Chapter 14

AGRIFOOD TRADE

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Agrifood exports make up about one-third of Myanmar's total exports, and their share of both total exports and as a ratio of total GDP has risen in recent years. Agrifood exports have the potential to generate higher income for farmers, traders, processors, and other stakeholders within agrifood value chains. Additionally, they can contribute to the country's foreign exchange earnings, supporting the importation of manufactured products embedded with modern technology required for the transformation of the agrifood sector. This chapter analyzes the past performance of key agrifood exports and assesses their potential role in the transformation of Myanmar's agrifood system and the overall economy.

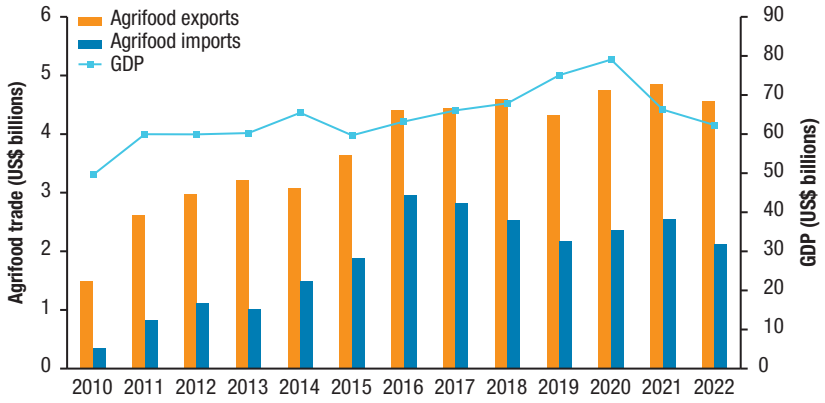
The chapter largely relies on the open access international trade database, Base pour l'analyse du commerce international (BACI) (BACI 2024; Gaulier and Zignago 2010). BACI is built on Comtrade—the UN international trade statistics database—which is based on data that individual countries report directly to the United Nations. The BACI dataset provides balanced bilateral trade flows for more than 5,000 products.

The chapter is organized as follows. First, we provide a broad overview of the performance of Myanmar's agrifood exports, identifying key exports and their markets. Second, we look at specific export crops that may play an important role in the future of Myanmar's agrifood export sector. Third, we discuss the policy environment that is constraining the sector. Last, we summarize our findings and provide policy recommendations for increasing export competitiveness and making agrifood exports an important driver of Myanmar's economic growth.

Overview of Myanmar's agrifood exports

Agrifood exports are Myanmar's second-largest export category behind manufacturing and account for one-third of total exports. In recent years, the value of agrifood exports has been nearly double that of agrifood

FIGURE 14.1 Myanmar's GDP and agrifood export and import levels, 2010–2022



Source: Authors' calculations using World Development Indicators data (World Bank 2024).

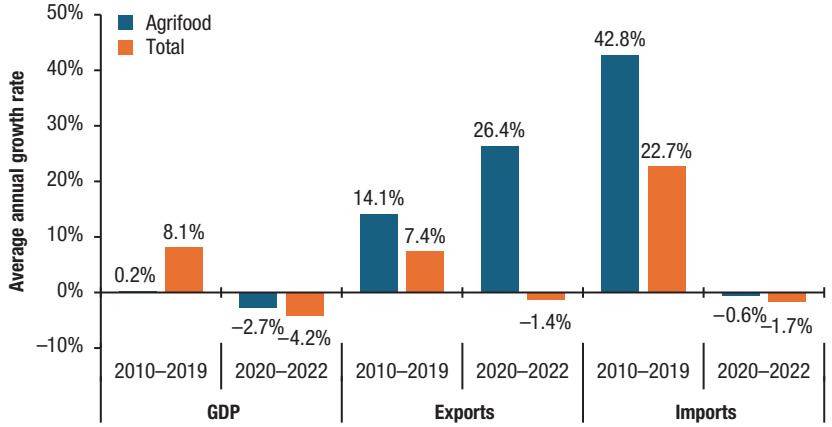
imports—Myanmar is a significant net agrifood exporter. Agrifood exports played a crucial role in Myanmar's economic growth from 2010 to 2019. The value of agrifood exports increased significantly from US$1.7 billion in 2010 to $4.2 billion in 2019 (Figure 14.1). As shown in Chapter 2, while the overall contribution of agriculture to total GDP declined during this period, the share of agrifood exports in total exports and GDP grew. This indicates that agrifood exports expanded at a faster pace than both total exports and the overall economy (Diao and Li 2020).

Through the crisis period from 2020 to 2022, agrifood exports continued to grow as Myanmar's agrifood exports benefited from an increase in global food prices and the depreciation of the Myanmar kyat (World Bank 2022). Meanwhile, the overall economy shrank during this period due to the impacts of the COVID-19 pandemic and the military coup.

As shown in Figure 14.2, agrifood exports grew at an annual average of 14.1 percent between 2010 and 2019, outpacing the growth of total exports (7.4 percent). The annual average growth rate for agrifood exports accelerated to 26.4 percent between 2020 and 2022, while growth in overall exports fell to negative 1.4 percent in the same period. This pattern demonstrates that the agrifood sector has been relatively more resilient to economic downturns compared with other sectors of the economy.

Approximately 94 percent of Myanmar's agrifood exports are unprocessed and minimally processed foods, while more than 80 percent of agrifood imports are culinary processed or processed foods (Chapter 13). Moreover,

FIGURE 14.2 Average annual growth rates for total GDP, agrifood GDP, value of total exports and imports, and value of agrifood exports and imports, 2010–2019 and 2020–2022



Source: Authors' calculations using World Development Indicators data (World Bank 2024).

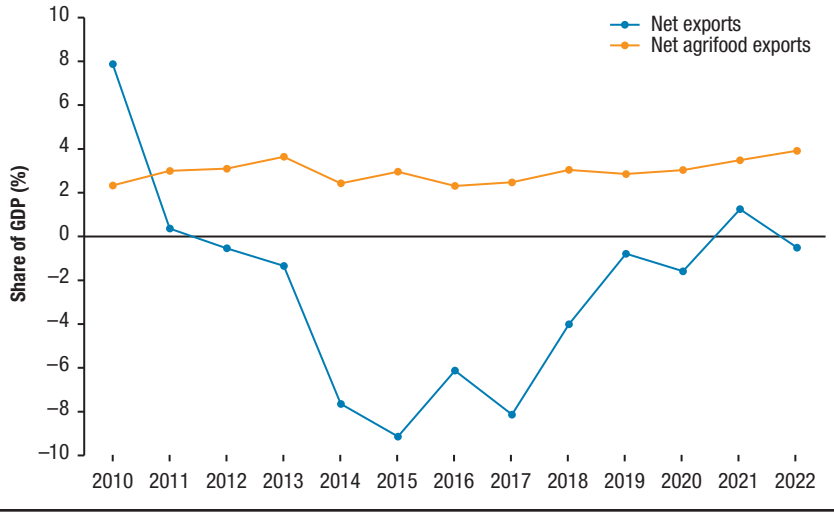
processed foods make up almost two-thirds of household demand for agrifood products (Chapter 2). This suggests there is potential for import substitution through investments in value-added processing, in addition to increasing potential earnings through exports.

Figure 14.3 shows that agrifood exports have contributed positively to Myanmar's trade balance. Agrifood exports averaged 3.1 percent of GDP between 2010 and 2019 and increased slightly to an average of 3.7 percent between 2020 and 2022. Conversely, the share of net total exports as a share of GDP averaged negative 2.9 percent between 2010 and 2019 and negative 0.3 percent between 2020 and 2022. As such, the agrifood sector, through its exports, plays a significant role in generating foreign exchange earnings and in reducing the total trade deficit that commenced in 2011.

The importance of the Asian market to Myanmar's agrifood exports

Asia is the most important agrifood export market for Myanmar, accounting for more than 80 percent of the country's agrifood exports. Table 14.1 provides information for the 12 largest importers of Myanmar's agrifood products between 2015 and 2019. The table shows annual average export values in current US dollars and the share of Myanmar's total agrifood exports that go to each of these 12 countries for the periods 1998 to 2002, 2015 to 2019, and 2020 to 2022. The aggregate share of agrifood exports to these 12 countries

FIGURE 14.3 Net total exports and net agrifood exports, as a share of total GDP, 2010–2022



Source: Authors' calculations using World Development Indicators data (World Bank 2024).

is surprisingly stable between 1998 and 2022, slightly increasing from 79 to 84 percent.

However, shares of individual countries vary significantly between the periods in Table 14.1. In the earliest period between 1998 and 2002, India was the largest importer of agrifood exports, receiving more than one-quarter of Myanmar's total agrifood exports. China became the largest importer between 2015 and 2019, while India became the second-largest market over that period, before falling to third between 2020 and 2022. China not only surpassed India as the most important importer; its agrifood imports alone accounted for nearly half of Myanmar's total exports to its 12 largest trade partner countries in the recent two periods. In the earliest period between 1998 and 2002, Japan and Singapore were important markets for Myanmar's agrifood products, but their share fell in subsequent periods. Instead, Thailand has become an important market. The three countries—China, India, and Thailand—together accounted for nearly two-thirds of Myanmar's total agrifood exports in the recent years.

Even though Myanmar is a member of the Association of Southeast Asian Nations (ASEAN), the Southeast Asian market did not emerge as a significant export destination until recently. ASEAN countries comprised one-third of Myanmar's total agrifood exports between 1998 and 2002, but their share declined to 18.1 percent between 2015 and 2019. However, during the crisis

TABLE 14.1 Top 12 countries importing Myanmar's agrifood exports, 1998–2022

	Average value (US$ million)			Share of total agrifood exports (%)		
Country/totals	1998–2002	2015–2019	2020–2022	1998–2002	2015–2019	2020–2022
China	17	1,656	1,729	3.3	39.8	33.3
India	129	675	725	25.6	16.2	14.0
Thailand	30	343	799	5.9	8.2	15.4
Malaysia	40	130	202	8.0	3.1	3.9
Japan	61	122	113	12.2	2.9	2.2
Singapore	60	75	36	12.0	1.8	0.7
Indonesia	14	70	91	2.9	1.7	1.7
Viet Nam	1	68	270	0.1	1.6	5.2
United Arab Emirates	0	67	53	0.0	1.6	1.0
Republic of Korea	5	61	52	1.1	1.5	1.0
Philippines	2	59	196	0.4	1.4	3.8
Bangladesh	20	57	97	4.0	1.4	1.9
Total of the 12 countries	380	3,383	4,364	79.1	81.4	84.1
ASEAN total	147	753	1,612	31.1	18.1	31.1
China, India, Japan, and Republic of Korea total	212	2,513	2,620	47.0	60.4	50.5

Source: Authors' calculations using BACI (2024).

Note: ASEAN (Association of Southeast Asian Nations) total includes exports to the nine ASEAN member countries. Thailand, Malaysia, Singapore, Indonesia, Viet Nam, and the Philippines are ASEAN member countries among the top 12 largest importers included in the table. The other ASEAN countries are Brunei, Cambodia, and Lao People's Democratic Republic, plus Myanmar. China, India, Japan, and Korea are non-ASEAN countries.

period between 2020 and 2022, ASEAN countries' share increased back to 31.1 percent, with large increases in agrifood exports to Thailand, Viet Nam, and the Philippines. Meanwhile, the share of agrifood exports to Japan and the Republic of Korea declined in the most recent period. This reduction is likely a result of their disinvestment in Myanmar in response to the military coup.

Concentration in agrifood exports

At the HS 4-digit commodity classification level, which is commonly used in product-level international trade databases, including BACI, Myanmar is shown to export approximately 150 agrifood commodity items. This number is notably lower compared to the mix of agrifood products exported by countries such as Indonesia, Malaysia, the Philippines, Thailand, and Viet Nam, all of which export 200 or more agrifood commodity items. Moreover,

TABLE 14.2 Myanmar's top 10 agrifood export commodities or commodity groups, by value, 1998–2022

	Rank			Average value (US$ million)			Share of total agrifood exports (%)		
Commodity	1998–2002	2015–2019	2020–2022	1998–2002	2015–2019	2020–2022	1998–2002	2015–2019	2020–2022
Pulses	1	1	1	165	1,000	1,306	35.5	27.7	26.0
Rice	3	2	2	24	588	964	5.2	16.3	19.2
Fish	2	3	4	159	545	591	34.3	15.1	11.8
Rubber	4	4	5	14	249	364	3.1	6.9	7.2
Maize	8	5	3	6	203	617	1.4	5.6	12.3
Cattle	5	6	7	10	188	60	2.2	5.2	1.2
Sesame	6	7	6	11	99	157	2.5	2.7	3.1
Bananas	—	8	8	0	79	59	0.0	2.2	1.2
Groundnuts	—	9	9	0	71	52	0.0	2.0	1.0
Melons	—	10	—	0	40	18	0.0	1.1	0.4
Top 10 total	NA	NA	NA	391	3,061	4,188	84.1	84.7	83.4

Source: Authors' calculations using BACI (2024).

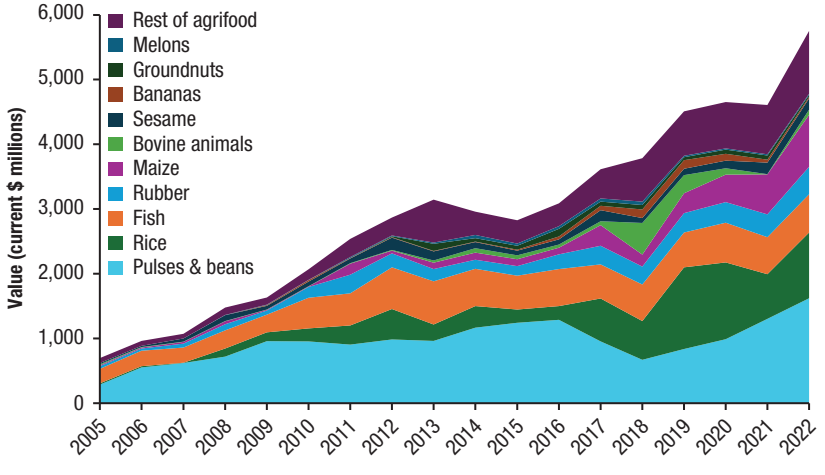
Note: Sugar exports are excluded in the ranking for the table because a large amount of sugar exports to China are reexports of sugar imports from India and Thailand (Pinitwong 2018). In addition, much of the sugar exported to China in recent years comes from sugar plantations in Myanmar that were recently established by Chinese investors to directly supply the Chinese market. A significantly lower share of fish and other seafood in total agrifood exports in the 2014 to 2018 period is a result of sharp declines in shrimp exports relative to other agrifood exports. Shrimp exports accounted for about 30 percent of total agrifood exports between 1998 and 2002 but only about 2 percent more recently. — = commodity not ranked among the top 10 agrifood export commodities during the period. NA = not applicable.

Myanmar's agrifood export trade is highly concentrated in a few specific commodities.

Using the five-year average export value for the period of 2015 to 2019, Table 14.2 lists the 10 most significant agrifood commodities or commodity groups exported by Myanmar in that period. For comparison over time, the average export commodity rank, value, and share of agrifood exports for 1998–2002 and 2020–2022 are also included in Table 14.2. Collectively, the 10 commodities constituted 84.7 percent of total agrifood exports between 2015 and 2019. The dominance of this group of commodities has remained relatively stable since 1998, except for bananas and groundnuts, which joined the top 10 only recently.

The average export value for these 10 commodities increased from an annual average of $391 million between 1998 and 2002 to $4.19 billion between 2020 and 2022. While pulses are Myanmar's most important export commodity in all years, by 2015 rice surpassed fish to become the second most important agrifood export. Rice as a share of the value of all agrifood

FIGURE 14.4 Value of exports of top agrifood commodities from Myanmar, by commodity, 2005–2022



Source: Authors' analysis using BACI (2024).
Note: Total agrifood exports exclude sugar products.

exports grew to 19.2 percent between 2020 and 2022. Maize has been the fastest growing agrifood export commodity in recent years, the share of which increased from 1.4 percent of total agrifood exports between 1998 and 2002 to 5.6 percent between 2015 and 2019 and to 12.3 percent between 2020 and 2022, becoming the third most important export commodity. Figure 14.4 shows the aggregated value of the top agrifood commodities between 2005 and 2022.

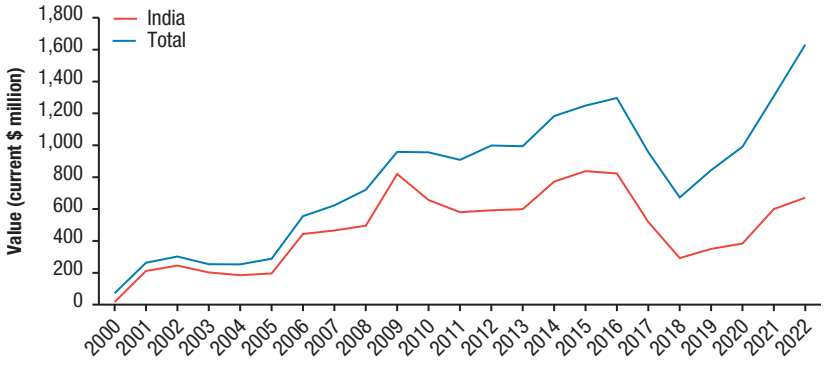
The potential of agrifood exports

This section focuses on the agrifood commodities that could play a more important role in the economic development of Myanmar's agrifood export sector.

Pulses

Pulses, including beans, are the most important agricultural export commodity group in Myanmar. Pulses account for a quarter of total agrifood exports annually, valued at between $1.0 billion and $1.6 billion in recent years (Figure 14.5). Pulses are grown primarily by smallholder farmers across the country, with 30 to 40 percent of production destined for export (MOALI

FIGURE 14.5 Myanmar's pulse exports, by value, total and to India, 2000–2022



Source: Authors' analysis using BACI (2024).

2020). The export of pulses has grown rapidly in recent years. An important exception to this pattern of growth was in 2017 and 2018, when India imposed an import quota on Myanmar's pulse and bean exports (Boughton, Haggblade, and Dorosh 2018).

India has been the largest importer of pulses from Myanmar since the early 1990s (Table 14.3). As the world's most populous country and with roughly 500 million vegetarians, India will likely remain the world's dominant consumer of pulses for the foreseeable future. In consequence, the Indian market is expected to remain the primary destination of Myanmar's pulse exports and serve as a driving force for growth in Myanmar's four major pulses—black gram, green gram, pigeon pea, and chickpea.

The future growth of Myanmar's pulse exports depends on reliable access to the Indian market in the long term and reduced volatility in demand caused by changes in India's import policies. India's import restrictions in 2017 and 2018 led to a complete cessation of black gram and pigeon pea purchases from farmers by Myanmar traders. A collapse in prices resulted. The unpredictability of India's quotas led Myanmar farmers to shift production to other crops for several years. However, in 2021, India signed a memorandum of understanding with Myanmar to import 350,000 tons of pulses annually through 2025/26. This agreement has led to an expansion in the production of black gram and pigeon pea, even as Myanmar farmers have shifted in recent years to produce green gram for the Chinese market. In the long run, Myanmar will benefit from extending this agreement with India. A long-term agreement to stabilize access to the Indian market will give Myanmar's farmers more

TABLE 14.3 Value of Myanmar's pulse exports to selected Asian countries, 1998–2022

	Average value (US$ million)			Share total pulse exports (%)		
Country	1998–2002	2015–2019	2020–2022	1998–2002	2015–2019	2020–2022
India	123.8	574.4	562.2	75.0	57.4	43.1
China	1.1	80.7	266.5	0.7	8.1	20.4
Indonesia	4.6	39.6	76.3	2.8	4.0	5.8
Viet Nam	0.0	39.1	85.2	0.0	3.9	6.5
United Arab Emirates	0.0	37.8	33.0	0.0	3.8	2.5
Pakistan	0.0	32.3	71.5	0.0	3.2	5.5
Malaysia	8.0	30.2	30.5	4.8	3.0	2.3
Japan	5.6	24.2	22.1	3.4	2.4	1.7
Thailand	0.1	19.4	31.1	0.1	1.9	2.3
Nepal	0.0	17.4	21.8	0.0	1.7	1.7
Sri Lanka	0.4	15.1	2.9	0.2	1.5	0.2
Bangladesh	0.3	11.9	20.1	0.2	1.2	1.5
Philippines	0.8	11.3	20.6	0.5	1.1	1.6
Singapore	11.0	10.0	12.9	6.7	1.0	1.0
Republic of Korea	2.4	7.4	5.6	1.4	0.7	0.4

Source: Authors' calculations using BACI (2024).

incentive to engage in pulse production, resulting in more stable domestic supply and price levels.

Since 2020, the market for Myanmar's pulse exports has diversified. Green gram has a more diversified market compared with other pulses, including a growing number of high-value markets—China, ASEAN countries, and Pakistan. While India continues to be the primary market, the Chinese market for pulses has increased substantially. China represented 20 percent of total pulse exports between 2020 and 2002, up from 8 percent between 2015 and 2019. ASEAN countries, particularly Indonesia, Viet Nam, Thailand, and the Philippines, have also increased their imports of pulses from Myanmar. ASEAN counties' share of pulse exports increased from 15 percent between 2015 and 2019 to almost 20 percent between 2020 and 2022. Pakistan has also emerged as a growing market for Myanmar pulses, taking 5.5 percent of total pulse exports between 2020 and 2022.

To continuously grow its pulse exports, Myanmar must expand to other markets and reduce its reliance on India. This includes expanding exports to existing markets, such as Japan, which imports the same pulses from Myanmar as India. However, Japan now imports more pulses from other

countries—less than 10 percent of its pulse imports come from Myanmar. Improving its competitiveness in the Japanese market will enable Myanmar to increase its pulse exports to Japan. Another approach will be for pulse producers in Myanmar to expand the production of other pulse varieties that have large markets outside of India. For instance, Bangladesh has a sizeable market for chickpeas, and while Myanmar produces chickpeas, the commodity accounts for only a small share of Bangladesh's imports.

Potential for growth is also seen in high-value and value-added pulse markets. Myanmar exporters currently clean and sort by size only 35 percent of green gram and 10 percent of pigeon pea exports (Myint 2014). In recent years, large Myanmar traders have made forays into high-value niche markets, with success in exporting large-sized green gram, which many wealthy Asian countries prefer for making bean sprouts. Europe could be an important additional market for this high-value product, with potentially high returns if Myanmar is able to meet its quality and traceability requirements.

Expanding the supply of quality value-added pulses will require investment in storage to achieve sufficient inventory, as well as processing facilities to ensure a year-round supply to foreign customers. To achieve this goal and to make investments in such processing facilities profitable, foreign companies will need to be allowed to trade in the domestic market and to purchase and locally store adequate amounts of raw materials. In addition to ensuring that local traders have access to equivalent financial services, opening up the domestic pulse market to foreign investors will enhance the level of investment and liquidity in the market and provide more stable and consistent price and quality incentives to Myanmar farmers (Boughton, Haggblade, and Dorosh 2018).

Rice

Myanmar's rice sector is covered extensively in Chapter 11. This section focuses on the markets for Myanmar's rice exports and how Myanmar can expand them.

Rice regained its status as an important export crop after Myanmar liberalized its rice export policy in the late 2000s and early 2010s, removing many restrictions on rice exports (World Bank 2014). According to the Ministry of Agriculture, Livestock, and Irrigation (MOALI), between 10 and 15 percent of rice production is for export (MOALI 2022). China is the primary importer of rice from Myanmar, averaging approximately $116 million annually between 2015 and 2019 (19.7 percent of Myanmar's total rice exports). However, data for rice exports to China may be underreported by up to

1 million tons per year because much of the rice exported to China uses informal trade channels (Dorosh, Win, and van Asselt 2019).

For the period between 2020 and 2022, BACI shows that rice exports to China surged to an average of $410 million annually. However, this may be explained by a combination of factors. First, while the volume of rice exports to China declined (Chapter 11), export prices for Myanmar rice reached an all-time high during this period (World Bank 2022). Second, as the land borders with China were often closed due to COVID-19 and conflict, exports through seaports increased. The unrecorded informal rice exports to China were through land borders, while exports through seaports were officially recorded. The actual decline in rice exports to China through land borders could be much larger than the officially recorded trade. Moreover, China began enforcing Sanitary and Phytosanitary Protocol certification for rice exports. These changes likely increased the quantity of formal exports that were recorded.

In contrast to pulses, Myanmar has a diverse set of trading partners for its rice exports. This is encouraging, given that global demand for rice is projected to continue growing over the next 10 to 15 years (World Bank 2014). Table 14.4 shows that between 2015 and 2019, excluding China, Myanmar exported annually more than $10 million in rice to 16 countries and over $1 million to 47 countries. Between 2020 and 2022, Myanmar continued to export more than $10 million in rice annually to 14 countries, excluding China, although the composition of the importing countries changed. Rice exports to Italy, Malaysia, Niger, the Netherlands, and Bulgaria exceeded the $10 million threshold for this period, while Sri Lanka, Guinea, Indonesia, Germany, and Burkina Faso dropped below the threshold. This suggests that improving the competitiveness of Myanmar's rice exports globally will enable the country to retain its current trading partners and to make inroads into new markets.

Excluding China, the European Union, where Myanmar enjoys duty-free access, was the largest market for Myanmar's rice exports, reaching an annual average of $131.5 million between 2015 and 2019 and increasing to $235.6 million annually between 2020 and 2022. Africa was the second-largest market between 2015 and 2019, averaging $165.5 million annually. However, ASEAN became a larger market between 2020 and 2022, averaging $130.7 million annually, with the Philippines and Malaysia increasing their imports of Myanmar rice substantially. Myanmar's rice exports are expected to continue to grow in the short term because India, an important competitor to Myanmar in global rice markets, has banned exports of non-Basmati rice

TABLE 14.4 Value of rice exports between 1998 and 2022 to countries importing more than $1 million per year in 2015–2019, US$ millions

Country	1998–2002	2015–2019	2020–2022		1998–2002	2015–2019	2020–2022		1998–2002	2015–2019	2020–2022
Europe	**3.8**	**174.9**	**266.8**	**Africa**	**10.0**	**165.5**	**112.0**	**ASEAN**	**9.4**	**80.3**	**130.7**
Belgium	0.2	46.8	84.8	Côte d'Ivoire	5.8	43.9	15.5	Philippines	0.0	34.7	77.4
Poland	0.0	18.2	31.0	Madagascar	0.0	33.4	14.5	Indonesia	5.1	22.0	8.4
Germany	0.0	15.7	5.5	Cameroon	1.8	29.6	13.6	Malaysia	1.0	9.1	31.2
UK	0.0	13.2	19.3	Guinea	0.7	19.5	5.6	Singapore	3.3	7.5	3.3
Spain	0.0	11.5	32.8	Burkina Faso	0.3	11.9	5.3	Viet Nam	0.0	5.3	7.0
Russia	0.0	10.0	1.9	Togo	0.0	3.8	6.3	Thailand	0.0	1.5	3.1
France	0.0	9.7	4.7	Ghana	0.0	3.7	1.9				
Bulgaria	0.2	8.6	10.7	Senegal	0.5	3.4	7.0	**Other Asia**	**1.0**	**46.9**	**41.5**
Netherlands	0.0	8.1	12.3	Mozambique	0.1	3.2	5.1	Bangladesh	0.7	20.4	33.8
Czechia	0.0	6.8	8.0	South Africa	0.0	2.5	0.3	Sri Lanka	0.0	16.8	1.1
Portugal	0.0	3.4	1.7	Benin	0.0	2.4	6.7	Afghanistan	0.0	3.8	0.0
Lithuania	0.0	3.2	6.3	Ethiopia	0.0	1.9	0.4	UAE	0.0	2.0	0.2
Italy	0.0	3.0	24.4	Mali	0.6	1.8	1.1	China, Taiwan	0.0	1.3	0.9
Greece	0.0	2.7	2.8					Japan	0.0	1.1	0.1
Romania	0.1	2.6	9.0								
Turkey	0.0	2.1	0.6								
Hungary	1.2	1.9	1.3								
Andorra	0.0	1.5	0.0								
Croatia	0.0	1.4	2.0								
Slovenia	0.0	1.3	1.7								

Source: Authors' calculations using BACI (2024).

Note: BACI data capture formal trade only. Because a large share of Myanmar's rice exports through informal channels to China is not captured by BACI, we exclude China from the table.

varieties to protect their domestic prices, and Thai and Vietnamese rice prices have risen sharply, forcing buyers to seek other sources.

Myanmar is not the dominant rice exporter to many of the rice-importing countries listed in Table 14.4. This means there is a smaller risk of market interruptions and price fluctuations caused by changes in the rice import policies of individual importing countries, unlike there is for Myanmar's pulse exports to India. Thus, to expand rice exports, Myanmar will need to focus primarily on the supply side by increasing land and labor productivity. For example, it is estimated that closing the rice yield gap so that productivity

levels are closer to those of Viet Nam could generate about 13 million tons of surplus for export (World Bank 2014).

If Myanmar is to export more rice, attention will also need to be paid to quality. Currently, most rice exports from Myanmar are of low quality. Poor-quality rice not only constrains potential export earnings but also provides limited income to farmers and other actors along the rice value chain. To improve rice quality for exports, modernizing rice industries and diversifying to higher-value rice varieties for export markets is key. In this regard, there is strong regional competition from Cambodia and Viet Nam, which have both increased their exports of high-quality rice in recent years.

Myanmar has signed a few trade agreements with China in recent years. In 2019, China signed a reciprocal agreement that increased the formal rice export quota fourfold to 400,000 tons per year in exchange for an equal value of Chinese goods entering the Myanmar market. The agreement did not include broken rice exports, which could continue through regular channels. Furthermore, in early 2020, Myanmar signed a Sanitary and Phytosanitary Protocol with China. Thereafter, the General Administration of Customs of the People's Republic of China issued export licenses to 43 companies and 79 rice mills in Myanmar to export rice to China. As a result of these agreements, exports of broken and other low-quality rice to China increased.

Overall, export channels for rice to China have benefited Myanmar producers and exporters. Through improvements in quality and increases in production, Myanmar could expand its rice exports to China and broader international markets. This would provide great benefits for its rice sector and for the country's rural development in general (Dorosh, Win, and van Asselt 2019).

Increasing Myanmar's competitiveness in the global rice market also requires the establishment of policies and public services to create a favorable investment climate for farmers, millers, traders, and logistics providers and improve efficiency along the entire rice value chain. In addition to issues with farm-level productivity, inefficiencies in the milling sector further lower the country's competitiveness in exports (Chapter 13). Upgrading and modernizing the rice milling industry requires a policy environment that encourages foreign direct investment and enables domestic mills to gain access to long-term credit, technical and managerial know-how, and reliable, low-cost electricity.

Maize

Maize has become Myanmar's second most important cereal crop after rice. Maize's share of total agrifood exports grew from 1.4 percent between 1998

and 2002 to 5.6 percent between 2015 and 2019 and to 12.3 percent between 2020 and 2022. The value of maize exports averaged $600 million annually between 2020 and 2022, tripling in value from the period 2015 to 2019 (Figure 14.6). This increase was partially due to decreased domestic demand caused by the economic downturn starting in 2020 and increasing global maize prices, particularly in 2022 after the start of the Russia–Ukraine conflict. Since 2019, the maize sector has faced numerous challenges, including trade barriers, conflict, and economic instability. Nevertheless, the maize sector exhibited remarkable resilience and has experienced robust growth in recent years (MAPSA 2023).

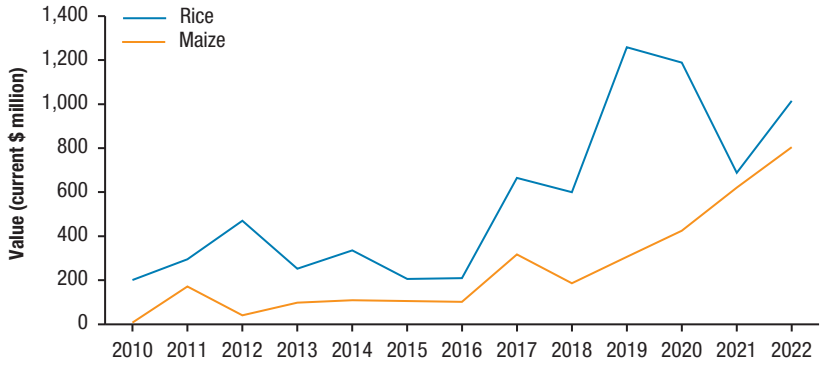
Maize production increased by approximately 84 percent between 2010 and 2019 (MAPSA 2023), primarily driven by growing domestic demand for animal feed. However, domestic demand was outpaced by exports. The share of maize grown for export was approximately 60 percent (MOALI 2022; USDA 2020). In southern Shan State, which accounts for 50 percent of national production, the number of maize growers tripled between 2007 and 2017 (Fang and Belton 2020).

While agroecological conditions in the Shan State are more favorable for maize than rice, maize has also been more profitable at the farm level. First, the unit value of maize is higher than that of rice. While the quantity of maize produced, as measured by harvest area and production, is only 7 percent that of rice, the value of maize exports was approximately 40 percent of the value of rice exports in 2018/19 (MOALI 2022). Second, maize requires minimal processing, which means farmers receive a higher share of the export price.

From 2010 to 2019, nearly all of Myanmar's maize exports went to China overland and were conducted informally to evade the high tariffs on formal maize imports. Maize exports to China reached $153.5 million annually between 2015 and 2019, accounting for more than 75 percent of Myanmar's total maize exports (Table 14.5). However, access to the Chinese market was unpredictable. China would tolerate illegal imports when its domestic production was low and temporarily enforce the informal import controls when domestic production was high. These unpredictable policies had the potential to crash Myanmar's entire maize market and quash farmers' incentives to expand production.

In October 2019, China implemented a near complete ban on the informal cross-border trade of maize that lasted for several years. Maize exports to China dropped to $40.8 million annually between 2020 and 2022, representing only 6.6 percent of total maize exports. New trade routes were established through Myawaddy (the land border crossing between Thailand and

FIGURE 14.6 Rice and maize exports, by value, 2010–2022



Source: Authors' analysis using BACI (2024).

Note: Rice exports are likely underreported due to informal cross-border exports to China that are not included in BACI.

TABLE 14.5 Top 10 countries importing Myanmar's maize, 1998–2022

	1998–2002		2015–2019		2020–2022	
Country	Value (US$ million)	Share (% of total)	Value (US$ million)	Share (% of total)	Value (US$ million)	Share (% of total)
China	0.0	0.6	153.5	75.5	40.8	6.6
Thailand	0.0	0.0	27.1	13.3	340.4	55.2
Philippines	0.0	0.0	12.0	5.9	97.1	15.7
India	0.0	0.6	4.3	2.1	26.2	4.2
Viet Nam	0.1	1.2	3.6	1.8	94.6	15.3
Sri Lanka	0.0	0.7	0.7	0.4	1.6	0.3
Malaysia	1.5	23.3	0.7	0.3	0.3	0.1
China, Taiwan	0.1	1.3	0.4	0.2	0.6	0.1
Singapore	1.4	21.4	0.3	0.1	0.1	0.0
Bangladesh	2.1	32.5	0.0	0.0	13.4	2.2
Total	5.2	81.7	216.0	99.7	615.0	99.7

Source: Authors' calculations using BACI (2024).

Myanmar) to Thailand, initially informally, but this route quickly became formalized through the ASEAN Free Trade Area agreement. This resulted in a surge of maize exports to Thailand, valued at $340.4 million annually between 2020 and 2022, representing 55.2 percent of total maize traded.

Simultaneously, many large multinational companies began to export maize by sea to other ASEAN countries. The Philippines and Viet Nam

became the second and third largest markets for Myanmar maize. As a result of this shift away from the Chinese market, Myanmar was able to diversify its maize export markets, while expanding production.

Meanwhile, demand for maize in ASEAN countries is rising (Wai 2019) and may represent a growing market for Myanmar in the future. While many ASEAN countries grow maize, Myanmar has some comparative advantages. Maize is more climate resilient than alternative rainfed crops, it requires less labor than many other crops, and production credit is available from traders, all of which can help lower labor and other production costs (Fang and Belton 2020). As a result, Myanmar's maize exports have the potential to become more competitively priced and increasingly important among the country's agrifood exports.

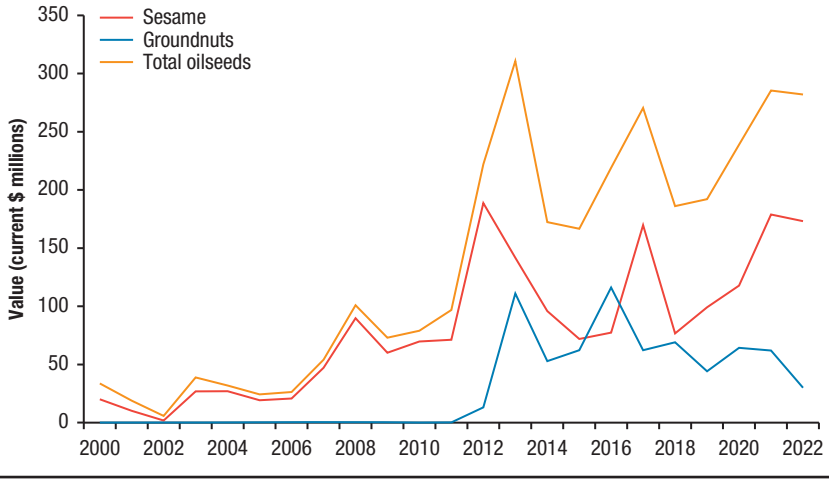
However, similar to the case for rice, efforts to expand exports of maize are constrained primarily by the supply side. Maize yields are less than 4 metric tons per hectare (ha)—low compared with those in other ASEAN countries. In countries such as Thailand and Viet Nam, where demand for maize is high due to highly developed poultry and other livestock sectors, maize yields average 4.7 metric tons per ha (FAO 2023). In addition, quality requirements are more stringent in the maize markets of many ASEAN countries than in China, the main destination for Myanmar's maize exports. For example, the lack of drying facilities in Myanmar could affect maize quality through the presence of storage pests. Expanding exports to ASEAN markets will require improvements in both the productivity and quality of maize.

High seasonal prices during monsoon months and large price variability are factors that affect incentives to produce maize for export. Increasing price stability through the provision of improved storage facilities would improve production incentives. Price variability leads to speculation and hoarding in Myanmar's maize markets. Increased use of commodity exchanges and warehouse receipt systems could also help reduce such variability and make Myanmar a more reliable participant in regional and global maize trade. Finally, because China may return as a major market for Myanmar maize, a long-term trade agreement providing reliable access to the Chinese market would provide additional stability needed for the maize sector to make these additional investments to expand exports.

Oilseeds

Oilseed exports, particularly groundnut and sesame, have grown between 2000 and 2022, even though export levels have been volatile annually (Figure 14.7). The share of sesame, the largest oilseed export crop, in total

FIGURE 14.7 Oilseed exports, by value, 2000–2022



Source: Authors' analysis using BACI (2024).

agrifood exports rose from 2.5 percent in the period from 1998 to 2002 to about 3 percent between 2020 and 2022. On average, sesame exports were valued at $157 million annually between 2020 and 2022. The share of groundnut in total agrifood exports reached 1.7 percent in 2015 to 2019 from almost zero in 1998 to 2002. However, this trend reversed direction between 2020 and 2022, dropping to about 1 percent of total agrifood exports in this period (Table 14.2). Overall, growth in groundnut and sesame exports, which together account for more than 75 percent of all oilseed exports, has been more rapid than the growth of overall agrifood exports.

China has been the primary market for Myanmar's sesame since at least 2015, with its share of sesame exports continuing to increase in recent years. Japan was the largest market between 1998 and 2002, followed by Singapore. However, the share of sesame exports to these markets has since declined. The six countries listed in Table 14.6 are the destinations for almost all (98.6 percent) of Myanmar's sesame exports, with China importing the most.

China and Thailand were the primary markets for Myanmar's groundnut between 2015 and 2019 (Table 14.7). While China remained the largest importer, its share dropped slightly between 2020 and 2022. Groundnut exports are highly concentrated, with more than 95 percent of exports going to China and Thailand in recent years. While the share of total groundnut exports going to Viet Nam has grown in recent years, the ASEAN countries

TABLE 14.6 Top seven countries importing Myanmar's sesame, by value, 1998–2022

	1998–2002		2015–2019		2020–2022	
Country	Value (US$ thousand)	Share (% of total)	Value (US$ thousand)	Share (% of total)	Value (US$ thousand)	Share (% of total)
China	4.0	3.5	606.8	61.3	1,190.1	76.0
Japan	54.5	47.6	170.0	17.2	112.6	7.2
China, Taiwan	13.9	12.1	105.7	10.7	123.5	7.9
Thailand	1.2	1.0	51.2	5.2	100.6	6.4
Singapore	31.4	27.4	23.5	2.4	18.4	1.2
Republic of Korea	0.0	0.0	11.8	1.2	7.7	0.5
Total	104.8	91.6	969.0	97.9	1,552.9	99.2

Source: Authors' calculations using BACI (2024).

TABLE 14.7 Top seven countries importing Myanmar's groundnut, by value, 1998–2022

	1998–2002		2015–2019		2020–2022	
Country	Value (US$ thousand)	Share (% of total)	Value (US$ thousand)	Share (% of total)	Value (US$ thousand)	Share (% of total)
China	0.0	6.3	458.3	64.7	313.0	60.1
Thailand	0.1	18.9	223.2	31.5	159.1	30.5
Indonesia	0.1	25.2	9.7	1.4	1.2	0.2
Viet Nam	0.0	0.0	9.3	1.3	31.9	6.1
Malaysia	0.3	49.7	3.8	0.5	1.2	0.2
China, Taiwan	0.0	0.0	1.2	0.2	1.2	0.2
Singapore	0.0	0.0	1.2	0.2	11.6	2.2
Total	0.6	100.0	706.8	99.8	519.2	99.6

Source: Authors' calculations using BACI (2024).

other than Thailand and Viet Nam together account for less than 3 percent of total groundnut exports.

Global demand for oilseeds is projected to increase by 9.3 percent by 2030 (OECD and FAO 2023). Meanwhile, production growth in Indonesia and Malaysia, which together account for 83 percent of global palm oil production and 34 percent of global vegetable oil production, is expected to be limited due to a slowdown in the expansion of the mature oil palm area (OECD and FAO 2023). Myanmar imports just under two-thirds of the edible oil it consumes (Moh et al. 2021). Therefore, there is potential for Myanmar to expand its oilseed exports or focus on import substitution, given the high demand for oilseeds both internationally and domestically.

Oilseeds have received increased attention from the military government in recent years, as Myanmar has not been able to import enough edible oil to meet domestic demand. This is due to decreased global exports, exacerbated by a temporary export ban on palm oil in Indonesia in early 2022. The ban resulted in soaring palm oil prices that were compounded by the depreciation of the Myanmar kyat. As a result, the military government temporarily suspended exports of oilseed crops. To reduce palm oil imports, it also promoted sunflower cultivation and the consumption of oil from locally produced groundnut, sesame, and sunflower. However, imported palm oil continues to be cheaper than locally produced oils, as groundnut and sesame oils receive a premium price in local markets due to their preferred flavor and limited supply.

As with other commodities, Myanmar will need to improve both productivity and processing in the oilseed sector. Oilseed yields, especially for groundnut, sesame, and sunflowers, are lower than in neighboring countries. To increase oilseed productivity will require access to quality seed, greater access to credit and agricultural extension, and increased use of fertilizer (MAPSA 2022). It will also require additional investments in oil mills, as most domestic mills use old equipment (Belton and Win 2019). However, as indicated in Chapter 13, the recent increase in oilseed prices has resulted in reinvestments in previously uncompetitive oil mills.

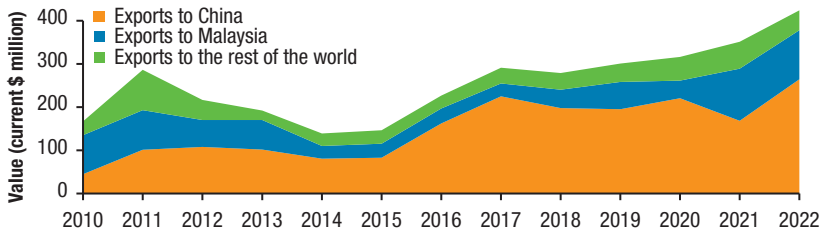
Rubber

Myanmar's rubber sector was liberalized in 2004. Since then, the planted area has tripled. According to the Myanmar Rubber Planter and Producer Association, more than 90 percent of rubber planters are smallholders who own plantations ranging from 1 to 40 hectares. The growing involvement of smallholders in rubber production has resulted in an increase from 200,000 hectares planted in 2004 to 650,000 in 2022 (Myint and Thu 2020; van Asselt, Htoo, and Dorosh 2017).

The downstream rubber market in Myanmar is small, leading to nearly all rubber being exported. Examining the post-2010 period, Figure 14.8 shows that natural rubber exports have been expanding steadily, rising in value from $167 million in 2010 to close to $424 million in 2022. However, in Asian markets, Myanmar's natural rubber exports are perceived as being of low quality. Exports are highly concentrated to China and Malaysia, which accounted for nearly 90 percent of Myanmar's rubber exports in 2022. China surpassed Malaysia as the largest importer of Myanmar rubber in 2011.

While Myanmar's rubber exports are highly concentrated in these two countries, Myanmar does not hold a dominant position as an exporter in

FIGURE 14.8 Natural rubber exports to China, Malaysia, and rest of world, by value, 2010–2022



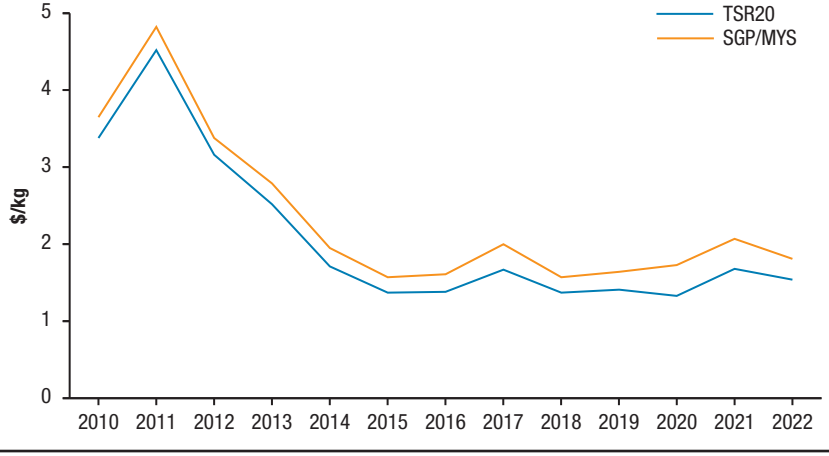
Source: Authors' analysis using BACI (2024).

either market. Consequently, it has limited influence on prices in these markets, which are determined by international rubber prices. Since 2012, the global price of rubber has declined, largely due to weak demand in China and other Asian countries (Figure 14.9). In line with this decrease, the per unit value of Myanmar's rubber exports has also fallen (Figure 14.10). Although prices have stabilized since 2015, they remain relatively low at 30 percent of the 2011 nominal price level. The lower price translates to reduced profitability for rubber farmers and producers in recent years, as it typically takes five or more years after establishing a plantation before harvesting becomes profitable.

Myanmar has lower rubber yields than other major rubber-producing countries, averaging 600 to 800 kg per ha across the states and regions. In contrast, average yields in neighboring countries range from 1,500 to 2,000 kg per ha. The main contributing factor to these low yields is poor tapping practices, which can also lead to a shortened lifespan for the tree (Charles and Aung 2015; van Asselt, Htoo, and Dorosh 2017). Therefore, it is critical that investments be made in training producers, supporting the adoption of improved varieties, and establishing marketing and certification schemes to encourage better tapping practices.

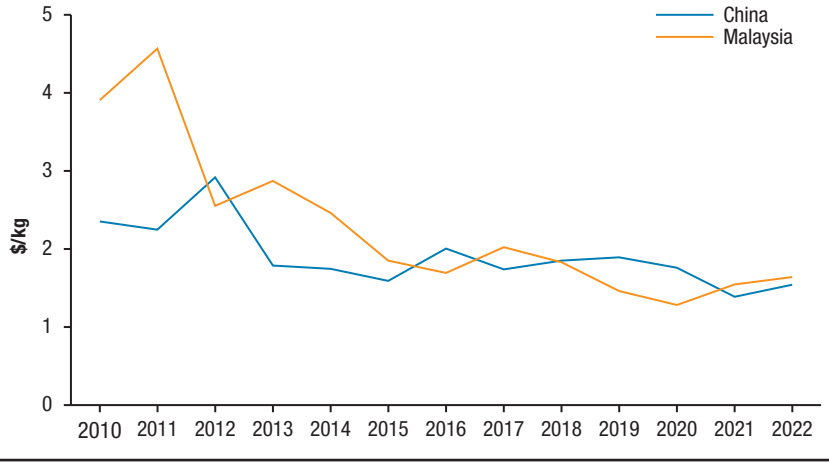
Improving the quality of processed rubber is also key to increasing export prices and improving the profitability of rubber production. However, there are limited incentives for actors to produce higher-quality rubber. At the producer level, smallholders now have no reason to keep rubber clean during initial processing, as traders purchase all rubber sheets regardless of quality, with only a small price difference for higher-quality sheets. Whereas in other countries, rubber sheets are graded on the basis of visual factors, such as texture,

FIGURE 14.9 World natural rubber prices, annual nominal, 2010–2022



Source: Commodity price data from World Bank (2024b).
Note: TSR20 = Technically Specified Rubber grade 20. SGP/MYS = Singapore/Malaysia.

FIGURE 14.10 Unit value of natural rubber exports to China and Malaysia, annual nominal, 2010–2022



Source: Authors' analysis using BACI (2024).

color, and resinous matter, in Myanmar, grading is primarily determined by the thickness of the rubber sheet. Therefore, prices are based on weight rather than the true quality of the rubber.

At the processing level, there is a lack of certification schemes or public laboratories to assess quality. The technologies used for rubber processing are often inadequate and outdated, and infrastructure is limited. Due to unreliable electricity supply, processing facilities rely on costly generators. The regulatory environment for processors is also weak—the Ministry of Industry issues operational licenses without regulations on production processes. Furthermore, there are no standardized procedures to ensure the quality of processed rubber, leading to uncertainty about product quality.

A series of potential interventions and policy options along the rubber value chain has been suggested (van Asselt, Htoo, and Dorosh 2017). Educational programs and training on acquiring improved planting materials, planting seedlings, using fertilizer, and adopting improved tapping techniques and collecting practices are necessary to raise awareness of best practices among rubber farmers. Smallholders should also receive training on field-level processing and information on various processing inputs and their applications. Extension services for rubber producers are also vital to improving cultivation management.

While most rubber-exporting countries have established technical specifications for block rubber, Myanmar lacks such standards. Therefore, the implementation of a rubber grading system and a standardized payment method based on graded rubber will be essential for the growth of the sector. Sheets, slabs, and clumps should be graded according to sheet thickness and visual qualities rather than based solely on the weight at the farmgate. Processors should use only rubber of the same grade to produce sheets. Testing for the level of dirt, ash, volatile matter, nitrogen content, plasticity, and color is necessary for grading and labeling. By adopting stringent grading, marketing, and payment standards across the rubber value chain, Myanmar can improve prices for producers and develop a competitive rubber sector.

Additionally, the establishment of a rubber certification system is vital for processors to access higher prices and key international rubber markets. Processed rubber is currently evaluated by the laboratory of the Research, Technology, and Training Center for Rubber Products. However, tests are conducted infrequently, and the laboratory lacks accreditation. Myanmar should aim to attain the ISO 9000 industrial standard series certification, which is the recognized standard for the rubber manufacturing industry. This certification would facilitate the promotion of Myanmar's rubber

product exports, as international buyers are increasingly requiring the ISO 9000 standard.

Fishery products

With a coastline stretching nearly 3,000 km, abundant rivers, several large estuaries, and numerous offshore islands, Myanmar has historically possessed a comparative advantage in the fishery industry. The country's diverse range of coastal and freshwater habitats enables the export of a wide variety of fishery products. Based on the HS 6-digit commodity classification, Myanmar exports approximately 60 different fishery products, making this sector one of the most diverse within the agrifood export category.

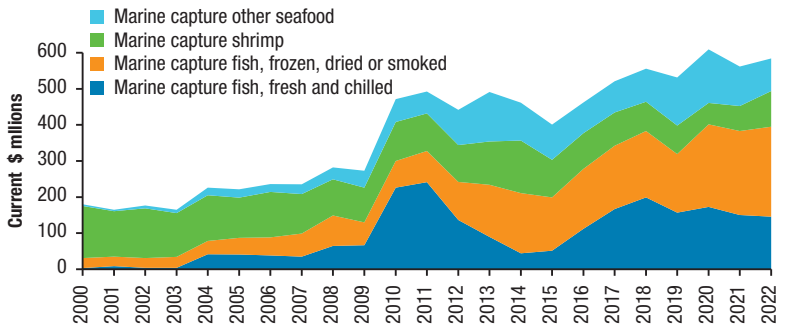
Over the past decade, the catch of wild fish and other aquatic species has steadily increased. However, the share of fish exports relative to total agrifood exports has declined from 34.3 percent between 1998 and 2002, when fishery products were the second-largest export commodity, to 15.1 percent between 2015 and 2019. Fishery product exports further declined to 11.8 percent between 2020 and 2022 (Table 14.2). This decline is primarily attributed to reduced exports of marine capture shrimp and prawns, which accounted for about 80 percent of total fishery exports between 1998 and 2002. In current prices, annual exports of marine capture shrimp and prawns were valued at $145 million in the early 2000s but fell below $100 million between 2015 and 2022 (Figure 14.11).

Conversely, the export of fish, especially fresh or chilled marine capture fish, has experienced rapid growth. In the early 2000s, the annual value of these fish exports was less than $5 million, but by 2022, it had surged to more than $150 million, peaking at almost $200 million in 2018.

Myanmar's fish exports reach a diverse set of markets. Frozen fish was shipped to more than 60 countries between 2015 and 2019, with a value exceeding $145 million annually. Between 2015 and 2019, 20 countries imported more than $1 million worth of frozen fish each year (Table 14.8), collectively accounting for 97.5 percent of Myanmar's total frozen fish exports.

Myanmar's various wild capture fishery products are unlikely to experience rapid growth in the future, and prawn fishing is expected to continue declining steadily. The most promising avenue for expanding exports lies in farmed fisheries. Although the production of farmed shrimp and crab is on the rise, it is starting from a very small base value. Farmed freshwater carp, for instance, has found a market in the Middle East. However, this market is limited, as carp is not widely consumed beyond these countries, many of which already produce fish domestically. Apart from farmed shrimp, the greatest potential

FIGURE 14.11 Exports of fishery products, by value, 2000–2022



Source: Authors' analysis using BACI (2024).

TABLE 14.8 Top 18 countries importing Myanmar's frozen fish, 1998–2022

	1998–2002		2015–2019		2020–2022	
Country	Value (US$ thousand)	Share (% of total)	Value (US$ thousand)	Share (% of total)	Value (US$ thousand)	Share (% of total)
Saudi Arabia	0.0	0.1	27.9	16.6	33.9	14.2
United Kingdom	4.5	19.2	20.8	12.3	17.2	7.2
China	0.9	4.0	20.3	12.0	37.3	15.6
Malaysia	5.9	25.4	16.9	10.0	21.5	9.0
Thailand	1.0	4.3	15.7	9.3	39.5	16.5
United Arab Emirates	0.0	0.0	10.7	6.4	10.8	4.5
United States	1.5	6.6	9.6	5.7	8.5	3.6
Bangladesh	0.0	0.2	5.2	3.1	6.7	2.8
Bahrain	0.0	0.1	4.9	2.9	4.1	1.7
Japan	1.2	5.2	4.7	2.8	4.4	1.9
Kuwait	0.0	0.0	4.1	2.4	6.5	2.7
Italy	0.0	0.0	4.1	2.4	6.2	2.6
India	0.1	0.5	3.8	2.3	15.7	6.6
Australia	2.8	11.8	2.8	1.6	1.6	0.7
Republic of Korea	0.2	1.0	2.4	1.5	1.8	0.7
Singapore	3.7	15.7	2.4	1.4	3.1	1.3
Qatar	0.2	0.7	2.3	1.4	4.3	1.8
Oman	0.0	0.0	2.1	1.3	3.8	1.6
Canada	0.2	1.0	2.1	1.2	2.6	1.1
Iraq	0.0	0.0	1.4	0.8	0.8	0.4
Total	22.3	95.6	164.2	97.5	230.3	96.3

Source: Authors' calculations using BACI (2024).

for the growth of aquaculture in Myanmar lies in serving the domestic market as a substitute for the decreasing production of capture fisheries.

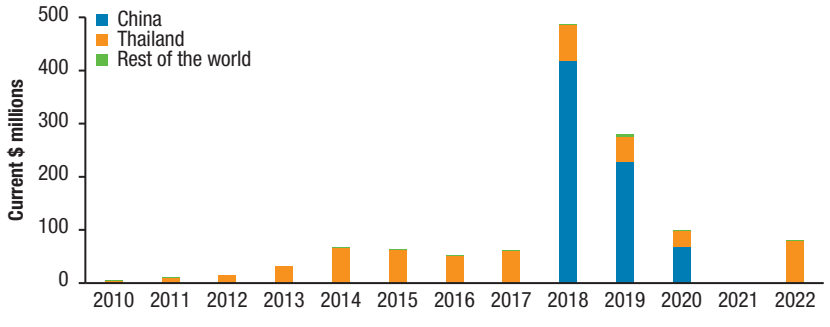
Cattle

Myanmar has the highest number of cattle and buffalo in Southeast Asia. These animals have been the most important livestock exports for Myanmar in recent years. Cattle exports rose from an average of $64 million annually between 2014 and 2017 to more than $500 million in 2018 (Figure 14.12). The spike in 2018 was a result of government implementing a new policy that officially allowed the export of livestock (MOC 2017). Before 2018, cattle exports were restricted due to the central role these animals played in Myanmar's agricultural production as draught animals. However, the rapid adoption of agricultural mechanization in recent years has diminished their necessity in this capacity. Therefore, regulations were revised to allow for the export of cattle.

Thailand was the primary importer of Myanmar's cattle prior to 2018. Even though cattle exports were illegal in Myanmar at the time, Thailand placed these cattle into its official system for quarantine, vaccination, documentation, and tagging. However, even at that time, China may have informally been the largest importer of Myanmar cattle (Zhizhi et al. 2018). This is evident in that China was immediately listed as the largest importer of cattle from Myanmar in 2018 after cattle exports from Myanmar became legal. Smith and colleagues (2019) estimated that more than 500,000 cattle were smuggled from Myanmar to China in 2015 alone. In comparison, the Ministry of Commerce data show that between October 2017 and March 2019, Myanmar officially exported 450,000 cattle and 52,000 buffalo (Htoon 2019).

Despite the initial surge in cattle exports, Myanmar introduced new regulations in 2019 that effectively halted exports. Concerns rose that the significant number of cattle leaving the country were not being replenished, rendering the trade unstable. Laitha and colleagues (2020) reported a decline in the cattle population from a peak of 17 million in 2017 to 9.1 million in 2020. The new regulations mandated that companies involved in cattle raising must update their land use registration to qualify for an export license. Land in Myanmar is registered for a specific use, and deviations from this designated use can lead to land confiscation (Chapter 6). This additional regulatory barrier resulted in costly delays in the formal cattle export process and provided further incentives for illegal cattle trade.

FIGURE 14.12 Value of cattle exports, by importing market, 2010–2022



Source: Authors' analysis using BACI (2024).

Figure 14.12 suggests a shift to informal trade channels, as exports to China notably decreased by 2020, with no formal trade recorded in 2021 and 2022. Nonetheless, as reported by the government-owned Global New Light of Myanmar newspaper, in 2021, an estimated 2,000 heads of cattle were being smuggled into China daily via the black market (GNLM 2021).

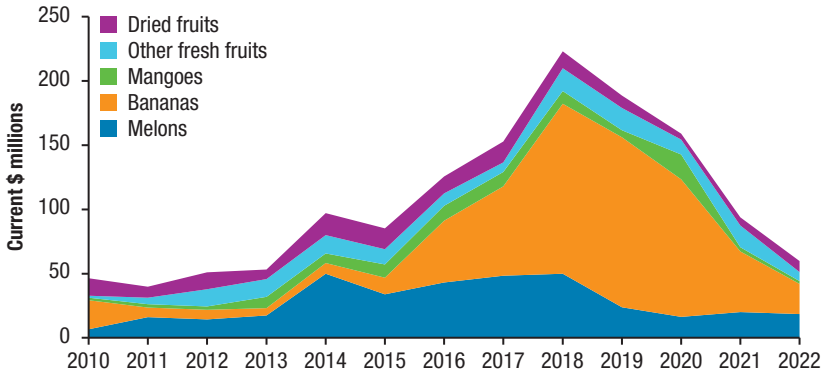
Access to the Chinese market will be crucial for stabilizing and expanding the cattle export sector. China's General Administration of Customs has provided recommendations to Myanmar that must be addressed before formal exports resume. In 2023, that agency relaxed some restrictions, permitting the import of cattle from Myanmar for slaughter use. However, Myanmar still needs to meet regulatory requirements and establish export facilities. Therefore, significant increases in formal exports are not expected in the short term (USDA 2023).

Exportable fruits

Fruit exports grew rapidly between 2010 and 2018, primarily to China. Figure 14.13 shows the export values of the major fruit exports from 2010 to 2022. Bananas were the top fruit export during this period. However, exports of melons were likely more significant than exports of bananas. There are considerable discrepancies between official figures in Myanmar and China, but figures from the Myanmar Fruit, Flower, Vegetable Producer, and Exporter Association show that the total volume of melon exports more than tripled from 2011 to 2018, with an estimated value of $169 million in 2016 (Kubo 2018; 2019).

Watermelon and muskmelons are the two major melon exports. Myanmar serves as an important off-season source of melons for China during the times

FIGURE 14.13 Fruit exports, by value, 2010–2022



Source: Authors' analysis using BACI (2024).

of the year when its farmers are not producing melons. In Myanmar, melons are primarily produced in the central Dry Zone. Through a unique broker system, exports are as simple as domestic sales. Farmers only need to ensure that their melons are transported to the town of Muse on the Myanmar–China border. In Muse, brokers will negotiate prices and ensure sales to buyers in China, minimizing risks to only price fluctuations for the producers. While melons are on China's General Administration of Quality Supervision, Inspection, and Quarantine (AQSIQ) positive list for imports, in practice, they generally enter China without sanitary and phytosanitary certificates (Kubo 2019).

Banana exports surged between 2015 and 2020, primarily from controversial Chinese investments in large tissue culture banana plantations in Kachin State. Such bananas are propagated using tissue culture techniques to maintain seedling quality. These bananas are grown primarily for export to China. While bananas are not on the AQSIQ positive list for imports to China, a network of Chinese border residents, who are allocated a daily quota of approximately 4 tons of bananas per day for commercial imports, are used to import the bananas (Hayward et al. 2020). Traditional bananas are also grown in the central parts of Myanmar and the Ayeyarwady Region. Traditional bananas are produced mainly for the domestic market, where demand has been growing in recent years, but there have been exports to China.

Myanmar was the top supplier of mango to the Chinese market from 2008 to 2013. However, exports have steadily declined in recent years (Kubo 2016). Mangoes are produced in Mandalay and southern Shan State and almost

entirely exported to China through the Muse border, where there is a wholesale market for Chinese importers. While mango exports are formalized on the Myanmar side, they are not subject to the Chinese sanitary and phytosanitary measures, even though they are on the AQSIQ positive list for imports.

Because China is the dominant importer of Myanmar's fruit exports, both the prices received and quantities supplied are determined mainly by Chinese buyers. Fruit exports are also subject to changes in subnational trade policy across the border in Yunnan Province, China. Moreover, imports of watermelons, muskmelons, mangoes, and jujubes are restricted to specific border entry points into Yunnan. Other fruits, including lychees, longans, mangosteens, and rambutans, can be exported via all Chinese border crossings. However, demand for these fruits within Myanmar is high, so the quantity of exports is low.

Myanmar's dependence on the Chinese market for exports was evident during the COVID-19 pandemic, when China temporarily closed the border and then reopened it with stringent checks and new regulations. These restrictions resulted in long queues of trucks waiting to access the border as drivers were required to conduct personal temperature checks, show vaccination cards, and then transfer goods to a Chinese driver at the border. Given their short shelf-life, this led to fruits rotting on trucks and being dumped by the side of the road near the border. For instance, exports of watermelons dropped from 30,000 metric tons in 2020 to just 60 metric tons in 2021 (Frontier 2022). Moreover, when the border was reopened, watermelon exports were subject to an unstable and frequently changing import tariff.

China will continue to be the primary market for Myanmar fruit exports, as import demand is expected to continue rising. However, to meet this demand, Myanmar faces competition from its regional neighbors who produce the same fruits. For instance, Laos recently developed a special economic zone on the Chinese border in Mohan, where it has access to direct tariff-free trade for fresh fruits with China. Meanwhile, producers in Myanmar are currently contending with conflict in production areas, transportation disruptions, and uncertain access at border areas. Myanmar will need to reopen discussions with China's General Administration of Customs to stabilize access to the Chinese market, as they did recently with green bananas, which received approval for import by normal trade in June 2022.

Myanmar will also need to expand efforts to penetrate new markets, such as the European Union and the Middle East. However, fruit exports to these markets will require that Myanmar meet Good Agricultural Practices standards and other certification requirements, which presents many technical

and institutional challenges. First, while Myanmar farmers have experience in growing these fruits with high export potential, they currently use local varieties and follow conventional practices that do not meet Good Agricultural Practices standards. Furthermore, standardization, quality management, accreditation, and metrology requirements pose a barrier to expanding these high-end fruit exports. The Ministry of Agriculture does not have the technical capacity to issue certain certifications, such as chemical residue certificates, and exporters must thus rely on private certification companies and private labs in Thailand for such documentation. Moreover, farmers and traders do not have incentives to sort and grade their products. Farmers and traders also have limited access to proper postharvest facilities. As a result, most fruit exports have little additional value added, resulting in a high concentration of exports to a single market, China, with generally low prices.

Trade policy environment

Agrifood trade policy pre-crisis

Myanmar has implemented several policies to increase its trade competitiveness and attract foreign investment since the reform period began in 2011. As a founding member of the World Trade Organization (WTO) and classified as a least developed country, Myanmar sought to take advantage of the special and differential treatment provisions that provide preferential market access for goods and services for such countries under regional and WTO agreements and of technical assistance related to trade. Furthermore, Myanmar made efforts to integrate and implement its commitments to ASEAN free trade agreements, including those with China, India, Japan, and the Republic of Korea, plus separately with Australia and New Zealand.

In learning from the experiences of its East Asian neighbors, Myanmar developed a National Export Strategy aiming to generate "sustainable export-led growth" that would create jobs and contribute to the overall socioeconomic development of the country (MOC 2015). The strategy aims to improve the export competitiveness of seven priority sectors, of which four are agrifood exports: rice; fisheries; rubber; and beans, pulses, and oilseeds. Investments have been made to improve access to finance, quality management, trade facilitation and logistics, and trade information and promotion.

After the adoption of the Export Strategy in 2015, Myanmar saw some progress. Export volumes of priority sector goods increased by approximately 30 percent in 2017, Good Agricultural Practices certifications were issued for

more than 15 crops, and promotional events for Myanmar's bean and pulses and fishery products were held abroad (MOC 2019).

However, Myanmar's export performance ranked poorly compared with that of its ASEAN counterparts. Bouët and Laborde (2019) developed a measure of trade integration that estimates trade costs in ad valorem equivalents. These costs include tariffs, nontariff measures, and the time and cost involved in border and documentary compliance. This unit allows for comparisons across countries and can serve as a measure of a country's competitiveness in international trade. Using this measure, the authors found Myanmar's export costs to be the highest among ASEAN countries, at 23 percent of the value for all goods and 59 percent for agricultural goods. The high trade costs for Myanmar were attributed primarily to the time required to successfully complete the logistical processes for exporting goods—that is, the average time needed to meet border and documentary compliance.

Impact of the triple crises on trade

The COVID-19 pandemic disrupted global supply chains through border closures, quarantine measures, and trade restrictions. In April 2020, Myanmar and neighboring China, India, and Thailand imposed border restrictions to prevent the spread of the virus. These measures closed key markets for perishable commodities, such as fruits and vegetables, which make up approximately 8 percent of total agricultural production. During this period, watermelon exports alone suffered an estimated $65 million loss (World Bank 2020). The uncertainty of border closures plus new restrictions, such as mandatory quarantine periods and restrictions on the entry of trucks and drivers, created additional costs and risks for farmers and traders. Meanwhile, higher shipping and container costs squeezed margins for sea-based exports.

Myanmar's COVID-19 Economic Relief Plan contained measures to mitigate the negative impacts of the pandemic on the economy and to promote a sustainable and inclusive recovery (GoM 2020). In the agriculture sector, the plan provided $430 million in loans to farmers to support input purchases for the 2020 monsoon production season and aimed to facilitate rice exports to maintain farmers' incentives. Measures were also taken to remove bottlenecks and fast-track the export process, including reducing the number of products requiring export licensing and waiving the 2 percent export tax. Moreover, investments were made to promote the use of e-commerce and mobile financial payments to create markets for products domestically and abroad.

As a result of the political instability generated by the military coup and recent global price shocks, the economic situation for Myanmar has further

declined. Agricultural exporters face increasing logistical challenges in moving their commodities to export markets. Active conflict near major export nodes has temporarily closed borders and increased the risk of harassment, rent-seeking, and threats to personal safety at security checkpoints. These risks, compounded by the global increase in fuel costs, have had significant impacts on freight charges and the viability of agricultural exports, as their profitability remains highly contingent on freight rates. Furthermore, these logistical challenges have added to the increasing cost of agricultural inputs for farmers and reduced the competitiveness of agricultural exports.

The military regime has also imposed strict foreign currency controls to address shortages in its foreign reserve levels. The floating exchange rate has been abolished and replaced with a fixed reference rate against the US dollar. As of December 2022, the difference between the fixed reference rate and the black market rate was approximately 20 percent. Foreign exchange surrender requirements have been placed on exporters, requiring them to convert 65 percent of export earnings into Myanmar kyat at the overvalued official reference rate within one business day. This requirement has acted as a tax of approximately 20 percent, squeezing exporters' margins.

The policy environment continues to become more restrictive and unpredictable. In April 2022, only 11 percent of agricultural exports were subject to export licensing. This increased to 65 percent of agricultural products by November 2022 and then to all exports by April 2023. This is a regression in the progress made prior to 2020, when the use of export licenses declined from approximately 90 percent to 11 percent of all exports. Meanwhile, the requirements for attaining an export license can be arbitrary. For example, businesses must have a balance of exports and imports, and the issuing of new export licenses has been suspended for certain commodities to regulate domestic prices. These licensing requirements affect trade facilitation, increase trade and compliance costs for traders, create uncertainty in traders' ability to access export markets, and provide incentives for trade through informal channels.

Conclusions and policy recommendations

This chapter focuses on the role of agrifood exports in Myanmar and assesses their potential to broaden economic growth and agricultural transformation. Agrifood exports now make up about one-third of Myanmar's total exports, and their share of both total exports and as a ratio of total GDP has risen in recent years. While the share of agriculture's contribution to Myanmar's total

GDP has fallen, which is a common occurrence in national economic transformation processes, growth in agrifood exports has been more rapid than broad economic growth. If Myanmar can further enhance its position as a net agrifood exporter (Figure 14.13), agrifood exports will not only create increased income for farmers, traders, processors, and other players along agrifood value chains but also help the country with foreign exchange earnings to support the necessary imports of many manufactured products embodied with modern technology.

Myanmar's agrifood exports are highly concentrated in a few commodities with limited value-addition through processing. These include pulses, fish, rice, rubber, maize, cattle, groundnut, sesame, melons, and banana. Exports of agrifood products are destined primarily for Asian countries. China has become the most important trading partner, with Thailand and India ranking next. The concentration in both commodities and country destinations implies that these currently dominant commodities and export markets will continue to play important roles in agrifood export growth in the immediate future. Moreover, except for pulses exported to India, for most of the countries it supplies, Myanmar is not now the dominant source of their imported agrifood commodities. One implication of this is that there is potential for future growth in many of these markets through increasing the share of the agrifood imports they obtain from Myanmar. This growth potential depends primarily on Myanmar's ability to expand its supply of agrifood export commodities by improving productivity and quality and by improving the country's competitiveness internationally. Meanwhile, when a market for a dominant export commodity is highly concentrated, reliable market access is important, such as in pulse exports to India and in rubber, maize, cattle, and melon exports to China. Long-term government-to-government trade agreements between Myanmar and dominant importing countries are important for improving access to such export markets.

Increased trade market diversification is important to reduce risks to Myanmar's exports caused by policy uncertainty in the dominant importing countries. For pulses, exploring market opportunities in countries beyond India will require diversification in the varieties of pulses produced for export. The rice export market is relatively more diverse than that of pulses. Continuing such market diversification will require Myanmar to improve the quality of its rice to meet the standards of higher-value export markets beyond China.

While fish is still an important agrifood export, the share of fish exports in total agrifood exports has fallen. This is primarily because Myanmar's marine

fisheries have been overexploited. Many of its wild capture products are unlikely to grow much more in the future. Farmed fisheries represent the best prospect for growing fish exports. However, except for farmed shrimp, most of the growth potential for aquaculture lies in supplying Myanmar's domestic market as a substitute for declining capture fisheries production.

Fruit and other horticultural exports have grown rapidly in recent years. Exports of melons, particularly watermelons and muskmelons, and bananas have dominated recent growth. As perishable commodities, fresh fruit exports are constrained by seasonality and difficulties in transportation, storage, and other logistics. Currently, border trade with China is the major export channel, but it is often influenced by trade policy changes. For Myanmar to be able to penetrate new markets in countries in the European Union and the Middle East, producers and exporters will need to follow global Good Agricultural Practices and other product certification requirements.

In conclusion, the following policy recommendations are important for increasing Myanmar's export competitiveness and making agrifood exports an important driver of its economic growth:

- Remove export licensing requirements on key agrifood export commodities and streamline export customs clearance requirements.
- Continue investments to improve the quality of key agrifood export commodities to meet Good Agricultural Practices and other standards to take advantage of preferential trade agreements under the WTO Global System of Preferences. Continue efforts to diversify trade to markets in advanced economies.
- Increase agricultural productivity through improved access to extension and services, financing, and inputs and by removing barriers in the supply chain.
- Build capacity to trace production processes to meet the product traceability standards required in countries where Myanmar seeks to export its agrifood products.
- Seek bilateral or multilateral agreements with regional trade partners to improve trade policy and market stability, including around sanitary and phytosanitary protocols.
- Provide producers, traders, processors, and agrifood exporters in Myanmar with market information on demand for goods, prices, and the standards and procedures required for exporting to specific countries.

- Promote Myanmar's products in targeted foreign markets and provide farmers and processors with information about any new export opportunities.

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