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Trade, Agriculture, and Development: Meeting Global Challenges to Commonwealth Countries

MICHAEL G. PLUMMER
JOHNS HOPKINS UNIVERSITY, SAIS EUROPE

Acknowledgments

Contents

I. Introduction

Addressing agricultural challenges needs to be a worldwide priority, as they are at the core of contemporary systemic problems: poverty, insecurity, inequality, climate change, even geopolitical conflict.

Raising agricultural productivity, promoting easy access to nutritious food, and facilitating trade in agricultural commodities in a sustainable way are essential to advancing global living standards and well-being. This point is sometimes missed in developed countries, where spending on food tends to account for only about a tenth of household expenditures[1] and plentiful supplies are taken for granted. But it is painfully obvious in low-income economies, where pursuing food security can be a constant struggle. Moreover, addressing agricultural challenges needs to be a worldwide priority, as they are at the core of contemporary systemic problems: poverty, insecurity, inequality, climate change, even geopolitical conflict. Global problems require global solutions; economic cooperation, particularly in agriculture, needs to be at the top of the global policy agenda.

Alas, it is not. The quarter-century that preceded the 2007-2008 global financial crisis was characterized by rising international integration propelled by concerted reductions in cross-border barriers to trade and investment. Today, however, the environment for economic cooperation is complicated by both positive and negative trends. On the positive side, recently established "mega-regional" trade groupings are breaking new ground particularly in terms of South-South cooperation, with the potential to stimulate significant global trade and investment in an inclusive way. Notable examples are the African Continental Free Trade Area (AfCFTA), which brings together 55 countries of the African Union and officially commenced in 2021; the Regional Comprehensive Economic Partnership (RCEP) agreement, in effect since 2022 and spanning 15 mostly developing economies in East Asia; and the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP), made up of 11 open economies in the Asia-Pacific region with a twelfth, the United Kingdom (UK), joining in 2023.[2] In addition, global environmental cooperation, such as via the Conference of Parties (COP) of the United Nations Framework Convention on Climate Change — the most recent of which, COP28, was held in December 2023 — has made progress in persuading countries to develop serious paths to net zero emissions, committing to the phasing out of fossil fuels and increasing international efforts to promote practical climate solutions.[3] Such agreements show that concerted, comprehensive global efforts are feasible.

Unfortunately, other forces are pulling the world in the opposite direction, with cooperation ostensibly breaking down in some areas and friction and outright conflict emerging in others. Multilateral trade cooperation under the World Trade Organization (WTO) has been struggling; the last attempt at a "single undertaking" of trade and investment liberalization, the Doha Development Agenda, was launched in November 2001 under the auspices of the WTO.[4] It reached an impasse in 2015, and even the WTO's dispute settlement Appellate Body has been in limbo since 2016. A stopgap Multi-Party Interim Appeal Arbitration Arrangement (MPIA) is in place but includes only 27 WTO parties (including the European Union) and excludes key members such as the United States.[5] The WTO's 13th Ministerial Conference in March 2024 had some positive outcomes, though was generally regarded as having achieved indifferent results overall. It failed to make progress in some key areas, such as public stockholding for food security purposes, enhanced

Agriculture and related land-use accounted for 17% of global greenhouse gas emissions. The sector has also been severely impacted by climate change, hurting in particular the poorest and most vulnerable countries where agriculture is the main economic activity of households.

disciplines on agricultural export restrictions, and rules on digital trade. Eighty-two WTO members in July 2024 released a "stabilised text" on e-commerce, but it remains doubtful if this "plurilateral" deal will survive the WTO gauntlet (Elms 2024; Ungphakorn 2024). Agriculture has proved over the years to be a particularly difficult sector to liberalize.

Even more ominously, in the past few years trade conflict has reached levels not experienced since the 1930s. And while COP has made progress, the most difficult roads lie ahead: the Paris Agreement of 1995 stresses the need to keep the rise in global temperatures to less than 1.5°C above pre-industrial levels and it is worrisome that we could reach that level very soon. The National Aeronautics and Space Administration (NASA)[6] estimates that global temperatures have already risen by 1.1°C and the World Meteorological Organization[7] assigns an 80% probability that the increase will reach 1.5°C for at least one year over the 2024-2028 period. In addition, some governments are backtracking on commitments.

Climate change is especially relevant to agriculture. It is a major contributor to climate change; the Food and Agriculture Organization of the United Nations (FAO 2022) estimates that in 2018, agriculture and related land-use accounted for 17% of global greenhouse gas (GHG) emissions. The sector has also been severely impacted by climate change, a process that is expected to get exponentially worse as global temperatures rise, hurting in particular the poorest and most vulnerable countries where agriculture is the main economic activity of households. Poverty levels have decreased significantly with economic reforms and global integration that began in the 1980s; for example, the percentage of individuals living in absolute poverty fell from 43% in 1981 to 9% in 2022,[8] but climate change could reverse this trend. The World Bank (2021) estimates that climate change could increase the number of individuals in poverty by 68-135 million by 2030, mostly

Climate change will hurt in particular the poorest and most vulnerable countries where agriculture is the main economic activity of households. (Photo source: Swathi Sridharan | Flickr).

Understanding the critical role of agriculture in addressing the multifaceted challenges facing Commonwealth countries, particularly those that are most vulnerable, and finding new means of advancing solutions are essential.

in Sub-Saharan Africa and South Asia, the world's poorest regions. It also has a negative effect on inequality; Dang, et al. (2023) estimates that a temperature increase of 1% Celsius increases not only poverty by 9.1% but also the Gini inequality index by 0.8%. Goals 1 and 2 of the 17 UN Sustainable Development Goals (SDGs) commit the international community to end poverty and create a world free of hunger, respectively, by 2030. Climate change works against them both, as well as most of the other SDGs.

Hence, understanding the critical role of agriculture in addressing the multifaceted challenges facing Commonwealth countries, particularly those that are most vulnerable, and finding new means of advancing solutions are essential. The goal of this paper is to analyze how international trade in general and agriculture trade in particular can be mobilized to meet these challenges and offer policy recommendations to support agricultural trade toward these ends.

The rest of the paper is organized as follows. Section II begins with an overview of trends in Commonwealth agricultural trade at the regional and subregional levels and considers key challenges facing development in member states, including issues related to poverty, food security, and climate change. Section III focuses on the potential of trade policy to reduce poverty, improve food security, and promote economic development, followed in Section IV by analysis of why and how agricultural trade has been inhibited by various policy instruments. Section V surveys empirical estimates of the potential benefits of agricultural trade liberalization based on the subject's extant literature, including quantitative work on the implications of emerging mega-regional agreements, as well as adding some fresh insights via new estimates of the potential benefits of agricultural trade liberalization at the product level for Commonwealth countries.

In general, the study finds strong support for the premise that trade in agriculture is essential to address many of the economic and social goals of the Commonwealth, such as increasing economic welfare, reducing poverty, enhancing food security, and addressing climate change challenges, and, thus, will be a powerful tool in achieving many of the SDGs.

II. Commonwealth agricultural trade in the context of global challenges

Trade has been a perennial link and conduit for cooperation across the Commonwealth nations and has contributed significantly to the economic success of its members. Food trade has been a vital part of this process.

International trade in agriculture boosts consumer welfare by allowing access to a greater variety of food products for consumers at a lower price. It improves domestic supply via more efficient inputs for agricultural production along the value chain and new technologies. Countries that are not well-endowed with efficient agriculture-related endowments benefit through imports, and agricultural exports can gain by selling goods abroad at a higher price and exploiting economies of scale. A global market offers greater incentives for investments in food-related research and, hence, higher productivity growth. For example, Farrokhi and Pelligrina (2023)[9] uses a multi-country general equilibrium model that highlights the importance of trade in improving technology through two channels: (1) adoption of new technologies through agricultural inputs; and (2) crop specialization to take advantage of the international marketplace, finding that both have been equally important in increasing welfare. The study also estimates that agricultural productivity from input growth across borders leads to large positive welfare effects. These results are consistent with the econometric work by Stone and Shepard (2011), which uses firm-level data to show that imported inputs have a strong and statistically significant effect on "total factor productivity" (TFP) and innovation in the food and beverages sector (as well as others). Martin (2017) underscores that international trade liberalization improves food security in a number of ways, including by: (1) taking advantage of gains from divergent factor endowments across countries, for example, land-abundant countries exchanging their more efficient agricultural exports with land-scarce countries; (2) increasing production efficiency in agriculture; (3) augmenting dietary diversity; and (4) improving access to food.

Trade has been a perennial link and conduit for cooperation across the Commonwealth nations and has contributed significantly to the economic success of its members.[10] Food trade has been a vital part of this process. This section first unpacks Commonwealth food trade and then considers the role it plays in helping the association face contemporary challenges.

A. Commonwealth food trade at a glance

Particularly for its lower-income members, food trade is critical to the food security of Commonwealth countries, several of which are among the most food-insecure in the world, and in achieving SDG Goal 2 (Ali 2022). Fostering stable, healthy and dynamic food markets deserves, therefore, to be prioritized by policymakers in setting not only domestic policy but also international trade and cooperation initiatives. To begin, it is useful to assess recent trends in Commonwealth food trade flows. The approach, of course, is stylized; additional perspectives can be found in Zhuawu, et al. (2020), Vickers, et al. (2020), and Ali (2022).

Table 1 breaks down Commonwealth food trade at aggregate and subgroup levels.[11] It offers an idea of the varying degrees of dependency on agricultural trade across the Commonwealth for net food importers and exporters. Overall, Commonwealth food trade is in surplus; food imports came to US$224 billion and exports to US$263 billion in 2022, with the latter exceeding the former

The intra-Commonwealth share of total food imports (exports) comes to about one-fourth (one-fifth); hence, Commonwealth countries in the aggregate rely on external sources for about three-fourths of their imports and four-fifths of their exports.

by about 17% of total imports. Food exports constitute 7.8% of the region's total merchandise exports, which is higher than the global norm (6.8%), and 5.8% of imports, which is slightly lower (6.1%). The intra-Commonwealth share of total food imports (exports) comes to about one-fourth (one-fifth); hence, Commonwealth countries in the aggregate rely on external sources for about three-fourths of their imports and four-fifths of their exports. Still, the developing members are more dependent on intra-Commonwealth trade, particularly Small Island Developing States (SIDSs) in the Pacific who source 82% of their imports from the Commonwealth. Developing members dominate intra-Commonwealth trade with an almost three-fourths share of the region's imports and more than two-thirds of its exports.

Table 1 – Food exports and imports of Commonwealth economies by group, 2022

Region/ Country	IMPORTS (VALUE, US$ MILLION, AND SHARE (%))						EXPORTS (VALUES, US$ MILLION, AND SHARE (%))					
	Total merchandise	Food					Total merchandise	Food				
		Value	% total	from CW (US$ m)	% from CW	Share of intra-CW (%)		Value	% total	to CW (US$ m)	% to CW	Share of intra-CW (%)
World	25,699,974	1,558,522	6.1	278,668	17.9	–	24,917,562	1,549,212	6.2	228,652	14.8	-
All Common-wealth	3,865,350	224,304	5.8	53,021	23.6		3,392,529	263,263	7.8	49,352	18.7	
OF WHICH												
Developed	1,791,228	107,993	6.0	13,640	12.6	25.7	1,597,416	145,201	9.1	15732	10.8	31.9
Developing	2,074,122	116,312	5.6	39,381	33.9	74.3	1,795,113	118,062	6.6	33,620	28.5	68.1
BY REGION												
Africa	335,334	29,020	8.7	11,133	38.4	21.0	289,118	23,651	8.2	8,626	36.5	17.5
Asia	1,687,134	81,993	4.9	25,914	31.6	48.9	1,446,814	90,880	6.3	23,555	25.9	47.7
Caribbean & Americas	623,876	39,064	6.3	3,445	8.8	6.5	638,073	62,923	9.9	3,493	5.6	7.1
Caribbean SIDS	40,327	3,524	8.7	885	25.1	1.7	39,040	1,167	3.0	479	41.0	1.0
Europe	844,271	55,139	6.5	4,983	9.0	9.4	540,599	15,889	2.9	1,425	9.0	2.9
Pacific	374,734	19,088	5.1	7,546	39.5	14.2	477,926	69,920	14.6	12,253	17.5	24.8
Pacific SIDS	11,326	1,774	15.7	1,449	81.7	2.7	20,140	2,364	11.7	960	40.6	1.9
VULNERABLE GROUPS												
LDCs (14)	156,317	16,869	10.8	8,459	50.1	16.0	106,311	5,287	5.0	2,135	40.4	4.3
SIDS (24)	63,142	7,177	11.4	2,838	39.5	5.4	62,505	4,496	7.2	1,688	37.6	3.4
Small States (33)	116,697	12,677	10.9	5,242	41.4	9.9	111,184	7,182	6.5	2,831	39.4	5.7

Notes: Calculations are as follows: "% total" is share of food imports (exports) in total imports (exports); "% from (to) CW" is the share of food imports (exports) from (to) Commonwealth countries in total trade; and "share of intra-CW (%)" is the share of food imports (exports) in total Commonwealth intra-regional imports (exports).
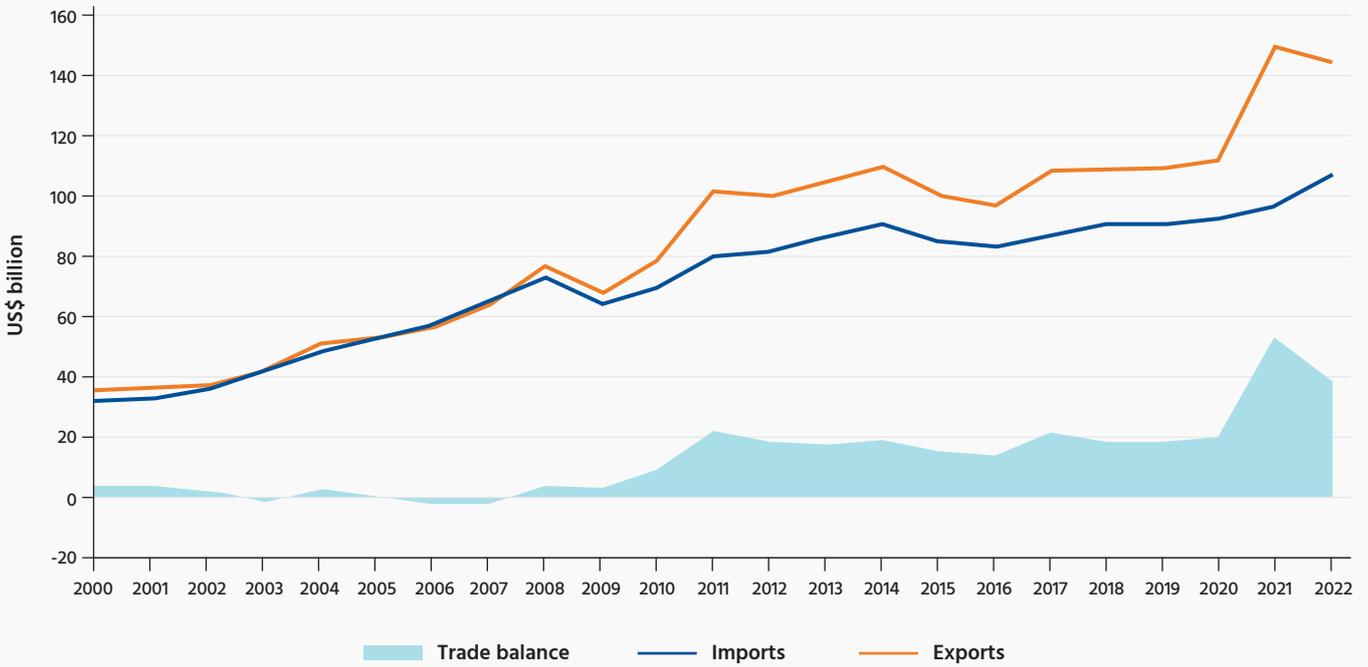**Source:** UNCTADStat, Commonwealth Secretariat.

The developed members make up somewhat less than half of total Commonwealth food imports but over half of its exports, leading to a US$39 billion food trade surplus that constitutes 95% of the combined regional total surplus in food trade, whereas developing countries have a small deficit.

Given the economic diversity across the Commonwealth, analysis at the subgroup level is more informative. Table 1 shows that the developed members make up somewhat less than half of total Commonwealth food imports but over half of its exports, leading to a US$39 billion food trade surplus that constitutes 95% of the combined regional total surplus in food trade, whereas developing countries have a small deficit. At the subregional level, food trade deficits accrue for Commonwealth members in Europe and Africa, and trade surpluses are in evidence in Asia and especially Pacific Commonwealth members. The Caribbean and the Americas subregion — to no small degree due to Canadian membership--is in surplus, but Commonwealth Least Developed Countries (LDCs) ran a significant deficit of US$12 billion, or over two-thirds (69%) of total imports of that subgroup. The SIDS also ran a deficit equivalent to about two-thirds of its total imports, except for Pacific SIDS which consistently ran a food surplus.

Figures 1-6 offer more detail at the sub-group level for the 2000-2022 time period. Figure 1 shows that developed Commonwealth members essentially had balanced food trade until 2009, after which their exports grew at a faster pace than imports with an especially strong uptick after 2020. Exports and imports declined significantly during the global financial crisis but since then growth has been healthy, particularly during the Covid-19 pandemic years. The same might be said of developing-country food trade (Figure 2) but with more balanced growth in imports and exports after the global financial crisis. Yet, the relative stability of developing-country food trade masks regional differences: African food exports (Figure 3) have been flat over the past decade and the region has had a deficit since 2015, whereas Asian food trade (Figure 4) has been continually in surplus, and food exports have been especially strong over the past few years. Caribbean SIDS exports and imports have been fairly stable with a trade deficit that has narrowed over the past few years (Figure 5) and, as noted, Pacific SIDS have continually registered a strong trade surplus over the period (Figure 6).

Figure 1 – Commonwealth developed food trade (US$ billion)

Trade balance   Imports   Exports

Source: UNCTADStat, Commonwealth Secretariat

Figure 2 – Commonwealth developing food trade (US$ billion)

Trade balance   Imports   Exports
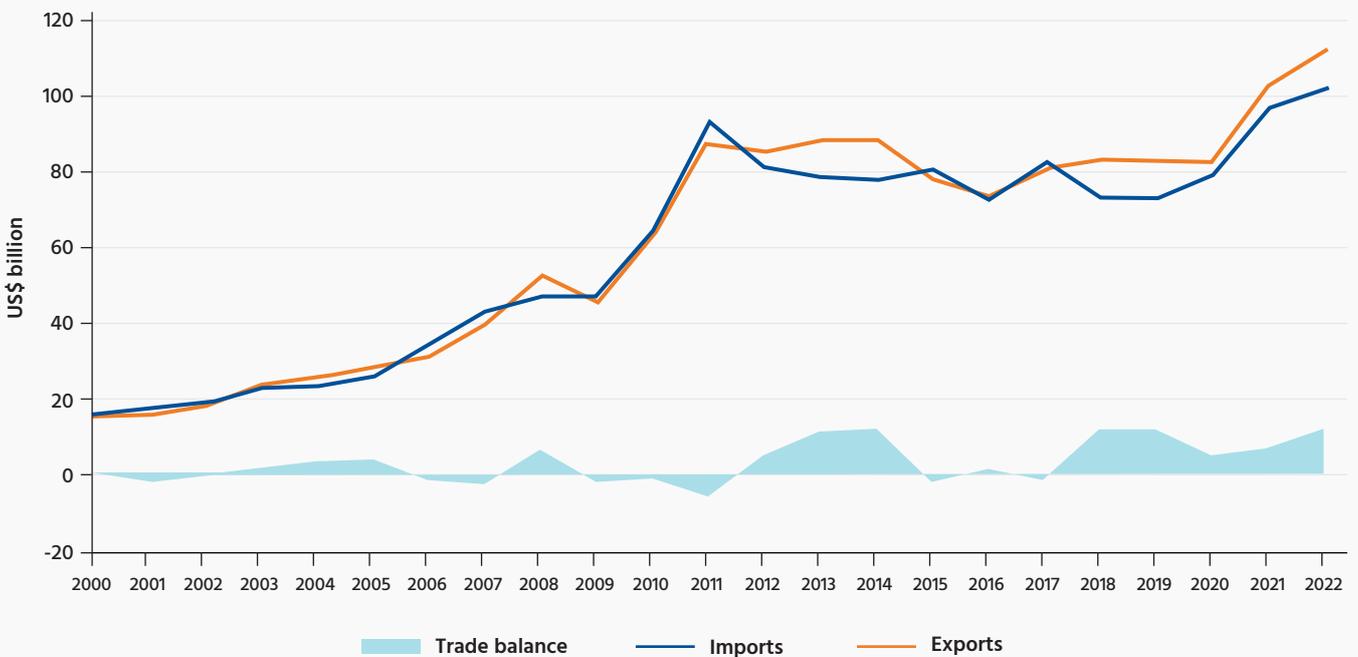
Source: UNCTADStat, Commonwealth Secretariat

Figure 3 – Commonwealth Africa food trade (US$ billion)

Source: UNCTADStat, Commonwealth Secretariat

Figure 4 – Commonwealth Asia food trade (US$ billion)
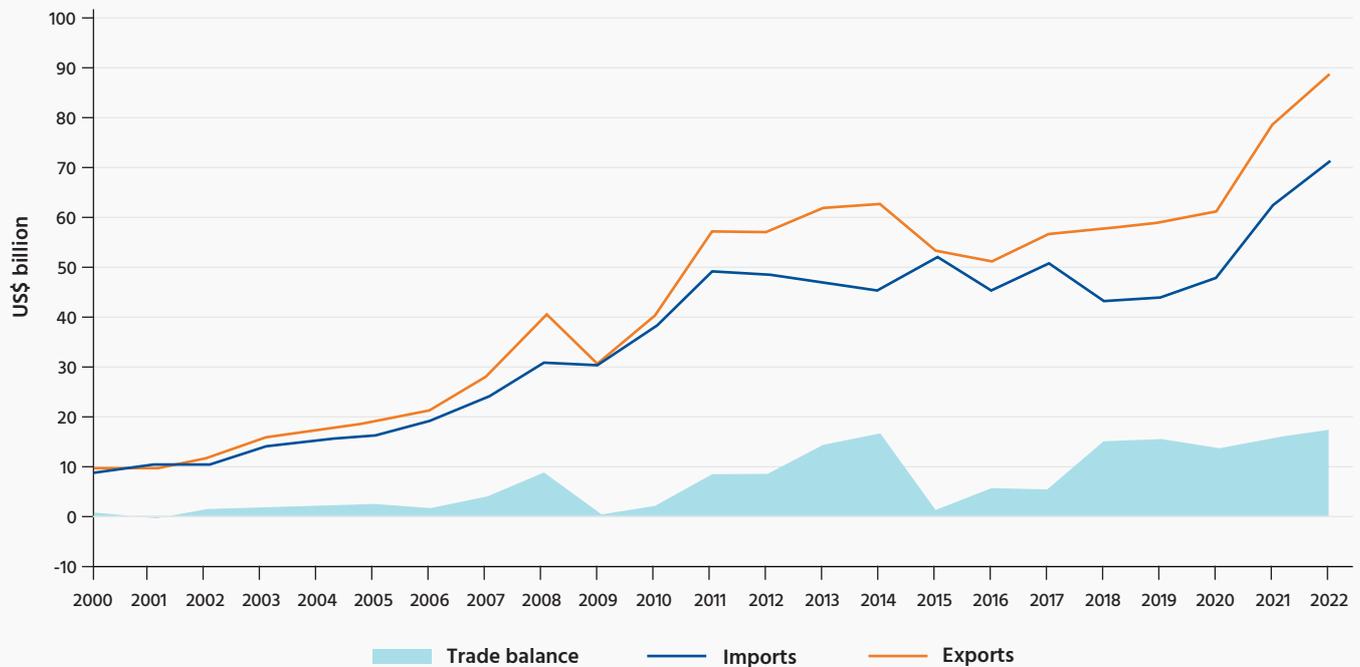
Source: UNCTADStat, Commonwealth Secretariat

Figure 5 – Commonwealth Caribbean SIDS food trade (US$ billion)
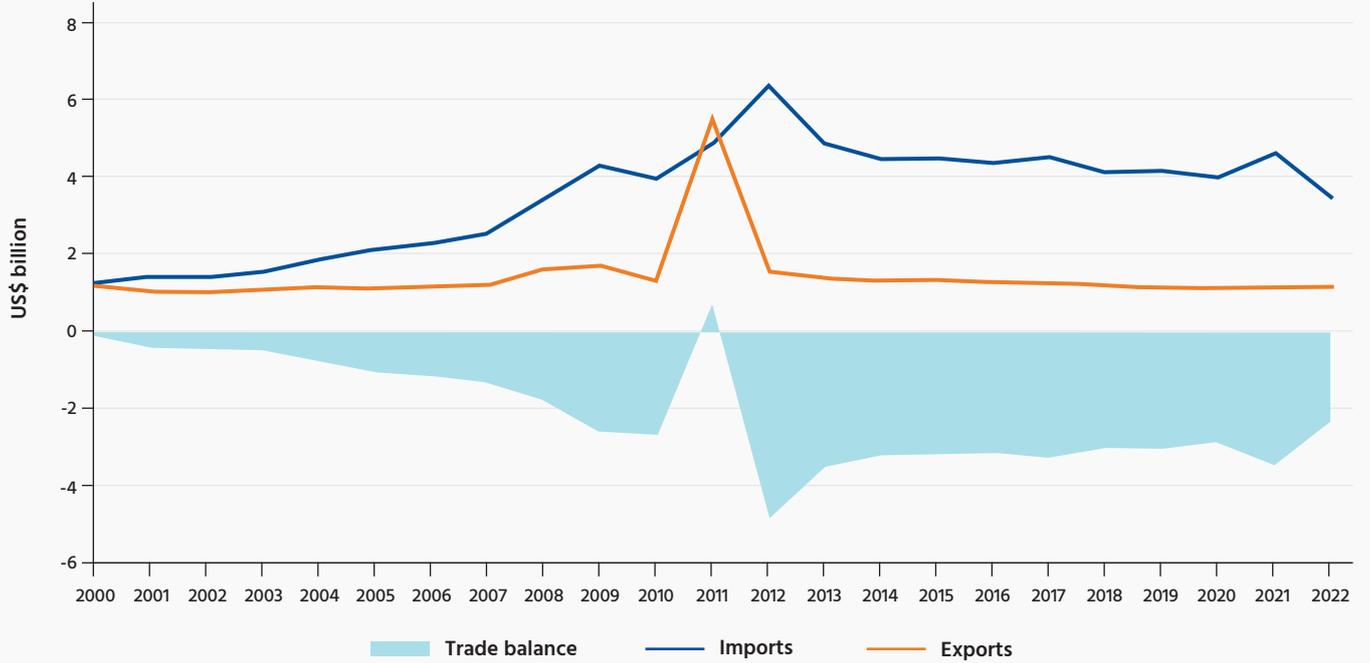
Source: UNCTADStat, Commonwealth Secretariat

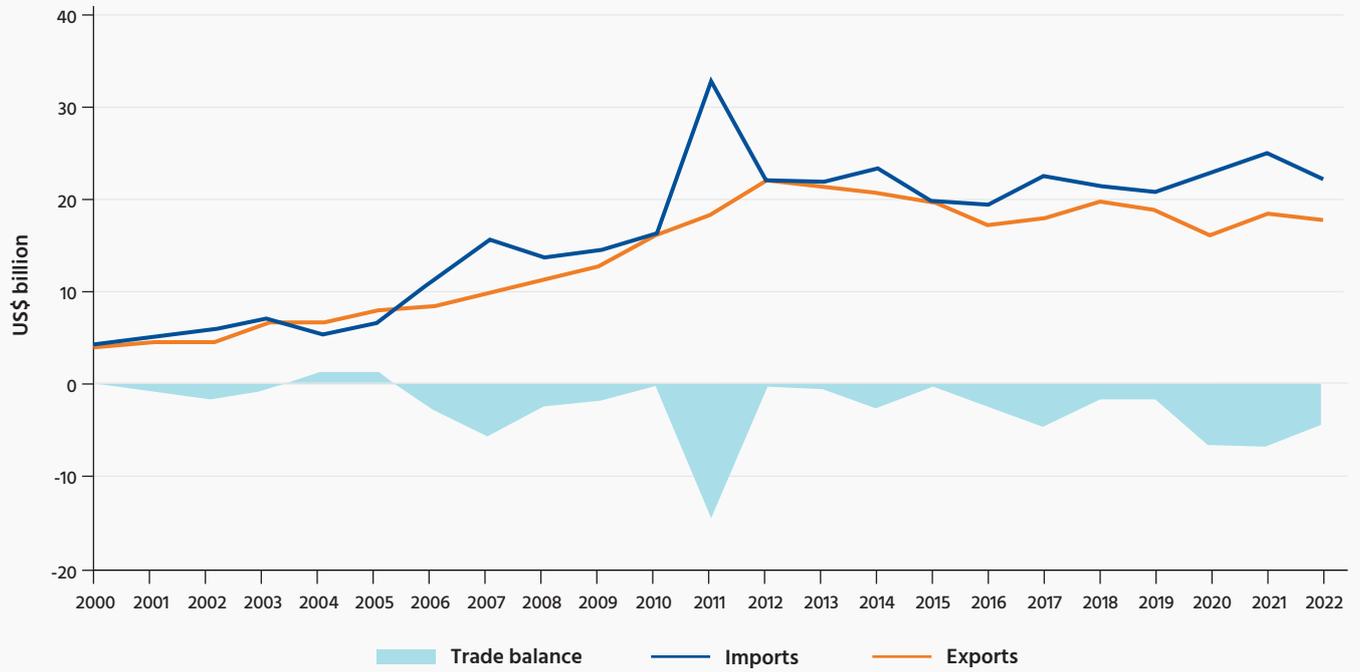**Figure 6** – Commonwealth Pacific SIDS food trade (US$ billion)
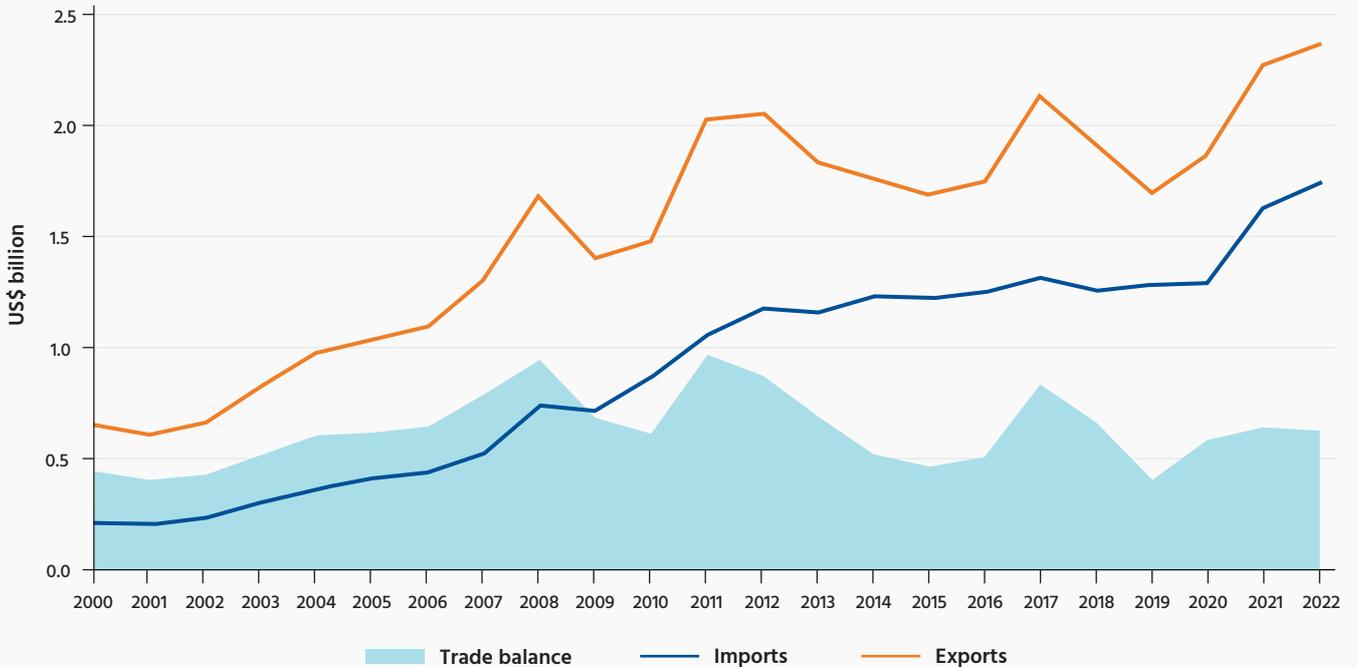
Source: UNCTADStat, Commonwealth Secretariat

To better grasp the importance of food trade in the Commonwealth, Figures 7 and 8 separate Commonwealth member countries into net food exporters and importers, respectively, at the country level, and identify the share of food exports (imports) in total country trade in 2022, with countries ranked according to their exposure to food trade. Figure 7 shows that 16 Commonwealth members are net exporters of which only three are LDCs (Malawi, Tanzania and the Solomon Islands). Food exports constitute a majority of total trade for the island states of Seychelles (69%), Belize (62%), and New Zealand (59%). Canada, Australia, India, and Malaysia register among the lowest shares at one-tenth or less of total exports but given the size of their trade in nominal terms they are the largest exporters in the Commonwealth.[12] More important from a food security perspective are the net food importers listed in Figure 8, of which there are 40. Of the top ten net food importers, half are LDCs and four out of the other five are SIDSs.[13] The share of food in total trade is highest in The Gambia and Rwanda, both LDCs, at 34% and 29% of total imports respectively.

Figure 7 – **Share of food in merchandise exports of net food exporters, 2022 (%)**

Country	Share %
Seychelles	69.3
Belize	62.5
New Zealand	58.6
Malawi	27.0
Solomon Islands	25.2
Eswatini	20.4
Tanzania	18.7
Namibia	18.1
Ghana	16.1
Nauru	10.7
Papua New Guinea	10.5
Canada	10.3
Australia	10.0
India	9.3
Malaysia	8.7
South Africa	8.2
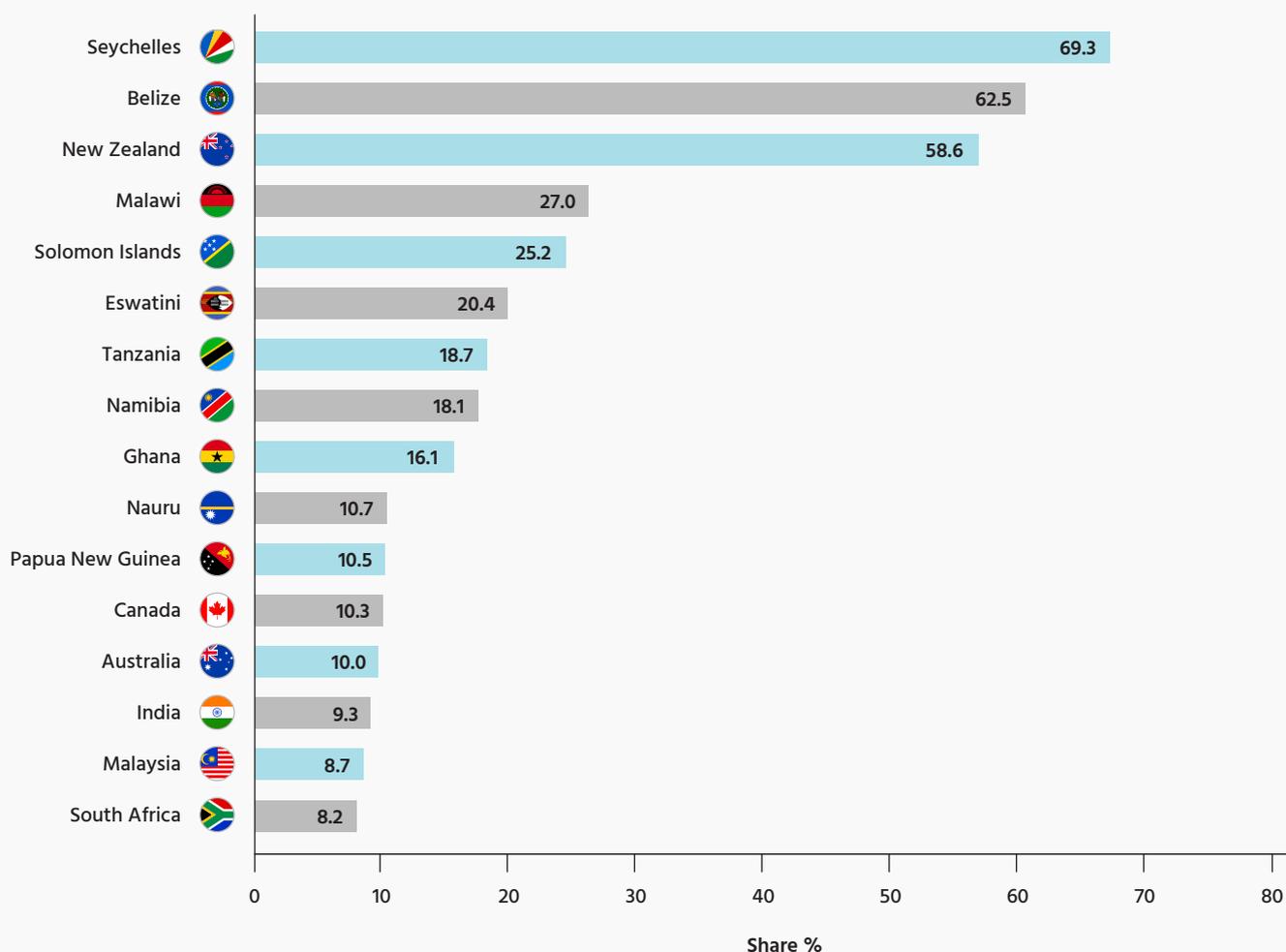
Source: UNCTADStat, Commonwealth Secretariat

Figure 8 – Share of food in merchandise imports for net food importers, 2022 (%)

Country	Share %
The Gambia	34.4
Rwanda	29.8
Tonga	23.5
Grenada	23.4
Kiribati	22.4
Samoa	20.4
Sierra Leone	20.3
St Vincent and the Grenadines	18.7
Gabon	18.2
Lesotho	17.7
Maldives	16.8
Vanuatu	15.9
Jamaica	15.3
Cameroon	15.1
Mauritius	15.0
Kenya	14.7
Fiji	13.8
Togo	12.6
Pakistan	11.6
Barbados	10.9
Nigeria	10.8
Bangladesh	10.7
Mozambique	10.7
Sri Lanka	10.5
St Kitts and Nevis	10.4
Trinidad and Tobago	10.2
Dominica	9.7
Cyprus	9.5
Botswana	9.5
Malta	7.9
Guyana	6.6
Uganda	6.6
United Kingdom	6.5
Zambia	6.3
Brunei Darussalam	5.7
St Lucia	4.9
Antigua and Barbuda	4.7
Tuvalu	4.1
Bahamas	4.1
Singapore	2.3

Source: UNCTADStat, Commonwealth Secretariat

Finally, Commonwealth food trade at the commodity level is shown in Figure 9 (exports) and Figure 10 (imports) for 2022. Edible Oils and Oilseeds, Cereals, and Prepared Foods make up the top three export categories, accounting for about 50% of total food exports. Imports are more concentrated than exports: the top three imports, i.e., Vegetables, Fruits and Nuts; Edible Oils and Oilseeds; and Prepared Foods, make up 59% of the total.

Figure 9 – **Composition of food exports of Commonwealth countries, 2022 (%)**

Category	Share %
Edible oils and oil seeds	19.2
Cereals	18.5
Prepared foods	13.9
Vegetables, fruits, and nuts	13.1
Meat	12.9
Seafood	9.1
Confectionary	7.2
Eggs and dairy	6.1
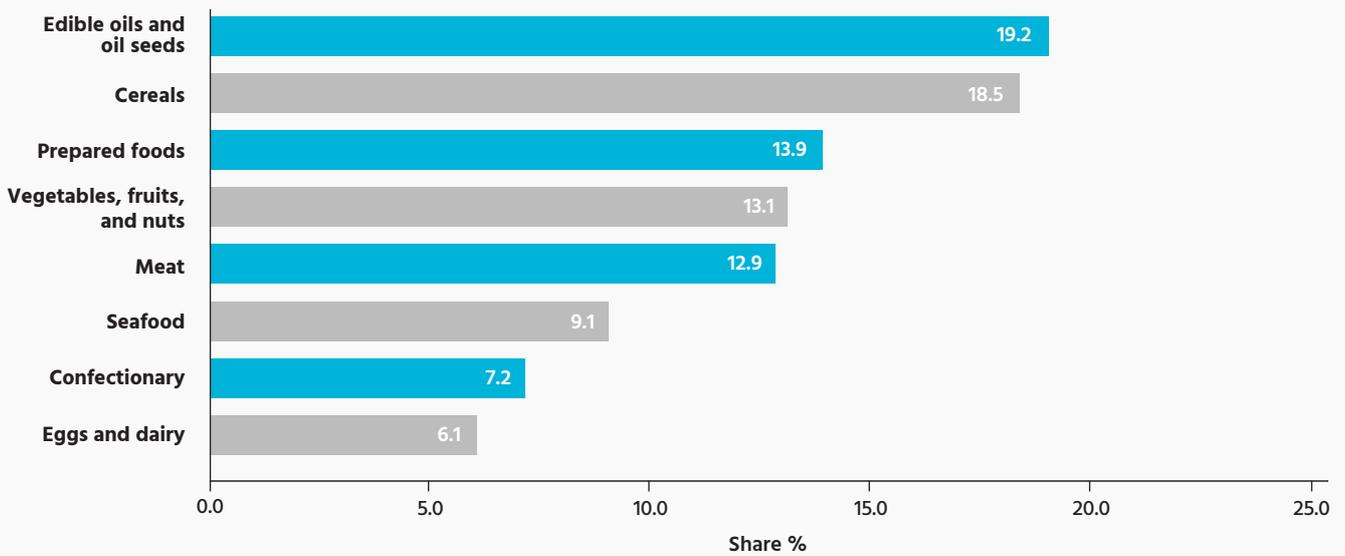
Source: UNCTADStat, Commonwealth Secretariat

Figure 10 – **Composition of food imports in Commonwealth countries, 2022 (%)**

Category	Share %
Vegetables, fruits, and nuts	22.2
Edible oils and oil seeds	21.0
Prepared foods	16.6
Cereals	10.1
Confectionary	9.1
Meat	8.7
Seafood	7.5
Eggs and dairy	4.8
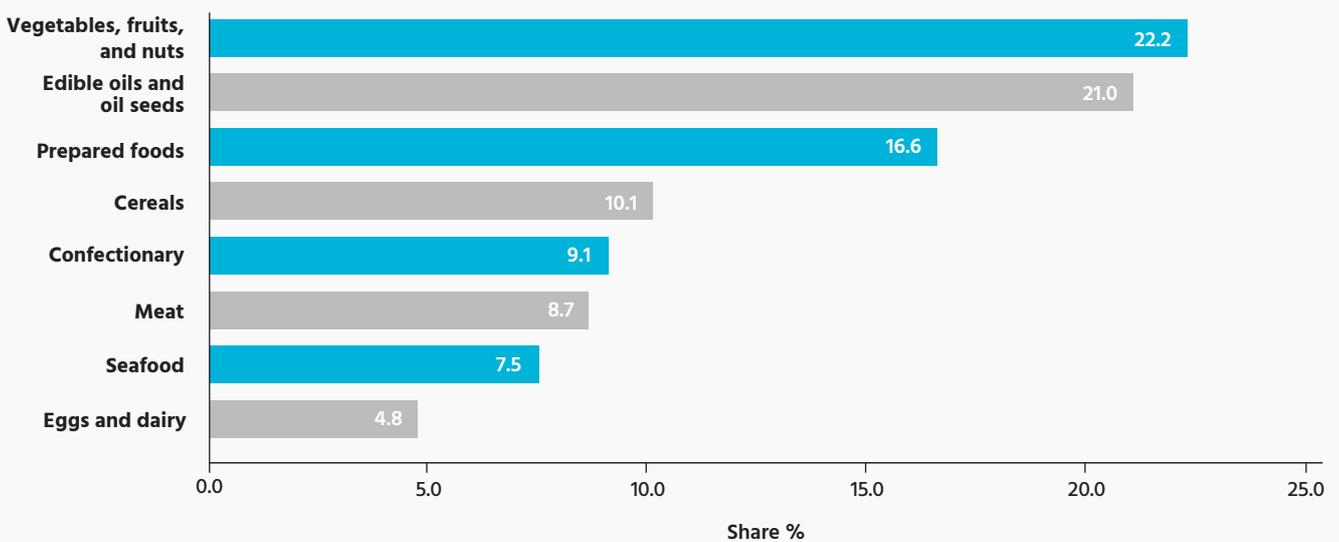
Source: UNCTADStat, Commonwealth Secretariat

Geopolitical conflict, such as the Russian war on Ukraine, periods of international food price spikes, and cycles of increases in agricultural protection through, for example, export restrictions tend to affect significantly vulnerable low-income and small states most.

B. Agricultural trade, poverty, risk, and climate change

International trade in agriculture serves as a powerful vehicle to reduce poverty and enhance food security. Accomplishing SDGs 1 and 2 would be difficult without such trade. According to OECD-FAO (2022), around 20-25% of the world's consumed calories originate from traded food products. Fifty-nine countries in Africa and Asia and the Pacific are net food-importing developing economies, many of which are low-income and rely on international trade in agriculture to mitigate the effects of poverty and enhance food security.[14] Food trade supports humanitarian activities of the World Food Programme, whose assistance reached 152 million people in over 120 economically fragile countries and territories in 2023.[15] In addition to these direct effects, on the supply side, international trade improves food security by increasing access to vital inputs like fertilizers, pesticides, and seeds, and facilitates access to useful production technologies. Growth in agriculture is more effective in reducing poverty than growth in other sectors and the poorest benefit the most from agricultural growth (Christiaensen and Martin 2018).

As stressed in WTO,[16] trade has been responsible for bringing hundreds of millions of people out of absolute poverty and improving living standards throughout the world. Agriculture has played a catalytic role in this trade-abetted process. For example, when the reform process began in China in 1978 with the "Four Modernizations," agricultural reform was a priority, and, with the adoption of the Household Responsibility System to replace collective farming, TFP in agricultural grew by 55% from 1979 to 1984 (Carter, et al. 2003), eventually bringing 800 million Chinese out of poverty.[17]

Stakes are particularly high for small, low-income Commonwealth members. Together with high levels of poverty, their size tends to make them more dependent on international trade in general and for food in particular (for example, Table 1, Appendix 1 and Figure 7). Hence, they are more vulnerable to international shocks. Food products account for approximately 11% of total imports of the 14 LDCs and 33 Small States of the Commonwealth (Table 1 and Appendix 1). Even in middle-income Pakistan, almost 70% of the population is directly or indirectly engaged in agricultural production,[18] and the share of food imports in its total imports was 16% in 2023 and, in the past, has been as high as 30%.[19]

Therefore, geopolitical conflict, such as the Russian war on Ukraine, periods of international food price spikes (for instance, over the 2008-14 period[20]), and cycles of increases in agricultural protection through, for example, export restrictions tend to affect significantly these vulnerable low-income and small states most. In fact, reactive trade policy is often behind these shocks: rapid increases in food prices can trigger increases in export taxes and other restrictions by agricultural exporting countries to keep domestic prices low and/or raise government revenue, thereby restricting supply to international markets. Large importing countries have an incentive to lower trade-related taxes to keep their domestic prices down, thereby increasing international demand. The result of a decrease in supply and increase in demand is a vicious cycle of price increases in the international food marketplace.[21]

In addition, trade plays a critical role in meeting what is arguably the greatest threat to agriculture in developing countries, as well as the most salient global challenge of our time: climate change. Developing countries are already suffering

Further, countries open to international trade have a greater capacity to adjust to climate change. The WTO finds a positive relationship between climate-change adaptivity and trade openness.

disproportionately more from climate change impacts, even while advanced economies contribute far more to global emissions. Without considerable carbon reductions, the world will not be able to meet the climate goals adopted in the Paris Agreement. Trade is an important contributor to greenhouse gases, given that production and transport of traded goods accounts for 20-30% of total greenhouse gas (GHG) emissions, with about three-fourths of these trade-related emissions due to energy and transportation (WTO 2021). Nevertheless, trade also can be an important part of the solution through, for example: trade in environmental goods and services, including to help cope with climate-induced shocks; trade-related investment in green sectors; technology transfer in green sectors and the dissemination of "best practices"; and incentivizing investments in low-carbon technologies by increasing scale (Kim, et al., 2023). WTO (2023) offers a set of "Trade Policy Tools for Climate Action," with one category focusing specifically on food and agriculture. It stresses how trade can improve the functioning of markets for food and agriculture while reducing carbon emissions by easing international trade in green products via trade liberalization, reforming domestic subsidies, and ameliorating domestic policies that produce inefficient outcomes. It references the Organisation for Economic Co-operation and Development's work (OECD 2023) estimating that, over 2020-2022, US$630 billion annually was spent on average to support individual agricultural producers, which it suggests could be "repurposed" to finance climate adaptation and mitigation.

Further, countries open to international trade have a greater capacity to adjust to climate change. The WTO finds a positive relationship between climate-change adaptivity and trade openness (WTO 2022). ADB (2023a) delineates three key policy options to support the transition to net zero: (1) reform price incentives through carbon pricing and reduce climate-damaging subsidies such as for fossil fuels and agriculture; (2) use regulations and incentives to elicit low-carbon responses and fund decarbonization; and (3) ensure environmental policies are fair, equitable, and inclusive. Unfortunately, the Paris Agreement and the current commitments reflected in existing Nationally Determined Contribution (NDC) plans do not generally highlight the role of trade and trade policy. The literature on how climate change affects competitiveness of countries in agriculture is relatively large, mostly applied on a country basis, and generally underscores its importance in agriculture. One cross-country study is by Costinot et al. (2016), which uses an extensive micro-level database for each of 10 crops cultivated over 1.7 million fields to show that climate change would have a significant effect on agriculture as well as reducing global GDP.

International agreements can mitigate these problems, create greater certainty, reduce vulnerabilities, and decrease food insecurity. Nevertheless, as noted in the next section, concerted economic cooperation in agriculture tends to be complicated and difficult.

III. The importance of trade policy in promoting development and poverty reduction

More open trade regimes have generally performed better than closed policy environments in the development process. Of course, isolating the effects of trade policy within a general policy reform program can be difficult because of its interconnectedness with other economic policies.

Modern trade theory, beginning with Adam Smith and David Ricardo in the 19th century, makes a strong case for open international trade. Early theories focused on how free trade allows countries to specialize in what they do best relative to the rest of the world (the country's "comparative advantage") and, via free exchange of exports and imports, provides for the most efficient international allocation of resources, from which all participating countries gain relative to "autarky" (that is, no trade). More recent theories add to these "static" (i.e., price-generated) efficiency effects longer-term "dynamic" gains from trade, such as increased incentives to invest in technology, technology upgrading through international interchange, and economies of scale. Moreover, there are positive knock-on effects of an open trade regime, for example, enhanced competition and greater flows of inward foreign direct investment (FDI), which increases local employment, wages, and technology transfer from foreign firms to the local economy, through the training and skill-upgrading of workers, better management and organizational processes, and new production techniques. Access to a larger variety of heterogeneous goods for consumers improves consumer welfare and offers for local firms cheaper sources of inputs and a more diverse selection, thereby improving productivity. Paul Krugman's "new trade theory" (Krugman 1979) identifies additional welfare-enhancing benefits to modern trade theory by adding imperfect competition, increasing returns to scale, and product variety. All of these supply-side and demand-side benefits are relevant to the agricultural sector, as well as manufacturing and services.

Empirically, more open trade regimes have generally performed better than closed policy environments in the development process. Of course, isolating the effects of trade policy within a general policy reform program can be difficult because of its interconnectedness with other economic policies. Trade policy is unlikely to succeed in spurring growth and development if it is not part of a supportive policy package. In addition, measuring "openness" is not always straightforward (Rodriguez and Rodrik 1999) and it is sometimes difficult to distinguish causality from correlations. Still, the economic literature is replete with studies suggesting that this is the case, including highly cited works such as Dollar (1992), Sachs and Warner (1995), Krueger (1998), Stiglitz (1998), and OECD (1998).

A *prima facie* "macro" evaluation would also support this conclusion. At the regional level, East Asia has been particularly successful in spurring economic growth through outward-oriented development strategies and market-friendly policies. The region is highly diverse in terms of its historical, ethnic, political, and social background, and its scope and speed of economic reforms have varied. But all economies[22] have embraced trade liberalization as part of their development strategies, at times in contrast to other regions, and to great effect. Trade as a percentage of gross domestic product (GDP), which is one metric by which internationalization can be measured, almost doubled from 31% in 1974 to 61% in 2023 in East Asia and the Pacific, while the region's per capita income grew remarkably from US$612 to US$12,928 over that same period, growth rates that are much higher than other regions like South Asia, Latin America, and Africa, where liberalization took place at a much slower pace.[23]

Trade liberalization, including in agricultural goods, has been pursued to some degree by most Commonwealth member countries, but the trade regimes differ significantly across countries and subregions.

Country-specific examples are also instructive. China in Northeast Asia and Vietnam in Southeast Asia offer particularly interesting experiences because they both emerged from a policy stance of quasi-autarky to deep integration with the global marketplace in a short period of time. Before the Four Modernizations in 1978 mentioned above, China's trade-to-GDP ratio was 9% and its per capita income was less than US$200; by 2023, its trade-to-GDP had more than tripled in importance to 37% and per capita income was 63 times higher at US$12,614, while average global per capita incomes grew by about six-fold over the same period. The poverty headcount ratio in China was 72% in 1990 but had plummeted to 0.1% by 2023.[24] Trade policy reform was an essential part of the vector of policy changes that unleashed the potential of the Chinese economy. It now competes with OECD countries in many high-tech sectors where technology is critical, from green-economy production of electric vehicles and solar panels to the digital economy. The Vietnamese experience is no less impressive. From the launch of its *doi moi* economic reform program in 1986 until 2022, the share of trade in its GDP rose from 23% to 184%, per capita GDP from US$430 to US$4,179, and the poverty count fell from 45% in 1992[25] to 1% in 2022. Vietnam should reach the upper-middle income threshold of US$4,465 in 2025 and has become a critical link in many manufacturing supply chains. Compare these examples to Argentina, a country that espoused "import-substitution industrialization" in the 1950s through the 1980s and has gone back-and-forth between outward- and inward-oriented approaches ever since. Its trade-to-GDP varied between 10%-20% and per capita GDP stagnated until its (IMF-imposed) economic reforms in the early 1990s, after which trade-to-GDP rose significantly (until the 1998-2002 depression and its ongoing peso crisis).

Moreover, a number of studies have established the link between trade and poverty reduction. An influential survey of these, undertaken by Alan Winters and colleagues (Winters, et al. 2004), concludes that, consistent with trade theory, empirical investigations tend to verify that trade liberalization leads to poverty reduction and, in any event, out of the more than 400 studies surveyed, there was no evidence that trade increases poverty. Many of the positive effects that trade has on poverty can be traced to its effects on the agricultural sector. The degree of effectiveness of trade liberalization is, however, a function of the policy environment in which trade is being liberalized and its institutional context.

Trade liberalization, including in agricultural goods, has been pursued to some degree by most Commonwealth member countries, but the trade regimes differ significantly across countries and subregions. Singapore began its trade liberalization program in the 1960s and soon became the most open economy in the world, with essentially zero tariffs on all goods.[26] Average tariffs in the developed Commonwealth members is around 3%.[27] This is far lower than average tariffs in developing Commonwealth member countries and, perhaps more importantly, the standard deviation of tariffs tends to be much higher. This tremendous diversity of the region makes it difficult to offer general recommendations on trade policy that would apply to all Commonwealth countries.[28] But the positive experiences of outward-oriented Commonwealth countries and other economies underscore the advantages of integrating into the international marketplace, particularly in agriculture, whereas noted above trade can reduce poverty, improve food security, and help cope with the many challenges of climate change.

IV. Origins and tools of agricultural protection

The process of structural change creates winners and losers and, with it, changes political dynamics, often in favor of protectionism.

Yet, if trade has the capacity for such a positive effect on key economic and social issues, and even as a means to reduce (at least at the margin) geopolitical friction by raising the cost of conflict, why have countries rarely embraced free trade? Trade barriers had been falling significantly until the global financial crisis, but they have been rising again. Kose and Muladic (2024) note that growth in trade in goods and services almost came to a halt in 2023, rising only by 0.2%, the slowest in a half-century outside global recessions, at the same time that trade restrictions are surging and the number of trade-liberalizing regional trade agreements (RTAs) has been falling. Agricultural trade has always been constrained by a variety of barriers and is threatened by this trend. In this section, instruments of protection in agriculture are discussed, but first it gives a brief review of the reasons why free trade is often a difficult sell, particularly politically. Last, environmental-related policy is considered, with the example of the EU's Carbon Border Adjustment Mechanism (CBAM), which went into effect in 2023 and through which border taxes will begin to apply in 2026.

A. The political economy of protectionism

Most basically, international trade relies on structural adjustment to increase efficiency via the international marketplace. This may lead to significant gains in efficiency, growth and development, but structural change requires some sectors to contract while others expand. Trade is not unique in this regard; for example, the digital economy has created new platforms that are far more efficient than what previously existed but it has rendered obsolete some business lines, leading to significant job contractions (for example, online streaming services have decimated video stores). The difference, however, is political: it is difficult to resist the rise in technology — though some are now trying to do that against artificial intelligence (AI) — but it is much easier to oppose trade, particularly in the context of nationalist policies. In short, the process of structural change creates winners and losers and, with it, changes political dynamics, often in favor of protectionism.

In addition, the unequal gains to economic actors behind efficiency-enhancing trade liberalization can lead to resistance, as stressed in the "political economy of protectionism" literature (for example, Krueger 1996). Benefits of trade are spread throughout the economy, especially for consumers, whereas the costs tend to be concentrated geographically. Political resistance to trade, therefore, is often easier to mobilize than support for it.

While trade reduces poverty, it may also exacerbate inequality, particularly in higher-income economies. The comparative advantage of developed countries tends to be in skills-, technology-, and capital-intensive sectors; through trade, these expand and, with them, higher wages go to better-skilled workers and owners of technology and capital, who tend to be at the higher end of the income distribution. The opposite effect, however, results in comparatively disadvantaged sectors, that is, traditional industries requiring less skills and expertise, where wages fall. The result is a worsening distribution of income and political opposition to trade in developed countries. By the same logic, however, the income distribution in developing countries should improve due to trade, *ceteris paribus*.

Short-run protection might allow the infant to develop and thrive, after which the government can withdraw the protection. However, the infant-industry argument has generated mixed results as an industrial policy.

It is also the case that a country does not choose its comparative-advantage industries; the global market does that. For a variety of public-policy/political reasons, a government may wish to support globally uncompetitive industries. For example, the government of a relatively labor abundant country may wish to have comparative advantage in high-tech industries but its actual comparative advantage will likely lie elsewhere. It may choose to protect the industry anyway. Note that in the long run, a country can change its comparative advantage; Japan was famous for exporting inexpensive low-tech manufactures in the 1950s and 1960s but, after years of investments in productivity and human and physical capital, its exports now tend to be among the most sophisticated in the world, with its top five exports all in the sectors of automobiles and advanced electronics.[29] But for a number of reasons a government may have incentives to try to expedite the development of a sector for its own purposes. The same would also apply to governments who believe that a sector is necessary for purposes of national defense, strategic competition, and so forth. Protection comes at a cost but the government is willing to pay it.

There do exist, however, "economic" arguments for protectionism, in the sense that short-run protection can actually improve the performance of the economy. The most popular of these is the "infant industry" argument, in which market failures in developing economies, such as finance-related bottlenecks or "learning by doing", prevent a comparative-advantage industry from developing. Short-run protection might allow the infant to develop and thrive, after which the government can withdraw the protection. However, the infant-industry argument has generated mixed results as an industrial policy. While there are recorded successes, there are also many failures since: (1) the government tends to have to choose if an industry has the potential to be competitive, and it is difficult for them to do so *ex ante*, particularly when government leaders may be motivated

Agriculture presents a separate set of additional considerations to the non-economic arguments for protection due to its importance in meeting the most basic needs of a country's population. (Photo source: Neil Palmer/CIAT | Flick).

It is useful to delineate the types of trade policy instruments that are used in agriculture, which might be classified as "direct" protection, that is, instruments directly applied to exports and imports; and "indirect" protection, which affect international trade but are applied to domestic production.

by factors other than efficiency when applying protection; and (2) given the protection accorded an indigenous firm, it has an incentive to perpetuate the tariff, that is, infant industries have a tendency to not grow up.[30]

Sometimes administrative actions, like countervailing duties, which offset foreign government subsidies, and anti-dumping duties, which are designed to offset "dumping" — selling exports at a price that is lower than the domestic price of the exporting country — are referred to as economically justified "protection". However, administrative duties are accepted as legitimate in that they correct for a foreign price distortion and, hence, are at least in theory designed to support the market rather than work against it.

B. Types of policy instruments applied in agriculture: A brief review

Agriculture presents a separate set of additional considerations to the above (non-economic) arguments for protection. This is due to agriculture's importance in meeting the most basic needs of a country's population.

First, it is useful to delineate the types of trade policy instruments that are used in agriculture, which might be classified as "direct" protection, that is, instruments directly applied to exports and imports; and "indirect" protection, which affect international trade but are applied to domestic production.[31] Common direct instruments include: (1) tariffs, which can be applied as a percentage of price ("ad valorem" tariff) but may also take the form of a fixed value, or "specific" tariff. The *ad valorem tariff* is by far the most common form of tariff; (2) quantitative restrictions, such as import quotas and export quotas (also known as "voluntary export restraints) which defines a set quantity of imports or exports; (3) tariff rate quotas (TRQ), which allow for a set quantity of imports at a preferential rate, after which the "normal" (i.e., most-favored-nation, or MFN) rate would apply; and (4) Sanitary and Phytosanitary (SPS) measures, which are necessary to make sure that agricultural imports meet at least minimal safety standards for domestic consumption. This might lead to prohibition of imports from some suppliers (as well as costly bureaucracy). A country may also wish to put in place policies to ensure food security; and (5) export taxes, which are usually used to raise government revenue and keep domestic prices low, and export subsidies, which benefit domestic producers and/or raise foreign market share but at the cost to domestic taxpayers and higher prices.

Indirect support measures would include: (1) commodity programs, which offer domestic price and income support programs for farmers, such as under the EU's Common Agricultural Policy. These tend to include product-specific support, direct payments to producers, supply controls, and various border measures (CRS 2021); (2) marketing support; and (3) input subsidies and tax exemptions.

Many of these arguments have a strong logic to them but can be abused. Take, for example, the historical protection of Japanese beef. When pressed for arguments as to why foreign beef was excluded from the Japanese market, the Japanese Agriculture Minister, Tsutomu Hata, famously argued that it was because Japanese physiology was unique.[32] A more contentious issue concerns imports of food that contain genetically modified organisms (GMOs). These are highly restricted particularly in the EU but are used fairly widely elsewhere, especially in the United States, Brazil, Argentina, India, and Canada. While still controversial and subject to scientific evaluation, the FAO supports the view that approved GM crops are safe

The CBAM, one component of the EU Green Deal, aims to prevent carbon leakage from happening. It imposes a levy on carbon-intensive products in six sectors that are imported into the EU: iron and steel, cement, fertilizers, aluminum, electricity, and hydrogen.

and have many economic benefits, with more than 17 million farmers planting GM crops in 29 countries.[33]

C. Climate-related issues: CBAM and beyond

With the transition to net zero GHG emissions, countries have been putting in place a variety of incentives and disincentives to green the economy. An important instrument in this process is the use of carbon taxes, which endeavor to internalize the negative externalities associated with GHG emissions. However, in the absence of a global system of taxing carbon, a carbon tax in one economy or economic space can put domestic production at a disadvantage and, indeed, could lead to "carbon leakage," in which case production moves to countries with weaker (or no) climate-related disincentives. Such a result would nullify the original intention of the carbon tax as well as hurt local employment. This problem has been recognized for many years. The Carbon Border Adjustment Mechanism (CBAM), one component of the EU Green Deal, aims to prevent carbon leakage from happening. It imposes a levy on carbon-intensive products in six sectors that are imported into the EU: iron and steel, cement, fertilizers, aluminum, electricity, and hydrogen. The adjustment is basically determined as the difference between the EU price on carbon and the price of carbon in the exporting country. This new regulation will encourage the EU's trading partners to establish carbon pricing strategies of their own. But some governments, particularly in developing countries, fear that this not only raises costs (not the least of which being bureaucratic) but could eventually be used as a new instrument of protection against developing economies.

Economic estimates (including by the European Commission[34]) suggest that the impact of CBAM on other countries will be limited, particularly with only six sectors covered. No agricultural sectors are included, although other aspects of the EU Green Deal do affect agriculture.[35] However, these sectors could be expanded and, given that LDCs and many middle-income countries have low or zero taxes on carbon, the effect may be much larger on them over time. Moreover, it is possible that other major export markets for Commonwealth countries will adopt their own carbon taxes. The United States, for example, is already considering it. Eicke et al. (2021) envisions a larger scope for the risks inherent in a country's capacity to meet the demands of the CBAM. The study argues that smaller developing countries face higher related risks compared to larger emerging economies. Smaller developing countries tend to be more exposed to CBAM implementation due to their limited statistical capacity and less-developed climate targets.

V. Agricultural trade liberalization: Empirical assessments

The removal of agricultural tariffs globally would increase international trade by 11.1%. The rise in global welfare (US$56 billion) per annum is approximately equal to 2% of world agricultural production.

The above analysis suggests that agricultural trade liberalization holds great potential in achieving many social objectives, albeit together with costs. How large these gains and losses would be is a critical question that has been addressed by many studies over the years. Hertel (2006), for example, gives an extensive review of the empirical literature on the effects of agricultural trade liberalization on poverty and concludes that it can have major positive impacts, although the ultimate extent of poverty reduction depends on a host of variables, from the quality of infrastructure to elasticities of demand and supply. OECD (2002) estimates the quantitative effects of agricultural trade liberalization in OECD countries, with a focus on tariffs and tariff-rate quotas, and also anticipates relatively large effects using its new (at the time) Aglink model. In an earlier study for the World Bank, Goldin and Knudsen (1990) produced a large report on the global implications of agricultural trade liberalization for developing countries, providing input into the Uruguay Round negotiations which concluded in 1995. Below, we consider related empirical work, with a special focus on the case studies of the CPTPP, RCEP, and the AfCFTA, and offer new product-level analysis using a matching technique.

A common approach to estimating the aggregate effects of policy innovations, as in the case of tariff liberalization or the creation of RTAs, is through CGE models (see Box 1 for a brief explanation of how these models work). CGE models have many advantages, including their ability to generate consistent, empirically tractable, economy-wide effects of changes in policies on key variables such as, *inter alia*, economic welfare, trade, structural change at the sectoral level, and labor markets, including effects on wages, employment by skill, and even gender, depending on the data available. Anticipating changes in these variables is critical to effective policymaking. One drawback, however, is that data limitations present in existing available databases preclude detailed product-level analysis and often exclude smaller countries and regions. This is why, as discussed below, in this study we use a partial equilibrium to gauge potential trade effects at the product level for all Commonwealth countries in Section V(c).

An example of an influential CGE model focusing on agriculture is Beckman (2021), which uses one to estimate the effects of two sets of policy scenarios: (1) the liberalization of tariffs on agricultural products; and (2) the implications of the WTO Trade Facilitation Agreement[36] on agriculture. The paper finds that the removal of agricultural tariffs globally would increase international trade by 11.1% relative to the baseline. Exports and imports rise for all regions except the EU, and all agricultural sectors see a rise in trade with the exception of live animals. Rice, beef, and other meats have the largest increases in trade, as they are the most protected globally. The rise in global welfare (US$56 billion) per annum is approximately equal to 2% of world agricultural production. It is useful to note these gains are large because they denote a *permanent* gain in efficiency, rather than one-time increase. Most regions in the model experience a drop in the price of agricultural commodities, which the study emphasizes will help improve food security.

BOX 1

Computable General Equilibrium (CGE) models: The basics*

CGE models have a long tradition of analyzing international trade issues. A typical CGE model of international trade consists of multiple countries that trade with each other; each country contains multiple industries which are linked through an input-output structure. Each economy generally has three agents: firms, consumers, and the government. Firms produce output, which is purchased by consumers and the government. Firms maximize profits and use market prices in deciding how much output to produce and with which inputs. Consumers in each country are often modeled with reference to a representative household. The representative household maximizes a utility function which is defined over the consumption of final goods from each industry. Consumers are endowed with capital, land, labor, and other factors of production. Based on market prices, they supply their factors and receive income in return. In a CGE model, the government administers only market-related policies, such as taxes, subsidies, trade tariffs, and quotas (if applicable) and policy variables often enter exogenously into CGE models.

The market-clearing conditions in CGE models determine prices of all goods and factors. Most are comparative-static in nature, that is, consumers and firms make optimal decisions based on current price signals, with no role for forward-looking expectations. When an external shock or policy change, such as a free trade area of liberalization of tariff barriers, is introduced into a static CGE model, prices and quantities adjust to clear all markets, and the model produces a new state of general equilibrium. However, as there is no explicit time dimension in a static CGE model, it neither provides results on how the economy adjusts to the new equilibrium nor stipulates how long it takes to reach the new equilibrium. To track the adjustment path requires a dynamic CGE model, which explicitly traces each variable through time. In dynamic models consumers and firms optimize their decisions intra- and inter-temporally, and the resulting equilibrium provides a set of prices that clears markets over a time path.

The Armington assumption of national product differentiation is popular in CGE models because it enables the model to match observed trade realities in a tractable way. However, its shortcoming is also obvious: The Armington specification has the effect of locking in pre-existing trade patterns and prevents a model from generating large changes in trade in sectors with little or no trade, leading to results referred to as the "stuck on zero trade" problem. Under the

Armington specification, if a country's imports of a given product from another country are zero initially, they will always be zero, even after significant reductions of trade barriers. Thus, in Armington-type CGE models, the trade patterns are largely determined by fixed-taste parameters, but these parameters are not explained by the model.

Inspired by the theoretical and empirical advances in international trade theory over the past four decades, some trade-focused CGE models have gone beyond the Armington specification to model trade behavior more realistically. The CGE models with monopolistic competition and firm-level product differentiation appeared in the 1980s, soon after Krugman (1979) developed the "new trade theory" model to rationalize intra-industry trade with the Dixit-Stiglitz (1977) love-of-variety specification.

In more recent years, the rise of heterogeneous-firm trade theory has led to the introduction of firm heterogeneity into CGE models.[37] In the models of Melitz (2003) and Bernard et al. (2003), each industry is populated by a continuum of firms, instead of a representative firm. These firms are differentiated by the varieties they produce and their productivity. In addition to fixed production costs, there are also fixed costs and variable (iceberg) costs associated with exporting activities. A firm enters export markets if and only if the net profits generated from its exports to a given country are sufficient to cover the fixed exporting costs. Thus, zero-cut-off profit conditions define the productivity thresholds for a firm's entry into exports markets. Typically, the combination of fixed export costs and variable export costs ensures that the exporting productivity threshold is higher than for production for the domestic market, i.e., only a small fraction of firms with high productivity sell to foreign markets.

Based on Petri, Plummer, and Zhai (2021)

Under the WTO Trade Facilitation Agreement simulation, the study estimates gains in agricultural trade at 7.3% relative to the baseline. This is somewhat less than under the tariff liberalization scenario but still solid. All regions gain except Argentina. In particular, it finds that low- and middle-income regions experience the largest export gains due to the more efficient clearance of agricultural products through customs.

In another study focused on Africa and two crops, maize and rice, Sunge and Ngepah (2020) use a common model employed in productivity analysis[38] and estimate that reducing trade distortions in agriculture, coupled with better governance, substantially increases TFP growth.

RTAs among developing countries are the most effective at liberalizing tariffs, with the share of duty-free tariff lines in these RTAs rising from on average 28% to 92%, compared to 68% to 87% for developed-developing country agreements.

A. Regional trade agreements: Case studies of CPTPP, RCEP, and AfCFTA

Regional Trade Agreements (RTAs), especially Free Trade Areas (FTAs), are trade partnerships in which two or more countries agree to liberalize trade among themselves. While such a preferential approach contradicts the concept of non-discrimination and "most-favoured-nation" (MFN) treatment espoused by the WTO, they are permitted by WTO rules (and the General Agreement on Tariffs and Trade, or GATT, before it) under certain conditions (Article XXIV), including: (1) substantially all goods must be included in the agreement; (2) tariffs have to be reduced to zero; (3) the agreement has to be implemented in a reasonable amount of time (within 10 years); (4) average tariffs on non-partner countries cannot rise, that is, an RTA cannot be used to increase protection against third countries; and (5) they must be notified to the GATT/WTO.[39] As of August 2024, 369 RTAs were in force, compared to 83 in 2000 and 28 in 1990.[40] With the end of the Doha Development Agenda negotiations in 2015 and the failure to bring forward an ambitious new "single undertaking" under the auspices of the WTO, RTAs have become the most vibrant source of concerted trade liberalization internationally, particularly in the Global South.

The economic effects of RTAs are ambiguous *a priori* in terms of efficiency because they lead to both positive and negative effects, with the former stemming from the usual gains from trade (that is, contraction of less efficient domestic production in favor of more efficient partner-country production, a process known as "trade creation") and the latter due to preferential treatment for partner countries that might be less efficient than non-partners ("trade diversion"). The majority of the empirical literature would suggest that most RTAs tend to generate net positive gains but success depends on many factors, including the economic structures and trade patterns of the integrating economies, scope or comprehensiveness of trade policies covered, and the "depth" of integration.[41] A survey of the theoretical effects of RTAs as well as models used to estimate their effects empirically can be found in Plummer, et al. (2010).

The OECD (2015) report offers a useful survey of the effects of RTAs on agriculture. It analyzes 53 agreements and finds that RTAs among developing countries are the most effective at liberalizing tariffs, with the share of duty-free tariff lines in these RTAs rising from on average 28% to 92%, compared to 68% to 87% for developed-developing country agreements. Nevertheless, the RTAs surveyed continue to be characterized by product exemptions and non-tariff barriers such as tariff-rate quotas (TRQs) in agriculture. Four key agricultural goods, namely dairy, sugar, cereals, and meat, continue to face significant protection after RTAs and tariffs are only eliminated in a few instances. Moreover, Rules of Origin (RoO)[42] tend to be stricter in agriculture than in other sectors. Export subsidies are prohibited in over half of the agreements, and also about half mention domestic agricultural subsidies, but actual reductions in trade barriers are rare. Rather, the RTAs usually just feature references to WTO processes. Most RTAs prohibit export restrictions between member-states except as permitted under the GATT/WTO. Very little is done with respect to SPS measures, which is surprising given their importance in agricultural trade.

The OECD (2015) report also offers a survey of empirical studies of the effects on agricultural trade of these RTAs and concludes that preferential tariff reductions do, indeed, have a substantial impact on agricultural exports and imports, both in terms of their effects on existing trade flows and in developing trade in new commodities. For example, agricultural goods that receive margins of preference

Malaysia, Canada, Singapore, and Australia benefit the most among Commonwealth countries in the CPTPP and, in fact, are among the biggest winners in the grouping, whereas the effects of RCEP on Commonwealth countries are much smaller. India loses due to trade diversion in both agreements.

of 5-10% increase trade on average by 10% and, where margins of preference exceed 10%, trade increases on average by 48%.

The large increase in the number of RTAs in recent years tends to include agreements that are relatively small in terms of membership. Bilateral RTAs make up a large majority. As such, they can be relatively inefficient and produce what has been referred to as a "spaghetti bowl" effect, that is, a bureaucratically cumbersome set of overlapping bilateral FTAs that may have limited utilization rates because of the small number of participants and, often, limited scope. The solution to this problem has been the emergence of modern "mega-regional" agreements to include many economies and expanded coverage, three of which have entered into force over the past few years: the CPTPP, RCEP, and AfCFTA, noted in Section I. These mega-regional trade groupings are particularly relevant to the economic prospects of the Commonwealth nations, due to not only their important implications for the global economy but especially the fact that Commonwealth members play key roles in each of these groupings. The CPTPP is composed of 12 economies – with the recent accession of the UK – and of these, seven are Commonwealth members: Australia, Brunei Darussalam, Canada, Malaysia, New Zealand, and Singapore, in addition to the UK. Except for Canada and the UK, these are also the five Commonwealth members of RCEP.[43] In addition, two of the existing four RCEP applicant economies, i.e., Bangladesh and Sri Lanka, are Commonwealth countries, with of course the as-yet remote possibility of India returning to the negotiating table at some point. All 21 African Commonwealth countries are members of the AfCFTA.

I. Asia-Pacific: RCEP and CPTPP

The CPTPP is a cutting-edge FTA that emerged from the 12-member Trans-Pacific Partnership (TPP) agreement when the United States, the country that had spearheaded TPP negotiations and signed it in 2016, withdrew from the agreement at the outset of the Trump administration. The agreement has been called a 21st century "gold standard" agreement, complete with an almost total phasing out of tariffs and comprehensive reductions in non-tariff barriers (NTBs), modern chapters imposing disciplines on state-owned enterprises, investment facilitation, ambitious coverage of services trade, e-commerce, and labor and environmental chapters.[44] When the United States pulled out of the TPP, the remaining countries decided to move forward with the same agreement except for a few items — all US priorities — that would be "suspended," in hopes that the United States would eventually return, and it was re-named the CPTPP. It went into effect in December 2018, enlarged to include the UK in 2023 (to enter into force in 2024), and has six economies in the queue for additional membership: China, Taiwan, Costa Rica, Ecuador, Uruguay, and Ukraine, with others such as South Korea, Indonesia, and the Philippines expressing a strong interest in applying.

The RCEP agreement began negotiations in November 2012 with 16 negotiating partners — the ten ASEAN countries and the six countries with an FTA in place with ASEAN, i.e., Australia, China, Japan, New Zealand, South Korea, and India — and went into effect in November 2020 without India, which had withdrawn in 2019. The RCEP agreement is far less comprehensive than the CPTPP, in part because of the considerable diversity of its membership, which includes low-income, middle-income and high-income economies, with a large range of economic structures. It also has several economies waiting to join. In addition to the two Commonwealth countries, Bangladesh and Sri Lanka, Hong Kong and Chile have applied.

The economic effects of CPTPP and RCEP have been studied extensively, most frequently via a CGE model.[45] To give an idea of the size of the economic effects of these agreements on income and trade, the results of a study by the author and co-authors Peter Petri and Cyn-Young Park are given in Tables 2 and 3 (adopted from Park, et al., 2021). Commonwealth countries that are included in the database and for which there are estimates are highlighted in the tables. Table 2 anticipates that both agreements will generate positive gains, to the tune of US$263 billion and US$188 billion, for RCEP and CPTPP, respectively. Though each estimate is small relative to baseline income, the gains are significant in that barriers to trade among the CPTPP economies were already low and RCEP economies had in place a large network of FTAs, with the exception of Northeast Asia. Malaysia, Canada, Singapore, and Australia benefit the most among Commonwealth countries in the CPTPP and, in fact, are among the biggest winners in the grouping, whereas the effects of RCEP on Commonwealth countries are much smaller. India loses due to trade diversion in both agreements. Table 3 shows that trade effects are significantly larger than the income effects given that the former tends to drive the latter: exports rise by US$496 billion and US$312 billion under RCEP and CPTPP, respectively, almost double the income effects.

Table 2 – Income effects of CPTPP and RCEP

	2030 income (US$ million)	Incremental income change (US$ billion)		Incremental income change (%)	
		CPTPP	RCEP	CPTPP	RCEP
AMERICAS	**39,569**	**60**	**3**	**0.15**	**0.01**
Canada	2,717	26	1	0.96	0.02
United States	25,754	-4	0	-0.01	0.00
ASIA	**50,659**	**91**	**234**	**0.18**	**0.46**
Brunei Darussalam	31	1	0	3.01	0.53
China	27,839	-14	127	-0.05	0.46
India	5,487	-5	-7	-0.09	-0.13
Malaysia	675	29	7	4.36	1.03
Singapore	485	15	0	3.14	0.05
OCEANIA	**2,854**	**19**	**2**	**0.65**	**0.08**
Australia	2,590	15	2	0.58	0.06
New Zealand	264	4	1	1.38	0.28
REST OF THE WORLD	**40,720**	**19**	**24**	**0.05**	**0.06**
Africa (Sub-Sahara)	4,068	0	1	0.00	0.01
WORLD	**133,801**	**188**	**263**	**0.14**	**0.20**

Notes: Commonwealth countries in **bold**. CPTPP=Comprehensive and Progressive Agreement for Trans-Pacific Partnership. RCEP=Regional Comprehensive Economic Partnership. Results are expressed as changes relative to the baseline. Results are obtained via a CGE model. See Box 1 and Park, et. al. (2021) for details.

Source: Park, Cyn-Young, Peter A. Petri, and Michael G. Plummer, 2021. "The Economics of Conflict and Cooperation in the Asia-Pacific: RCEP, CPTPP, and the US-China Trade War," East Asian Economic Review, Vol. 25, No. 3, September, pp. 233-272.

Table 3 – Export effects of CPTPP and RCEP

	2030 Exports (US$ million)	Incremental Exports (US$ billion)		Percent Export Change (%)	
		CPTPP	RCEP	CPTPP	RCEP
AMERICAS	**7,068**	**78**	**-4**	**1.1**	**-0.1**
Canada	835	40	-1	4.8	-0.1
United States	3,906	-8	-2	-0.2	-0.1
ASIA	**12,905**	**187**	**496**	**1.4**	**3.8**
Brunei Darussalam	16	1	0	3.6	0.6
China	4,976	-6	234	-0.1	4.7
India	1,360	-3	-5	-0.2	-0.4
Malaysia	491	45	12	9.3	2.5
Singapore	470	30	-2	6.4	-0.5
OCEANIA	**673**	**29**	**4**	**4.3**	**0.6**
Australia	589	24	3	4.0	0.6
New Zealand	84	5	1	5.9	1.2
REST OF THE WORLD	**15,503**	**19**	**0**	**0.1**	**0.0**
Africa (Sub-Sahara)	883	1	1	0.1	0.1
WORLD	**36,149**	**312**	**496**	**0.9**	**1.4**

Notes: Commonwealth countries in **bold**. CPTPP=Comprehensive and Progressive Agreement for Trans-Pacific Partnership. RCEP=Regional Comprehensive Economic Partnership. Results are expressed as changes relative to the baseline. Results are expressed as changes relative to the baseline. Results are obtained via a CGE model. See Box 1 and Park, et. al. (2021) for details.

Source: Park, Cyn-Young, Peter A. Petri, and Michael G. Plummer, 2021. "The Economics of Conflict and Cooperation in the Asia-Pacific: RCEP, CPTPP, and the US-China Trade War," East Asian Economic Review, Vol. 25, No. 3, September, pp. 233-272.

II. African Continental Free Trade Area (AfCFTA)

Africa has long hosted RTAs of various degrees of scope and depth, including the East African Community, the Economic Community of West African States, the Common Market for Eastern and Southern Africa, the Southern African Customs Union, the Southern African Development Community, and the Economic and Monetary Union of Central Africa.[46] Nevertheless, intra-regional trade continues to be low; as a percentage of total trade, it was only 13.7% in 2022, down from 14.5% in 2021.[47] This compares to about 59% in Asia and the Pacific.[48] The AfCFTA is designed to change that. It was created under the auspices of the African Union, in part to contribute to efforts to achieve the region's Sustainable Development Goals, especially Goal 8 to "promote sustained, inclusive and sustainable economic growth, full and productive employment, and decent work for all." Twenty of the AfCTA's 55 members are Commonwealth nations.

Using a CGE model that takes advantage of labor-related data, Plummer, et al. (2024) estimates the welfare, trade, sectoral change, and employment effects of the AfCTA.[49] Table 4 summarizes the projected effects on welfare and trade

AfCFTA should increase Continental welfare by 3.2% on an annual basis, which is significantly larger than the anticipated effects of the CPTPP and RCEP. The gains in income derive mainly from a substantial increase in trade.

for countries covered in the model, including 13 Commonwealth countries (highlighted), with results presented as changes relative to the baseline. Overall, it finds that the AfCFTA should increase Continental welfare by 3.2% on an annual basis, which is significantly larger than the anticipated effects of the CPTPP and RCEP. The gains in income derive mainly from a substantial increase in trade: exports and imports are estimated to increase by approximately 14%, or more than four times the increase in welfare. Of the Commonwealth countries, Togo experiences the largest income gains relative to baseline GDP (11%) and Ghana the most in absolute terms, with a gain of US$9.5 billion. But export gains are especially impressive for some Commonwealth members: Zambia (US$34 billion), Kenya (US$32 billion), and Togo (US$30 billion) are estimated to gain the most in nominal terms, but benefits are fairly widespread, with eight out of the 13 Commonwealth countries experiencing a rise in exports of more than US$20 billion.

Changes in sectoral employment are presented in Table 5, where agriculture and Commonwealth countries are highlighted. Clearly the AfCFTA will have beneficial effect on employment overall, but especially in agriculture. Agricultural employment expands in all Commonwealth members with the exceptions of Botswana, which experiences a small (2,000) contraction, and Mauritius, a country where employment changes very little. Agricultural employment gains are particularly notable in Tanzania and Kenya, where respectively 1.022 million and 449,000 new jobs are created.[50]

In short, RTAs, particularly mega-regional agreements, have the potential to increase economic efficiency, welfare, trade, and employment substantially. These agreements were very complicated to negotiate given divergent economic (and other) interests, but in the end the anticipated potential gains via economic cooperation were sufficient to complete the agreements.

Table 4 – Welfare and trade impacts of the African Continental Free-trade Area
(EV, relative to baseline, 2033)

	US$ billion, 2014 prices	% of baseline GDP	Trade US$ billion, 2014	
	AfCFTA	AfCFTA	Exports	Imports
AFCFTA ECONOMIES	**146.9**	**3.2**	**13.6**	**13.9**
Egypt	11.2	1.4	10.8	9.6
Morocco	6.8	3.3	14.5	12.5
Tunisia	3.0	4.6	16.6	14.7
Benin	0.6	1.6	16.2	10.0
Burkina Faso	2.8	7.5	29.8	38.0
Cameroon	1.5	2.0	25.8	18.4
Côte d'Ivoire	10.7	9.8	59.3	59.6
Ghana	9.5	8.6	21.7	21.0
Guinea	2.3	10.8	27.4	28.9
Nigeria	5.2	0.6	2.7	4.8
Senegal	4.9	8.5	40.2	30.5
Togo	1.4	11.3	29.5	23.8
Rest of Central Africa	5.8	7.7	4.7	6.8
Ethiopia	3.3	1.3	11.7	10.5
Kenya	8.3	4.5	31.7	23.9
Madagascar	0.5	1.9	8.1	8.2
Malawi	0.7	4.5	19.2	19.4
Mauritius	0.8	3.7	11.3	9.6
Mozambique	2.1	4.2	13.9	14.7
Rwanda	1.8	6.6	24.7	23.7
Tanzania	8.2	6.0	24.6	22.7
Uganda	3.5	4.4	28.2	32.7
Zambia	4.5	12.0	34.0	38.1
Zimbabwe	1.7	8.4	32.8	27.0
Botswana	2.1	6.7	8.1	15.1
Namibia	2.2	11.4	37.0	30.3
South Africa	21.7	5.2	17.4	20.9
Rest of Africa	19.8	2.3	7.5	7.3
World	**108.5**	**0.1**	**0.4**	**0.4**

Notes: Commonwealth countries in **bold.** Results are obtained via a CGE model. derived using a CGE model. For details, see Box 1 and Plummer, et. al. (2024).

Source: Plummer, Michael and Zhai, Fan and XIE, Jie, Prosperity through Deeper Integration in Africa? Welfare, Trade and Labor Effects of the African Continental Freetrade Area and the Belt and Road Initiative, 2024. Available at SSRN: https://ssrn.com/abstract=4905551

Table 5 – Effects of African Continental Free-trade Area on sectoral total employment
(change from baseline, '000 workers, 2033)

	BWA	BFA	CIV	EGY	ETH	GHA	KEN
Agriculture	-4	122	183	-1	584	320	449
Mining	1	60	-12	-1	-40	-11	-4
Processed food	-4	-60	14	27	6	248	40
Textiles & apparel	2	-21	51	0	1	62	-16
Wood and paper products	-1	-44	6	77	8	-7	13
Chemicals	0	-12	19	20	-74	4	57
Energy-intensive manufacturing	-1	22	1	22	14	-3	0
Other manufactures	0	-16	-2	20	11	70	14
Construction	8	81	38	44	26	56	48
Utilities	0	1	1	11	1	6	11
Trade	11	374	297	79	98	209	249
Transportation	7	33	31	-18	19	18	-9
Communication	0	1	0	0	0	0	-2
Financial services	-1	-2	-4	-2	2	-3	0
Other private services	4	47	-2	-14	112	47	48
Public services	10	-9	-5	24	8	9	72

	MUS	NAM	SEN	TGO	TZA	UGA	ZMB
Agriculture	0	22	82	35	1,022	375	121
Mining	0	4	10	-4	-72	-7	24
Processed food	0	5	26	2	95	44	-29
Textiles & apparel	1	-2	17	126	71	-12	-5
Wood and paper products	1	0	-27	21	-35	-16	-17
Chemicals	0	0	3	14	5	-4	15
Energy-intensive manufacturing	0	1	15	2	-3	103	3
Other manufactures	1	1	17	20	28	-19	-8
Construction	1	11	35	9	77	49	87
Utilities	0	-2	9	0	6	1	10
Trade	0	15	298	175	347	63	293
Transportation	1	2	45	14	171	46	19
Communication	0	0	0	-1	1	0	1
Financial services	0	1	4	0	-6	-6	-1
Other private services	0	19	32	-68	32	-4	72
Public services	0	1	4	-3	18	18	23

Notes: Commonwealth countries highlighted in orange. Results are obtained via a CGE model. derived using a CGE model. For details, see Box 1 and Plummer, et. al. (2024). **Source:** Plummer, Michael and Zhai, Fan and XIE, Jie, Prosperity through Deeper Integration in Africa? Welfare, Trade and Labor Effects of the African Continental Free-trade Area and the Belt and Road Initiative, 2024.

The United States is the largest market for these agricultural exports at US$57 billion, followed by the EU at US$43 billion. Tariffs facing Commonwealth exporters in these markets vary considerably.

B. Commodity-level effects of liberalization: New estimates

Policymakers tend to be more interested in disaggregated effects of policy innovations than economy-wide analysis because product-based analysis offers more insight into costs and benefits from a social perspective. If a trade agreement is estimated to increase economic welfare, that is useful information. But what if the gains are skewed toward just one sector and others experience net losses? For example, what if capital-intensive manufacturing gains but labor-intensive manufacturing and agriculture lose? From a distributional point of view, that could be problematic. CGE models offer useful information about the effects of changes in trade policy on the economy and sectoral change in the aggregate, but from a policy point of view it would be useful to consider effects at the product level as well.

In order to give a better idea of the potential effects of tariff liberalization in agriculture on all Commonwealth countries, this subsection considers the effects of trade liberalization at the four-digit HS level.[51] It examines the likely effects of tariff liberalization through two approaches: (1) the product-level implications of agricultural tariff liberalization of the main markets of the Commonwealth on the exports of CSs; and (2) the product-level effects of trade liberalization of imports in local Commonwealth member markets. The first gives a notion of how the global marketplace could support exports from Commonwealth countries and the second how priority liberalization of imports locally might help food security. The approach is based on a fairly commonly used "partial equilibrium" methodology developed in Kreinin and Plummer (1992).

I. Agricultural exports to main Commonwealth markets

Table 6 shows the top 10 agricultural exports of Commonwealth countries (ranked by value) at the product level to five key Commonwealth export markets, that is, the EU, the United States, UK, China, and Japan (the top 50 exports are included in Appendix 2) for the year 2022. It includes the value of the Commonwealth's commodity exports, share of those exports in total agricultural exports, and the applied tariff in the destination markets.[52] A few observations: The United States is the largest market for these agricultural exports at US$57 billion, followed by the EU at US$43 billion. Tariffs facing Commonwealth exporters in these markets vary considerably. At least half of the top ten exports to each market enters tariff free, with the exception of the Japanese market, where only four items enter tariff-free. But tariffs can be high on certain commodities. Among the top 10 exports to the United States, the country applies non-zero tariffs only on Meat of Bovine Animals Fresh and Meat of Bovine Animals Frozen, which are taxed at a high 17.8%, the highest on any of the top 50 agricultural exports to that market. These products also face the highest tariffs in the Japanese market and at more than double the US rates (38.5% for both). Crustaceans are taxed at the highest rate in the UK market (10.9%), and a similar level of tariffs on Crustaceans and Citrus Fruit (10.3% and 10.8%, respectively) are applied in the EU market among top 10 Commonwealth exports.

Table 6 – Top 10 Commonwealth agricultural exports to selected markets and levels of protection, 2021

A. European Uion

HS4 code	Product description	US$ millions	% total exports	Applied MFN
	Total	43,422.4	100	
1205	Rape, colza seeds	3,656.8	8.42	0.0
1511	Palm oil	2,680.4	6.17	0.0
0306	Crustaceans	1,851.1	4.26	10.3
0204	Meat of sheep/goats	1,603.4	3.69	0.0
2106	Food prep	1,354.6	3.12	0.0
1001	Wheat and meslin	1,242.4	2.86	0.0
1801	Cocoa beans	1,189.0	2.74	0.0
1518	Animal/veg fats	1,164.7	2.68	0.0
1604	Prep/preserved fish	1,144.1	2.63	0.0
0806	Grapes	1,124.7	2.59	7.7

B. United States

HS4 code	Product description	US$ millions	% total exports	Applied MFN
	Total	57,207.8	100	
2106	Food prep	5,618.8	9.82	0.0
1905	Bread, pastry, etc.	4,934.4	8.63	0.0
0306	Crustaceans	4,585.4	8.02	0.6
1514	Rape, colza, mustd oil	3,884.2	6.79	0.0
0201	Meat of bovine, fresh	2,937.6	5.14	17.8
1806	Chocolate prep	1,981.3	3.46	0.0
2004	Vegetables prep	1,788.6	3.13	0.0
0204	Meat of sheep/goats	1,639.2	2.87	0.0
0202	Meat of bovine, frozen	1,601.2	2.80	17.8
0302	Fish; fresh or chilled	1,181.9	2.07	0.6

C. United Kingdom

HS4 code	Product description	US$ millions	% total exports	Applied MFN
	Total	5,235.9	100	
0204	Meat of sheep/goats	352.2	6.73	0.0
1518	Animal/veg fats, oil	336.9	6.43	0.0
1511	Palm oil	308.8	5.90	0.0
1006	Rice	271.8	5.19	0.0
1001	Wheat and meslin	268.8	5.13	0.0
0806	Grapes	241.3	4.61	6.0
0306	Crustaceans	228.5	4.36	10.9
1604	Prep/preserved fish	222.5	4.25	0.0
0805	Citrus fruit	207.6	3.97	10.8
1005	Maize (corn)	176.5	3.37	0.0

D. China

HS4 code	Product description	US$ millions	% total exports	Applied MFN
	Total	36,461.7	100	
0402	Milk	3,588.0	9.84	10.0
1001	Wheat and meslin	2,891.4	7.93	0.0
0202	Meat of bovine, frozen	2,620.4	7.19	16.3
0306	Crustaceans	2,511.4	6.89	6.2
0204	Meat of bovine, fresh	2,006.0	5.50	17.0
1511	Palm oil	1,875.6	5.14	0.0
1901	Malt extract	1,731.9	4.75	0.0
1205	Rape, colza seeds	1,506.8	4.13	0.0
2106	Food prep not specified	1,334.4	3.66	0.0
1006	Rice	1,232.4	3.38	0.0

E. Japan

HS4 code	Product description	US$ millions	% total exports	Applied MFN
	Total	15,492.3	100	
1205	Rape, colza seeds	1,952.4	12.60	0.0
1001	Wheat and meslin	1,463.7	9.45	0.0
0202	Meat of bovine, frozen	1,088.6	7.03	38.5
0203	Meat of swine	955.6	6.17	2.2
0201	Meat of bovine, fresh	836.5	5.40	38.5
1511	Palm oil	691.4	4.46	0.0
0306	Crustaceans	621.9	4.01	3.3
0406	Cheese and curd	547.0	3.53	31.8
1701	Cane or beet sugar	524.2	3.38	0.0
0304	Fish fillets	435.3	2.81	4.3

Note: Product codes are HS2017. Applied MFN tariffs are calcuated as the simple average of tariffs at six-digit HS level.

Source: WITS, WTO-IDB, Commonwealth Secretariat

The average tariff on imports valued at more than US$1 billion, constituting fully two-thirds of total subregional imports, is 14%. Reductions in these tariffs could boost food consumption considerably in some economies as well as benefit household expenditures in general.

Two caveats need to be kept in mind regarding the above analysis. First, there is an endogeneity problem: higher tariffs lead to lower exports *ceteris paribus,* and vice versa, and this no doubt distorts the picture somewhat. For example, Japan has applied in the past a tariff of 778% on rice imports.[53] Rice exports by some Commonwealth countries are competitive, as seen from the fact that it was a top 10 export to Japan's regional neighbor, China. But it is no mystery why rice exports are not found in the top 50 agricultural exports to Japan. Second, the only data on protection that are used here concern tariffs but, as noted in Section IV, there are many other instruments that can be mobilized to deter imports, particularly in agriculture. Hence, the applied tariffs used here should be considered a minimum level of protection.

II. Agricultural imports of net food-importing Commonwealth markets

Table 7 aggregates the top 50 imports at the four-digit HS product level of 37 net food-importing Commonwealth countries. It includes the value of imports summed across all countries, share of each product in total imports of this subregion, and the applied MFN tariff on each item, averaged from the six-digit HS level and across countries. As the variance in protection across net food importing Commonwealth members could hardly be greater, with some free-trade countries like Brunei and Singapore and others in Africa with high tariffs, generalizations can be difficult. Still, it is noteworthy that tariff levels tend to be high: the average tariff on imports valued at more than US$1 billion, constituting fully two-thirds of total subregional imports, is 14%. Reductions in these tariffs could boost food consumption considerably in some economies as well as benefit household expenditures in general.[54] Tariff levels in the 10 net food importing Commonwealth countries that are also LDCs tend to be higher than average, and these countries could gain the most in terms of food security through tariff liberalization.[55]

How much would imports increase with tariff liberalization? Price elasticities of import demand are notoriously difficult to estimate, as they vary considerably across countries and commodities. However, Fally and Sayre (2018) undertakes a meta-analysis of the large literature on price elasticity of demand estimates for commodities and calculates that, in general, these estimates tend to vary between negative 0.1 and 0.5, suggesting considerable potential for increasing import demand with tariff reductions, even if commodity demand tends to be somewhat price-inelastic.

In addition to the caveats mentioned with respect to the analysis of protection in main export markets, it is important to stress that import tariff revenue can sometimes be an important source of government revenue. Trade liberalization, therefore, may cause a fiscal challenge. Yet, there are many other forms of potential indirect revenue sources that governments can tap that can make up for any lost revenue due to liberalization. In any event, given the distortions caused by import tariffs that diverge across products, the tariff-revenue argument could be solved via an across-the-board tariff that would increase government revenue without causing production and consumption distortions.

Table 7 – Top 50 product imports from Commonwealth net food importing countries and applied protection, 2022

HS4 code	Product description	US$ millions	% total imports	Applied MFN	HS4 code	Product description	US$ millions	% total imports	Applied MFN
	Total	**53,706.3**	**100**		*Cont'd*				
1511	Palm oil	8,576.3	15.97	17.9	0407	Birds' eggs	381.2	0.71	19.3
1001	Wheat	5,454.3	10.16	3.1	0406	Cheese, curd	377.3	0.70	17.5
1701	Sugar	3,036.1	5.65	25.2	0203	Meat of swine	373.6	0.70	29.3
1006	Rice	2,876.1	5.36	12.4	1902	Pasta	347.5	0.65	21.0
1201	Soya beans	2,170.4	4.04	7.1	1602	Prep meat	342.7	0.64	26.3
0402	Milk, concentrated	1,853.7	3.45	19.6	1101	Wheat flour	327.4	0.61	20.7
1507	Soya-bean oil	1,782.6	3.32	24.7	1702	Sugars	326.0	0.61	10.0
2106	Food prep	1,756.6	3.27	12.9	0805	Citrus fruit	305.1	0.57	24.5
0713	Vegetables	1,625.4	3.03	12.2	2008	Fruit, nuts	298.1	0.56	19.3
0303	Fish; frozen	1,461.8	2.72	18.5	2009	Fruit juices	293.6	0.55	24.2
1005	Maize (corn)	1,337.2	2.49	8.3	1605	Crustaceans	272.6	0.51	17.5
1518	Animal/veg oils	1,158.1	2.16	11.8	0306	Crust in shell	269.1	0.50	19.5
1901	Malt extract	1,156.7	2.15	11.4	1107	Malt	267.9	0.50	4.2
0207	Meat of poultry	1,077.2	2.01	24.0	1516	Animal/veg fats	263.2	0.49	21.6
1905	Bread, pastry	721.7	1.34	22.3	1704	Sugar conf	263.0	0.49	24.0
2103	Sauces and prep	607.8	1.13	19.5	0305	Fish, dried	243.1	0.45	15.4
1205	Rape/colza seed	572.1	1.07	7.7	1801	Cocoa beans	239.3	0.45	7.1
0703	Onions, shallots	535.6	1.00	21.2	0204	Meat sheep/goat	234.2	0.44	19.0
1502	Fats bovine, etc	519.3	0.97	6.5	0105	Poultry, live	229.4	0.43	12.5
1604	Prepared fish	490.7	0.91	16.9	0401	Milk, raw	225.6	0.42	24.7
1806	Chocolate	453.4	0.84	22.8	2101	Extracts	219.3	0.41	19.8
1517	Margarine	439.2	0.82	19.2	0304	Fish fillets	215.0	0.40	22.3
0202	Meat bovine, frozen	419.3	0.78	21.0	0405	Butter, other fats	214.1	0.40	16.8
0808	Apples, pears	402.9	0.75	20.8	1512	Sun-flower seed	198.6	0.37	22.4
2004	Veg preparations	398.4	0.74	19.4	0701	Potatoes	196.0	0.36	14.3

Note: Product codes are HS2017. Applied MFN tariffs are calcuated as the simple average of tariffs at six-digit HS level.

Source: WITS, WTO-IDB, Commonwealth Secretariat

VI. Policy implications: Toward better cooperation in agriculture

Agricultural trade liberalization has been a perennial issue at the WTO and, before it, the GATT, and considerable progress has been made in certain areas. But the sensitive nature of agricultural trade particularly in the 21st century has limited the gains thus far that could be achieved through multilateral cooperation.

This study has underscored the potential benefits of trade in general and agricultural trade in particular in achieving salient economic and social goals of the Commonwealth nations, including increasing economic welfare, reducing poverty, enhancing food security, and addressing climate change challenges. Agricultural trade is an important tool to attain the Sustainable Development Goals, particularly Goal 1 and Goal 2. This conclusion is strongly supported by economic analysis and quantitative modeling.

Nevertheless, agriculture is the sector that faces the most intractable obstacles to international exchange, via direct instruments such as tariffs, quantitative restrictions, SPS, and technical barriers to trade (TBT), as well as indirect measures such as commodity programs and domestic subsidy programs. Some of these restrictions are understandable from the perspective of risk and social priorities; others are more political in nature. All tend to be costly. Given the potential benefits from agricultural trade liberalization particularly for the most vulnerable Commonwealth countries, finding the most efficient paths to facilitate as much as possible the free flow of agricultural products needs to be a priority. This will require economic reform at the domestic level but also through international cooperation at various levels.

Agricultural trade liberalization has been a perennial issue at the WTO and, before it, the GATT, and considerable progress has been made in certain areas. But the sensitive nature of agricultural trade particularly in the 21st century has limited the gains thus far that could be achieved through multilateral cooperation. For example, little was accomplished on agricultural issues at the 13th Ministerial in March 2024, with the failure to reach any breakthroughs on the agriculture agenda, including on harmful fisheries subsidies and public stockholding for food security purposes. Still, there is a will to move forward; in July 2024 the Chair of the WTO's agricultural negotiations encouraged members to boost their efforts to "reinvigorate" talks in the fall.[56]

More progress has been made through RTAs. This study has underscored the benefits of these agreements in liberalizing trade including in agriculture, especially with regard to the new mega-regional trade agreements in the Asia-Pacific and Africa that include many Commonwealth members. However, as noted in the OECD (2015) survey, RTAs continue to feature product exemptions and non-tariff barriers such as TRQs in agriculture. The study underscores that much can be improved in these agreements. It offers a useful set of recommendations regarding agriculture that could help guide RTAs and cross-border economic cooperation more generally, namely:

— Product exemptions and tariff-rate quotas should be limited;
— Agreements should harmonize ROOs and keep them simple (they are often the most complicated in agriculture);
— They should prohibit export subsidies and related policies;
— They should prohibit export restrictions, except on a temporary basis to meet critical shortages of food;

Due to the nature of pan-Commonwealth cooperation and the diversity of its membership, a formal agreement like an RTA would be difficult to envision. Still, it would be possible to devise informal rules, disciplines, and support measures to spur agricultural trade among Commonwealth countries as well as with non-member states.

— Agreements should limit special agricultural safeguards and, when included, they should contain "sunset clauses";
— SPS principles should be transparent, harmonized as much as possible consistent with international standards, and feature equivalence in testing across members and non-members; and
— Agreements should include technical assistance and financial support for partners who need it, and there should be greater coverage and roles for technical working groups to promote collaboration on standards and regulations.

In any event, new momentum is required if Commonwealth countries are to reap the potential benefits of freer global trade in agriculture. Due to the nature of pan-Commonwealth cooperation and the diversity of its membership, a formal agreement like an RTA would be difficult to envision. Still, it would be possible to devise informal rules, disciplines, and support measures to spur agricultural trade among Commonwealth countries as well as with non-member states. The principles noted above would no doubt serve as useful input into related discussions.

Moreover, the process of improving the agricultural trade-related performance of lower-income Commonwealth countries in particular could be supported through cooperation with developed countries within and outside the Commonwealth, which tend to be the most important markets for Commonwealth exporters and sources of imports. Section V(c) noted that tariffs can be high in certain commodities, and reducing direct and indirect barriers to Commonwealth trade could significantly benefit particularly the poorest households in the Commonwealth.

The process of improving the agricultural trade-related performance of lower-income Commonwealth countries in particular could be supported through cooperation with developed countries within and outside the Commonwealth. (Photo source: US Embassy New Zealand | Flickr).

Agricultural trade has a key role to play in helping countries on the path to net zero and in helping countries face the many threats of climate change by providing, for example, access to new technologies, inputs and other resources on the supply side, and allowing greater access to safe, plentiful, nutritious, and inexpensive food on the demand side.

But in order for LDCs to benefit from a more open and free international marketplace, bottlenecks to trade must be overcome. Implementation of the WTO Trade Facilitation Agreement will yield strong benefits in this regard, as anticipated by Beckman (2021) and others. In addition to policy support and fewer restrictions on the exports of LDCs, investment in both hard and soft trade-related infrastructure needs to be a priority. Seeking financial resources to help low-income economies overcome trade-related infrastructural constraints is in many ways a *sine qua non* to maximize benefits from the international marketplace. These resources could come from a variety of sources, including multilateral and regional development banks, official development assistance programs, and private-sector partnerships. Indeed, the Aid for Trade Initiative, which was launched at the Hong Kong WTO Ministerial in December 2005 and financed by OECD development assistance programs, is specifically designed to remove supply-side and trade-related infrastructural obstacles that impede performance in tapping international markets, be it on the import or export side. Aid for Trade has been a great success; between 2006 and 2022, 90 bilateral and multilateral donors contributed a cumulative US$648 billion "to promote the integration of developing economies and least developed countries (LDCs) into the multilateral trading system, unleashing their export potential and strengthening local livelihoods" (OECD-WTO 2004). The associated financing promotes trade policy and regulations, trade development (for example, investment promotion, business support), physical infrastructure, productive capacity, and adjustment assistance (for example, to reduce the costs of structural change). Aid for Trade is also helping with the green transition, with almost a quarter of Aid for Trade assistance applied to the energy sector (WTO 2024).

In fact, agricultural negotiations will continue to be married with issues related to the transition to net zero. This study has underscored the threat that climate change poses to agriculture and the most vulnerable developing economies in terms of its effects on increasing absolute poverty, endangering food security, reducing development prospects, and increasing inequality. Agricultural trade has a key role to play in helping countries on the path to net zero and in helping countries face the many threats of climate change by providing, for example, access to new technologies, inputs and other resources on the supply side, and allowing greater access to safe, plentiful, nutritious, and inexpensive food on the demand side. Unfortunately, NDCs tend to ignore the role of trade in the green transition. The COP28 UAE Declaration on Sustainable Agriculture, Resilient Food Systems, and Climate Action,[57] endorsed by 160 states including Commonwealth members, does mention the importance of strengthening the multilateral trading system but without details. Commonwealth countries would do well to emphasize the role of trade in meeting the goals of this declaration and flesh out the details that might be adopted over time at the regional and global levels.

Researcher bio:
Michael G. Plummer

Michael Plummer is the Eni Professor of International Economics at Johns Hopkins University School of Advanced International Studies, and Professor of International Economics at SAIS Europe since 2001.He was Director of SAIS Europe from 2014 to 2023. Professor Plummer was Head of the Development Division of the Organization for Economic Co-operation and Development (OECD) in Paris from 2010 to 2012; an associate professor at Brandeis University (1992-2001); and Fellow at the East-West Center (1988-1992).

From 2007 to 2015, Professor Plummer was Editor-in-Chief of the Journal of Asian Economics (Elsevier) and President of the American Committee on Asian Economic Studies (ACAES) from 2008 to 2015. A former Fulbright Chair in Economics and Pew Fellow in International Affairs at Harvard University, he has been an Asian Development Bank (ADB) distinguished lecturer on several occasions and team leader of projects for various organizations including the Association of Southeast Asian Nations, the United Nations, the OECD, the ADB, the World Bank, the IMF, and the World Trade Organization. He has taught at more than a dozen universities in Asia, Europe, and North America.

Professor Plummer has advised several governments on the Transpacific Partnership (TPP) negotiations and ASEAN governments of economic integration issues and was a member of the Trade Policy Modelling Review Expert Panel of the UK government (2020-2022). He is a member of the editorial boards of the Asian Economic Journal, the Journal of Southeast Asian Economics (formerly ASEAN Economic Bulletin); and the Global Economic Journal. Professor Plummer is author/co-author of over 100 journal articles and book chapters and co-author/editor of 28 books. His PhD is in economics from Michigan State University.

Michael G. Plummer

Eni Professor of International Economics,
Johns Hopkins University

Endnotes

1. To be precise, in 2022, the share of food in household expenditure came to 6% in the US, 7% in the UK, 12% in the EU, and 16% in Japan. Source: OECD Data Explorer, accessed 16 July, 2024.
2. The UK is currently in the ratification process which is expected to be completed in 2024.
3. https://unfccc.int/cop28/5-key-takeaways
4. The WTO succeeded the General Agreement on Tariffs and Trade (GATT) in 1995.
5. For details on the MPIA see: WTO, https://wtoplurilaterals.info/plural_initiative/the-mpia/
6. https://earthobservatory.nasa.gov/world-of-change/global-temperatures
7. https://wmo.int/news/media-centre/global-temperature-likely-exceed-15degc-above-pre-industrial-level-temporarily-next-5-years
8. World Bank estimates, https://data.worldbank.org/topic/poverty .
9. Trade, Technology, and Agricultural Productivity, Farid Farrokhi and Heitor S. Pellegrina, Journal of Political Economy, volume 131, number 9, 2023, https://www.journals.uchicago.edu/doi/pdf/10.1086/724319
10. See sources included in the Commonwealth Secretariat website, https://thecommonwealth.org/our-work/trade-and-economy
11. See Appendix A for a list of Commonwealth member countries by Economic Status (developed or developing), Geography, and status as a Small State, Small Island Developing State (SIDS), or Least Developed Country.
12. Their nominal exports come to US$62 billion, US$41 billion, US$42 billion, and US$31 billion, respectively. Source: Comtrade.
13. Gabon is the only country in that group that is neither a SIDS nor an LDC.
14. FAO, https://data.apps.fao.org/catalog/dataset/special-country-groups/resource/56ac7f70-6286-426d-8579-555390927bc3?inner_span=True, accessed 21 July, 2024.
15. WFP at a Glance, 2 August 2024, World Food Programme, https://www.wfp.org/stories/wfp-glance
16. World Trade Report 2023, World Trade Organization, https://www.wto.org/english/res_e/publications_e/wtr23_e.htm
17. Four decades of poverty reduction in China: Drivers, insights for the world, and the way ahead, The World Bank and the Development Research Center of the State Council, the People's Republic of China, 2022, https://thedocs.worldbank.org/en/doc/bdadc16a4f5c1c88a839c0f905cde802-0070012022/original/Poverty-Synthesis-Report-final.pdf
18. Agricultural Trade and Ultra-Poor in Pakistan: An Application of CGE Model, Saud Ahmad, Muhammad Aamir Khan, and Usman Mustafa, Millennial Asia, Volume 13, Issue 3, 2022, https://journals.sagepub.com/doi/epub/10.1177/09763996211010607
19. Food imports (% of merchandise import – Pakistan), World Bank, accessed June 2024, https://data.worldbank.org/indicator/TM.VAL.FOOD.ZS.UN?locations=PK
20. See FAO, https://www.fao.org/worldfoodsituation/foodpricesindex/en/.
21. Pangestu and Van Trotsenburg (2022) analyze this process in the context of the Russian war on Ukraine, noting that only a few months after the war started, 34 countries had imposed restrictions on exports of food or fertilizers, which came close to the 36 countries that had done so during the food crisis of 2008-2012. They also give examples of temporary lifting of import restrictions.
22. An exception, of course, would be North Korea, which is perhaps the most closed economy in the world, as well as among the poorest.
23. World Bank, https://data.worldbank.org/indicator/NE.TRD.GNFS.ZS?locations=Z4 https://data.worldbank.org/indicator/NE.TRD.GNFS.ZS?locations=Z4 and https://data.worldbank.org/indicator/NY.GDP.PCAP.CD?locations=Z4
24. All data in this paragraph come from the World Bank.
25. Poverty data from 1992 are the earliest offered in the World Bank database.

26. The only exception to zero MFN tariffs in Singapore is for certain alcoholic beverages.
27. World Bank, https://data.worldbank.org/indicator/TM.TAX.MRCH.SM.FN.ZS?locations=GM.
28. See Commonwealth (2021) for relevant discussions.
29. Data are for 2021, World Integrated Trade Solution database, accessed 4 August, 2024. https://wits.worldbank.org/CountryProfile/en/Country/JPN/Year/LTST/Summary
30. There is a fairly large literature looking at the infant industry argument. For an early empirical text on Turkish data, see Krueger and Tuncer (1982).
31. See FAO, https://www.fao.org/4/x7352e/X7352E03.htm, for a more detailed review of direct and indirect tools.
32. New York Times, "Japanese Are Special types, They Explain," March 6, 1988. https://www.nytimes.com/1988/03/06/weekinreview/the-world-japanese-are-special-types-they-explain.html
33. FAO (2022).
34. The impact assessment used GEM-E3, a recursive dynamic computable general equilibrium model. Variables are determined simultaneously through the interactions between the economy, the energy system, and the environment. https://ec.europa.eu/transparency/documents-register/detail?ref=SWD(2021)643&lang=en
35. One example is the EU Regulation on Deforestation-Free Supply Chains, which entered into force in June 2023, requires companies to prove that their products were not produced on land that experienced deforestation or forest degradation, which will require companies to undergo "strict due diligence," which requires a large bureaucratic burden and has been criticized as being discriminatory toward small- and medium-sized exporters. Products included are palm oil, cattle, soy, coffee, cocoa, timber, and rubber, as well as derived products such as beef. Details can be found at the European Commission website at: https://environment.ec.europa.eu/news/green-deal-new-law-fight-global-deforestation-and-forest-degradation-driven-eu-production-and-2023-06-29_en#:~:text=This%20law%20responds%20to%20the,demand%20for%20deforestation%2Dfree%20products.
36. The WTO Trade Facilitation Agreement went into effect in 2017 and includes measures to expedite and lower costs of trade as well as facilitate greater cooperation between customs and other border officials on compliance issues. For details, see: https://www.wto.org/english/tratop_e/dtt_e/dtt-tradfa_e.htm .
37. See Zhai (2008), Balistreri, Hillberry and Rutherford (2011), Dixion, Jerie, and Rimmer (2013), Itakura and Oyamada (2013).
38. Their model is based on a Malmquist-data envelopment analysis approach.
39. Details can be found through the WTO's Regional Trade Agreements Gateway (https://www.wto.org/english/tratop_e/region_e/region_e.htm).
40. WTO, https://rtais.wto.org/UI/PublicMaintainRTAHome.aspx .
41. Examples of comprehensiveness would include how many economic sectors are included in the agreement, the extent of service-sector coverage, and of course the coverage of the agricultural sector (for example, when the ASEAN Free Trade Area (AFTA) was first developed in 1992, agriculture was completely excluded). Depth would include the degree to which non-tariff barriers are liberalized, cooperation on SPS and TBT, and labor and environmental issues.
42. Rules of origin, which specify the criteria required to establish the country of origin of a product, are necessary in an RTA due to the differing tariff rates applied by members of an RTA on non-partner countries. Suppose that high-tariff Country A and low tariff Country B form their own FTA in which intra-regional trade is tariff-free but they retain their external tariffs on non-members. In order to prevent non-members from redirecting all exports to Country A and then re-directing exports to Country B from there in order to take advantage of the tariff differential (known as "trade deflection"), it is important to have ROO.
43. India began negotiations with RCEP when they were launched in November 2012 but withdraw before signing the agreement. The RCEP agreement itself stipulates that India is able to apply to join RCEP at will.
44. See Petri, et al. (2012) for a comprehensive survey of the TPP agreement and Park, et al. (2021) for a survey of the provisions of the CPTPP and RCEP, as well as an analytical comparison between the two.
45. See Park, et al. (2021), for a survey and from which the CPTPP and RCEP estimates below are derived.

46. See UNCTAD (2008) and World Bank (2020) for reviews and analysis of these regional integration programs.

47. United Nations Economic Commission for Africa (UNECA), https://www.uneca.org/stories/african-countries-trading-more-outside-the-continent-than-amongst-themselves%2C-eca-report#:~:text=Trade%20Integration,-Despite%20trade%20under&text=Intra%2DAfrican%20trade%20as%20a,13.7%20per%20cent%20in%202022.

48. Asian Development Bank, https://www.adb.org/news/trade-integration-deepens-asia-and-pacific-amid-pandemic

49. It also includes estimates of the effects of the Belt and Road Initiative.

50. More detailed labor-market effects of the AfCFTA, including by occupation and gender, can be found in Plummer, et al. (2024).

51. For a list of commodities at the four-digit Harmonized System (HS) codes, see: https://www.foreign-trade.com/reference/hscode.htm

52. These tariffs use the applied MFN tariffs at the six-digit HS level (for which data are available) and are aggregated to the fourr-digit HS level using a simple average.

53. https://www.nytimes.com/2014/01/10/business/international/japanese-begin-to-question-rices-sacred-place.html#:~:text=AGA%2C%20Japan%20%E2%80%94%20For%20decades%2C,not%20open%20to%20trade%20negotiations.

54. From an economic perspective, all these economies are "small" in the sense that they are price-takers on international markets. Hence, drops in tariffs should lead to corresponding decreasing in food prices.

55. No tariff data are available for Kiribati, which is not a member of the WTO.

56. https://www.wto.org/english/news_e/news24_e/agri_09jul24_e.htm

57. The Declaration can be found here: https://www.cop28.com/en/food-and-agriculture

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References

Ali, Salamat, 2022. "The Russia-Ukraine Conflict: Implications for Food Security in the Commonwealth," The Commonwealth, Trade Hot Topics, Issue 182, July.

Beckman, Jayson, 2021. "Reforming Market Access in Agricultural Trade: Tariff Removal and the Trade Facilitation Agreement," Economic Research Report Number 280, USDA Economic Research Service, April.

Carter, Colin A., Jing Chen and Baojin Chu, 2003. "Agricultural Productivity Growth in China: Farm Level versus Aggregate Measurement," China Economic Review, Volume 14, Issue 1, pp. 53-71.

Christiaensen, Luc and Will Martin, 2018. Five New Insights on How Agriculture Can Help Reduce Poverty, World Bank Blogs, July 26. Available at: https://blogs.worldbank.org/en/jobs/five-new-insights-how-agriculture-can-help-reduce-poverty#:~:text=Growth%20in%20agriculture%20remains%20more,growth%20generated%20in%20other%20sectors.

Commonwealth Secretariat, 2021. "Energising Commonwealth Trade in a Digital World: Paths to Recovery Post-Covid," Commonwealth Trade Policy Review 2021, London, The Commonwealth Secretariat.

Costinot, Arnaud, Dave Donaldson, and Cory Benjamin Smith, 2016. "Evolving Comparative Advantage and the Impact of Climate Change in Agricultural Markets: Evidence from 1.7 Million Fields around the World," Journal of Political Economy, 124 (1), pp. 205-248, February.

CRS, 2021. "EU Agricultural Domestic Support: Overview and Comparison with the United States," Congressional Research Service, June 7. Available at: https://crsreports.congress.gov/product/pdf/R/R46811

Dang, Hai-Anh H., Minh Cong Nguyen, and Trong-Anh Trinh, 2023. "Does Hotter Temperature Increase Poverty and Inequality? Global Evidence from Subnational Data Analysis," World Bank Policy Research Working Paper 10466, October.

Dollar, David, 1992. "Outward-oriented Developing Economies Really Do Grow More Rapidly: Evidence from 95 LDCs, 1976-85," Economic Development and Cultural Change, pp. 523-544.

Eicke, Laima, Silvia Weko, Maria Apergi, and Adela Marian. 2021. Pulling Up the Carbon Ladder? Decarbonization, Dependence, and Third-country Risks from the European Carbon Border Adjustment Mechanism. Energy Research and Social Science 80 (October): 102240.

Elms, Deborah, 2024. "Getting to yes: The e-commerce JSI reaches landmark at the WTO," Hinrich Foundation, 30 July. Available at: https://www.hinrichfoundation.com/research/article/digital/the-ecommerce-jsi-reaches-landmark-at-the-wto/

European Commission. 2021. Commission Staff Working Document Impact Assessment Report. Accompanying the document Proposal for a Regulation of the European Parliament and of the Council Establishing a Carbon Border Adjustment Mechanism. SWD/2021/643 final. Brussels: European Commission.

FAO, 2022. Genetically Modified Crops: Safety, Benefits, Risks and Global Status, FAO, Columbo. Available at: https://www.fao.org/3/cb8375en/cb8375en.pdf

FAO, 2020. Emissions due to agriculture. Global, regional and country trends 2000–2018. FAOSTAT Analytical Brief Series No 18, Rome.

Goldin, Ian and Odin Knudsen, 1990. Agricultural Trade liberalization: Implications for Developing Countries. Washington, D.C., World Bank Group. Available at: http://documents.worldbank.org/curated/en/174131468739526888/Agricultural-trade-liberalization-implications-for-developing-countries

Hertel, Thomas W., 2006. A Survey of Findings on the Poverty Impacts of Agricultural Trade Liberalization, FAO. Available at: https://www.fao.org/agrifood-economics/publications/detail/en/c/121694/ .

Kim, Kijin, Peter Petri, Cyn-Young Park, and Michael G. Plummer, 2023. "The Role of Trade in Asia's Net Zero Pathways: Overview and Policy Implications," ADB Briefs No. 274, November. Available at: https://www.adb.org/publications/trade-asia-pacific-net-zero-pathways

Kreinin, Mordechai E., and Michael G. Plummer, 1992. "The Effects of Economic Integration in Industrial Countries on ASEAN and the NIEs," World Development, Vol. 20, No. 9, September 1992, pp. 1345-1366.

Kose, Ayhan and Alen Mulabdic, 2024. "Global Trade Has Nearly Flatlined: Populism is Taking a Toll on Growth," World Bank Blogs, February 22. Available at: https://blogs.worldbank.org/en/voices/global-trade-has-nearly-flatlined-populism-taking-toll-growth

Krueger, Anne, 1998. "Why Trade Liberalisation is Good for Growth," The Economic Journal, 108, September, pp. 1513-1522.

Krueger, Anne, ed., 1996. The Political Economy of Trade Protection, National Bureau of Economic Research, University of Chicago Press, January.

Krueger, Anne and Baran Tuncer, 1982. "An Empirical Test of the Infant Industry Argument," American Economic Review, Vol. 72, No. 5, December, pp. 1142-1152.

Krugman, Paul, 1979. "Increasing Return, Monopolistic Competition, and International Trade," Journal of International Economics, Volume 9, No. 4, November, pp. 469-479.

Martin, Will, 2017. "Agricultural Trade and Food Security," ADBI Working Paper Series No. 664, February. Available at: https://www.adb.org/sites/default/files/publication/228906/adbi-wp664.pdf

OECD and WTO, 2024. Aid for Trade at a Glance, OECD and WTO, Paris and Geneva. Available at: https://www.wto.org/english/res_e/booksp_e/a4tatglance2024_e.pdf

OECD, 2023. Agriculture and Policy Monitoring and Evaluation 2023: Adapting Agriculture to Climate Change, Paris, OECD.

OECD, 2002. Agriculture and Trade Liberalization: Extending the Uruguay Agreement, Paris, OECD. Available at: https://www.oecd.org/en/publications/2002/03/agriculture-and-trade-liberalisation_g1gh17ea.html.

OECD, 2015. "Regional trade agreements and agriculture", OECD Food, Agriculture and Fisheries Papers, No. 79, OECD Publishing, Paris. Available at: https://doi.org/10.1787/5js4kg5xjvvf-en.

OECD, 1998. Open Markets Matter: The Benefits of Trade and Investment Liberalisation, Paris, OECD.

Pangestu, Mari Elka and Axel Van Trotsenburg, 2022. "Trade Restrictions Are Inflaming the Worst Food Crisis in a Decade," World Bank Blogs, July 6. Available at: https://blogs.worldbank.org/en/voices/trade-restrictions-are-inflaming-worst-food-crisis-decade

Park, Cyn-Young, Peter A. Petri, and Michael G. Plummer, 2021. "The Economics of Conflict and Cooperation in the Asia-Pacific: RCEP, CPTPP, and the US-China Trade War," East Asian Economic Review, Vol. 25, No. 3, September, pp. 233-272.

Petri, Peter A., Michael G. Plummer, and Fan Zhai, 2021. "Modelling Asia-Pacific Regional Integration," Ch. 3 in Fukunari Kimura, Mari Pangestu, Shandre Thangavelu and Christopher Findlay (eds), Handbook on East Asian Integration, Edward Elgar, Cheltenham, 2021, pp. 49-65.

Petri, Peter A. Petri, Michael G. Plummer, and Fan Zhai, 2012. The Trans-Pacific Partnership and Asia-Pacific Integration: A Quantitative Assessment, Peterson Institute for International Economics, Washington, DC., November 2012.

Plummer, Michael and Zhai, Fan and XIE, Jie, Prosperity through Deeper Integration in Africa? Welfare, Trade and Labor Effects of the African Continental Freetrade Area and the Belt and Road Initiative, 2024. Available at SSRN: https://ssrn.com/abstract=4905551 .

Plummer, Michael G., David Cheong and Shintaro Hamanaka, 2010. Methodology for Impact Assessment of Free Trade Agreements (Manila, Asian Development Bank). Available at: https://aric.adb.org/pdf/FTA_Impact_Assessment.pdf

Rodriguez, Francisco and Dani Rodrik, 1999. "Trade Policy and Economic Growth: A Skeptic's Guide to the Cross-national Evidence," NBER Working Paper No. 7081, April.

Sachs, Jeffrey D. and Andrew Warner, 1995. "Economic Reform and the Process of Global Integration," Brookings Papers on Economic Activity, pp. 1-118. Available at: https://www.brookings.edu/wpcontent/uploads/1995/01/1995a_bpea_sachs_warner_aslund_fischer.pdf

Sachs, Jeffrey, and Andrew Warner, "Economic Reform and the Process of Global Integration," Brookings Papers on Economic Activity, 1995:1, 1-118.

Fally, Thibault and James Sayre, 2018. "Commodity Trade Matters," National Bureau of Economic Research Working Paper 24965, August, Cambridge, National Bureau of Economic Research. Available at: https://www.nber.org/system/files/working_papers/w24965/w24965.pdf

Stone, S. and B. Shepherd, 2011. "Dynamic Gains from Trade: The Role of Intermediate Inputs and Equipment Imports", OECD Trade Policy Papers, No. 110, OECD Publishing, Paris, April. http://dx.doi.org/10.1787/5kgf17f17ks1-en

Sunge, Regret and Nicholas Ngepah, 2020. "The Impact of Trade Liberalization on Agricultural Total Factor Productivity Growth in Africa," International Economic Journal, Volume 34, Issue 4, pp. 571-598.

UNCTAD, 2008. Regional Cooperation and Integration in Sub-Saharan Africa, Discussion Papers No. 189, September.

Ungphakorn, Peter, 2024. "Getting to yes: What's behind the e-commerce standoff at the WTO?" Hinrich Foundation, 13 August. Available at: https://www.hinrichfoundation.com/research/wp/wto/what-is-behind-the-e-commerce-standoff-at-the-wto/

Vickers, Brendan, Salamat Ali, Collin Zhuawu, Andrea Zimmermann, Husam Attaallah, and Edona Dervisholli, 2020. "Impacts of the COVID-19 Pandemic on Food Trade in the Commonwealth," The Commonwealth, International Trade Working Paper 2020/15.

World Bank, 2020. The African Continental Free-trade Area: Economic and Distributional Effects (Washington, D.C., World Bank).

World Food Programme, 2024. WFP at a Glance: A guide to the facts, figures and frontline work of the World Food Programme, 28 June. Available at: https://www.wfp.org/stories/wfp-glance

WTO, 2024. Aid for Trade in Action: Supporting the Transition to Clean Energy, Geneva, WTO. Available at: https://www.wto.org/english/res_e/publications_e/a4t_in_action_e.htm

WTO, 2023. Trade Policy Tools for Climate Action. Geneva, WTO, 2 December. Available at: https://www.wto.org/english/news_e/news23_e/publ_02dec23_e.htm .

WTO, 2021. "The Carbon Content of International Trade," Trade and Climate Change Information Brief No. 4, September 11. Available at: https://www.wto.org/english/news_e/news21_e/clim_03nov21-4_e.pdf

Zhuawu, Collin, Salamat Ali and Hilary Enos-Edu, 2020. "COVID-19 and Food Supplies in the Commonwealth," The Commonwealth, Hot Trade Topics, Issue 165.

Appendix 1 – Commonwealth countries food trade, total

Region/Country	Total merchandise	Imports (value, US$ million, and share (%)					
		Food					
		Value	% total	from CW (US$ M)	% from CW	Share of intra-CW (%)	Share of region (%)
World	25,699,974	1,558,522	6.06	278,668	18	-	100
All Commonwealth	**3,865,350**	**224,304**	**5.80**	**53,021**	**24**	**100.0**	**100**
of which							
Developed	**1,791,228**	**107,993**	**6.03**	**13,640**	**13**	**25.7**	**100**
Australia	309,189	13,375	4.33	4,207	31	7.9	12.4
Canada	583,549	35,540	6.09	2,560	7	4.8	32.9
Cyprus	12,205	1,164	9.54	76	7	0.1	1.1
Malta	8,519	669	7.86	71	11	0.1	0.6
New Zealand	54,219	3,939	7.27	1,890	48	3.6	3.6
United Kingdom	823,547	53,305	6.47	4,835	9	9.1	49.4
Developing	**2,074,122**	**116,312**	**5.61**	**39,381**	**34**	**74.3**	**100**
by region							
Africa	**335,334**	**29,020**	**8.65**	**11,133**	**38**	**21.0**	**100**
Botswana	8,087	768	9.50	645	84	1.2	2.6
Cameroon	9,131	1,379	15.10	326	24	0.6	4.8
Eswatini	1,666	271	16.29	264	97	0.5	0.9
Gabon	2,838	518	18.25	58	11	0.1	1.8
The Gambia	1,404	483	34.40	85	18	0.2	1.7
Ghana	20,247	2,469	12.19	471	19	0.9	8.5
Kenya	21,166	3,110	14.69	1,940	62	3.7	10.7
Lesotho	1,856	328	17.67	322	98	0.6	1.1
Malawi	1,586	123	7.78	90	73	0.2	0.4
Mauritius	6,609	990	14.98	462	47	0.9	3.4
Mozambique	14,671	1,569	10.69	963	61	1.8	5.4
Namibia	7,795	773	9.92	525	68	1.0	2.7
Nigeria	60,351	6,536	10.83	1,429	22	2.7	22.5
Rwanda	3,569	1,065	29.84	606	57	1.1	3.7
Seychelles	1,364	297	21.75	59	20	0.1	1.0
Sierra Leone	2,025	411	20.31	104	25	0.2	1.4
South Africa	136,207	5,432	3.99	1,534	28	2.9	18.7
Tanzania	14,219	991	6.97	469	47	0.9	3.4
Togo	3,041	383	12.60	115	30	0.2	1.3
Uganda	8,450	555	6.57	414	75	0.8	1.9
Zambia	9,050	568	6.28	250	44	0.5	2.0
Asia	**1,687,134**	**81,993**	**4.86**	**25,914**	**32**	**48.9**	**100**
Bangladesh	95,547	10,246	10.72	4,971	49	9.4	12.5
Brunei Darussalam	9,184	524	5.71	357	68	0.7	0.6
India	720,441	30,363	4.21	7,692	25	14.5	37.0
Malaysia	293,797	19,406	6.61	5,716	29	10.8	23.7
Maldives	3,516	592	16.83	291	49	0.5	0.7
Pakistan	70,781	8,201	11.59	1,089	13	2.1	10.0
Singapore	475,578	10,737	2.26	4,388	41	8.3	13.1
Sri Lanka	18,291	1,924	10.52	1,411	73	2.7	2.3
Caribbean	**40,327**	**3,524**	**8.74**	**885**	**25**	**1.7**	**100**
Antigua and Barbuda	1,738	81	4.65	23	28	0.0	2.3
The Bahamas	10,898	445	4.08	24	5	0.0	12.6
Barbados	2,308	252	10.90	92	37	0.2	7.1
Belize	1,586	152	9.58	7	5	0.0	4.3
Dominica	389	38	9.71	13	33	0.0	1.1
Grenada	457	107	23.39	29	27	0.1	3.0
Guyana	4,455	295	6.62	106	36	0.2	8.4
Jamaica	6,956	1,062	15.26	297	28	0.6	30.1
Saint Lucia	2,317	112	4.85	44	39	0.1	3.2
St Kitts and Nevis	388	40	10.40	11	27	0.0	1.1
St Vincent and the Grenadines	420	79	18.68	27	34	0.1	2.2
Trinidad and Tobago	8,416	863	10.25	213	25	0.4	24.5
Pacific	**11,326**	**1,774**	**15.67**	**1,449**	**82**	**2.7**	**100**
Fiji	3,057	422	13.82	340	81	0.6	23.8
Kiribati	186	42	22.40	23	55	0.0	2.3
Nauru	121	13	11.09	12	88	0.0	0.8
Papua New Guinea	6,014	953	15.84	579	61	1.1	53.7
Samoa	529	108	20.44	49	45	0.1	6.1
Solomon Islands	558	98	17.66	41	41	0.1	5.6
Tonga	249	59	23.54	39	67	0.1	3.3
Tuvalu	156	6	4.12	6	89	0.0	0.4
Vanuatu	458	73	15.92	53	72	0.1	4.1
LDCs (14)	**156,317**	**16,869**	**10.79**	**8,459**	**50**	**16.0**	**100**
SIDS (24)	**63,142**	**7,177**	**11.37**	**2,838**	**40**	**5.4**	**100**
Small states (33)	**116,697**	**12,677**	**10.86**	**5,242**	**41**	**9.9**	**100**

Appendix 1 – Commonwealth countries food trade, total (cont'd)

Region/Country	Total merchandise	Exports (values, US$ million, and share (%))					
		Food					
		Value	% total	to CW (US$ M)	% to CW	Share of intra-CW (%)	Share of region (%)
World	24,917,562	1,549,212	6.22	228,652	15	-	100
All Commonwealth	3,392,529	263,263	7.76	49,352	19	100.0	100
of which							
Developed	1,597,416	145,201	9.09	15,732	11	31.9	100
Australia	412,683	41,110	9.96	6,356	15	12.9	28.3
Canada	599,032	61,756	10.31	3,014	5	6.1	42.5
Cyprus	4,363	462	10.58	188	41	0.4	0.3
Malta	3,253	407	12.51	23	6	0.0	0.3
New Zealand	45,102	26,446	58.64	4,937	19	10.0	18.2
United Kingdom	532,982	15,021	2.82	1,214	8	2.5	10.3
Developing	1,795,113	118,062	6.58	33,620	28	68.1	100
by region							
Africa	289,118	23,651	8.18	8,626	36	17.5	100
Botswana	8,314	69	0.83	54	78	0.1	0.3
Cameroon	8,198	967	11.79	143	15	0.3	4.1
Eswatini	2,288	468	20.44	401	86	0.8	2.0
Gabon	9,075	66	0.73	0	0	0.0	0.3
The Gambia	432	93	21.51	38	41	0.1	0.4
Ghana	20,471	3,289	16.06	901	27	1.8	13.9
Kenya	7,411	1,235	16.67	475	38	1.0	5.2
Lesotho	894	33	3.68	31	96	0.1	0.1
Malawi	900	243	27.00	197	81	0.4	1.0
Mauritius	2,388	537	22.48	155	29	0.3	2.3
Mozambique	8,299	704	8.49	394	56	0.8	3.0
Namibia	5,828	1,052	18.05	398	38	0.8	4.4
Nigeria	63,075	1,373	2.18	270	20	0.5	5.8
Rwanda	2,111	401	19.02	28	7	0.1	1.7
Seychelles	537	372	69.27	79	21	0.2	1.6
Sierra Leone	1,317	78	5.94	7	9	0.0	0.3
South Africa	122,901	10,046	8.17	4,049	40	8.2	42.5
Tanzania	6,825	1,278	18.73	648	51	1.3	5.4
Togo	1,348	249	18.51	58	23	0.1	1.1
Uganda	4,842	531	10.97	259	49	0.5	2.2
Zambia	11,664	566	4.86	43	8	0.1	2.4
Asia	1,446,814	90,880	6.28	23,555	26	47.7	100
Bangladesh	66,866	924	1.38	400	43	0.8	1.0
Brunei Darussalam	14,230	37	0.26	9	25	0.0	0.0
India	453,415	42,348	9.34	8,831	21	17.9	46.6
Malaysia	352,094	30,720	8.72	10,893	35	22.1	33.8
Maldives	400	56	14.11	16	28	0.0	0.1
Pakistan	30,901	5,001	16.19	952	19	1.9	5.5
Singapore	515,802	10,708	2.08	2,085	19	4.2	11.8
Sri Lanka	13,107	1,087	8.29	370	34	0.8	1.2
Caribbean	39,040	1,167	2.99	479	41	1.0	100
Antigua and Barbuda	2,391	7	0.28	0	7	0.0	0.6
The Bahamas	3,957	123	3.11	6	5	0.0	10.5
Barbados	341	27	7.78	21	78	0.0	2.3
Belize	348	217	62.49	77	35	0.2	18.6
Dominica	39	7	16.97	4	66	0.0	0.6
Grenada	44	18	42.05	2	10	0.0	1.6
Guyana	10,585	256	2.42	93	36	0.2	22.0
Jamaica	996	214	21.49	70	33	0.1	18.3
Saint Lucia	91	7	8.18	6	75	0.0	0.6
St Kitts and Nevis	56	1	1.11	0	6	0.0	0.1
St Vincent and the Grenadines	123	18	14.44	9	48	0.0	1.5
Trinidad and Tobago	20,069	272	1.36	191	70	0.4	23.3
Pacific	20,140	2,364	11.74	960	41	1.9	100
Fiji	1,141	240	21.04	65	27	0.1	10.2
Kiribati	213	36	17.00	4	11	0.0	1.5
Nauru	226	24	10.65	0	1	0.0	1.0
Papua New Guinea	17,609	1,841	10.45	850	46	1.7	77.9
Samoa	84	14	16.80	3	23	0.0	0.6
Solomon Islands	579	146	25.15	29	20	0.1	6.2
Tonga	14	7	49.59	3	46	0.0	0.3
Tuvalu	23	4	15.69	0	0	0.0	0.2
Vanuatu	252	53	21.13	5	9	0.0	2.3
LDCs (14)	106,311	5,287	4.97	2,135	40	4.3	100
SIDS (24)	62,505	4,496	7.19	1,688	38	3.4	100
Small states (33)	111,184	7,182	6.46	2,831	39	5.7	100

*Notes: Calculations are as follows: "% total" is share of food imports (exports) in total imports (exports); "% from (to) CW" is the share of food imports (exports) from (to) Commonwealth countries in total trade; and "share of intra-CW (%)" is the share of food imports (exports) in total Commonwealth intra-regional imports (exports). **Source:** UNCTADStat, Commonwealth Secretariat*

Appendix 2 – Top 50 agricultural exports to selected markets and levels of protection, 2021

HS2017 code (HS4 level)	Product description	Value (US$ millions)	Share of total exports (%)	Applied MFN (Simple average of HS6 level)
European Union				
	Total	43,422.4	100	
1205	Rape or colza seeds, nesoi, whether or not broken	3,656.8	8.42	0.0
1511	Palm oil and its fractions, refined but not chemically modified	2,680.4	6.17	0.0
0306	Crustaceans	1,851.1	4.26	10.3
0204	Meat of sheep or goat	1,603.4	3.69	0.0
2106	Food preparations not elsewhere specified	1,354.6	3.12	0.0
1001	Wheat and meslin	1,242.4	2.86	0.0
1801	Cocoa beans	1,189.0	2.74	0.0
1518	Animal or vegetable fats, oils	1,164.7	2.68	0.0
1604	Prepared or preserved fish; caviar	1,144.1	2.63	0.0
0806	Grapes	1,124.7	2.59	7.7
0805	Citrus fruit	1,119.7	2.58	10.8
0307	Molluscs	981.8	2.26	9.1
1006	Rice	964.2	2.22	0.0
1905	Bread, pastry, cakes, biscuits, similar baked products	953.3	2.20	0.0
0304	Fish fillets and other fish meat	911.6	2.10	11.2
0302	Fish; fresh or chilled, except frozen	877.1	2.02	10.9
0406	Cheese and curd	817.2	1.88	0.0
0810	Fruit, fresh, n.e.c. in chapter 08	759.4	1.75	8.0
1513	Coconut (copra), palm kernel, or babassu oil	744.7	1.72	0.0
1005	Maize (corn)	696.5	1.60	0.0
1806	Chocolate and other food preparation	668.1	1.54	0.0
1201	Soya beans	667.5	1.54	0.0
0201	Meat of bovine animals	598.7	1.38	0.0
1804	Cocoa; butter, fat and oil	574.8	1.32	0.0
1515	Fixed vegetable fats and oils	568.9	1.31	0.0
2008	Fruit, nuts, and other edible parts	536.8	1.24	0.0
0303	Fish; frozen, excluding fish fillet	524.5	1.21	10.3
0804	Dates, figs, pineapples, avocados, mangoes, mangosteens	497.3	1.15	4.9
0713	Vegetables, leguminous; shelled, dried	482.1	1.11	0.8
0405	Butter and other fats and oils derived from milk	446.4	1.03	0.0
2101	Extracts, essences, concentrates of coffee	440.9	1.02	0.0
2103	Sauces and preparations	439.4	1.01	0.0
1701	Cane or beet sugar and chemically pure sucrose	426.8	0.98	0.0
0401	Milk and cream; not concentrated, nor sweetened	414.1	0.95	0.0
1904	Prepared foods obtained by swelling or roasting of cereals	396.5	0.91	0.0
1803	Cocoa paste	378.1	0.87	0.0
0808	Apples, pears and quinces; fresh	369.2	0.85	7.2
1302	Vegetable saps and extracts; pectic	358.9	0.83	0.0
1003	Barley	328.6	0.76	0.0
1209	Seeds, fruit and spores used for sowing	314.6	0.72	0.0
1901	Malt extract; flour/groats/meal/starch	310.8	0.72	0.0
1703	Molasses; resulting from the extraction or refining of sugar	300.2	0.69	0.0
0803	Bananas, including plantains; fresh	292.6	0.67	16.0
0101	Horses, asses, mules and hinnies; live	275.6	0.63	6.1
1211	Plants and parts of plants; used primarily in perfumery, insecticidal, fungicidal or similar purposes, fresh or dried	269.5	0.62	0.0
2004	Vegetables preparations; prepared or preserved otherwise than by vinegar, frozen	269.1	0.62	0.0
1207	Oil seeds and oleaginous fruits, not for sowing	213.0	0.49	0.0
0802	Nuts, except coconut, Brazil nuts, and cashews	211.7	0.49	2.6
1704	Sugar confectionery (including white chocolate)	199.0	0.46	0.0
1702	Sugars, including lactose, fructose, glucose, maltose	195.0	0.45	0.0

Appendix 2 – Top 50 agricultural exports to selected markets and levels of protection, 2021 (cont'd)

United States				
HS2017 code (HS4 level)	Product description	Value (US$ millions)	Share of total exports (%)	Applied MFN (Simple average of HS6 level)
	Total	57,207.8	100	
2106	Food preparations not elsewhere specified	5,618.8	9.82	0.0
1905	Bread, pastry, cakes, biscuits, similar baked products	4,934.4	8.63	0.0
0306	Crustaceans	4,585.4	8.02	0.6
1514	Rape, colza or mustard oil and fractions	3,884.2	6.79	0.0
0201	Meat of bovine animals; fresh or chilled	2,937.6	5.14	17.8
1806	Chocolate and other food preparation	1,981.3	3.46	0.0
2004	Vegetables preparations; prepared or preserved otherwise than by vinegar, frozen	1,788.6	3.13	0.0
0204	Meat of sheep or goats; fresh, chilled	1,639.2	2.87	0.0
0202	Meat of bovine animals; frozen	1,601.2	2.80	17.8
0302	Fish; fresh or chilled, excluding frozen	1,181.9	2.07	0.6
0102	Bovine animals; live	1,158.0	2.02	0.0
0203	Meat of swine; fresh, chilled or frozen	1,157.2	2.02	0.0
1605	Crustaceans and other aquatic invertebrates	1,141.3	2.00	0.0
1901	Malt extract; flour/groats/meal/starch	830.6	1.45	0.0
0709	Vegetables; n.e.c. in chapter 07	818.9	1.43	11.2
1502	Fats of bovine animals, sheep or goat	759.6	1.33	0.0
1001	Wheat and meslin	707.2	1.24	0.0
1602	Prepared or preserved meat	683.4	1.19	0.0
2008	Fruit, nuts, and other edible parts	675.9	1.18	0.0
2103	Sauces and preparations	624.9	1.09	0.0
1302	Vegetable saps and extracts; pectic	619.0	1.08	0.0
1704	Sugar confectionery	608.8	1.06	0.0
0103	Swine; live	575.7	1.01	0.0
1518	Animal or vegetable fats, oils, fractions	532.2	0.93	0.0
1702	Sugars, including lactose, fructose, glucose, maltose	497.8	0.87	0.0
0307	Molluscs	479.6	0.84	0.2
0304	Fish fillets and other fish meat	464.0	0.81	0.6
1904	Prepared foods obtained by swelling or roasting of cereals	463.7	0.81	0.0
0713	Vegetables, leguminous; shelled, dried	461.2	0.81	0.0
1006	Rice	446.9	0.78	0.0
1004	Oats	430.9	0.75	0.0
1104	Grains, worked	425.7	0.74	0.0
0707	Cucumbers and gherkins; fresh or chilled	418.1	0.73	0.0
0701	Potatoes; fresh or chilled	413.2	0.72	0.0
0702	Tomatoes; fresh or chilled	369.9	0.65	0.0
0810	Fruit, fresh, n.e.c. in chapter 08	336.5	0.59	0.8
0404	Whey and products consisting of natural milk constituents	327.4	0.57	11.1
0409	Honey; natural	322.8	0.56	0.0
0811	Fruit and nuts; uncooked or cooked	322.7	0.56	8.2
0206	Edible offal of bovine animals, swine	319.8	0.56	0.0
1604	Prepared or preserved fish; caviar	304.7	0.53	0.0
1511	Palm oil and its fractions, refined but not chemically modified	302.2	0.53	0.0
1205	Rape or colza seeds, nesoi, whether or not broken	288.2	0.50	0.0
1515	Fixed vegetable fats and oils	275.5	0.48	0.0
1109	Wheat gluten; whether or not dried	269.1	0.47	0.0
1804	Cocoa; butter, fat and oil	263.5	0.46	0.0
1207	Oil seeds and oleaginous fruits, not for sowing	238.1	0.42	0.0
1211	Plants and parts of plants; used primarily in perfumery, insecticidal, fungicidal or similar purposes, fresh or dried	236.4	0.41	0.0
1513	Coconut (copra), palm kernel or babassu oil	228.3	0.40	0.0
1107	Malt; whether or not roasted	226.9	0.40	0.0

Appendix 2 – Top 50 agricultural exports to selected markets and levels of protection, 2021 (cont'd)

	United Kingdom			
HS2017 code (HS4 level)	Product description	Value (US$ millions)	Share of total exports (%)	Applied MFN (Simple average of HS6 level)
	Total	**5,235.9**	**100**	
0204	Meat of sheep or goats; fresh, chilled	352.2	6.73	0.0
1518	Animal or vegetable fats, oils, fractions	336.9	6.43	0.0
1511	Palm oil and its fractions, refined but not chemically modified	308.8	5.90	0.0
1006	Rice	271.8	5.19	0.0
1001	Wheat and meslin	268.8	5.13	0.0
0806	Grapes	241.3	4.61	6.0
0306	Crustaceans	228.5	4.36	10.9
1604	Prepared or preserved fish; caviar	222.5	4.25	0.0
0805	Citrus fruit	207.6	3.97	10.8
1005	Maize (corn)	176.5	3.37	0.0
0406	Cheese and curd	161.8	3.09	0.0
0713	Vegetables, leguminous; shelled, dried	142.2	2.72	0.0
0804	Dates, figs, pineapples, avocados, guavas, mangoes, mangosteens	127.9	2.44	4.0
0808	Apples, pears and quinces; fresh	125.1	2.39	5.4
1205	Rape or colza seeds, nesoi, whether or not broken	119.5	2.28	0.0
0803	Bananas, including plantains; fresh	113.6	2.17	16.0
1905	Bread, pastry, cakes, biscuits, similar baked products	110.4	2.11	0.0
2008	Fruit, nuts and other edible parts	105.1	2.01	0.0
1703	Molasses; resulting from the extraction or refining of sugar	97.1	1.86	0.0
0810	Fruit, fresh; n.e.c. in chapter 08	92.9	1.78	7.1
0709	Vegetables; n.e.c. in chapter 07	83.3	1.59	8.9
2106	Food preparations not elsewhere specified	79.3	1.51	0.0
1605	Crustaceans, molluscs and other aquatic invertebrates	68.9	1.32	0.0
0708	Leguminous vegetables; shelled or chilled	67.4	1.29	10.0
1701	Cane or beet sugar and chemically processed	61.9	1.18	0.0
0809	Apricots, cherries, peaches, plums	59.0	1.13	13.5
2103	Sauces and preparations	48.2	0.92	0.0
2004	Vegetables preparations; prepared or preserved otherwise than by vinegar, frozen	44.0	0.84	0.0
2001	Vegetables, fruit, nuts and other edible parts of plants, prepared or preserved by vinegar	37.7	0.72	0.0
1513	Coconut (copra), palm kernel or babassu oil	33.1	0.63	0.0
1902	Pasta; whether or not cooked, stuffed, or prepared	32.8	0.63	0.0
1302	Vegetable saps and extracts; pectic	31.8	0.61	0.0
0704	Cabbages, cauliflowers, kohlrabi, kale	31.4	0.60	10.7
1211	Plants and parts of plants of a kind used primarily in perfumery or for insecticidal, fungicidal or similar purposes	29.4	0.56	0.0
0714	Roots and tubers with high starch or inulin content	29.0	0.55	2.0
0304	Fish fillets and other fish meat	28.9	0.55	10.3
1702	Sugars, including lactose, fructose, glucose, maltose	27.9	0.53	0.0
1516	Animal or vegetable fats and oils and their fractions	27.1	0.52	0.0
0409	Honey; natural	26.7	0.51	16.0
1901	Malt extract; flour/groats/meal/starch	26.3	0.50	0.0
0801	Coconuts, Brazil nuts, cashews	25.2	0.48	0.0
1515	Fixed vegetable fats and oils	22.9	0.44	0.0
0307	Molluscs	22.6	0.43	8.4
0813	Fruit, dried, other than that of headings 0801 to 0806	21.2	0.41	4.6
0303	Fish; frozen, excluding fish fillet	20.9	0.40	9.2
0206	Edible offal of bovine animals, swine	20.7	0.40	0.4
1801	Cocoa beans; whole or broken, raw or roasted	19.0	0.36	0.0
1209	Seeds, fruit and spores; used for sowing	17.5	0.33	0.0
1806	Chocolate and other food preparation	17.4	0.33	0.0
0712	Vegetables, dried; whole, cut, sliced	17.4	0.33	11.5

Appendix 2 – Top 50 agricultural exports to selected markets and levels of protection, 2021 (cont'd)

China				
HS2017 code (HS4 level)	Product description	Value (US$ millions)	Share of total exports (%)	Applied MFN (Simple average of HS6 level)
	Total	36,461.7	100	
0402	Milk and cream; concentrated	3,588.0	9.84	10.0
1001	Wheat and meslin	2,891.4	7.93	0.0
0202	Meat of bovine animals; frozen	2,620.4	7.19	16.3
0306	Crustaceans	2,511.4	6.89	6.2
0204	Meat of sheep or goats; fresh, chilled	2,006.0	5.50	17.0
1511	Palm oil and its fractions	1,875.6	5.14	0.0
1901	Malt extract; flour/groats/meal/starch	1,731.9	4.75	0.0
1205	Rape or colza seeds, nesoi, whether or not broken	1,506.8	4.13	0.0
2106	Food preparations not elsewhere specified	1,334.4	3.66	0.0
1006	Rice	1,232.4	3.38	0.0
0713	Vegetables, leguminous; shelled, dried	1,014.7	2.78	4.0
0401	Milk and cream; not concentrated	942.1	2.58	15.0
1207	Oil seeds and oleaginous fruits, not for sowing	903.8	2.48	0.0
0405	Butter and other fats and oils derived from milk	814.4	2.23	10.0
0802	Nuts (excluding coconuts, Brazil nuts, and cashews)	693.3	1.90	19.3
0303	Fish; frozen, excluding fish fillet	675.5	1.85	7.5
0102	Bovine animals; live	667.7	1.83	5.0
1007	Grain sorghum	661.9	1.82	0.0
1003	Barley	638.1	1.75	0.0
1515	Fixed vegetable fats and oils	626.9	1.72	0.0
0406	Cheese and curd	530.8	1.46	12.6
1201	Soya beans, whether or not broken	491.0	1.35	0.0
0810	Fruit, fresh; n.e.c. in chapter 08	454.8	1.25	21.8
0307	Molluscs	437.0	1.20	7.9
0201	Meat of bovine animals; fresh or chilled	398.7	1.09	14.7
1514	Rape, colza or mustard oil and fractions	396.5	1.09	0.0
0203	Meat of swine	380.2	1.04	16.0
1513	Coconut (copra), palm kernel or babassu oil	321.0	0.88	0.0
0805	Citrus fruit	289.4	0.79	14.3
0206	Edible offal of bovine animals, swine	280.4	0.77	15.3
0410	Edible products of animal origin; nesoi	254.6	0.70	19.6
0811	Fruit and nuts; uncooked or cooked	220.9	0.61	30.0
0302	Fish; fresh or chilled, excluding fillets	187.3	0.51	7.4
0808	Apples, pears and quinces; fresh	176.5	0.48	12.4
1701	Cane or beet sugar and chemically pure sucrose	143.8	0.39	0.0
1302	Vegetable saps and extracts; pectic	124.0	0.34	0.0
1508	Ground nut oil and its fractions	116.2	0.32	0.0
0806	Grapes	116.1	0.32	11.5
2101	Extracts, essences, concentrates of coffee	115.4	0.32	0.0
1806	Chocolate and other food preparation	111.0	0.30	0.0
1214	Swedes, mangolds, fodder roots, hay	110.9	0.30	0.0
1805	Cocoa; powder, not containing added sugar	105.2	0.29	0.0
1211	Plants and parts of plants of a kind used primarily in perfumery or for insecticidal, fungicidal or similar purposes	104.7	0.29	0.0
1004	Oats	98.2	0.27	0.0
1516	Animal or vegetable fats and oils and their fractions	96.7	0.27	0.0
1504	Fats and oils and their fractions of marine mammals	92.6	0.25	0.0
0404	Whey and products consisting of natural milk constituents	89.4	0.25	13.0
0809	Apricots, cherries, peaches, plums	84.6	0.23	13.0
1209	Seeds, fruit and spores used for sowing	76.7	0.21	0.0
1404	Vegetable products not elsewhere specified	71.8	0.20	0.0

Appendix 2 – Top 50 agricultural exports to selected markets and levels of protection, 2021 (cont'd)

	Japan			
HS2017 code (HS4 level)	**Product description**	**Value (US$ millions)**	**Share of total exports (%)**	**Applied MFN (Simple average of HS6 level)**
	Total	**15,492.3**	**100**	
1205	Rape or colza seeds, nesoi, whether or not broken	1,952.4	12.60	0.0
1001	Wheat and meslin	1,463.7	9.45	0.0
0202	Meat of bovine animals; frozen	1,088.6	7.03	38.5
0203	Meat of swine	955.6	6.17	2.2
0201	Meat of bovine animals; fresh or chilled	836.5	5.40	38.5
1511	Palm oil and its fractions	691.4	4.46	0.0
0306	Crustaceans	621.9	4.01	3.3
0406	Cheese and curd	547.0	3.53	31.8
1701	Cane or beet sugar and chemically pure sucrose	524.2	3.38	0.0
0304	Fish fillets and other fish meat	435.3	2.81	4.3
1003	Barley	431.7	2.79	0.0
0206	Edible offal of bovine animals, swine	376.2	2.43	10.1
0810	Fruit, fresh; n.e.c. in chapter 08	369.2	2.38	5.9
0303	Fish; frozen, excluding fish fillet	341.1	2.20	4.1
1214	Swedes, mangolds, fodder roots, hay	328.2	2.12	0.0
1005	Maize (corn)	292.5	1.89	0.0
1201	Soya beans, whether or not broken	277.3	1.79	0.0
1806	Chocolate and other food preparation	271.4	1.75	0.0
0204	Meat of sheep or goats; fresh, chilled	232.2	1.50	0.0
2106	Food preparations not elsewhere specified	212.5	1.37	0.0
1901	Malt extract; flour/groats/meal/starch	202.5	1.31	0.0
1207	Oil seeds and oleaginous fruits, not for sowing	196.9	1.27	0.0
1107	Malt; whether or not roasted	181.1	1.17	0.0
1404	Vegetable products not elsewhere specified	120.8	0.78	0.0
1513	Coconut (copra), palm kernel or babassu oil	97.7	0.63	0.0
1007	Grain sorghum	92.7	0.60	0.0
0805	Citrus fruit	91.3	0.59	13.4
1801	Cocoa beans	88.8	0.57	0.0
1905	Bread, pastry, cakes, biscuits, similar baked products	86.9	0.56	0.0
0302	Fish; fresh or chilled, excluding fillet	72.4	0.47	4.7
1804	Cocoa; butter, fat and oil	70.5	0.46	0.0
2004	Vegetables preparations n.e.c.; prepared or preserved otherwise than by vinegar	68.9	0.44	0.0
0402	Milk and cream; concentrated	64.9	0.42	28.8
0811	Fruit and nuts; uncooked or cooked	64.4	0.42	10.3
0404	Whey and products consisting of natural milk constituents	63.1	0.41	24.8
2009	Fruit juices (including grape must)	62.8	0.41	0.0
1602	Prepared or preserved meat	62.3	0.40	0.0
2103	Sauces and preparations	57.0	0.37	0.0
0307	Molluscs	54.6	0.35	7.8
0209	Pig fat, free of lean meat, and poultry fat	53.1	0.34	6.0
0409	Honey; natural	52.4	0.34	25.5
0101	Horses, asses, mules and hinnies; live	51.7	0.33	0.0
1516	Animal or vegetable fats and oils and their fractions	51.7	0.33	0.0
2101	Extracts, essences, concentrates of coffee	49.6	0.32	0.0
0713	Vegetables, leguminous; shelled, dried	49.6	0.32	3.0
1213	Cereal straw and husks, unprepared	48.9	0.32	0.0
1515	Fixed vegetable fats and oils	48.9	0.32	0.0
1805	Cocoa; powder, not containing added sugar	48.3	0.31	0.0
0709	Vegetables; n.e.c. in chapter 07	47.5	0.31	3.5
0802	Nuts (excluding coconuts, Brazil nuts, and cashews)	46.9	0.30	6.3

Notes: Products codes are HS2017. Applied MFN tariffs are calculated as the simple average of tariffs at six-digit HS level. **Source:** *Commonwealth Secretariat*

Appendix A – Commonwealth member countries

Economy	Econ Status	Geographical	Small state	SIDS	LDCs
Australia	Developed	Pacific	No	No	No
Canada	Developed	Caribbean and Americas	No	No	No
Cyprus	Developed	Europe	Yes	No	No
Malta	Developed	Europe	Yes	No	No
New Zealand	Developed	Pacific	No	No	No
UK	Developed	Europe	No	No	No
Botswana	Developing	Africa	Yes	No	No
Cameroon	Developing	Africa	No	No	No
Eswatini	Developing	Africa	Yes	No	No
Gabon	Developing	Africa	Yes	No	No
Gambia	Developing	Africa	No	No	Yes
Ghana	Developing	Africa	No	No	No
Kenya	Developing	Africa	No	No	No
Lethoso	Developing	Africa	Yes	No	Yes
Malawi	Developing	Africa	No	No	Yes
Mauritius	Developing	Africa	Yes	Yes	No
Mozambique	Developing	Africa	No	No	Yes
Nambia	Developing	Africa	Yes	No	No
Nigeria	Developing	Africa	No	No	No
Rwanda	Developing	Africa	No	No	Yes
Seychelles	Developing	Africa	Yes	Yes	No
Sierra Leone	Developing	Africa	No	No	Yes
South Africa	Developing	Africa	No	No	No
Tanzania	Developing	Africa	No	No	Yes
Uganda	Developing	Africa	No	No	Yes
Zambia	Developing	Africa	No	No	Yes
Bangladesh	Developing	Asia	No	No	Yes
Brunei Darussalam	Developing	Asia	Yes	No	No
India	Developing	Asia	No	No	No
Malaysia	Developing	Asia	No	No	No
Pakistan	Developing	Asia	No	No	No
Sri Lanka	Developing	Asia	No	No	No
Maldives	Developing	Asia	Yes	No	No
Singapore	Developing	Asia	No	Yes	No
Antigua and Barbuda	Developing	Caribbean and Americas	Yes	Yes	No
Bahamas	Developing	Caribbean and Americas	Yes	Yes	No
Barbados	Developing	Caribbean and Americas	Yes	Yes	No
Belize	Developing	Caribbean and Americas	Yes	Yes	No
Domenica	Developing	Caribbean and Americas	Yes	Yes	No
Grenada	Developing	Caribbean and Americas	No	Yes	No
Guyana	Developing	Caribbean and Americas	Yes	Yes	No
Jamaica	Developing	Caribbean and Americas	Yes	Yes	No
St Kitts and Nevis	Developing	Caribbean and Americas	Yes	Yes	No
St Lucia	Developing	Caribbean and Americas	Yes	Yes	No
St Vincent	Developing	Caribbean and Americas	Yes	Yes	No
Trinidad and Tobago	Developing	Caribbean and Americas	Yes	Yes	No
Fiji	Developing	Pacific	Yes	Yes	No
Kiribati	Developing	Pacific	Yes	Yes	Yes
Nauru	Developing	Pacific	Yes	Yes	No
Papua New Guinea	Developing	Pacific	Yes	Yes	No
Samoa	Developing	Pacific	Yes	Yes	No
Solomon Island	Developing	Pacific	Yes	Yes	Yes
Tonga	Developing	Pacific	Yes	Yes	No
Tuvalu	Developing	Pacific	Yes	Yes	Yes
Vanuatu	Developing	Pacific	Yes	Yes	Yes

Source: UNCTADStat, Commonwealth Secretariat

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