions by 0.6%, but also reduce global farm output by 0.9%. This disparity was attributed to a lesser decline in the production of emission-intensive products such as beef and dairy (declining by 0.7% and 0.6%, respectively) and the relocation of production to regions with higher emission intensities.

Building on this analysis, FAO, UNDP, and UNEP (2021) expanded their investigation to encompass poverty and food security outcomes using the dynamic version of CGE model MIRAGRODEP. Simulating a global removal of all fiscal subsidies, including output, input, and factor of production subsidies, they projected a decrease in agricultural production. Crop production was estimated to decline by 1.6% in 2030, while livestock production would decrease by 0.46%. This reduction would lead to a decline in agricultural land by 0.17% and an increase in forestland by 0.02%. Despite a slight decrease in emissions by 11.3 million tons of CO₂eq by 2030, the elimination of agricultural subsidies would have adverse outcomes on poverty, food security, and nutrition. Farm income would fall by 5.7% in 2030, exacerbating extreme poverty, particularly in developing countries, and increasing undernourishment prevalence.

In a similar way, Gautam *et al.* (2022) examined the impacts of removing subsidies along with all other support across all countries simultaneously using MIRAGRODEP. They forecasted a reduction in crop production by 1.3% and in livestock production by 0.5% by 2040, accompanied by mixed economic outcomes. Despite a slight increase in real work income by 0.05%, farm income would decline significantly by 4.5%. Adverse consequences on poverty and nutrition were also anticipated, with an increase in extreme poverty by 0.01% and a rise in healthy food prices by 1.7%. However, there would be a limited but favorable outcome on climate, with a reduction in emissions by 103 million tons of CO₂eq by 2040.

Guerrero *et al.* (2022) analyzed the potential of agricultural policy reforms to mitigate the adverse effects of climate change on agriculture. Simulating an elimination of coupled support policies with the partial equilibrium model GLOBIOM, they found a reduction in crop and livestock production by 0.5% and 0.4%, respectively, in 2050. This policy scenario would also decrease cumulative AFOLU GHG emissions by 124 Mt CO₂eq over 2010-2050. However, it would lead to an increase in the prevalence of undernourishment.

Springmann and Freund (2022) explored policy scenarios aligning agricultural subsidies with health, climate change, and economic objectives using the CGE model MAGNET. Their analysis highlighted the potential economic and



environmental benefits of removing producer payments, with a 0.3% reduction in total food-related emissions. Nonetheless, adverse health consequences were projected due to decreased agricultural production, particularly for fruits, vegetables, and grains, leading to a decline in total energy intake and consumption of fruits and vegetables and an increase in diet-related mortality.

Cao *et al.* (2023) investigated the relationship between global agricultural and food support reforms, agricultural emissions, and food security using the CGE model GTEM. They found that removing agricultural subsidies worldwide would have some economic benefits, particularly in high-income countries, but adverse impacts on food security, resulting from a decline in crop and livestock productions, increased food consumer prices, and decreased food consumption. Nevertheless, removing agricultural subsidies would have a positive environmental outcome with a reduction in agricultural emissions by 1.6% in 2050, driven mostly by a decline in emissions from livestock production.

Finally, Valin *et al.* (2023) examined various global policy reform scenarios that could reduce GHG emissions from agriculture by redirecting government budgetary transfers to the agricultural sector. Their findings indicated a decline in agricultural emissions and agricultural land but negative impacts on food security and livelihoods. Repurposing agricultural subsidies thus entails significant adverse trade-offs, although it may have positive environmental outcomes.

Results from the literature suggest that repurposing agricultural subsidies toward sustainable intensification and innovation could comprehensively address the multifaceted challenges facing global food systems. Gautam *et al.* (2022) modeled repurposing current budgetary support towards higher public spending on R&D and incentives for green innovations, yielding significant positive outcomes for the environment, poverty reduction, nutrition, and the overall economy. Valin *et al.* (2023) examined several repurposing scenarios that would redirect parts of the budgetary support towards innovation and productivity growth or investments targeting emission abatement technologies, finding that targeted investments could effectively decrease emissions without negatively impacting food provision



and farm production. However, concerted international action is crucial for maximizing the benefits of repurposing agricultural subsidies, with coordinated approaches yielding more equitable outcomes across regions and sectors.

FACTORS ACCOUNTING FOR THE DIFFERENT RESULTS

Although the trade-offs highlighted in the various analyses are consistent, the magnitude of the challenges differs. This is partly due to differences in the modelling approaches. Guerrero *et al.* (2022) use the partial equilibrium model GLOBIOM, while the other studies use a CGE model. Some assessments are done with the static version of the model (Valin *et al.*, 2023 and Laborde *et al.*, 2021), and different time horizons are considered among dynamic analyses. Different modeling approaches may lead to different outcomes due to variations in the adjustment mechanisms implemented by each approach.

Furthermore, different support databases are used. While some studies rely on the GTAP database that embeds information on subsidy rates, other modeling work has adjusted those rates to align with alternative data sources. For instance, Valin, *et al* (2023) use the OECD PSE database to precisely model subsidies. This results in differences in the total number of subsidies removed. With GTAP, the total amount of positive transfers to production factors and output in the agricultural sector is only USD 156 billion in 2017, while it amounts to USD 232 billion with the OECD PSE database.

Also, different studies may have varying scopes of subsidies being removed. For example, in the study conducted by Guerrero *et al.* in 2020, only commodity-specific transfers (other than market price support) are suppressed. Input payments are therefore not included in the suppression, resulting in a total removal of USD 28 billion instead of USD 150 billion for total coupled support. Cao *et al.* (2023) removed only domestic support for the agricultural sector and did not include subsidies provided to food manufacturing.

Finally, different assumption made in the repurposing scenarios of these studies have a major impact on the results. For instance, Cao *et al* (2023) assume land use is fixed between the baseline and the reform scenario in each region (no variations in deforestation due to the repurposing scenario).



IMPACTS OF REALLOCATING AGRICULTURAL SUPPORT: POLICY SCENARIOS

This chapter employs MIRAGRODEP to analyse the impact of reducing and removing trade-distorting domestic support within the framework of the WTO's agricultural negotiations. We develop two policy scenarios to see the effects of eliminating distortions both at the national and global levels on food security, nutrition, and climate outcomes.

Baseline

The baseline was developed using projections from the latest United Nations demographic data (UNDESA, 2022) and the 2023 International Monetary Fund economic growth estimates (IMF, 2023). This approach updates the 2017 GTAP base year values to reflect the policy scenario years (2024–2028) and estimates outcomes up to 2035.

Policy Scenarios Implemented

Scenario 1: Harmonization of Agricultural Support Within National Borders. This scenario aims to create a level playing field across products, as current agricultural support is highly biased towards certain commodities. Support is reallocated such that all commodities in each country receive the same level of support equal to the average rate in each specific country.

Scenario 2: Harmonization of Agricultural Support Across National Borders. This scenario addresses global inequality by leveling the playing field both across products and countries. In this bold scenario, countries with historically higher levels of agricultural support relative to the global average make financial transfers to those with lower support levels. To enhance political feasibility, countries previously below the global average in support do not contribute to these transfers, while non-contributing countries with higher support levels provide financial transfers to consumers².

² Note that China, Russia, and Mexico, would not be required to contribute to these financial transfers.

METHOD

The MIRAGRODEP model is a sophisticated multi-region, multisector computable general equilibrium (CGE) model, building on the MIRAGE model, to analyse global economic and trade relations. It captures international trade in goods, services, and capital flows, providing a detailed and comprehensive representation of economic interactions. The model includes environmental considerations and can assess the impact of various economic shocks on households, such as income, purchasing power, poverty, food security, and nutrition. It utilizes a recursive dynamic framework for capital accumulation, integrating GTAP11 data, which contains world macroeconomic accounts and trade flows for 141 countries and 65 sectors for the year 2017.

On the supply side, the model uses a Leontief function for production, with intermediate inputs modelled through a constant elasticity of substitution (CES) function. The demand side features a representative agent with a linear expenditure system-constant elasticity of substitution (LES-CES) utility function, capturing income elasticities of demand for goods. This setup allows the model to simulate trade patterns accurately and evaluate the effects of economic changes on production, consumption, and income distribution (Bouet *et al*, 2021).

MIRAGRODEP operates under four main assumptions regarding factor markets, private accounts, external accounts, and government accounts, ensuring consistent modelling of economic behaviour. The model includes poverty analysis using the POVANA household model and evaluates land use changes and greenhouse gas emissions through agroecological zones and constant elasticity of transformation (CET) specifications.

Furthermore, the model incorporates farm policies through ad-valorem subsidies and detailed agricultural support data from the Ag-Incentives database, addressing nearly 90% of global agricultural production. This integration allows for a comprehensive analysis of food system policies and their impact on economic and environmental outcomes.



RESULTS

The analysis of agricultural subsidies in Latin America and the Caribbean (LAC) reveals significant disparities across subregions, which are likely to persist and even worsen by 2035 without targeted policy reforms. Under current projections, the level of subsidies in Mexico is expected to reach 12% of the value of agricultural production by 2035, while in Central America, it would represent less than 0.6%.

Harmonizing subsidies within national borders does little to create a level playing field between countries, as it maintains the existing disparities in subsidy levels within each region. In contrast, harmonizing subsidies across national borders would equalize subsidy levels across regions, although slight variations would remain due to differences in the value of agricultural production.

Under a scenario where subsidies are harmonized across national borders, financial transfers would primarily flow from high-subsidy regions such as the European Union and the United States to regions with strong domestic demand, like Sub-Saharan Africa, the Rest of Asia³, and Rest of Southeast Asia⁴. While LAC would also receive net transfers, the extent would be more limited. It is important to note that in order to enhance the political viability of the policy scenario, countries that previously had a level of support lower than the global average are never contributing to the global financial transfers towards countries with a lower level of agricultural support, meaning only countries with historically higher levels of agricultural support compared to the global average are contributing to the global financial transfer.

Macro-Economic Outcomes

The findings indicate that global GDP would see a more substantial increase under a scenario of total harmonization of agricultural subsidies across national borders, driven by efficiency gains. Within LAC, GDP growth is particularly pronounced in subregions that receive financial transfers, specifically the Caribbean, Southern Cone, and Central America.

³ ARE - BGD - BHR - IRN - IRQ - ISR - JOR - KWT - LBN - LKA - NPL - OMN - PAK - PSE - QAT - SAU - SYR - TUR - XSA - XWS

⁴ IDN - KHM - LAO - MNG - MYS - PHL - THA - VNM - XEA - XSE

Moreover, the harmonization of subsidies within national borders would lead to a decrease in world prices, reflecting enhanced efficiency, especially for fruits and vegetables (-3.7%), grains (-1.5%), and coffee and tea (-1.5%). Conversely, when subsidies are harmonized across national borders, the impact on world prices becomes more varied, occasionally leading to slight increases for certain commodities, such as meat. These policy scenarios would also reorient subsidies and production towards regions with robust domestic demand, such as Africa, thereby reshaping the global agricultural landscape.

Social Outcomes

At the global level, the homogenization of subsidies across national borders yields significant social benefits - prevalence of extreme poverty, undernourishment, and unaffordability of healthy diets- all fall significantly (0.55, 0.47, 0.66 percentage point from the baseline respectively).

For the LAC region, there is a significant reduction in these social indicators in subregions receiving financial transfers. Under the initial baseline, the Caribbean, Southern Cone, and Central America experience marked improvements, in contrast, the Andean Region sees minimal changes in the prevalence of extreme poverty, undernourishment, and unaffordability of healthy diets. This limited impact is primarily due to the region receiving little financial transfer, with changes in social indicators driven mainly by shifts in agricultural production among sectors with varying labor intensities.

In Mexico, the harmonization of subsidies within national borders leads to a substantial decrease in both the prevalence of undernourishment and the unaffordability of healthy diets. This improvement is attributed to reduced import prices of agricultural commodities, resulting in a greater increase in import volumes relative to their value. Specifically, the value of imports for fruits, vegetables, and grains declines while their volumes rise. However, under the scenario of cross-border subsidy harmonization, agricultural production in Mexico experiences a significant decline due to a steep reduction in agricultural subsidies. Simultaneously, the world prices of agricultural commodities do not decrease proportionately, leading to an overall increase in the value of imports. The social impact in Mexico is somewhat mitigated by the country's exclusion from contributing to international financial transfers, with the reduction in subsidies compensated by non-targeted income transfers to consumers.



Environmental Outcomes

The policy scenarios under consideration reveal a global increase in agricultural emissions. However, this increase is relatively modest and varies across countries. Importantly, these scenarios do not account for technological advancements; the repurposing of agricultural support is neither conditional nor reallocated to extension services or research and development (R&D). The observed increase in agricultural emissions suggests a need for further exploration of conditional repurposing of agricultural support.

Sectoral Outcomes

Scenario 1: Harmonization of subsidies within national borders

The harmonization of agricultural subsidies within national borders presents significant impacts on the trade dynamics of Latin America and the Caribbean, particularly in the meat, fruits and vegetables, and coffee and tea sectors.

Under this policy scenario, meat exports from Latin America and the Caribbean are projected to decline significantly by 3.4% by 2035. This reduction is largely driven by a 3.0% decrease in exports from the Southern Cone, a region that faces a 0.4% decrease in production due to reduced subsidy levels. As a result, imports in the Southern Cone are expected to rise by 2.8%, and imports from Mexico are projected to increase by 3.1%, driven by a 0.6% decrease in domestic production. Collectively, these changes would lead to a 2.5% increase in meat imports at the regional level in Latin America and the Caribbean.

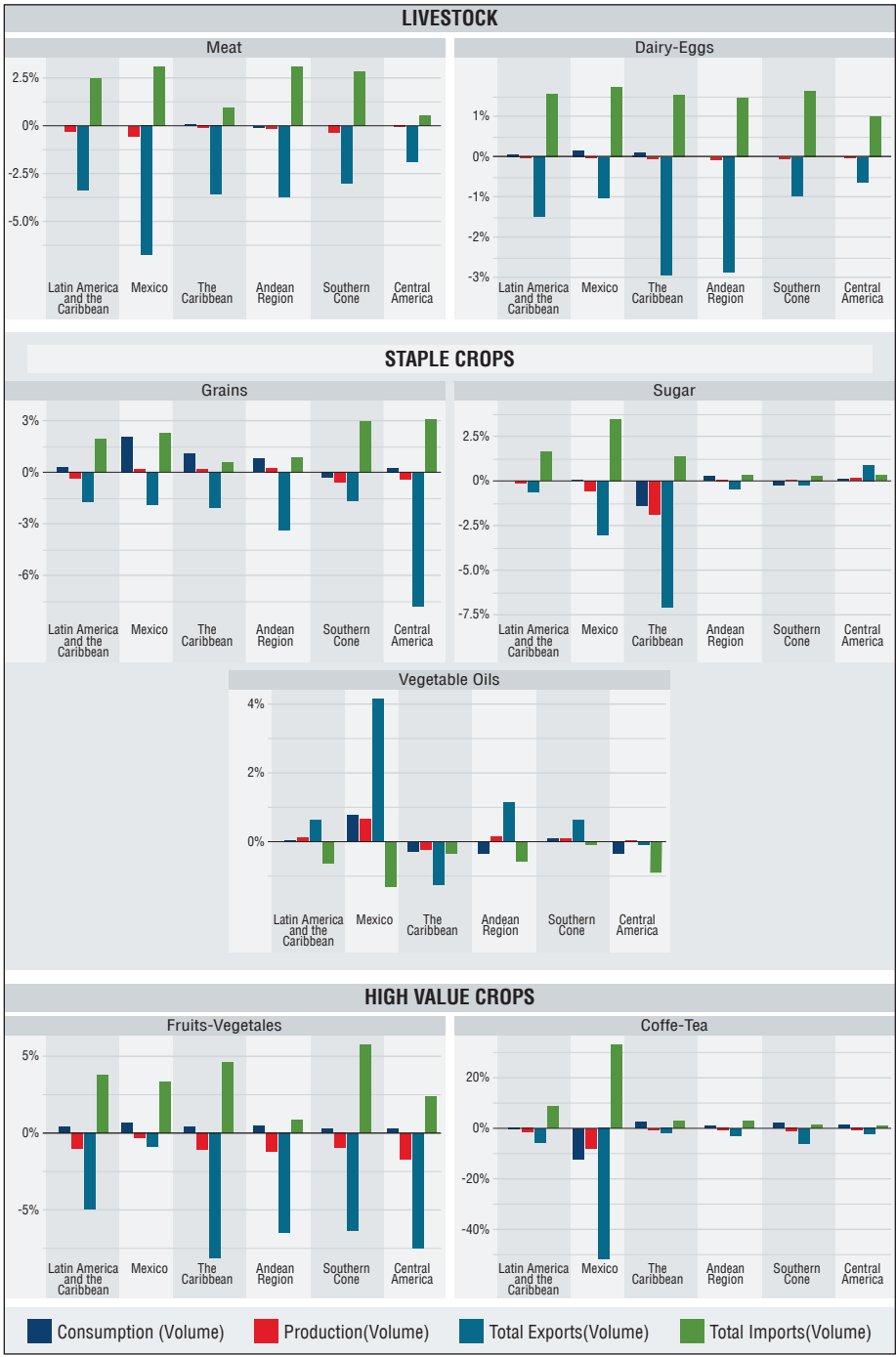
The exports of fruits and vegetables from Latin America and the Caribbean are also expected to decrease substantially, with a projected decline of 4.9%. This decrease can be attributed to a combination of increased domestic consumption (+0.4%) and decreased production (-1%). Notably, the Southern Cone and Andean Region would experience significant reductions in exports, by 6.3% and 6.5%, respectively. These declines result from the interplay between reduced production and increased consumption in these subregions. Although the harmonization of subsidies within national borders leads to an increase in subsidies for fruits and vegetables in these areas, the level of support remains lower than that of competing trade partners, leading to an uneven playing field.

Similarly, coffee and tea exports from Latin America and the Caribbean are expected to decline markedly by 5.7% under the harmonization scenario.

The Southern Cone and Andean Region are likely to see significant reductions in exports, with decreases of 5.9% and 3.0%, respectively, driven by a combination of increased consumption and decreased production. Concurrently, imports of coffee and tea in the region are projected to rise substantially by 8.9%, largely due to a more than 30% increase in imports from Mexico. In Mexico, the coffee and tea sector initially benefit from high levels of subsidies under the baseline scenario in 2035; however, these subsidies are significantly reduced under the harmonization scenario, leading to an 8% decline in coffee and tea production in the country.



FIGURE 6.1 ▶ Impact on production, consumption, exports and imports by sector by 2035. % change with respect to the baseline



Source: Authors' calculations based on Miragrodep model.

These findings underscore the critical trade-offs associated with the harmonization of agricultural subsidies within national borders, highlighting the potential for significant shifts in trade patterns, production, and consumption across key agricultural sectors in Latin America and the Caribbean.

Scenario 2: Harmonization of subsidies across national borders

Under a harmonization of subsidies across national borders, several key agricultural exports from Latin America and the Caribbean are projected to increase, driven by significant changes in subsidy levels, particularly in the Southern Cone.

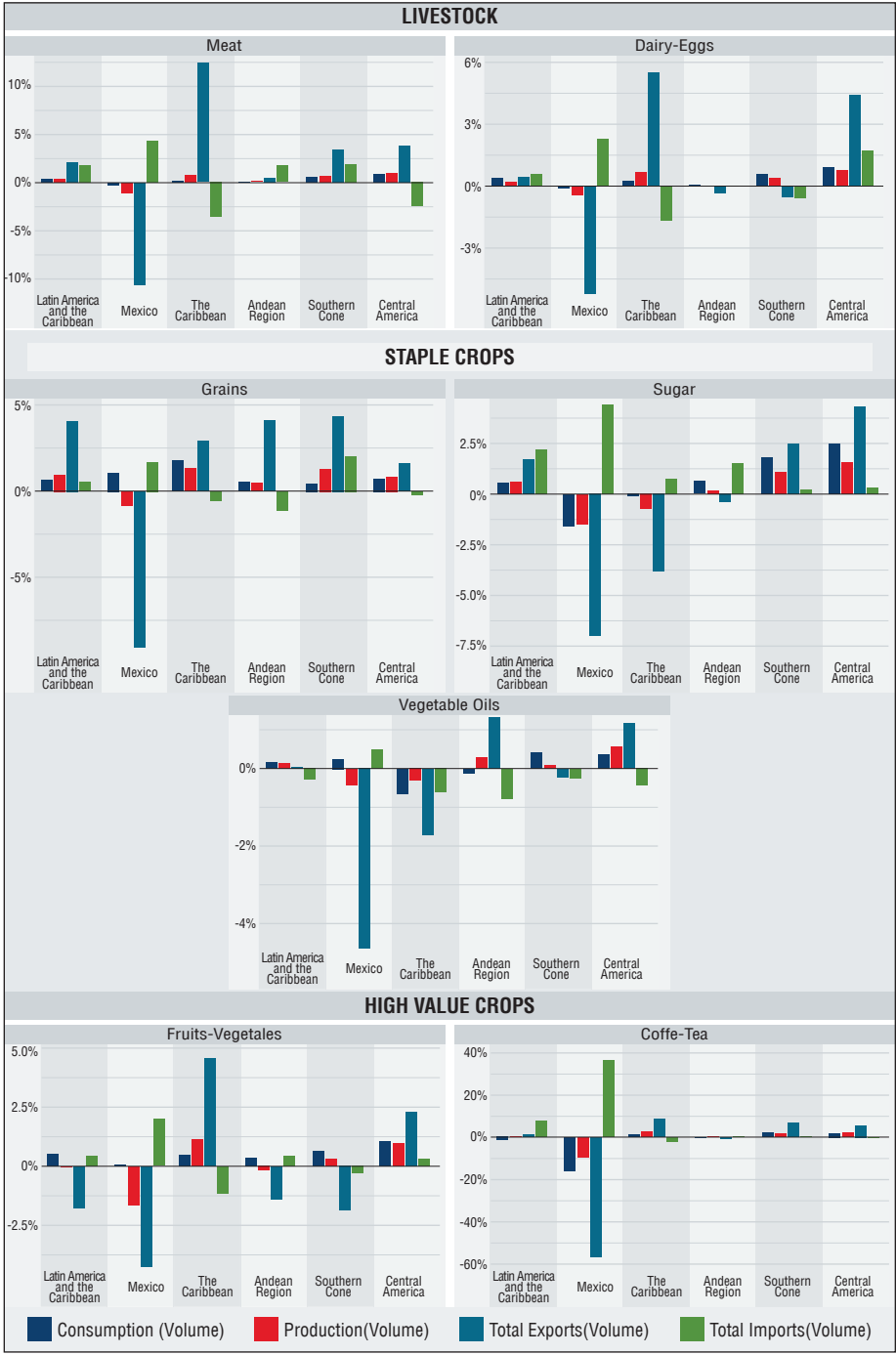
The harmonization of subsidies across national borders would lead to a 2.1% increase in meat exports from Latin America and the Caribbean by 2035. This growth is primarily driven by a 3.4% increase in exports from the Southern Cone, where production is expected to rise by 0.6% due to a substantial increase in subsidies, which would more than triple.

Grain exports from the region would see an even more pronounced increase of 4.1%, again largely attributed to the Southern Cone, where exports are projected to grow by 4.4%. The significant rise in subsidy levels in the Southern Cone, more than tripling, would boost production, leading to this increase in grain exports.

In contrast to the scenario of harmonizing subsidies within national borders, sugar exports from Latin America and the Caribbean would increase by 1.1% under the policy of harmonizing subsidies across national borders. This increase would be driven by higher exports from both the Southern Cone and Central America, with growth rates of 2.5% and 4.3%, respectively. These increases are due to a significant rise in sugar production in these subregions, following a more than quadruple increase in subsidies.

Under this policy scenario, coffee and tea consumption in the region would decrease significantly by 1.5%, primarily due to a sharp decline in consumption in Mexico (-16%). Despite this reduction in consumption, coffee and tea exports from Latin America and the Caribbean are projected to rise by 1.5%. This growth is driven by substantial increases in exports from the Southern Cone (+6.9%) and Central America (+5.3%), both of which would experience significant production increases due to higher subsidy levels.

FIGURE 6.2 ▶ Impact on production, consumption, exports and imports by sector by 2035. % change with respect to the baseline



Source: Authors' calculations based on Miragrodep model.

These results highlight the potential for increased agricultural exports in Latin America and the Caribbean under a scenario of subsidy harmonization across national borders, particularly for meat, grains, sugar, and coffee and tea.

The repurposing of domestic support has a clear impact on reducing the cost of current and healthier diets. Phasing out resources from staple foods may lead to modest reductions in undernourishment, underscoring the importance of carefully selecting the “right” products for support. Technology transfer, innovation, and financial resources are crucial for fostering adoption, particularly in the Global South. The elimination of existing policies presents a complex array of consequences, making the repurposing of policies essential, with a focus on sustainable intensification and prioritizing the production of healthy and environmentally friendly products. Governments face the challenge of balancing these opportunities to ensure a sustainable and equitable global agricultural landscape.

GLOBAL IMPLICATIONS AND LESSONS

The global implications of climate change necessitate new strategies, recognizing that policy reform is a country-level process with environmental impacts extending beyond national boundaries. Current support should be better targeted to reduce the cost of nutritious food, increase sustainability, and make trade freer while balancing farmers’ incomes. Our modeling exercise reveals that removing existing distortions alone will not solve the problems, emphasizing the importance of investing in productivity gains and addressing productivity gaps.

Analyzing the impacts of scenarios on production, extreme poverty, undernourishment, and the affordability of healthy diets provides valuable insights. Scenarios with cross-border support redistribution show substantial improvements for low- and middle-income countries, indicating the potential benefits of a more equitable global distribution of agricultural support.



WHAT CAN BE DONE

Repurposing domestic support has a discernible impact on reducing the cost of current and healthier diets. Phasing out resources from staple foods may modestly impact undernourishment, highlighting the need for careful consideration in selecting the most appropriate products. Technology transfer, innovation, and financial resources will prove indispensable in facilitating adoption, particularly in the Global South. The removal of existing policies presents a complex landscape of consequences, making repurposing policies imperative, with a particular emphasis on sustainable intensification and prioritizing the production of healthy and environmentally friendly products. Governments must navigate the challenges and opportunities presented by repurposing policies, ensuring a balanced and sustainable global agricultural landscape.

CONCLUSION

Achieving a sustainable and equitable global food system requires a coordinated effort from the international community. Multilateralism, particularly through the World Trade Organization (WTO), plays a crucial role in guiding these efforts towards a sustainable future. Current debates and proposals within the WTO highlight the necessity for collaborative and innovative solutions to tackle the multifaceted challenges facing global agricultural and food systems.

A key step in this process is the reduction and removal of trade-distorting domestic support. Analyzing various scenarios, including support redistribution and environmental impacts, reveals significant potential for positive outcomes, especially for low- and middle-income countries. However, the complexity of global agriculture demands careful consideration of unintended consequences and a comprehensive approach that emphasizes sustainability, resilience, and inclusivity.

As nations navigate the landscape of policy reforms, it is vital to balance the interests of diverse economies, accounting for the unique needs of smallholder farmers and fostering international cooperation. Reallocating financial resources and making targeted investments in sustainable practices are essential strategies for achieving a fairer and more resilient global food system.

Multilateralism provides the framework for coordinating these efforts, ensuring that policy reforms transcend national boundaries and address global challenges collaboratively. The WTO serves as a central platform for international dialogue and negotiation, facilitating discussions and fostering consensus on critical issues such as the reduction of trade-distorting domestic support.

In summary, the path forward involves not only repurposing domestic support but also embracing a holistic and forward-looking approach that integrates environmental sustainability, technology transfer, and social inclusivity. By prioritizing these principles and leveraging the mechanisms of multilateralism, nations can collectively strive towards a sustainable and equitable global food system that meets current needs without compromising the ability of future generations to meet theirs.

REFERENCES

- Bouët, Antoine; Laborde Debutquet, David; and Piñeiro, Valeria. 2021. MIRAGRODEP, an analytical model adapted to economic and trade reforms. In *The road to the WTO twelfth Ministerial Conference: A Latin American and Caribbean perspective*, eds. Valeria Piñeiro, Adriana Campos, and Martín Piñeiro. Pp. 169-179. San Jose, Costa Rica: Instituto Interamericano de Cooperación para la Agricultura (IICA); and International Food Research Institute (IFPRI). <https://doi.org/10.2499/p15738coll2.134842>
- Cao, L., K. Burns and J. Greenville (2023), *Reforming agricultural markets to support emissions reductions*, <https://doi.org/10.25814/ZJG3-0B14>
- FAO, UNDP and UNEP (2021), *A multi-billion-dollar opportunity – Repurposing agricultural support to transform food systems*, FAO, UNDP, and UNEP, <https://doi.org/10.4060/cb6562en>
- FAO, IFAD, UNICEF, WFP and WHO. 2022. *The State of Food Security and Nutrition in the World 2022. Repurposing food and agricultural policies to make healthy diets more affordable*. Rome, FAO.
- Gautam, M., Laborde, D., Mamun, A., Martin, W., Piñeiro, V. & Vos, R. 2022. Washington, DC, World Bank. <http://hdl.handle.net/10986/36875>
- Joseph W. Glauber, “Climate-Smart Agriculture and the World Trade Organization,” *American Enterprise Institute*, January 3, 2022, <https://www.aei.org/research-products/report/climate-smart-agriculture-and-the-world-trade-organization>
- Glauber, Joseph. 2022. *Rethinking trade rules to achieve a more climate resilient agriculture*. IFPRI Discussion Paper 2164. Washington, D.C.: International Food Policy Research Institute (IFPRI). <https://doi.org/10.2499/p15738coll2.136542>
- Guerrero, S., Henderson, B., Valin, H., Janssens, C., Havlik, P., & Palazzo, A. (2022, June). *The impacts of agricultural trade and support policy reform on climate change adaptation and environmental performance: A model-based analysis* (Tech. Rep. Nos.

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- OECD Food, Agriculture and Fisheries Papers, No. 180). Paris: OECD Publishing.
- Retrieved 2022-10-11, from https://www.oecd-ilibrary.org/agriculture-and-food/the-impacts-of-agricultural-trade-and-support-policy-reform-on-climate-change-adaptation-and-environmental-performance_520dd70d-en doi: 10.1787/520dd70d-en - GLOBIOM (Global Biosphere Management Model).
- Laborde, D. et al. (2021), "Agricultural subsidies and global greenhouse gas emissions", Nature Communications, Vol. 12, p. 2601, <https://doi.org/10.1038/s41467-021-22703-1>
- Mamun, Abdullah; Martin, Will; and Tokgoz, Simla. 2021. Reforming agricultural support for improved environmental outcomes. Applied Economic Perspectives and Policy 43(4): 1520-1549. <https://doi.org/10.1002/aep.13141>
- OECD (2022), Declaration on Transformative Solutions for Sustainable Agriculture and Food Systems, <https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0483>
- OECD (2023), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database).
- Springmann, M. and F. Freund (2022), "Options for reforming agricultural subsidies from health, climate, and economic perspectives", Nature Communications, Vol. 13/Article number: 82, <https://doi.org/10.1038/s41467-021-27645-2>
- Valin, H., B. Henderson and J. Lankoski (2023), "Reorienting budgetary support to agriculture for climate change mitigation: A modelling analysis", OECD Food, Agriculture and Fisheries Papers, No. 206, OECD Publishing, Paris, <https://doi.org/10.1787/28248b95-en>
- World Trade Organization. (2021). Article 6.2 of the agreement on agriculture (AoA) in perspective. Submission by Brazil (JOB/AG/195).
- World Trade Organization. (2023). Agreement on agriculture (aoa): the amber and blue box, product-specific concentrations of support. Communication by the Cairns Group (JOB/AG/245).
- World Trade Organization. (2023). Analysis of trends in green box support. Communication by the Cairns Group to the Committee on Agriculture (JOB/AG/253).
- World Trade Organization. (2023). Analysis of trends in green box support. Revision. Communication by the Cairns Group to the Committee on Agriculture (JOB/AG/253/Rev.1).
- World Trade Organization. (2023). Domestic Support. Revision. Communication by the African Group and Pakistan to the Committee on Agriculture (JOB/AG/242/Rev.1).
- World Trade Organization. (2023). Elimination of AMS beyond de minimis: reducing distortions in global agricultural trade. (JOB/AG/216/Rev.1).
- World Trade Organization. (2023). Enhancing food security through the reform in agriculture and the use of current flexibilities. Communication by Brazil to the Committee on Agriculture (JOB/AG/254).
- World Trade Organization. (2023). Towards a strengthened negotiation framework in the domestic support pillar building a comprehensive approach to negotiations on domestic support. Communication by Costa Rica to the Committee on Agriculture (JOB/AG/243).
- World Trade Organization. (2023). Towards a strengthened negotiation framework in the domestic support pillar building a comprehensive approach to negotiations on domestic support. Revision. Communication by the Cairns Group to the Committee on Agriculture (JOB/AG/243/Rev.1).
- World Trade Organization. (2024). Towards a strengthened negotiation framework in the domestic support pillar building a comprehensive approach to negotiations on domestic support. Revision. Communication by the Cairns Group and Ukraine to the Committee on Agriculture (JOB/AG/243/Rev.2).