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**IFPRI Discussion Paper 02379**

November 2025

## **Rewriting the Rules**

### **How U.S. Tariff Paths Could Reshape Global Trade**

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## ABSTRACT

This paper examines how the recent shift in United States tariff policy could reshape global agricultural trade and influence the stability of food systems worldwide. Using the MIRAGRODEP computable general equilibrium model, the analysis evaluates three policy scenarios that reflect the current trajectory of trade tensions: the North America scenario, the Liberation Day tariff package, and a renewed U.S.–China tariff confrontation. The scenario results reveal distinct lessons. The North America scenario shows that deeply integrated regional markets are extremely sensitive to tariff shocks, and even moderate tariff increases within North America lead to significant disruptions in agricultural trade and measurable welfare losses for Canada and Mexico. The Liberation Day scenario demonstrates that unilateral tariff escalation reduces U.S. competitiveness across a wide range of agricultural products and triggers substantial trade diversion toward countries with preferential access, particularly Mexico, which becomes the primary beneficiary of redirected U.S. import demand. The China scenario highlights that renewed U.S.–China tariff escalation produces severe distortions, especially in oilseed markets, as prohibitive tariffs drive China to shift its purchases almost entirely toward South American suppliers, sharply lowering U.S. export prices and fragmenting global supply chains. Across all scenarios, global agricultural trade contracts, supply chains become less efficient, and food systems become more exposed to climate and geopolitical shocks. These findings underscore the need for predictable and coordinated trade policies that limit uncertainty rather than amplify it. Strengthening trade diversification, investing in supply chain resilience, and aligning economic and geopolitical objectives remain essential for safeguarding global food security in an increasingly unstable trade environment.

**Keywords:** Trade, food security, food prices, tariffs

## **ACKNOWLEDGEMENT**

This work is part of the CGIAR Science Program on Policy Innovations. We thank all funders who supported this research through their contributions to the CGIAR Trust Fund.

## 1. INTRODUCTION

While the broader political and economic implications of recent U.S. trade measures have captured much of the public attention, their potential to disrupt global agricultural trade deserves equal consideration. Agriculture plays a central role in international supply chains and is closely linked to both economic development and food security. It has also historically been highly vulnerable to policy shifts, retaliatory tariffs, and changes in market access. As seen during the first Trump administration, trade restrictions can quickly alter trade flows, create price uncertainty, and inject long-term instability into global food systems. In this context, a critical question arises: How might renewed U.S. trade tariffs reshape global agricultural trade patterns and price dynamics? This article examines selected scenarios proposed in the context of developments throughout 2025, focusing on their potential implications for global agricultural trade. These scenarios serve as illustrative cases to explore how agricultural trade patterns may be reconfigured in response to emerging geopolitical and policy shifts.

To analyze these dynamics, we employ the MIRAGRODEP computable general equilibrium (CGE) model, a well-established tool for assessing the economy-wide effects of trade policies. The model captures both macroeconomic outcomes and sector-specific adjustments by simulating tariff shocks under alternative scenarios, with and without retaliation by trading partners. This allows us to quantify changes in GDP, welfare, trade flows, and terms of trade across countries and regions, while also identifying distributional effects in sensitive agrifood sectors such as oilseeds, fruits and vegetables, and meat.

The results reveal several important findings. First, the United States consistently experiences declines in GDP and trade volumes, underscoring the self-damaging nature of broad, unilateral tariff hikes. Second, North American partners such as Mexico and Canada are highly exposed, with concentrated losses under scenarios where tariffs are applied regionally, while they benefit modestly when exempted, as under the “Liberation Day” policy. Third, global agricultural markets face significant disruption under scenarios of U.S.–China escalation, particularly in soybeans and oilseeds, where trade diversion and price realignment reverberate worldwide. Finally, secondary exporters in Latin America and Sub-Saharan Africa may capture short-term gains, but these benefits are tempered by broader inefficiencies, oversupply pressures, and long-term uncertainty.

This work contributes to the broader research on trade policy and food systems in three ways. First, it extends the evidence base on how large-scale tariff interventions ripple through global agricultural markets, complementing earlier analyses of the 2018–2019 U.S.–China trade war. Second, it demonstrates the value of scenario-based modeling in assessing systemic risks, offering policymakers an evidence-based framework to anticipate impacts and design mitigation strategies. Third, it situates agricultural trade at the center of current debates on geopolitical fragmentation, supply chain resilience, and global food security, highlighting the critical importance of open and predictable trade regimes in times of rising uncertainty.

## 2. LITERATURE REVIEW

The imposition of tariffs by the United States has generated significant repercussions for both North America and the global economy. Several studies, conducted prior to 2025, have examined the effects of U.S. protectionist policies, focusing on variations in GDP, welfare, trade flows, and employment outcomes.

Mexico has emerged as one of the most vulnerable economies to U.S. trade restrictions. Li, He, and Lin (2018)<sup>i</sup> simulated a scenario with 45% tariffs on Chinese goods and between 20% and 35% on Mexican goods. Their findings suggest a 3.1%-4.5% decline in Mexico's GDP, and a welfare reduction of 1.6% and 2.8%. Exports and imports fell by 18.5%-28.4% and 15.0%-22.8%, respectively. These figures underscore Mexico's vulnerability to external trade shocks, particularly from the United States. The model also predicts an employment decline of 8.2%-12.7%, representing a significant social cost given the country's dependence on labor-intensive export industries.

China also faces substantial economic setbacks from U.S. trade policies. Li, He, and Lin (2018) show that unilateral U.S. tariffs ranging from 15% to 60% on Chinese goods could reduce China's GDP by 0.7%-2%, and a welfare loss of 0.2%-0.5%. In a scenario of mutual tariffs, where both China and the United States imposed tariffs within that range, China's GDP would decline by 0.7%-1.8%, and welfare by 0.2%-0.6%. Leung and Li (2019)<sup>ii</sup> estimate that a 25% increase in U.S. tariffs on Chinese goods would reduce China's GDP by approximately 1%, with employment losses between 1.1% and 1.2%. Similarly, Guo, Lu, Sheng and Yu (2018)<sup>iii</sup>, estimate that a unilateral 45% tariff on all Chinese imports would reduce China's GDP by 1.8%, however, a reciprocal response from China would moderate the decline to 0.9%.

The results for the United States are mixed. Li, He, and Lin (2018) mutual tariffs of 15%-60% with China could yield a slight increase in U.S. GDP (0.01%-0.13%), and modest welfare gains (0.2%-0.1%), while trade would fall by 2.8%-7.4%. However, Li, Balistreri, and Zhang (2020)<sup>iv</sup> find that under a scenario involving a 10% tariff on aluminum and 15% retaliatory tariffs from China, the EU, India, and Turkey, U.S. welfare would decrease by 0.2%. With tariffs on Chinese products rising to 25%-30%, the welfare loss would deepen to 0.4%. These differences reflect the distinct modeling approaches and assumptions, Li, He, and Lin (2018) emphasize trade

rebalancing and terms-of-trade effects that can generate modest welfare gains despite employment losses, while Li, Balistreri, and Zhang (2020) calibrate to observed tariff measures and sectorial input-output linkages that highlight efficiency losses from retaliation.

At the global level, U.S. tariff impositions have a broad negative effect. Li, He, and Lin (2018) report that under a mutual scenario involving China and Mexico, global GDP would decline by 0.3%-0.4%, while global welfare would fall by 0.02%-0.04%. Global trade volumes would also decrease by 2.9%, reflecting significant disruption to international supply chains and a generalized contraction in economic activity

More recent literature emphasized the uneven effects of tariff escalation among North American partners and key actors in the global trading system, particularly in the context of trade tensions under a second Trump administration. Ai *et al.* (2025) simulate a wide array of scenarios, including unilateral and mutual tariff increases involving the United States, Canada, Mexico, China, and the rest of the world.

For Mexico, the estimated effects vary substantially depending on the scope of retaliation. Under mutual U.S.-China tariffs of 60%, Mexico would experience a 0.23% increase in GDP, a modest welfare gain of 2%, and a 3.1% rise in exports, indicating potential trade diversion benefits. Conversely, a U.S.-only unilateral tariff of 25% on Canada and Mexico would lead to a 0.56% contraction in Mexico's GDP, a 6.4% welfare loss, and a 17.6% decline in exports. These losses are further exacerbated in a mutual retaliation scenario within North America, where Mexico's GDP contracts by 2% and exports by 9.3%.

For Canada, the estimated impacts are similarly contingent on the retaliation framework. In a unilateral U.S. tariff scenario (25% on Canada and Mexico), Canada's GDP falls by 1.6%, welfare by 7.9%, and exports by 28.2%.

Under mutual retaliation within North America, Canada's GDP fell by 3.8% and trade shrank by 17.3%. The results underscore the economy's vulnerability to U.S. protectionism, particularly given the high trade exposure and integration under the USMCA framework.

Regarding China, Ai, *et al.* (2025) report that mutual 60% tariffs with the U.S.-China would reduce China's GDP by 0.9%, and welfare by 2.7%, driven by import contractions (-11.9%) and declining trade volumes (-6.7%).

Under a milder 10% mutual tariff (on top of 2019 levels), GDP declines by 0.5%. Then the escalation includes Canada and Mexico as well, and China's GDP falls slightly (-0.14%).

The United States, despite being the initiator in many scenarios, through the magnitude varies depending on tariff escalation and retaliation patterns. In a 60% mutual tariff escalation with China, the U.S. GDP falls by 0.45%, and welfare by 0.71%. With 10% tariffs (plus 2019 levels), GDP declines more moderately (-0.2%), though losses persist. A unilateral 25% tariff against Canada and Mexico leads to a 0.1% contraction in GDP; mutual retaliation lowers GDP further (-0.1%), offsetting any potential welfare gains. When combining tariff increases against China, Canada, and Mexico, the U.S. economy contracts (-0.3% GDP), and trade volumes decline across all scenarios, with imports dropping by up to 10.7%.

**Table 1. Impact of tariffs under the selected literature review**

Percentage change from baseline

Reference	Year	Scenario	Tariff	Country	Welfare	GDP	Employ	Trade	X	M
Li, He, Lin (2018)	2017	Unilateral US - China	15% - Overall import	China	-0.179	-0.724	-1.034	-2.082	-3.394	-0.496
				US	0.139	0.125	-0.074	-2.125	-0.217	-3.48
		Mutual US - China	15%- Overall import	China	-0.163	-0.667	-1.062	-2.601	-3.467	-1.554
				US	0.12	0.007	-0.545	-2.749	-1.583	-3.577
		Unilateral US - China	30%- Overall import	China	-0.312	-1.26	-1.81	-3.626	-5.909	-0.867
				US	0.184	0.241	-0.144	-3.689	-0.397	-6.027
		Mutual US - China	30%- Overall import	China	-0.31	-1.152	-1.861	-4.514	-6.036	-2.673
				US	0.152	0.037	-0.957	-4.761	-2.75	-6.189
		Unilateral US - China	45%- Overall import	China	-0.414	-1.667	-2.407	-2.803	-7.824	-1.152
				US	0.175	0.346	-0.21	-4.871	-0.546	-7.941
		Mutual US - China	45%- Overall import	China	-0.441	-1.514	-2.479	-5.96	-7.993	-3.502
				US	0.132	0.079	-1.278	-6.276	-3.638	-8.149
		Unilateral US - China	60%- Overall import	China	-0.493	-1.983	-2.875	-5.72	-9.314	-1.375
				US	0.133	0.442	-0.27	-5.783	-0.673	-9.412
		Mutual US - China	60%- Overall import	China	-0.559	-1.79	-2.965	-7.079	-9.517	-4.132
				US	0.083	0.126	-1.533	-7.442	-4.33	-9.652
		Mutual US - China and Mexico	45% China - 20% Mexico	China	-0.433	-1.518	-2.478	-5.944	-7.98	-3.482
				US	0.131	-0.074	-2.59	-9.611	-7.274	-11.271
				Mexico	-1.645	-3.096	8.17	-16.758	-18.541	-15.073
				World	-0.015	-0.336	-0.951	-2.477	-2.477	-2.477
Mutual US - China and Mexico	45% China - 35% Mexico	China	-0.43	-1.518	-2.475	-5.932	-7.966	-3.473		
		US	0.089	-0.134	-3.271	-11.31	-9.14	-12.851		
		Mexico	-2.824	-4.543	-12.693	-25.472	-28.43	-22.678		
		World	-0.041	-0.376	-1.162	-2.914	-2.914	-2.914		
Leung, Li (2019)	2018	Mutual	25% - Overall import	China		-1	-1.11			
							-1.2			

Reference	Year	Scenario	Tariff	Country	Welfare	GDP	Employ	Trade	X	M	
Guo, Lu, Sheng, Yu (2018)	2018	Unilateral US - China	45% - All import	China		-1.8			-11.23	-3.23	
				US		7.98			8.37	-16.71	
		Mutual US - China	45% - All import	China		-0.85				-13.4	-11.27
				US		6.68			1.85	-18.22	
Li, Balistreri, Zhang (2020)	2020	Mutual US – China, EU India, Turkey	10% Aluminum 15% Steel	Canada	-0.078				-1	-0.9	
				China	-0.036				0.1	0.1	
				Mexico	0.011				-0.3	-0.3	
				US	-0.029				-0.8	-0.4	
		Mutual US – China, EU, India, Turkey	10% Aluminum 15% Steel (China, EU, India, Turkey) + China’s Tariff March 2020	Canada	0.195					0.2	0.1
				China	-1.728					-4	-4.9
				Mexico	0.775					2.2	2
				US	-0.238					-5.8	-4
		Mutual US - China	10% Aluminum 15% Steel (China, EU, India, Turkey) + China’s Tariff 25% - 30%	Canada	0.283					0.4	0.3
				China	-2.365					-5.4	-6.5
				Mexico	1.073					3.2	2.8
				US	-0.418					-7	-4.9
Ai, Huang, Li, Zhang, Zhang (2025)	2025	Mutual US China	60%	Canada	2.27	0.49		4.18	-6.84	7.55	
				China	-2.73	-0.87		-6.7	9.62	-11.88	
				Mexico	2.03	0.23		3.94	3.13	7.01	
				US	-0.71	-0.45		-1.12	-3.82	-5.86	
		Mutual US China	10% + additional 2019	Canada	1.19	0.27		2.17	-3.64	4	
				China	-1.57	-0.5		-3.94	4.82	-7.75	
				Mexico	1.01	0.12		1.9	2.96	4.87	
				US	-0.3	-0.2		-0.45	-3.13	-3.91	
		Unilateral US - Canada Mexico	25%	Canada	-7.94	-1.6		-15.02	-28.22	12.09	
				China	0.22	0.1		0.95	2.05	-1.93	
				Mexico	-6.37	-0.56		-11.72	-17.63	-8.86	
				US	0.29	-0.16		2.86	-4.77	-5.67	
		Mutual US – Canada and Mexico	25%	Canada	-10.88	-3.79		-17.31	29.3	-40.73	
				China	0.39	0.16		1.58	-3.35	3.46	
				Mexico	-7.29	-2.01		-10.79	-9.93	-23.74	
				US	0.05	-0.14		1.38	-9.07	-8.22	
		Mutual US - Canada and Mexico China	25%, 10% + additional 2019	Canada	-10.41	-3.59		-16.6	37.52	-39.21	
				China	-0.85	-0.14		-2.04	-0.52	-3.21	
				Mexico	-6.8	-1.91		-9.9	-9.01	-2.69	
				US	-0.06	-0.33		1.98	-11	-10.69	
		Mutual US - Canada Mexico China World	25%, 10% + additional	Canada	-9.41	-3.39		-14.64	28.52	-12.22	
				China	-0.53	-0.19		-0.81	-1.48	-8.09	
				Mexico	-6	-1.83		-8.43	-6.96	-2.27	

Reference	Year	Scenario	Tariff	Country	Welfare	GDP	Employ	Trade	X	M	
			2019, 10% World	US	-0.46	-0.41		-0.04	-22.36	-21.27	
McKibbin, Hogan, Noland (2024)	2025	Unilateral US - World	10%	Canada		-\$32 B					
				China		-\$102 B					
				Mexico		-\$28 B					
				US		-\$283 B					
		Mutual US - World	10%	Canada		-\$60 B					
				China		-\$69 B					
				Mexico		-\$53 B					
				US		-\$721 B					
		Unilateral US - China	60%	Canada		\$5 B					
				China		-\$129 B					
				Mexico		\$12 B					
				US		-\$283 B					
		Mutual US - China	60%	Canada		\$9 B					
				China		-\$770 B					
				Mexico		\$12 B					
				US		-\$327 B					
Bouët, Maty and Zheng (2024)	2025	Unilateral US - World except Canada and Mexico	Minimum 10% - All Products	Canada		0.5			3.4		
				China		-0.1			-1		
				Mexico		1.9			7.7		
				US		-0.3			-8.2		
		Unilateral US - World except Canada and Mexico	10 p.p. - All goods	Canada		0.7				4.5	
				China		-0.2			-1.6		
				Mexico		2.3			9.2		
				US		-0.4			-10.7		
		Unilateral US - World except Canada and Mexico	10 p.p. - All goods World and 60 p.p. China	Canada		1.2				7.9	
				China		-1.1			-7.6		
				Mexico		6.5			25.8		
				US		-0.7			-15.2		
		Mutual US - World except Canada and Mexico	10 p.p. - All goods World and 60 p.p. China	Canada		1.3				8.3	7.1
				China		-1.3			-8.9	-9.4	
				Mexico		6.6			26.1	23.4	
				US		-1.3			-22.9	-17.5	
Lee (2023)	2025	Unilateral US - World	10%	US	\$39.7 B	-0.16			-13.1	-11.3	
		Mutual US – World	10%	US	-\$123.3 B	-0.31			-17.8	-22.4	

Reference	Year	Scenario	Tariff	Country	Welfare	GDP	Employ	Trade	X	M	
		Unilateral US - World	60% China 25% Canada and Mexico 10% Rest of World	Canada		-0.2					
				China		-0.13					
				Mexico		-0.18					
				US		-0.61			-18.6%	-14.8%	
		Mutual US - World	60% China 25% Canada and Mexico 10% Rest of World	Canada		-1.14					
				China		-0.28					
				Mexico		-1.36					
				US		-0.79			-32.2%	-26.7%	
The Budget Lab (2025a)	2025	Unilateral US – World except Canada and Mexico	Minimum 10% - All Products	Canada		0.54					
				China		-0.16					
				Mexico		0.29					
				US		-0.35					
		Mutual US – World except Canada and Mexico	Minimum 10% - All Products	Canada		-2.07					
				China		-0.22					
				Mexico		0.06					
				US		-0.56					
The Budget Lab (2025b)	2025	Mutual US - China	125% China	Canada		-2.19					
				China		-0.57					
				Mexico		-0.02					
				US		-0.57					
Meltzer (2025)	2025	Unilateral US – Canada and Mexico	25% - All Products	Canada		-1.16 p.p.			-9.3%		
				Mexico		-1.14 p.p.			-13.9%		
				US		-0.24 p.p.			-6%		
		Mutual US – Canada and Mexico	25% - All Products	Canada		-3.02 p.p.				-19%	
				Mexico		-3.14 p.p.			-25.7%		
				US		-0.32 p.p.			-9%		

Note: B - Billions

The 2018–2019 U.S.–China trade war marked the beginning of a period of intensified trade frictions between the world’s two largest economies. Initiated through the use of Section 301, the United States imposed a 25% tariff on \$50 billion worth of Chinese goods, prompting immediate and equivalent retaliatory tariffs from China. By mid-2018, both countries had fully implemented their respective tariff lists, raising average tariff levels from 6–8% to over 20%. These measures disrupted bilateral trade and contributed to declining GDP and welfare in both countries. Estimates indicate that under a 45% unilateral U.S. tariff on Chinese goods, China’s GDP would

decline by up to 1.8%, though mutual retaliation could moderate the decline to 0.85%. Despite attempts to correct trade imbalances and address concerns over intellectual property and subsidies, the conflict resulted in decreased trade volumes and increased market uncertainty, with limited economic gains for the U.S.

In 2025, trade tensions have broadened significantly, now encompassing not only China but also key U.S. trading partners including Canada, Mexico, and the European Union. These new tensions have emerged under a renewed protectionist agenda, marked by universal tariffs and the use of national emergency provisions. The United States announced a 25% tariff on imports from Canada and Mexico and raised tariffs on Chinese goods to as high as 125%. Retaliation followed with China imposing multiple rounds of tariffs on U.S. energy, machinery, and agricultural goods, while Canada announced countermeasures on \$155 billion in U.S. exports. Simulations show that these actions have significant economic consequences—Mexico and Canada could experience sharp GDP and welfare losses, while China faces continued trade contraction. Even the U.S. incurs GDP and welfare declines across all scenarios. These developments suggest that, unlike the bilateral dispute of 2018, the current round of trade tensions represents a systemic disruption with global ramifications, affecting integrated supply chains and amplifying the economic costs of protectionism.

### 3. CURRENT TRADE STRUCTURE

In recent years, U.S. trade policy has shifted toward unilateralism and protectionism, which became more pronounced after Donald J. Trump's inauguration in 2017 and has had effects on global trade governance. The first Trump administration implemented tariffs under provisions such as Sections 201 and 232 (related to safeguards<sup>vi</sup> and national security<sup>vii</sup>) and Section 301 (unfair trade<sup>viii</sup>), often bypassing the dispute settlement mechanisms established by the World Trade Organization (Balistreri, Böhringer, & Rutherford, 2018).

This protectionist stance was further reinforced by the withdrawal from the Trans-Pacific Partnership (TPP), the more restrictive restructuring of existing trade agreements such as the USMCA with Canada and Mexico, and the Korea-US Free Trade Agreement, the initiation of the trade war with China, and through its efforts to block appointments of members to the WTO Dispute Settlement Appellate Body.

The Biden Administration, while critical of the Trump trade agenda during the 2020 campaign, did little to reverse those actions (Bacchus 2022). Rather, it promised a "worker-centric" trade policy aimed at improving supply chain resilience in strategically important sectors, building back a manufacturing sector focused on green industry through domestic subsidies, and a continued hard line towards China (Glauber 2023; Hufbauer 2023).

President Trump's 2024 re-election platform advanced the *America First* investment policy<sup>ix</sup> which centered on universal tariffs, expanded import restrictions, and the possible revocation of China's Permanent Normal Trade Relations (PNTR) status, all with the stated goal of protecting domestic industry (McKibbin & Noland, 2025).

Shortly after retaking the White House in January 2025, the Trump Administration again implemented aggressive trade measures. On February 1, 2025, the United States government declared a national emergency under the International Emergency Economic Powers Act (IEEPA), citing the extraordinary threat posed by illicit drug flows—particularly fentanyl—and irregular migration. As part of this declaration, the U.S. imposed an additional 25% tariff on imports from Canada and Mexico, and a 10% tariff on imports from China, with a lower 10% rate applied to Canadian energy products (The White House, 2025a).

Canada reacted immediately, and the Canadian government announced a countermeasure package that included 25% tariffs on \$155 billion worth of U.S. goods. The first phase, effective February 4, would target \$30 billion in

goods such as processed foods, beverages, textiles, and appliances. These measures were presented as a necessary response to defend Canadian economic interests against what Canada viewed as unjustified and unilateral U.S. actions (Gouvernement of Canada, 2025).

The U.S. paused the application of tariffs on Canada and Mexico on February 3, acknowledging steps taken by both governments. In response, Canada agreed to delay its countermeasures for at least 30 days (The White House, 2025b; The White House, 2025c). However, on March 4, the U.S. reinstated the tariffs, prompting Canada to proceed with the implementation of its first phase of retaliatory duties.

Meanwhile, China announced on February 4 that it would impose retaliatory tariffs beginning February 10. These included a 15% duty on coal and liquefied natural gas, and a 10% duty on crude oil, agricultural machinery, and vehicles (Ministry of Finance of the People's Republic of China, 2025a). In addition, on March 3, 2025, China expanded its measures to include a 15% tariff on agricultural goods like chicken, wheat, corn, and cotton, and 10% on soybeans, pork, beef, seafood, fruits, and dairy products (Ministry of Finance of the People's Republic of China, 2025b).

In parallel, the U.S. intensified its approach. On February 10, it raised the tariff on steel and aluminum from 10% to 25%, effective March 12, citing national security concerns and the need to strengthen the domestic industry (Federal Register, 2025a; Federal Register, 2025b). On February 13, President Trump introduced the “Fair and Reciprocal Plan”, a trade strategy to align U.S. tariffs with those imposed by foreign partners, allowing for further retaliatory actions (The White House, 2025d).

The European Union announced on March 11 new countermeasures in response to U.S. tariffs on European steel and aluminum. The EU’s approach included phasing out existing retaliatory measures from 2018 and 2020, and introducing new tariffs worth €18 billion on U.S. exports, to be implemented by mid-April (European Commission, 2025). Additionally, on March 12, Canada announced a new 25% tariff on steel and aluminum products, and additional imported U.S. goods worth \$29.8 billion (Department of Finance Canada, 2025).

On April 2, 2025, the United States announced a new global tariff policy aimed at rebalancing trade flows by imposing a 10% ad valorem duty on all imports, with higher rates for specific countries. While the baseline tariff applied broadly, Mexico and Canada were excluded and received differentiated treatment based on compliance

with USMCA rules of origin. The higher tariffs for countries such as China (34%), Vietnam (46%), and Cambodia (49%), reflect a targeted response to persistent trade deficits and perceived unfair practices. In contrast, strategic allies like the European Union (20%) and Japan (17%) faced more moderate adjustments (The White House, 2025e).

The trade conflict between the United States and China escalated sharply. China announced a broad increase in tariffs on U.S. goods, raising the average rate to 34%, in response to the new reciprocal tariff (Ministry of Finance of the People's Republic of China, 2025c). In the days that followed, the United States responded with a more aggressive measure: between April 8 and 9, tariffs on Chinese Goods were raised to as high as 125%, targeting strategic sectors such as technology, machinery, and intermediate goods (The White House, 2025f). In turn, on April 8 and 10, the Chinese government imposed equivalent increases on U.S. exports, including agricultural products, automobiles, and key manufactured goods, further deepening the dispute (Ministry of Finance of the People's Republic of China, 2025d; Ministry of Finance of the People's Republic of China, 2025e).

In 2023, the United States accounted for 10% of total global agrifood imports and 9% of global exports, reflecting its significant role in international agricultural trade. That year, the U.S. exported agrifood products valued at USD 173.4 billion and imported USD 198.4 billion, resulting in a net trade deficit of approximately USD 25 billion. This trade deficit underscores the growing importance of imports in meeting domestic food demand, particularly in categories where products are now available year-round in U.S. supermarkets, filling the gaps in seasonal or limited domestic production.

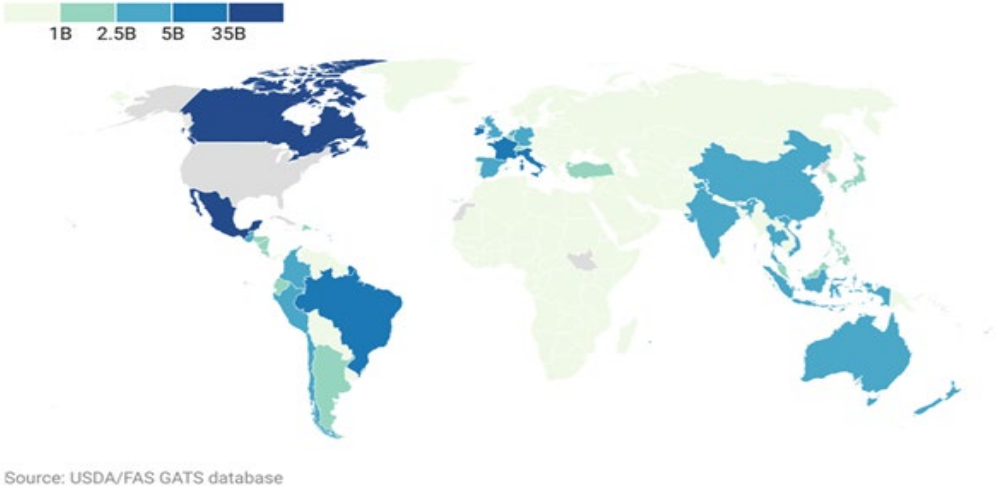
U.S. agrifood imports are concentrated among a relatively small number of key trading partners. Mexico and Canada were by far the largest suppliers, accounting for USD 45.6 billion and USD 40.3 billion respectively. Together, these two countries accounted for 43.8% of total U.S. agrifood imports (see Figure 1). This reflects the deep regional integration of North American food supply chains under longstanding trade agreements such as USMCA.

The European Union was the third largest supplier accounting for USD 33.2 billion. Beyond these top two partners, a second tier of countries, including Chile, China, Brazil, Indonesia, and India, each supplied between USD 5 and 7 billion worth of agrifood products. A broader group of countries, ranging from Australia and

Vietnam to Guatemala and Argentina, contributed between USD 1 and 4.5 billion each. Notably, more than 50 countries individually exported less than USD 1 billion in agrifood products to the U.S., indicating a highly skewed distribution in import sources.

**Figure 1. U.S. agrifood imports, by countries**

In 2023 USD values

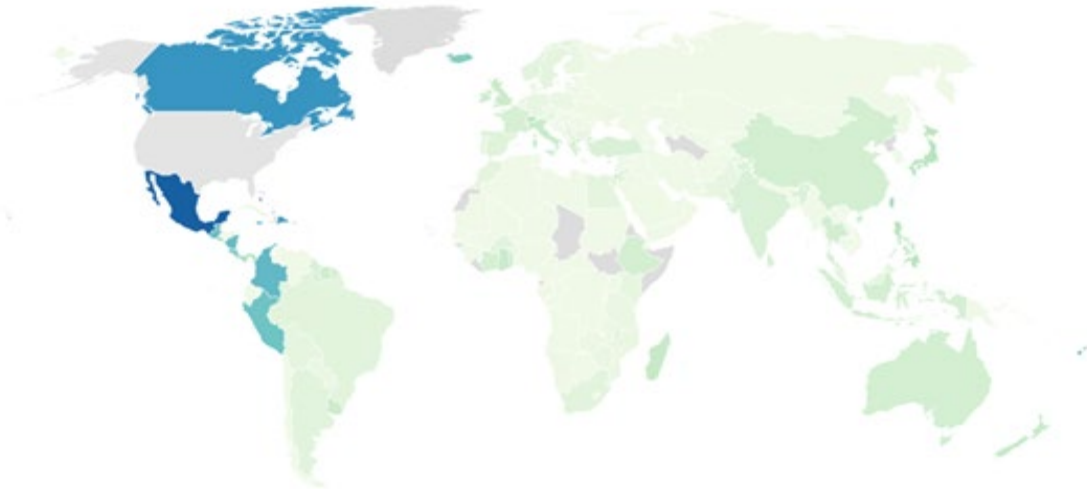


The relative importance of the United States as a destination market for agrifood exports varies significantly across countries (see Figure 2). Countries such as Mexico, Guatemala, Honduras, and several others in Central America, South America, and the Caribbean exhibit a high degree of dependence on the U.S. market, as indicated by the darkest shading. Canada also stands out, reflecting the deep integration of its agrifood trade with the United States, underpinned by long-standing trade agreements and cross-border supply chains.

In contrast, most countries in Europe, Africa, Oceania, and Asia direct a much smaller share of their agrifood exports to the U.S., typically less than 10% of their total export value. This suggests a more diversified export orientation or stronger regional trade ties. Notable exceptions include Japan and the Philippines, where the U.S. accounts for more than 15% of agrifood exports, indicating a more significant bilateral trade relationship.

**Figure 2. Share of total agrifood exports to the U.S., by exporting country**

Share of 2023 value



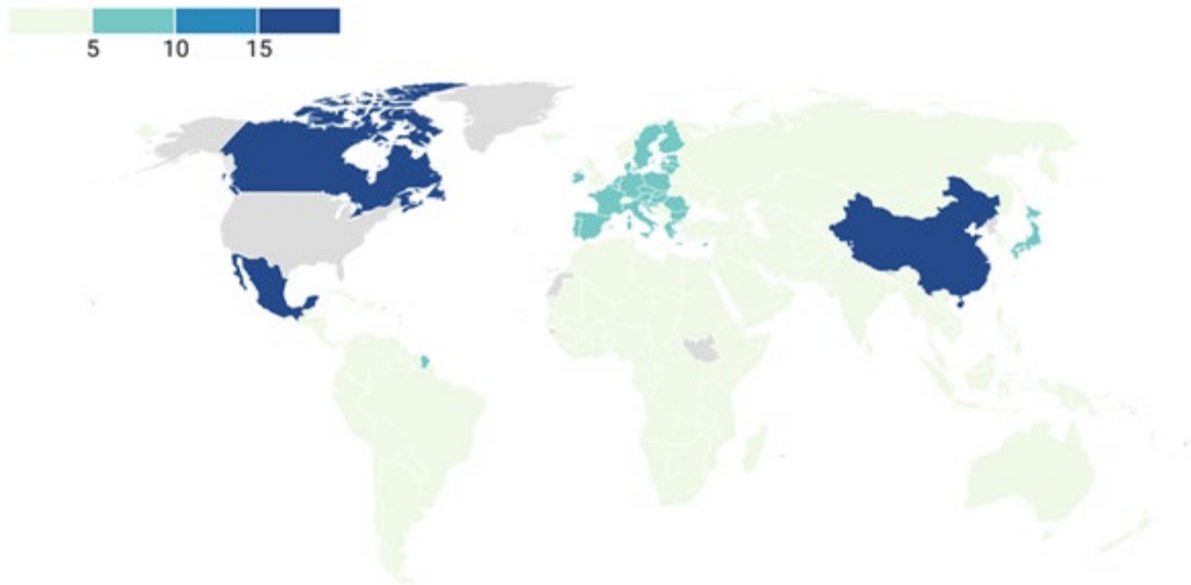
Source: FAOSTAT

From the perspective of the United States as an agrifood exporter, its key international markets are highly concentrated, with a few countries accounting for a disproportionately large share of total exports (see Figure 3). Three major destinations, Mexico, Canada, and China, each absorb more than 15% of U.S. agrifood exports, collectively representing over half of the total agrifood export value. This concentration reflects not only geographical proximity and trade agreements in the case of Mexico and Canada, but also the scale and demand characteristics of China’s market.

Beyond these top three, a second tier of trading partners includes countries such as Japan and the European Union, each receiving between 5% and 10% of U.S. agrifood exports. The remaining destinations, comprising a broad mix of countries across various regions, individually account for less than 5% of total exports. This distribution highlights both the strategic importance of a few core markets and the relatively limited penetration of U.S. agrifood products in many parts of the world, suggesting opportunities and vulnerabilities in the current export structure.

### Figure 3. Share of total U.S. agrifood exports, by destination

Share of 2023 total agrifood exports value



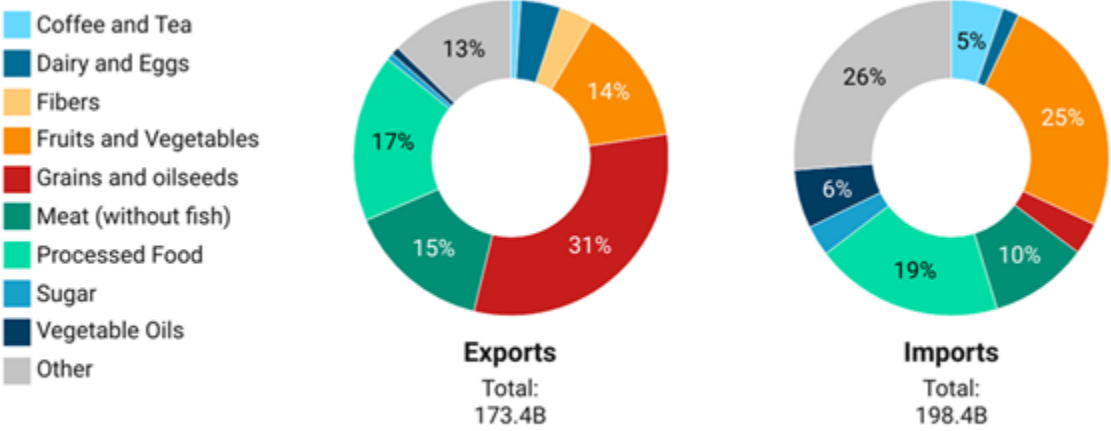
Source: US Department of Agriculture GATS database

Breaking down U.S. agrifood trade flows by product category reveals clear contrasts between exports and imports (see Figure 4). In 2023, grains and oilseeds dominated exports, accounting for 31% of total value, reflecting the U.S.'s strong comparative advantage in bulk commodities. Processed foods (17%), meat excluding fish (15%), and fruits and vegetables (14%) followed, indicating a growing role for value-added and perishable goods in U.S. export markets.

On the import side, the composition shifts significantly toward consumer-oriented goods. Imports were led by the “Other” category, driven largely by alcoholic beverages such as wine and spirits, which represented 26% of total import value. Fruits and vegetables made up 25%, highlighting year-round demand that exceeds domestic seasonal production. Processed foods accounted for 19%, reflecting the U.S. consumer’s preference for variety and convenience.

**Figure 4. Share of U.S. agrifood trade, by product categories**

Share of 2023 total agrifood trade value



Source: FAOSTAT

## 4. METHODOLOGY

MIRAGRODEP is a Computable General Equilibrium (CGE) model based on the MIRAGE (Modelling International Relationships under Applied General Equilibrium) model. In its standard version, MIRAGRODEP is a recursive, dynamic multi-region, multisector model. In MIRAGRODEP, the government is explicitly modeled as different from private agents. Government income consists of taxes collected on production, on factors of production, on exports, on imports, on consumption, and on households' income.

The Armington assumption (Armington 1969) allows us to capture product differentiation, including varying levels of substitution of products by origin and destination, and it is a robust way to represent bilateral and intersectoral trade flows. In this study, Armington elasticities are drawn from the GTAP 10 database (GTAP 2018) and follows three levels of nesting varying across regions depending on the product mix of each sector.

The model includes three important assumptions: the external account closure<sup>1</sup> for which we assumed a constant current account surplus/deficit in terms of individual country GDP and a proportional scaling among net capital importers guaranteed global balance and an endogenous real exchange; the government account closure, government surplus/deficit assumed constant in terms of domestic GDP with endogenous adjustment with domestic consumption tax, and the investment-savings closure (saving driven model).

For this study, the main source of data comes from GTAP 11 v2 version.

The model is designed to capture the medium-term impacts, essentially providing a snapshot of the economy before the shock and another one after the shock has taken effect. As a result, it does not account for short-term effects, meaning that factors such as price volatility, market expectations, policy uncertainty and weather events are not incorporated into the analysis.

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<sup>1</sup> In CGE models, closure refers to the assumptions that specify which variables are determined inside the model and which are fixed externally, allowing the system to be solved. These choices define how savings, investment, labor markets, and trade flows adjust, and they strongly influence the interpretation of results. In essence, closure is both a technical requirement and an economic statement about how the modelled economy responds to shocks or policies.

## 5. SCENARIOS

We analyzed three potential scenarios to assess the implications of the new U.S. tariff policies. The first scenario - North America- is based on the fact sheet released by the White House on February 1, 2025, titled "*Fact Sheet: President Donald J. Trump Imposes Tariffs on Imports from Canada, Mexico and China*" (source). This scenario includes a 25% tariff for all imports by the U.S. from Canada and Mexico, with the exception of energy products with only 10%.

The second scenario -Liberation Day- reflects the tariffs announced on the day termed "Liberation Day" on April 2, 2025 introducing a 10% supplemental tariff on imports from nearly all U.S. trading partners (see Table 10 in Annex). In addition, countries with which the U.S. runs the largest bilateral trade deficits face higher, individualized tariffs referred to by the Trump administration as "reciprocal" tariffs—though these are imposed unilaterally rather than mutually negotiated. Significantly, the Liberation Day tariffs exempt Canada and Mexico from tariff increases.<sup>2</sup>

The third scenario -China + 10%- simulates the global trade impacts of the U.S. and China's retaliatory tariffs in place as of April 12. On the U.S. side, this includes the 10% additional tariffs announced on April 2 against all trading partners but Canada and Mexico (but not the additional supplemental tariffs from April 2). In addition, this scenario includes 125% tariffs specifically targeting China. In response, China is assumed to impose a 125% supplemental tariff on U.S. exports, representing a significant counter-retaliatory measure. No other country retaliates against the U.S in agri-food products, but all countries impose retaliatory measures on U.S. exports of steel, aluminum, cars, and car parts.

The three scenarios were simulated under two conditions: with and without retaliation from U.S. trade partners. While Annex 1 provides the full set of results for both versions of each scenario, the results section of this article focuses exclusively on the outcomes under the assumption that trade partners implement retaliatory measures.

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<sup>2</sup> Tariffs for goods compliant with the US-Mexico-Canada Agreement (USMCA) rules of origin provisions remain at 0%.

## 6. RESULTS

### 6.1 Macro results

#### 6.1.1 GDP

Across all three scenarios, GDP declines are observed globally (see Table 2), with variations depending on the country or region. The U.S. itself experiences negative impacts in all scenarios, with the most significant drop occurring under the *Liberation Day* scenario (-1.21%). This highlights the potential self-inflicted economic harm of broad, unilateral tariff hikes, even when introduced under the premise of boosting national competitiveness. The most severe GDP losses are seen in Canada and Mexico, particularly under the *North America* scenario, where tariffs are likely more concentrated on close trading partners. Mexico's GDP falls by over 2%, and Canada's decline is also substantial (-1.5%). These outcomes reflect the deep economic integration these countries have with the U.S.<sup>3</sup>.

In the case of China and the EU, the impacts are more moderate but still clearly negative. China is hit hardest in the *China +10%* scenario (-0.4%), where it faces direct supplemental tariffs, while the EU sees smaller GDP losses due to indirect effects such as trade diversion and global slowdown.

For Latin America and the Caribbean (LAC), GDP shows limited upside under the *North America* scenario, while the other two scenarios result in economic contraction. The region's vulnerability stems from its dependence on global markets and agricultural exports, which are sensitive to shifts in trade policy and demand.

Sub-Saharan Africa (SSA) experiences similar directional impacts across the different scenarios, though with lower overall magnitudes. Although not a direct target of the tariffs, the region is indirectly affected through global economic linkages, such as commodity prices, reduced trade volumes, and tighter global financial conditions.

Finally, the global economy suffers under all three scenarios. The aggregate world GDP declines showing the broader costs of escalating trade tensions, with the greatest impact under the *Liberation* (-0.4%). While tariffs may

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<sup>3</sup> The exception is under the "Liberation Day" tariffs where Canada and Mexico see gains in GDP under the no retaliation scenario. Canada and Mexico were exempted from the supplemental tariffs and so see increases in trade as U.S. trade with other partners becomes more costly. As countries retaliate against the US, the US imports less and GDP in Canada and Mexico declines as well.

be intended to protect domestic industries or rebalance trade relationships, they often backfire by reducing competitiveness.

**Table 2. Impact of tariffs on GDP. Scenarios with counter-retaliatory tariffs.**

Percentage change from baseline

Region/Country	North America	China + 10%	Liberation Day
USA	-0.23%	-1.14%	-1.21%
Canada	-1.48%	-0.44%	-0.21%
Mexico	-1.98%	-0.62%	-0.20%
EU	0.00%	-0.05%	-0.19%
China	0.01%	-0.41%	-0.25%
LAC (without Mexico)	0.04%	-0.17%	-0.18%
Sub-Saharan Africa	0.02%	-0.03%	-0.05%
World	-0.10%	-0.39%	-0.44%

Source: Calculations by authors based on MIRAGRODEP simulations.

### 6.1.2 Terms of Trade

Across all three tariff scenarios, changes in Terms of Trade<sup>4</sup> are observed globally, with significant variation by country and region (see Table 3). The U.S. experiences mixed outcomes, with a modest improvement under the *China + 10%* scenario (+4.9%), but sees only marginal gains under the *Liberation Day* scenario (+0.2%) and a slight deterioration in the *North America* scenario (-0.04%).

The largest negative Terms of Trade shifts occur in Canada and Mexico under the North America scenario.

Mexico's Terms of Trade drop sharply by over 6.4%, while Canada's fall by 4.6%, underscoring their heavy reliance on trade with the U.S. and the high cost of trade between LAC and North America. Conversely, both countries experience significant improvements under the *Liberation Day* scenario, where they are not the direct targets of tariffs, Mexico's Terms of Trade improve by over 4.4% and Canada's by 1%.

China sees consistent losses in Terms of Trade under both the *Liberation Day* (-1.3%) and *China +10%* (-1.7%) scenarios, which directly target its exports with high tariffs. These declines reflect China's deteriorating trade position in the face of restricted market access and worsening export conditions. The EU, though not a primary

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<sup>4</sup> Terms of trade is measured as the ratio of a country's export prices to its import prices. It essentially indicates how much of a country's exports are needed to obtain a unit of its imports.

target in any scenario, shows relatively small changes, declining slightly under *China +10* (-0.2%) and improving modestly in the other two scenarios.

For regions like LAC (excluding Mexico), Terms of Trade impacts are mixed but generally positive under *Liberation Day* (+0.8%) and *North America* (+0.6%), likely reflecting shifts in export competitiveness as trade flows are rerouted. SSA also sees slight gains in two of the three scenarios, despite not being directly targeted, indicating limited but positive spillovers through global commodity markets and price adjustments.

At the global level, changes in terms of trade are small in magnitude across all scenarios, but the modest improvements in *Liberation Day* and *China +10%* contrast with a slight deterioration under *North America*.

These results highlight how even when some countries benefit from relative price changes, the broader economic effects of trade conflict, including disrupted supply chains, retaliatory measures, and market inefficiencies, often undermine these gains.

Moreover, such disruptions can catalyze long-term shifts in trading relationships, as countries and firms adjust sourcing strategies to reduce exposure to tariff risk and geopolitical uncertainty. This structural reorientation may have lasting consequences for global agrifood trade patterns well beyond the immediate period of policy intervention (See IFPRI Blog: “*The U.S.–China Trade War 2.0: What are the implications for global oilseed markets?*”).

**Table 3. Impact of tariffs on Terms of Trade. Scenarios with counter-retaliatory tariffs.**

Percentage change from baseline

Region/Country	North America	China + 10%	Liberation Day
USA	0.16%	4.91%	-0.04%
Canada	1.04%	-3.36%	-4.56%
Mexico	4.46%	-1.84%	-6.40%
EU	0.13%	-0.21%	0.29%
China	-1.33%	-1.69%	0.35%
LAC (without Mexico)	0.76%	-0.01%	0.58%
Sub-Saharan Africa	0.12%	-0.10%	0.17%
World	0.01%	0.01%	0.00%

Source: Calculations by authors based on MIRAGRODEP simulations.

### 6.1.3 Agrifood World Prices

Model simulations indicate that global agrifood prices experience the steepest declines under the scenarios where the U.S. imposes 125% tariffs on China goods and China counter-retaliates against the U.S. with equivalent tariffs (Table 4). This outcome is primarily driven by the severe disruption to bilateral trade flows between two of the world's largest economies, which results in a significant contraction in global demand for traded agrifood products.

A similar but less pronounced decline in global agrifood prices is observed under the *Liberation Day* scenario. In this case, the U.S. imposes a 54% tariff on Chinese imports, again triggering reciprocal retaliation from China. While the magnitude of the tariff is lower than in the 125% scenario, the bilateral trade distortion remains substantial, resulting in surplus agrifood supply in both economies and weakened global price levels due to oversupply conditions and diminished trade efficiency.

In contrast, scenarios involving U.S. tariff actions against Canada and Mexico produce more moderate global agrifood price effects. Under the scenario where the United States imposes a 25% tariff on imports from its North American partners, and both Canada and Mexico respond with reciprocal measures, global agrifood prices are estimated to increase slightly.

While the overall global trade footprint of Canada and Mexico is smaller compared to China, their agrifood trade with the U.S. is deeply integrated and highly significant at the regional level. The U.S. is the primary export destination for both countries, absorbing approximately 88% of Mexico's and 60% of Canada's total agrifood exports (see IFPRI Blog: "*Impact of Proposed U.S. Tariffs on Agricultural Trade Flows in the Western Hemisphere*"). Tariff applied between these three countries can drive up domestic and regional prices, though their impact on global price levels remain relatively modest.

**Table 4. Impact of tariffs on Agrifood World Prices. Scenarios with counter-retaliatory tariffs.**

Percentage change from baseline

Product group	North America	China + 10%	Liberation Day
Agrifood	0.82%	-3.52%	-0.46%
Coffee and Tea	0.85%	-3.69%	-1.07%
Dairy and Eggs	0.81%	-3.50%	-0.56%
Fruits and Vegetables	1.05%	-3.65%	-0.81%
Grains	0.68%	-3.57%	-0.09%
Meat and Fish	0.85%	-3.42%	-0.54%
Plant Based Fibers	0.79%	-3.30%	0.57%
Processed Food	0.83%	-3.46%	-0.49%
Sugar	0.87%	-3.51%	-0.74%
Vegetable Oils	0.90%	-4.02%	-0.63%

Source: Calculations by authors based on MIRAGRODEP simulations.

#### 6.1.4 Agrifood Trade

Across the three scenarios, both imports and exports in the agrifood sector experience significant declines globally (see Table 5), with variations across different countries and regions. The U.S. faces the most substantial negative impact on both imports and exports, with the most pronounced drop under the *Liberation Day* scenario (-24.5% and -39.1%, respectively).

Canada and Mexico see the most severe reductions in agrifood imports and exports, particularly in the *North America* scenario, where tariffs are more concentrated on these close trading partners. Mexico experiences a steep decline in imports, with a drop of nearly 34% in the *North America* scenario, and a significant reduction in exports as well (-24%). Canada's imports fall by nearly 24% under the same scenario, while its exports drop by over 20%. These results reflect the deep economic integration of these countries with the U.S., highlighting the interconnectedness of trade flows within the region.

China and the EU show more moderate but still negative effects, except under the *North America* scenario where they benefit due to trade diversion within Northern America. In the *China + 10%* scenario, China faces a notable reduction in both imports and exports, with imports dropping by over 9% and exports by more than 7%.

Conversely, the EU sees smaller changes, with exports declining by only about 0.9% and imports by more than 2% under the *Liberation Day* scenario.

For LAC (excluding Mexico) and SSA, both imports and exports experience smaller impacts, due to the low U.S. share of agrifood trade in these regions. Across the different scenarios, imports in LAC (excluding Mexico) declined from 1.5% to -2.2%, while exports fell from 1.3% to 0.4%. Similarly, Sub-Saharan Africa experienced a decrease in imports from 0.5% to -0.2% and in exports from 0.6% to 0.1%. However, these regions' dependence on agricultural exports makes them sensitive to changes in global trade policies and demand. Ultimately, global trade suffers under all three scenarios, with the most pronounced drop under the *Liberation Day* scenario (-4.7%). These trends underscore the broader economic costs of escalating trade tensions. While tariffs may be intended to safeguard domestic industries or rebalance trade relationships, they often backfire, leading to reduced global competitiveness and economic disruptions.

**Table 5. Impact of tariffs on Agrifood Trade. Scenarios with counter-retaliatory tariffs.**

Percentage change from baseline

Trade	Region/Country	North America	China + 10%	Liberation Day
Exports	USA	-14.11%	-23.26%	-39.14%
Exports	Canada	-19.71%	0.19%	12.27%
Exports	Mexico	-24.95%	-4.16%	8.45%
Exports	EU	1.62%	-0.41%	-0.90%
Exports	China	1.55%	-7.55%	-2.28%
Exports	LAC (without Mexico)	1.32%	0.40%	0.53%
Exports	Sub-Saharan Africa	0.64%	0.11%	0.61%
Exports	World	-2.29%	-3.76%	-4.71%
Imports	USA	-13.22%	-17.41%	-24.46%
Imports	Canada	-23.97%	-4.00%	7.71%
Imports	Mexico	-33.95%	-6.33%	11.16%
Imports	EU	0.89%	-0.68%	-2.49%
Imports	China	1.26%	-8.74%	-9.02%
Imports	LAC (without Mexico)	1.45%	-0.81%	-2.20%
Imports	Sub-Saharan Africa	0.53%	-0.86%	-0.20%
Imports	World	-2.29%	-3.76%	-4.71%

Source: Calculations by authors based on MIRAGRODEP simulations.

Beyond the impacts on total trade, the different scenarios reveal notable trade diversion effects that alter established trade patterns (see Table 6). Such diversions can have lasting implications for regional competitiveness, integration, and economic resilience. This highlights how even short-term policy shifts can trigger long-term structural changes in trade dynamics.

Under the *North America* scenario, agrifood exports from Mexico and Canada to the United States decline sharply, by 52% and 65% respectively. In response, U.S. imports from LAC (excluding Mexico) and the rest of the world increase, partially offsetting the reduced inflows from Canada and Mexico. Bilateral trade between Canada and Mexico rises, and Mexico redirects some of its exports toward the EU and China. However, these alternative markets do not fully compensate for the substantial loss of access to the U.S. market.

Under the *China +10%* scenario, U.S. agrifood exports experience a broad-based decline across all major regions, with the steepest contraction occurring in exports to China. In response, China diversifies its sourcing strategy by significantly increasing agrifood imports from alternative suppliers, particularly Canada, LAC (excluding Mexico), and SSA.

Under the *Liberation Day* scenario, the overall trade impacts are more pronounced across all regions. However, a key distinction emerges, due to the fact that Mexico and Canada are exempted from tariffs, intra-North American trade expands. Relative to the *China +10% scenario*, U.S. exports to other global regions face more severe declines, particularly in exports destined for the EU. Notably, exports to China exhibit a relative improvement, in response to a lower tariff.

**Table 6. Agrifood Trade Diversion in value terms. Scenarios with counter-retaliatory tariffs.**

Percentage change from baseline

Region/Country	Destination	North America	China + 10%	Liberation Day
USA	Canada	-66.19%	-11.80%	10.03%
USA	Mexico	-68.39%	-8.86%	18.31%
USA	EU	5.55%	3.07%	-53.17%
USA	China	4.39%	-98.90%	-83.83%
USA	LAC (without Mexico)	3.57%	-8.48%	-26.82%
USA	Sub-Saharan Africa	6.85%	-13.31%	-35.50%
USA	World	-14.87%	-23.17%	-38.81%
Canada	USA	-65.23%	-11.66%	22.45%
Canada	Mexico	114.77%	-10.57%	-41.92%
Canada	EU	20.29%	-1.59%	-7.62%
Canada	China	19.72%	41.72%	17.82%
Canada	LAC (without Mexico)	16.20%	5.65%	-2.19%
Canada	Sub-Saharan Africa	16.81%	6.07%	-3.63%
Canada	World	-20.96%	-0.24%	12.52%
Mexico	USA	-52.36%	-8.34%	15.05%

Region/Country	Destination	North America	China + 10%	Liberation Day
Mexico	Canada	105.41%	12.87%	-14.48%
Mexico	EU	42.17%	5.20%	-13.98%
Mexico	China	34.50%	9.71%	-10.74%
Mexico	LAC (without Mexico)	23.05%	4.82%	-4.17%
Mexico	Sub-Saharan Africa	3.24%	0.93%	-1.26%
Mexico	World	-26.05%	-4.32%	8.81%
EU	USA	14.19%	-12.45%	-53.74%
EU	Canada	31.83%	6.25%	6.57%
EU	Mexico	29.02%	5.24%	9.26%
EU	China	-0.61%	4.82%	5.40%
EU	LAC (without Mexico)	-1.16%	2.71%	10.50%
EU	Sub-Saharan Africa	-0.28%	-0.16%	2.49%
EU	World	1.65%	-0.40%	-0.87%
China	USA	11.14%	-98.32%	-87.19%
China	Canada	28.40%	9.94%	11.13%
China	Mexico	16.52%	6.49%	13.96%
China	EU	-0.05%	4.02%	6.14%
China	LAC (without Mexico)	-1.44%	6.69%	14.52%
China	Sub-Saharan Africa	-0.02%	3.55%	5.33%
China	World	1.59%	-7.75%	-2.40%
LAC (without Mexico)	USA	11.01%	-12.69%	-19.88%
LAC (without Mexico)	Canada	22.07%	5.64%	3.84%
LAC (without Mexico)	Mexico	39.27%	-0.68%	-4.84%
LAC (without Mexico)	EU	-0.60%	-3.70%	-2.77%
LAC (without Mexico)	China	-1.55%	21.89%	15.16%
LAC (without Mexico)	LAC (without Mexico)	-1.48%	0.37%	4.75%
LAC (without Mexico)	Sub-Saharan Africa	-0.24%	-2.06%	-1.30%
LAC (without Mexico)	World	1.33%	0.49%	0.66%
Sub-Saharan Africa	USA	7.81%	-14.22%	-47.14%
Sub-Saharan Africa	Canada	22.25%	4.83%	7.04%
Sub-Saharan Africa	Mexico	10.00%	1.73%	12.15%
Sub-Saharan Africa	EU	-0.10%	0.25%	3.43%
Sub-Saharan Africa	China	-1.02%	24.92%	17.53%
Sub-Saharan Africa	LAC (without Mexico)	-0.50%	1.72%	6.33%
Sub-Saharan Africa	Sub-Saharan Africa	0.26%	-0.56%	0.96%
Sub-Saharan Africa	World	0.67%	0.10%	0.59%
World	USA	-14.04%	-17.41%	-24.02%
World	Canada	-25.10%	-4.22%	7.76%
World	Mexico	-34.62%	-6.42%	11.21%
World	EU	0.90%	-0.70%	-2.53%
World	China	1.25%	-8.69%	-9.04%
World	LAC (without Mexico)	1.43%	-0.81%	-2.22%
World	Sub-Saharan Africa	0.53%	-0.87%	-0.21%

Region/Country	Destination	North America	China + 10%	Liberation Day
World	World	-2.51%	-3.81%	-4.69%

Source: Calculations by authors based on MIRAGRODEP simulations.

## 6.2 Sectoral results

This section presents results focused on the agrifood sectors most affected under each trade tension scenario.

Given that the key players in these scenarios are major exporters and importers, the economic consequences are concentrated in a subset of sectors with high trade exposure and strategic importance. By isolating these sectors, the analysis captures the direct transmission channels of trade disruptions, allowing for a clearer understanding of how tariff shifts or retaliatory policies translate into sectoral price changes and shifts in trade flows.

Focusing on these sectors ensures that the scenarios are interpreted through the lens of real economic impacts, rather than solely through aggregated trade balances. This approach highlights the distributional effects of trade tensions, offering insight into potential risks for producers, consumers, and regions. As such, the findings are intended to inform policymakers aiming to mitigate negative outcomes or design targeted and effective strategic interventions.

### 6.2.1 Fruits and Vegetables – North America scenario

Mexico plays a critical role in the global trade of fruits and vegetables, standing as one of the leading exporters of these products. Its proximity to the U.S., combined with preferential trade agreements and integrated cross-border supply chains, has made the U.S. its dominant trading partner, absorbing over 94% of Mexico’s fruit and vegetable exports in 2023. The bilateral flow of produce, including tomatoes, avocados, berries, and peppers, is underpinned by strong seasonal complementarity, with Mexico supplying fresh produce during periods when U.S. domestic production is limited. However, this tightly linked relationship also leaves Mexico highly vulnerable to shifts in U.S. trade policy.

Under the *Northern America* scenario in which the U.S. imposes a 25% tariff on imports from Mexico (including Fruits and Vegetables), a significant realignment in trade flows is expected (see Table 7). The immediate impact would be a sharp reduction in the competitiveness of Mexican produce in the U.S. market, leading to an estimated

20% decline in overall exports. Facing higher costs and reduced demand from U.S. buyers, Mexican producers are projected to reorient their exports toward alternative markets, primarily the European Union and China. However, these markets are not perfect substitutes; challenges such as longer shipping distances, compliance with different sanitary standards, and underdeveloped distribution networks limit the extent of this trade diversion.

**Table 7. Fruits and Vegetables Trade Diversion in value terms**

Percentage change from baseline under North America scenario with counter-retaliatory tariffs.

Exporter	Importer			
	China	EU	United States	World
Brazil	0.58%	0.25%	21.15%	3.01%
China		-0.12%	20.90%	1.39%
EU	0.88%		21.41%	1.83%
Mexico	58.02%	56.06%	-41.69%	-20.11%
South Africa	0.03%	-0.55%	20.19%	1.08%
United States	5.35%	5.14%		-17.50%
World	0.80%	0.94%	-15.68%	-3.05%

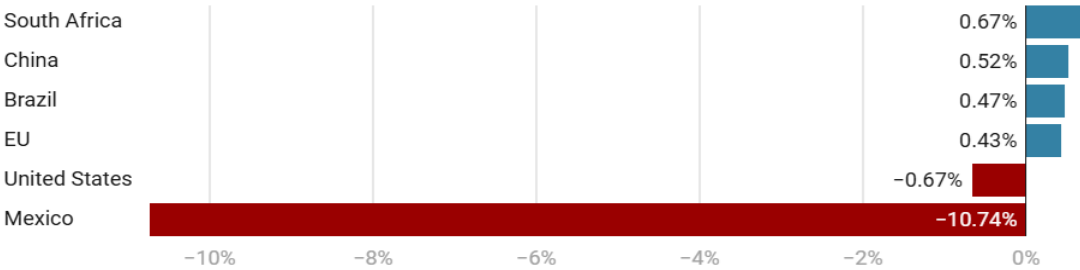
Source: Calculations by authors based on MIRAGRODEP simulations.

Due to the importance of the U.S. in Mexico's exports and the difficulties of diverting trade to other regions, would exert downward pressure on prices (see Figure 5). The expected 11% decline in Fruits and Vegetables export prices reflects these distortions. Unlike the U.S., where Mexico has strong distribution channels and brand recognition, the European and Chinese markets are more fragmented and competitive. As supply exceeds demand, prices are likely to fall, eroding profit margins for Mexican producers. Smaller producers, particularly those lacking the scale and infrastructure to enter new markets, may be affected.

From a broader macroeconomic perspective, the imposition of U.S. tariffs could have ripple effects beyond trade flows. Reduced export earnings and lower prices could contract rural incomes, increase unemployment in agriculture-dependent regions, and slow growth in Mexico's agrifood sector. This scenario illustrates the broader vulnerabilities of concentrated trade relationships and underscores the need for diversification and resilience in global agrifood supply chains.

**Figure 5. Impact of tariffs on Fruits and Vegetables prices**

Percentage change from baseline under North America scenario



Assumes countries impose counter-retaliatory tariffs to match new U.S. tariffs.  
 Source: Calculations by authors based on MIRAGRODEP simulations.

**6.2.2 Pork and Poultry Meat – Liberation Day scenario**

Under the *Liberation Day* scenario, the EU strengthens its position as a competitive exporter of Pork and Poultry Meat, particularly to high-demand markets in Asia (see Table 8). The EU registers substantial trade surpluses with Japan (+22%), China (+10%), and Mexico (+19%), reflecting its capacity to meet rising global demand with high-standard, export-ready products. Japan, a key importer that account for 9% of global imports, shows consistent demand across suppliers, with China capturing a significant portion of this demand.

In contrast, North American trade flows, between the U.S., Mexico, and Canada, are shaped by the fact the U.S. exempts Canada and Mexico from supplemental tariffs, the offering a clear comparative advantage within the region. The U.S. increases its Pork and Poultry Meat exports to Mexico, benefiting from close integration and preferential access. However, its exports to other global markets decline sharply, leading to an overall drop in total exports. Canada, on the other hand, boosts its exports to the U.S., and given the size of the American market, this increase significantly strengthens Canada’s overall export position. Mexico, meanwhile, leverages its access to both U.S. and global suppliers, maintaining strong trade flows within the region and expanding imports from key partners, taking advantage of broader global disruptions while benefiting from stable regional trade conditions.

**Table 8. Pork and Poultry Meat Trade Diversion in value terms**

Percentage change from baseline under Liberation Day scenario with counter-retaliatory tariffs.

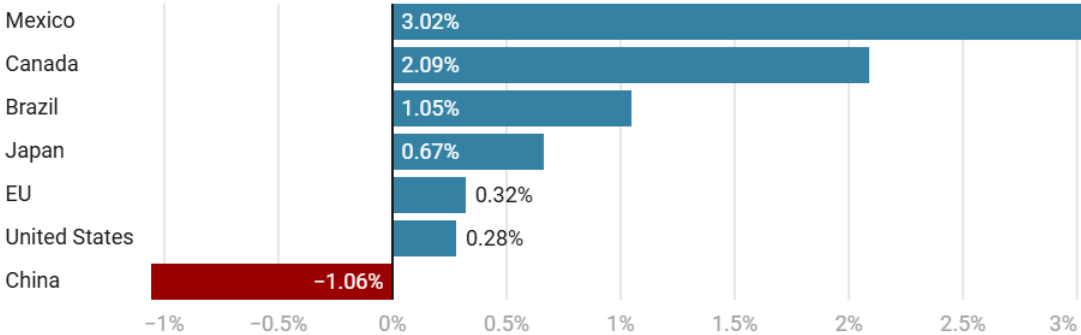
Exporter	Importer					
	China	EU	Japan	Mexico	United States	World
Brazil	0.65%	-7.65%	12.28%	8.96%	-61.28%	0.07%
Canada	-10.70%	-18.44%	-0.38%	-3.94%	20.31%	8.43%
China		18.72%	44.10%	39.86%	-99.41%	31.06%
EU	9.60%		22.27%	18.51%	-86.03%	6.92%
United States	-99.63%	-90.90%	-92.82%	19.02%		-48.09%
World	-20.51%	-4.68%	-4.34%	17.12%	-27.62%	-5.64%

Source: Calculations by authors based on MIRAGRODEP simulations.

A third notable outcome under the Liberation Day scenario is the general upward pressure on prices for Pork and Poultry Meat across most regions, driven largely by the counter-retaliatory tariffs imposed globally (see Figure 6). The application of targeted tariffs, especially among major exporters, creates new frictions and inefficiencies in trade, raising costs across supply chains. As a result, prices tend to increase in key markets such as Mexico (+3.0%), Canada (+2.1%), Brazil (+1.0%), and even the EU (+0.3%). The only major exporter experiencing a decline in prices is China (-1.1%). Overall, these price movements suggest that while trade volumes are being reshaped, market access frictions continue to exert pressures on global meat prices.

**Figure 6. Impact of tariffs on Pork and Poultry Meat prices**

Percentage change from baseline under Liberation Day scenario



Assumes countries impose counter-retaliatory tariffs to match new U.S. tariffs.

Source: Calculations by authors based on MIRAGRODEP simulations.

### 6.2.3 Oilseeds – China + 10% scenario

China plays a pivotal role in global oilseed markets, particularly as the dominant importer of soybeans. In the 2023/2024 marketing year, China imported 112 million metric tons of soybeans, 62% of global soybean trade, driven by its need for soybean meal for animal feed and soybean oil for food use. Since 2000, China’s soybean import demand has expanded at an extraordinary average annual rate of 9.2%, vastly outpacing global growth. This voracious demand has structured the global soybean supply chain, with Brazil and the U.S. emerging as the two largest exporters to China, accounting for a combined 92% of China’s imports. However, shifts in trade policy, such as the proposed 125% tariff on U.S. soybeans under the *China +10%* scenario, could radically disrupt existing flows and prices in the global oilseed market.

Under this scenario, U.S. soybean exports to China would become prohibitively expensive, likely falling to near zero (see Table 9). Brazil, already China’s largest supplier, would further consolidate its position, with Argentina and other South American exporters also increasing shipments. Despite this adjustment, China’s total oilseed imports are projected to decline by 8.2% due to supply constraints and higher prices. The U.S., meanwhile, would face an estimated 39% drop in oilseed exports overall, as new buyers in secondary markets (Europe and Mexico) only partially compensate for lost Chinese demand. Global oilseed trade would contract by 4.2%, revealing the scale of the distortion caused by tariff-induced trade redirection.

**Table 9. Oilseeds Trade Diversion in value terms**

Percentage change from baseline under China + 10% scenario with counter-retaliatory tariffs.

Exporter	Importer			
	China	EU	Mexico	World
Argentina	35.40%	-30.49%	-53.10%	20.38%
Brazil	29.11%	-33.44%	-55.39%	16.20%
Canada	72.35%	-11.18%	-40.69%	16.22%
United States	-99.12%	75.87%	23.39%	-38.57%
World	-8.24%	2.69%	0.30%	-4.23%

Source: Calculations by authors based on MIRAGRODEP simulations.

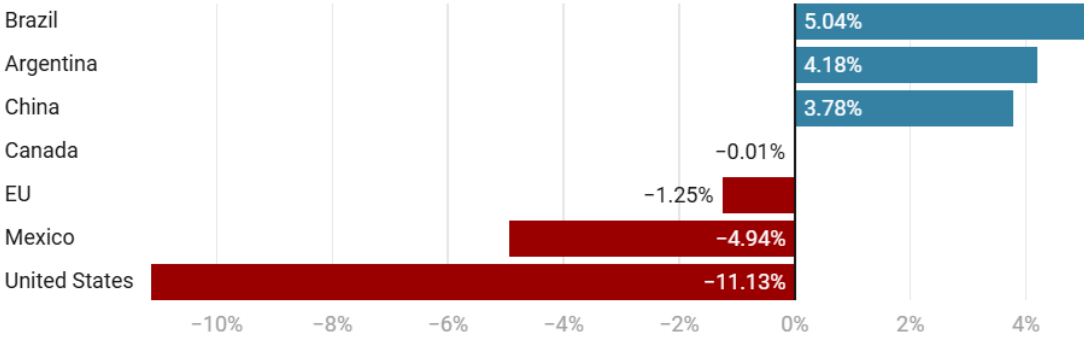
The effects of this disruption would extend beyond volumes to global price structures (see Figure 7). The sharp fall in U.S. export demand would lead to a projected 11.1% drop in U.S. oilseed prices, as producers face oversupply and diminished margins. In contrast, China’s bid to secure supply from alternative sources would push

prices up for South American exporters and domestic oilseed prices in China are expected to rise by nearly 4%. These divergent trends reflect severe segmentation in global markets under trade constraints, with price signals no longer reflecting efficient allocation but rather strategic redirection and protectionism.

Other major oilseed importers would experience mixed outcomes. The EU, benefiting from an influx of cheaper U.S. oilseeds, could see prices fall by 1.2%, while Mexico, more exposed to the U.S. market, could see oilseed prices decline by as much as 5%. These shifts create opportunities for U.S. exporters in non-Chinese markets, but they come at a significant aggregate cost. Not only does the U.S. lose access to its most valuable agricultural export destination, but global supply chains are forced to reorganize in less efficient ways. The *China +10%* scenario underscores the systemic vulnerabilities in global agricultural trade, where concentrated bilateral dependencies can be rapidly destabilized by targeted tariffs.

**Figure 7. Impact of tariffs on Oilseeds prices**

Percentage change from baseline under China + 10% scenario



Assumes countries impose counter-retaliatory tariffs to match new U.S. tariffs.

Source: Calculations by authors based on MIRAGRODEP simulations.

## 7. CONCLUSIONS

The *North America* scenario produces the most concentrated regional impacts, with severe GDP losses in Canada and Mexico due to their deep integration with the U.S. market. The imposition of 25% tariffs by the U.S. on its regional partners, and the reciprocal measures, lead to sharp declines in agrifood trade, with exports from Mexico to the U.S. dropping by over 50% and Canada's by more than 65%. Mexico redirects some exports to China and the EU, and bilateral trade between Canada and Mexico increases, but these diversions are insufficient to replace lost access to the U.S. market. Terms of Trade deteriorate significantly for both Mexico (-6.4%) and Canada (-4.6%), and regional prices rise as supply chains are disrupted. Unlike the other scenarios, the global impacts here are smaller, but the regional consequences are severe.

Mexico's reliance on the U.S. market is particularly evident in Fruits and Vegetables, where over 94% of exports flowed U.S. in 2023. The imposition of U.S. tariffs would severely erode Mexico's competitiveness, causing a projected 20% drop in overall exports and an 11% decline in export prices, as producers face higher costs and attempt to reorient trade toward the EU and China. While some trade would be redirected, the lack of well-established supply chains and fragmented market structures in these regions would limit gains and compress margins, particularly for smaller producers.

The *North America* scenario shows the vulnerability of highly concentrated trade relationships and highlights the economic imperative of diversifying export markets and enhancing the resilience of regional supply chains.

In the *China +10%* scenario, the primary economic disruption centers on bilateral trade between the U.S. and China, with both countries suffering from GDP losses and deteriorating trade balances. U.S. agrifood exports to China fall sharply, while China's overall Terms of Trade and export position weaken due to restricted market access. In response, China significantly diversifies its imports, increasing agrifood purchases from Canada, LAC, and SSA. This trade diversion benefits some secondary exporters but also contributes to a global oversupply in U.S. products, weakening prices and demand.

This realignment is particularly disruptive in the global oilseed market, where China plays a pivotal role as the world's largest soybean importer. A 125% tariff on U.S. soybeans makes American exports to China virtually

nonviable, leading to an estimated 39% drop in total U.S. oilseed exports. Brazil and Argentina expand their market share, but China's total oilseed imports still decline by 8.2%, constrained by higher prices and limited supply. As a result, global oilseed trade contracts by 4.2%, with U.S. prices falling 11.1% due to domestic oversupply, while Chinese prices rise nearly 4%, revealing sharp market segmentation. Other importers such as the EU and Mexico experience mixed effects, gaining from cheaper U.S. supply but facing market volatility. The *China + 10%* scenario illustrates how tit-for-tat tariff escalation between two major economies can lead to widespread trade fragmentation, inefficiencies, and longer-term shifts in sourcing strategies that redefine global trade patterns, especially for highly concentrated and interdependent markets like oilseeds.

In the *Liberation Day* scenario, the broad imposition of U.S. tariffs, coupled with an overall 10% tariff (including regional partners), leads to pronounced trade diversion and diminished GDP and global trade volumes. The U.S. experiences the most significant drop in GDP, exports and imports, which highlights the potential self-inflicted economic harm of broad tariff hikes. Because they are exempted from the "Liberation Day" tariffs, Canada and Mexico register modest improvements in their Terms of Trade and benefit from deeper intraregional integration, these gains are insufficient to offset the broader inefficiencies introduced by disrupted supply chains and declining competitiveness. The EU, by contrast, capitalizes on the opportunity to absorb displaced trade flows, particularly from Asia.

Trade in pork and poultry meat exemplifies the sectoral impacts of such trade realignments. The EU emerges as a leading beneficiary, expanding its exports to Japan, China, and Mexico, and reinforcing its competitive position in high-standard meat products. In North America, the preferential 10% tariff structure supports increased U.S. exports to Mexico and a notable rise in Canadian exports to the U.S., reflecting the relative insulation of regional trade. However, the U.S. experiences a sharp contraction in its global meat exports, and Mexico's role evolves as a diversified importer leveraging both regional and global suppliers.

The *Liberation Day* scenario highlights the self-defeating nature of broad tariff hikes, revealing long-term risks to U.S. market share and influence. As Southern Hemisphere exporters strengthen ties with key importers, the U.S. faces a potential permanent loss of competitiveness, signaling a lasting realignment in global agricultural trade flows.

Together, the three scenarios underscore the complexity and far-reaching consequences of large-scale trade disruptions in global agricultural markets. While each scenario reveals distinct patterns of impact—whether highly concentrated regional losses in North America, strategic global realignments triggered by U.S.-China tensions, or widespread fragmentation under wide ranging U.S. tariff policies—all highlight the vulnerability of interdependent trade systems to protectionist shocks. These findings emphasize the importance of market diversification, investment in resilient supply chains, and the maintenance of open and predictable trade environments. In an era of rising geopolitical uncertainty, evidence-based trade policy and strategic cooperation will be critical to minimizing economic harm, ensuring food security, and preserving the stability of global agri-food trade networks.

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## ANNEX

**Table 10. Reciprocal tariff under ‘Liberation Day’ scenario**

Additional percentage points to the existing tariffs

Country	Partner	<i>Additional percentage points</i>
United States	Mexico	0%
United States	Canada	0%
United States	China	54%
United States	Cambodia	49%
United States	Laos	48%
United States	Madagascar	47%
United States	Vietnam	46%
United States	Sri Lanka	44%
United States	Myanmar	44%
United States	Bangladesh	37%
United States	Serbia	37%
United States	Botswana	37%
United States	Thailand	36%
United States	Taiwan	32%
United States	Indonesia	32%
United States	Switzerland	31%
United States	South Africa	30%
United States	Pakistan	29%
United States	Tunisia	28%
United States	Kazakhstan	27%
United States	India	26%
United States	Korea	25%
United States	Japan	24%
United States	Malaysia	24%
United States	Cote d’Ivoire	21%
United States	European Union	20%
United States	Jordan	20%
United States	Nicaragua	18%
United States	Israel	17%
United States	Philippines	17%
United States	Norway	15%
United States	All other countries	10%
China	United States	54%

**Table 11. Impact of tariffs on GDP**

Percentage change from baseline

Region/ country	North America		China + 10		Liberation Day	
	No Retaliation	With Retaliation	No Retaliation	With Retaliation	No Retaliation	With Retaliation
USA	-0.193	-0.226	-1.079	-1.138	-0.993	-1.212
Canada	-0.248	-1.48	-0.043	-0.441	0.207	-0.213
Mexico	-0.522	-1.975	-0.029	-0.621	0.516	-0.205
EU	0	0.001	0.018	-0.049	-0.006	-0.191
Other Europe	-0.002	0.001	0.008	-0.049	0.014	-0.108
Asia (without China)	0.004	0.008	-0.043	-0.412	-0.034	-0.252
China	0.006	0.026	-0.052	-0.01	-0.063	0.047
Eastern Asia (without China)	0.007	0.018	-0.021	-0.043	-0.094	-0.346
South-Eastern Asia	0.009	0.017	-0.016	-0.036	-0.1	-0.161
Southern Asia	-0.005	0.005	-0.021	0.003	-0.029	-0.053
Central Asia	0.002	0.005	-0.01	-0.052	-0.002	-0.106
Western Asia	0.019	0.038	-0.043	-0.173	-0.014	-0.185
LAC (without Mexico)	0.03	0.051	-0.068	-0.298	-0.008	-0.315
Caribbean	0.029	0.075	-0.164	-0.601	-0.108	-0.553
Central America	0.011	0.032	-0.014	-0.106	0.017	-0.112
Southern Cone	0.041	0.045	-0.096	-0.224	-0.097	-0.271
Andean Region	0.006	0.018	-0.019	-0.025	-0.027	-0.038
Africa	0.009	0.018	0.007	-0.008	0.003	-0.002
Northern Africa	0.005	0.018	-0.032	-0.033	-0.04	-0.055
Sub-Saharan Africa	0.003	0.007	-0.03	-0.015	-0.021	-0.055
Eastern Africa	0.003	0.009	0.021	-0.007	0.013	-0.141
Middle Africa	0.007	0.023	-0.054	-0.075	-0.069	-0.064
Southern Africa	0.005	0.006	-0.006	-0.034	0.01	-0.068
Western Africa	-0.056	-0.104	-0.278	-0.392	-0.255	-0.44
Oceania	-0.193	-0.226	-1.079	-1.138	-0.993	-1.212
World	-0.248	-1.48	-0.043	-0.441	0.207	-0.213

**Table 12. Impact of tariffs on Terms of Trade**

Percentage change from baseline

Region/ country	North America		China + 10		Liberation Day	
	No Retaliation	With Retaliation	No Retaliation	With Retaliation	No Retaliation	With Retaliation
USA	1.522	-0.038	7.26	4.914	7.296	0.163
Canada	-6.392	-4.559	-4.114	-3.362	0.509	1.036
Mexico	-8.598	-6.397	-2.906	-1.843	4.007	4.457
EU	0.166	0.289	-0.307	-0.209	-0.801	0.13
Other Europe	0.139	0.169	-0.295	-0.093	-0.293	0.218
Asia (without China)	0.257	0.347	-1.936	-1.685	-1.854	-1.331
China	0.041	0.102	-0.16	0.052	-0.07	0.487
Eastern Asia (without China)	0.089	0.142	0.098	0.119	-0.687	-0.242
South-Eastern Asia	0.119	0.124	0.156	0.132	-0.712	-0.3
Southern Asia	-0.023	0.031	-0.161	0.334	-0.097	0.517
Central Asia	0.096	0.115	-0.589	-0.226	-0.461	0.074
Western Asia	0.405	0.577	-0.936	-0.012	-0.681	0.76
LAC (without Mexico)	0.379	0.615	-1.031	-0.378	-0.505	1.033
Caribbean	0.743	0.867	-0.772	-0.182	-0.282	1.094
Central America	0.216	0.411	-0.634	0.353	-0.393	0.985
Southern Cone	0.751	0.838	-1.657	-0.675	-1.541	-0.108
Andean Region	0.073	0.14	-0.42	-0.031	-0.365	0.244
Africa	0.049	0.086	-0.277	0.117	-0.083	0.49
Northern Africa	0.085	0.168	-0.492	-0.105	-0.508	0.121
Sub-Saharan Africa	0.112	0.207	-1.091	-0.445	-0.95	-0.176
Eastern Africa	0.091	0.168	-0.251	-0.055	-0.49	-0.027
Middle Africa	0.099	0.205	-0.691	-0.128	-0.607	0.202
Southern Africa	0.067	0.168	-0.445	0.007	-0.219	0.646
Western Africa	-0.007	-0.005	0.007	0.007	0.016	0.006
Oceania	1.522	-0.038	7.26	4.914	7.296	0.163
World	-6.392	-4.559	-4.114	-3.362	0.509	1.036

**Table 13. Impact of tariffs on Agrifood Exports in values**

Percentage change from baseline

Region/ country	North America		China + 10		Liberation Day	
	No Retaliation	With Retaliation	No Retaliation	With Retaliation	No Retaliation	With Retaliation
USA	-7.525	-14.106	-18.659	-23.262	-19.179	-39.144
Canada	-12.768	-19.705	-1.681	0.191	11.117	12.274
Mexico	-18.139	-24.953	-4.103	-4.159	8.191	8.446
EU	0.573	1.622	-0.703	-0.411	-1.484	-0.898
Other Europe	0.07	0.721	-0.764	-0.583	-1.348	0.361
Asia (without China)	0.476	1.549	-3.932	-7.553	-2.88	-2.281
China	0.304	0.564	-0.1	0.794	-1.262	0.454
Eastern Asia (without China)	0.66	1.225	-1.469	-0.992	-3.847	-2.615
South-Eastern Asia	0.737	1.33	-0.738	-0.983	-2.562	-0.807
Southern Asia	0.016	0.362	-0.175	0.917	-0.469	2.213
Central Asia	0.432	1.047	-0.458	-0.523	-1.132	0.345
Western Asia	0.576	1.325	-0.958	0.397	-1.282	0.534
LAC (without Mexico)	2.765	3.977	-3.623	-3.444	-4.152	-7.142
Caribbean	1.696	3.405	-2.192	-2.716	-2.567	-4.422
Central America	0.225	0.766	-0.744	1.292	-1.197	1.863
Southern Cone	1.171	2.225	-0.798	-1.23	-0.474	-1.389
Andean Region	0.308	0.789	-0.358	0.081	-1.336	0.515
Africa	0.586	1.223	-0.601	0.005	-1.428	0.24
Northern Africa	0.212	0.64	-0.274	0.107	-1.304	0.609
Sub-Saharan Africa	0.594	1.015	-0.396	-0.888	-1.315	0.444
Eastern Africa	0.143	0.714	-0.581	-0.47	-1.32	0.568
Middle Africa	0.152	0.632	-0.219	-0.039	-1.329	0.777
Southern Africa	0.438	0.844	-0.675	-0.481	-1.042	1.373
Western Africa	-1.558	-2.287	-3.443	-3.761	-3.345	-4.706
Oceania	-7.525	-14.106	-18.659	-23.262	-19.179	-39.144
World	-12.768	-19.705	-1.681	0.191	11.117	12.274

**Table 14. Impact of tariffs on Agrifood Imports in values**

Percentage change from baseline

Region/ country	North America		China + 10		Liberation Day	
	No Retaliation	With Retaliation	No Retaliation	With Retaliation	No Retaliation	With Retaliation
USA	-9.391	-13.222	-13.131	-17.408	-10.154	-24.456
Canada	-14.59	-23.965	-4.854	-4.003	7.298	7.705
Mexico	-20.442	-33.955	-7.129	-6.327	10.018	11.161
EU	0.573	0.891	-1.018	-0.683	-2.879	-2.49
Other Europe	0.159	0.405	-1.049	-0.66	-1.256	0.246
Asia (without China)	0.885	1.26	-6.07	-8.74	-6.696	-9.021
China	0.253	0.617	-1.936	-0.838	-2.001	0.282
Eastern Asia (without China)	0.421	0.831	-1.007	-0.417	-4.073	-3.81
South-Eastern Asia	0.453	0.71	-1.31	-0.829	-3.863	-3.296
Southern Asia	0.023	0.316	-1.706	-0.634	-2.171	0.235
Central Asia	0.191	0.451	-1.366	-0.829	-1.695	-0.387
Western Asia	0.751	1.455	-2.174	-0.815	-1.787	-2.2
LAC (without Mexico)	0.843	1.423	-2.656	-1.657	-2.193	-3.574
Caribbean	0.897	1.884	-2.055	-1.087	-1.264	-3.855
Central America	0.407	0.963	-1.395	0.409	-0.971	0.678
Southern Cone	1.04	1.839	-2.928	-1.661	-2.882	-3.972
Andean Region	0.161	0.489	-1.603	-0.701	-1.881	-0.08
Africa	0.059	0.437	-1.34	-0.476	-1.443	0.089
Northern Africa	0.234	0.526	-1.791	-0.861	-2.194	-0.201
Sub-Saharan Africa	0.239	0.364	-1.792	-0.953	-1.925	-0.289
Eastern Africa	0.265	0.584	-1.592	-0.973	-2.828	-1.526
Middle Africa	0.203	0.486	-1.77	-0.796	-2.148	0.06
Southern Africa	0.306	0.695	-1.719	-0.908	-1.727	-0.444
Western Africa	-1.558	-2.287	-3.443	-3.761	-3.345	-4.706
Oceania	-9.391	-13.222	-13.131	-17.408	-10.154	-24.456
World	-14.59	-23.965	-4.854	-4.003	7.298	7.705

<sup>i</sup> The paper employs a Global General Equilibrium Model with 29 countries to analyze trade policies under non-cooperative and cooperative Nash equilibria, incorporating endogenous trade imbalances. Production is represented through CES functions with capital and labor as inputs, while consumption follows a nested CES utility function with the Armington assumption of product differentiation by country or origin. The framework explicitly accounts for bilateral trade costs, including tariffs and non-tariff barriers. A monetary extension is introduced with a fixed exchange rate and non-accommodative monetary policy. Calibration relies on standard elasticity at 2.

<sup>ii</sup> The study employs a simulation-approach using observed tariff increases and historical analogies to approximate the economic impact of the China–US trade war. The method assumes a maximum trade volume decline based on past US–Japan trade patterns, applies a 60% value-added ratio for Chinese export to reflect a worst case scenario, and incorporates a marginal propensity to consume of 0.5 to capture output losses through trade and consumption linkages.

<sup>iii</sup> The paper applies a multi-country, multi-sector general equilibrium model based on Eaton and Kortum (2002), extended to 62

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economies and 33 sectors (18 tradable and 15 services). The model incorporate input-output linkages across sectors, allowing for the analysis of trade, output, and real wages. Following the approach of Caliendo and Parro (2015) the framework uses the 2015 OECD Inter-Country Input-Output (ICIO) database as its benchmark, providing structure of calibrating bilateral trade flows and production linkages.

<sup>iv</sup> The study uses the GTAPinGAMS model, a static multi-country, multi-sector computable general equilibrium framework grounded in the Arrow-Debreu general equilibrium tradition. The model incorporates a full input-output structure and bilateral trade flows across 65 sectors and 141 regions/countries, with production and preferences represented by CES functions under perfect competition. It adopts the Armington assumption, treatign imports by country of origin as imperfect substitutes, with nested CES structure. Calibration is based on the GTAP 10 database. Limitation include parametric and structural uncertainty, the absence of foreign direct investment, and the lack of distinction between domestic and foreign ownership.

<sup>v</sup> GTAP 11 computable general equilibrium (CGE) model is a static multi-country, multi-sector CGE framework in the Arrow-Debreu tradition, calibrated to 2017 data. It includes 65 agri-food and manufacturing sectors across 20 aggregated regions. Preferences and production technologies follow CES structures under perfect competition, with a full input-output representation of industry technologies. The model adopts the Armington assumption with nested CES functions distinguishing between domestic and imported goods, across imported sources.

<sup>vi</sup> Section 201 of the Trade Act of 1974 provides a legal mechanism for U.S. industries to seek temporary import relief when facing serious injury or the threat thereof due to a surge in imports. The U.S. International Trade Commission (USITC) must determine wheter increased imports are a “substantial cause” of serioud injury. If the finding is affirmative, the USITC recommends a remedy (such as tariffs or quotas) to the President, who makes the final decision on wether and how to apply the relief. (USITC, s.f.)

<sup>vii</sup> Section 232 of the Trade Expansion Act of 1962 authorizes the U.S. government to investigate wheter specific imports threaten national security. Administered by the Department of Commerce, these investigations assess whether certain products are being imported in such quantities or under conditions that could impaiir national defense or broader security interests. The Secretary of Commerce must submit findings to the President within 270 days, who then decides whether and how to respond (tariff or other trade restrictions to mitigate the perceived threat). (Bureau of Industry and Security, 2024)

<sup>viii</sup> Section 301 of the Trade Act of 1974 authorizes to U.S. Trade Representative (USTR) to investigate and respond to foreign trade practices that violate trade agreements or are unjustifiable, unreasonable, or discriminatory, and the burden or restrict U.S. Commerce. The USTR may initiate an investigation based on a petition from an interested party or on its own initiative. If a violation is found, the USTR may recommend actions sucha as the imposition of tarrifs, suspension of trade concessions, or the negotiation or agreements to elimiante the offending practice or provide compensation. (Congress, 2024)

<sup>ix</sup> The *America First* investment policy marks a strategic recalibration of the United States’ stance on foreign capital, prioritizing national security and economic sovereignty over liberal investment norms. While maintaining an open environment for investment from allied nations, the policy establishes differentiated treatment based on geopolitical alignment, particularly restricting capital originating from adversarial states such as the People’s Republic of China. This approach operationalizes the nexus between economic and national security by enhancing scrutiny over transactions in critical sectors—such as technology, infrastructure, and agriculture—through institutional mechanisms like the Committee on Foreign Investment in the United States (CFIUS). The policy’s implications for international trade are profound, as it redefines capital flows, introduces new layers of regulatory control, and may fragment global value chains. (The White House, 2025)

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