



Assessment Study and Policy Recommendations on Market Competitiveness and Trade Facilitation of Myanmar's Agriculture Products



## Assessment Study and Policy Recommendations on Market Competitiveness and Trade Facilitation of Myanmar's Agriculture Products

This Assessment Study and Policy Recommendations draw on the studies entitled "Market Competitiveness and Trade Facilitation of Myanmar's Rice, Green Gram, Maize, Soybean, Watermelon and Fishery Products" which were prepared by the national consultants for the Ministry of Agriculture, Livestock and Irrigation with assistance of "Improvement of Agriculture Trade Facilitation to Encourage Supply Chain of Myanmar's Agriculture Products in Collaboration with LMC Counties Project".



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**Improvement of Agriculture Trade Facilitation to Encourage  
Supply Chain of Myanmar's Agriculture Products in Collaboration with  
LMC Countries Project**

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## Contents

EXECUTIVE SUMMARY .....	x
ACRONYMS AND ABBREVIATIONS .....	xii
1. Introduction .....	1
1.1 Purpose .....	1
1.2 Importance of agriculture in Myanmar economy .....	1
1.3 Myanmar’s participation in regional cooperation for competitiveness and trade facilitation of agricultural goods .....	4
1.3.1 Myanmar’s commitment to ASEAN-Regional Comprehensive Economic Partnership (RCEP).....	4
1.3.2 ASEAN-CHINA Free Trade Area (ACFTA) .....	5
1.3.3 Myanmar’s participation in CMEC and LMC .....	6
1.3.4 Trade Development between Myanmar and China .....	10
1.3.5. Negotiations towards an ASEAN-Canada Free Trade Agreement.....	10
2. The Agricultural Development Policies and Strategies .....	12
2.1 Agriculture Development Strategy and Investment Plan (ADSP) .....	12
2.2 Myanmar Rice Sector Development Strategy (MRSDS) .....	12
2.3 National Export Strategies (NES).....	12
3. Institutional Arrangement for Trade Facilitation Process in Myanmar .....	14
4. Methodology used in the study .....	16
4.1 Price Competitiveness/ Differentials .....	16
4.2 Productivity and Quality Competitiveness .....	16
4.3 Revealed Comparative Advantage (RCA).....	17
4.4 Trade Potential/Export Potential.....	18
4.5 SWOC Analysis on product competitiveness and trade facilitation.....	18
5. Summary Assessment of the Consultants’ Reports: The Competitiveness and Trade Facilitation of Selected Agricultural Commodities .....	20
5.1 Rice .....	21
5.1.1 Importance in Myanmar’s economic development .....	21
5.1.2 Importance of product in both domestic and export markets .....	21
5.1.3 Trade development between Myanmar and China .....	23
5.1.4 Domestic consumption and export .....	24
5.1.5 Value chain of the product.....	25
5.1.6 Challenges in production and export .....	27
5.1.7 Trading partners and export share in international market .....	29
5.1.8 Product Competitiveness, export potential and comparative advantage .....	32
5.1.9 Strength, Weakness, Opportunities and Challenges (SWOC).....	38
5.2 Maize .....	39
5.2.1 Importance in Myanmar’s economic development .....	39
5.2.2 Role of maize in both domestic and export markets.....	40
5.2.3 Trade development between Myanmar and China .....	41

5.2.4	Domestic consumption and export .....	42
5.2.5	Value chain of the maize .....	43
5.2.6	Challenges in production and export .....	44
5.2.7	Trading partners and export share in international market .....	45
5.2.8	Product Competitiveness, export potential and comparative advantage .....	46
5.2.9	Strength, Weakness, Opportunities and Challenges (SWOC).....	49
5.3	Green Gram .....	50
5.3.1	Importance in Myanmar’s economic development .....	50
5.3.2	Importance of product in both domestic and export markets .....	51
5.3.3	Trade development between Myanmar and China .....	51
5.3.4	Domestic consumption and export .....	52
5.3.5	Value chain of the product.....	52
5.3.6	Challenges in production and export .....	53
5.3.7	Trading partners and export share in international market .....	53
5.3.8	Product Competitiveness, export potential and comparative advantage .....	55
5.3.9	Productivity and Quality Competitions .....	55
5.3.10	Analysis of the Trade Potential of Green Gram Exports.....	57
5.3.11	Revealed Comparative Advantage (RCA) and Revealed Symmetric Comparative Advantage (RSCA).....	58
5.4	Soybean.....	59
5.4.1	Importance in Myanmar’s economic development .....	59
5.4.2	Importance of product in both domestic and export market.....	59
5.4.3	Trade development between Myanmar and China .....	60
5.4.4	Domestic consumption and export .....	62
5.4.5	Challenges in production and export .....	62
5.4.6	Trading partners and export share in international market .....	63
5.4.7	Product Competitiveness, export potential and comparative advantage .....	65
5.4.8	Market demand of trading partners.....	68
5.4.9	Market Chain (Producer-Domestic Processors-Exporter).....	69
5.4.10	Strength, Weakness, Opportunities and Challenges (SWOC).....	70
5.5	Watermelon.....	71
5.5.1	Importance in Myanmar’s economic development .....	71
5.5.2	Importance of product in both domestic and export markets .....	72
5.5.3	Trade development between Myanmar and China .....	72
5.5.4	Domestic consumption and export .....	73
5.5.5	Value chain of the product.....	73
5.5.6	Challenges in production and export .....	74
5.5.7	Trading partners and export share in international market .....	75
5.5.8	Product Competitiveness, export potential and comparative advantage .....	76
5.5.9	Strengths, Weaknesses, Opportunities and Challenges (SWOC).....	79
5.6	Aquatic products.....	80
5.6.1	Importance in Myanmar's economic development .....	80

5.6.2	Importance of product in both domestic and export markets .....	81
5.6.3	Trade development between Myanmar and China .....	82
5.6.4	Domestic consumption and export .....	83
5.6.5	Value Chain of the Product (Producers-Domestic Market- Export) .....	85
5.6.6	Challenges in production and export .....	87
5.6.7	Trading partners and export share in international market .....	89
5.6.8	Product Competitiveness, export potential and comparative advantage .....	94
5.6.9	Strengths, Weaknesses, Opportunities and Challenges (SWOC).....	100
6.	Policy Recommendations and Action Plans .....	103
6.1	Key points.....	103
6.2	Rice.....	104
6.2.1	Policy Recommendations .....	104
6.2.2	Action Plan on the Recommendations.....	105
6.3	Maize .....	106
6.3.1	Recommendations.....	106
6.3.2	Action Plan on the Recommendations.....	108
6.4	Green Gram .....	110
6.4.1	Recommendations.....	110
6.4.2	Action Plan on Recommendations.....	111
6.5	Soybean.....	112
6.5.1	Recommendations.....	112
6.5.2	Action Plan on Recommendations.....	113
6.6	Watermelon.....	114
6.6.1	Recommendations.....	114
6.6.2	Action Plan on Recommendations.....	115
6.7	Aquatic products .....	116
6.7.1	Recommendations.....	116
6.7.2	Action Plan on Recommendations.....	117
7.	References .....	120

## List of Tables

Table 1.	Share of Agriculture, Livestock, Fishery and Forestry in GDP (At Constant Producers' Prices) .....	2
Table 2.	Export of Agricultural Products.....	3
Table 3.	The Projects (Lancang-Mekong Cooperation Special Fund) implemented by concerned Departments under MOALI.....	9
Table 4.	Exports of rice and broken rice by sea and border trade during the fiscal year 2010-2021 to 2022-2023 .....	22
Table 5.	Export of Rice and Broken Rice by Fiscal Years (April to March) .....	22
Table 6.	Rice Export from Myanmar to China (2014 to 2023) .....	24
Table 7.	Rice (HSC:1006) Top Importing Countries in the World (2023).....	29
Table 8.	Rice (HSC:1006) Top Importing Countries in Asia (2023) .....	30
Table 9.	Top (10) Rice (HSC:1006) Exporters in Asian Countries (2023) .....	31
Table 11.	Asia's Largest Broken Rice (HSC:100640) Exporters (2023) .....	32
Table 12.	Export of Myanmar's Broken Rice (HSC: 100640) in 2023 to Countries in Asia.....	32
Table 13.	Nominal Protection Rate (NPR) of Myanmar Rice (HSC: 1006) (2023).....	33
Table 14.	Nominal Protection Rate (NPR) of Myanmar's Broken Rice (HSC: 100640) (2023) ....	33
Table 15.	Paddy Yield (MT/Ha) in Myanmar and other Asian Countries .....	34
Table 16.	Comparison of FOB Prices of Rice (HSC:1006) of Myanmar and Asian Major Rice Exporter (US\$/Ton) .....	34
Table 17.	Comparison of Export Quality of Rice (HSC:1006) between Myanmar and other Asian Countries.....	35
Table 18.	Comparison of FOB Prices of Broken Rice (HSC:100640) between Myanmar and other Exporting Countries in Asia (US\$/MT) .....	35
Table 19.	Comparison of Export Quality of Broken Rice (HSC: 100640) between Myanmar and Other Asian Countries .....	36
Table 20.	Trade/Export Potential of Myanmar Rice (HSC. 1006) in 2023 .....	36
Table 21.	Trade/Export Potential of Myanmar Broken Rice (HSC:100640) in 2023 .....	37
Table 22.	Global market comparative advantage (RCA and RSCA) of Myanmar Rice (HSC: 1006) .....	37
Table 23.	Global market comparative advantage (RCA and RSCA) of Myanmar broken rice (HSC: 100640).....	38
Table 24.	Sown Area, Yield and Production of Maize in Myanmar (2012-2013 to 2022-2023)....	40
Table 25.	Top Asian Countries Importing maize (HSC: 1005) from Myanmar (2023).....	43
Table 26.	Ten Largest Maize Producing Countries and Myanmar.....	46
Table 27.	National Protection Rate (NPR) of Myanmar Maize (HSC: 1005) (2023) .....	47

Table 28.	Maize Yield Comparison of Myanmar and other Asian Countries (MT/Ha).....	47
Table 29.	Comparison of FOB Prices of Maize Grain (HSC:1005) Exported by Myanmar and Asian Countries during (2014-2023) (US\$/MT) .....	47
Table 30.	Comparison of Quality and Price Status of Maize Export (HSC: 1005) from Myanmar and Other Asian Countries (FOB Price).....	48
Table 31.	Myanmar Maize Export Trade Potential (HSC: 1005) 2023.....	48
Table 32.	Comparative Advantage of Myanmar maize (HSC: 1005) in Global Market (RCA and RSCA).....	49
Table 33.	Contribution of Green gram in Pulses production in Myanmar (2023).....	51
Table 34.	Green gram and Matpe (HSC: 071331) Top Importing Countries in Asia (2023).....	54
Table 35.	Green Gram and Matpe (HSC: 071331) Top Exporting Countries in Asia (2023).....	54
Table 36.	Green Gram and Matpe (HSC: 071331) Top Importing Countries in Asia from Myanmar .....	55
Table 37.	Green gram and Matpe (HSC: 071331) Nominal Protection Rate (NPR) (2023).....	55
Table 38.	Myanmar and Asia Green Gram and Matpe Production by Year (million MT) .....	56
Table 39.	Green gram and Matpe yield (MT/Ha) of Myanmar and Asian countries .....	56
Table 40.	Comparison of FOB Prices of Green Gram and Matpe (HSC: 071331) Exported from Myanmar and other Asian Countries (US\$/Ton).....	57
Table 41.	Comparison of Quality and Price Value of Green Gram (HSC: 071331) Exported by Myanmar and Other Asian Countries (FOB Price) .....	57
Table 42.	Myanmar Green and Matpe (HSC: 071331) Trade Potential (2023) .....	58
Table 43.	Global Market Comparative Strength (RCA and RSCA) of Myanmar Green and Matpe (HSC: 071331).....	58
Table 44.	Soybean production ('000 Ha and MT).....	59
Table 45.	Exports of various peas and beans by Myanmar in 2023-24.....	60
Table 46.	Top 10 Soybean (HSC: 1201) Importing Countries in Asia (2023).....	61
Table 47.	Soybean (HSC: 1201) Exporting Top Countries in Asia (2023).....	61
Table 48.	Top Asian Countries Importing Myanmar Soybean (HSC: 1201) (2023) .....	62
Table 49.	Top 10 Importing Countries of Soybeans in Asia (HSC: 1201) (2023).....	63
Table 50.	Soybean (HSC: 1201) Top Ten Exporting Countries (2023) .....	64
Table 51.	Top Asian Countries importing Myanmar Soybean (HSC: 1201) (2023).....	64
Table 52.	Wholesale Price of Soybean (HSC: 1201) of Myanmar and Asian Countries (US\$/MT) (2023).....	65
Table 53.	Nominal Protection Rate (NPR) of Myanmar Soybean (HSC: 1201) (2023) .....	65
Table 54.	Yield of Soybean in Myanmar and Asian Countries (MT/Ha).....	66
Table 55.	FOB Price of Soybean in Myanmar and Exporting Asian Countries (US\$/MT) .....	66

Table 56. Comparison of Quality and Price (FOB Price, US\$/MT) of Soybean (HSC:1201) among Myanmar and other Exporting Asian Countries .....	67
Table 57. Trade/Export Potential of Soybean (HSC: 1201) from Myanmar (2023) .....	67
Table 58. Revealed Comparative Advantage (RCA) and Revealed Symmetric Comparative Advantage (RSCA) of Myanmar Soybean (HSC: 1201).....	68
Table 59. Watermelon (HSC:080711) Importing Countries from Myanmar (2023) .....	75
Table 60. Top Asian Countries Exporting Watermelon (HSC:080711).....	76
Table 61. Nominal Protection Rate (NPR) of Myanmar Watermelon (HSC:080711) (2023) .....	76
Table 62. Watermelon (HSC:080711) Production in Myanmar and Asian Countries (Million MT/Year) .....	77
Table 63. Comparison of FOB Price/Ton of Watermelon among Exporting Countries in Asia and Myanmar (US\$ Million) .....	77
Table 64. Comparable Price and Quality of Watermelon (HSC: 080711) between Asian Exporting Countries and Myanmar (FOB Price).....	78
Table 65. Trade Potential of Myanmar Watermelon (HSC 080711) (2023) .....	78
Table 66. Comparative Advantage of Myanmar Watermelon (HSC: 080711) in World Market (RCA and RSCA) .....	79
Table 67. Total fishery production of Myanmar by quantity (MT).....	80
Table 68. Production of major species/groups of species from aquaculture of Myanmar by quantity (MT).....	80
Table 69. Export of aquatic products of Myanmar by quantity and value .....	82
Table 70. Export of Aquatic products from Myanmar to China from 2014-2015 to 2022-2023 ....	83
Table 71. Annual Export Volume and Value of Aquatic Products by various Trade Routes from Fiscal Year 2014-2015 to Fiscal Year 2022-2023 .....	84
Table 72. Export volume and value of aquatic products exported abroad in the 2022-2023 .....	84
Table 73. Top 10 Seafood Products Exported Abroad in Fiscal Year 2022-2023 .....	85
Table 74. Volume and export value of Myanmar aquatic products exports to major trading countries in the 2022-2023 .....	90
Table 75. Live fish (HSC:0301) Top Exporting Asian Countries (2023) .....	91
Table 76. Myanmar Live fish (HSC:0301) Top Exporting Asian Countries (2023).....	91
Table 77. Fresh Fish (HSC:0302) Top Exporting Countries in Asia (2023).....	92
Table 78. Myanmar Fresh Fish (HSC:0302) Top Importing Countries (2023).....	92
Table 79. Myanmar Frozen Fish (HSC:0303) Top Importing Countries in Asia (2023) .....	93
Table 80. Nominal Protection Rate (NPR) Myanmar's Eel (HSC: 030192) (2023) .....	94
Table 81. Nominal Protection Rate (NPR) of Myanmar's Live Fish (HSC: 0301) (2023).....	94



Table 82. The FOB Price of Live Fish (HSC:0301) of Myanmar and Exporting Countries in Asia (US\$/MT) .....	95
Table 83. Comparison of Quality and Price (FOB) of Live Fish (HSC:0301) between Myanmar and Other Exporting Countries in Asia .....	95
Table 84. The FOB Prices of Fresh Fish (HSC:0302) in Myanmar and other Asian Countries (US\$/MT) .....	96
Table 85. Comparison of Quality and Price (FOB) of Fresh Fish (HSC:0302) in Myanmar and other Exporting Countries in Asia .....	97
Table 86. FOB Prices of Frozen Fish (HSC:0303) in Myanmar and other Exporting Countries in Asia (US\$/MT) .....	97
Table 87. Shows a comparison of fish quality and price value conditions for frozen fish (HSC: 0303) exports of Myanmar and other Asian countries .....	98
Table 88. Revealed Comparative Advantage (RCA) and Revealed Symmetric Comparative Advantage (RSCA) of Myanmar Aquatic products.....	100

## List of Figures

Figure 1. Rice Flow in Myanmar.....	27
Figure 2. Share of Myanmar rice export to trading partners .....	29
Figure 3. Share of Myanmar broken rice export to trading partners .....	29
Figure 4. Maize Value Chain Diagram.....	44
Figure 5. Value Chain of Watermelon.....	74



*This Assessment Study and Policy Recommendations draw on the comprehensive studies entitled “Market Competitiveness and Trade Facilitation of Myanmar’s Rice, Green gram, Maize, Soybean, Watermelon and Aquatic products” were done by the national consultants and prepared for Ministry of Agriculture, Livestock and Irrigation (MOALI) with assistance of “Improvement of Agriculture Trade Facilitation to Encourage Supply Chain of Myanmar’s Agriculture Products in Collaboration with LMC Counties Project, funded by Lancang-Mekong Special Fund (2023)”. This research paper has been prepared solely under the responsibility of the research team, based on the collection and analysis of quantitative data. The views and findings expressed herein are those of the authors and do not represent any institution or organization.*

## EXECUTIVE SUMMARY

The study focuses on competitiveness, export potential and trade facilitation processes of the agricultural commodities (rice, maize, green gram, soybean, melon and aquatic products) which are economically importance of the country. Myanmar as a member of ASEAN is participating in regional cooperation for competitiveness and trade facilitation of agricultural goods. The ASEAN-China Free Trade Area (ACFTA) was signed on 1<sup>st</sup> January 2010. The agreements under the framework of ACFTA reflect the economic development of Myanmar as a member of ASEAN since China is currently the second largest trading partner of Myanmar after Thailand, and is the major source for imports. Myanmar is a key participant in the Lancang-Mekong Cooperation (LMC) which is a sub-regional cooperation mechanism involving six countries: China, Myanmar, Thailand, Laos, Cambodia, and Vietnam.

In order to facilitate trade of agricultural goods between Myanmar and China, the SPS Protocols on rice & broken rice, dry cocoon, life cattle and buffalo, maize, banana, soybean, pineapple, wild aquatic products and farmed aquatic products had been signed between the Ministry of Agriculture, Livestock and Irrigation of Myanmar and the General Administration of Customs (GACC) of China. SPS protocols to be signed for other agricultural crops, live cattle, frozen meat, edible aquatic products and ornamental marine fish are on-going internal process by both sides. The sub-sector agricultural policy in Myanmar which launched in 2016, “Marketing, Value-added Processing and Export Policy” highlights the strategic thrusts regarding product competition, trade facilitation and export promotion. The competition in export of rice is strong in the region. Myanmar exported rice to China, accounting (45) percent of its export volume to Asian countries in 2023. Similarly, Myanmar's main importer of broken rice is China, which was accounted as (79) percent of its total exports to Asian countries.

Myanmar’s rice is found to be able to export to their rice markets in competition with other exporting countries. Myanmar broken rice is exported to European and Asian countries such as Belgium, China, Hong Kong and Malaysia competitively. The global market comparative strength of Myanmar rice and broken rice is substantial. Efforts need to be made not only to boost the yield but to improve the quality of rice also in Myanmar in order to compete with other exporting countries in Asia. Maize is a crop that is mainly relied on domestic animal feed and has potential for export. The SPS Protocol for export of maize had been signed between Ministry of Agriculture, Livestock and Irrigation of Myanmar and the General Customs Authority (GACC) of China in 2022. About (40) percent of maize production in Myanmar is mainly used in local livestock foodstuffs, and (60) percent of its production is exported. According to the ASEAN Free Trade Agreement (AFTA), Myanmar has the right to export maize to Thailand through the border with tax exemption since 2022. More than (80) percent of Thailand's maize imports are mainly imported from Myanmar. Export potential of maize has also in China and India. Myanmar’s maize is competitive in export and is highly comparative advantage in Asian countries. Green gram plays an important role in the development of the country's economy as major source of export income. Myanmar’s green gram is well competitive, comparatively strong and has trade potential in Asian market. Soybean has great



potential to contribute to the domestic livestock sector, to reduce import of soybean paste from abroad for animal feed, and to increase the export of surpluses to neighboring countries. Thailand dominates Myanmar's soybean market. China is the largest importer of soybean in Asia. Watermelon is exported to China through the border route, as well as to Thailand and India. Export of watermelon is well competitive and comparatively strong, however, market instability still exists. Myanmar is ranked 18<sup>th</sup> in the countries with the highest production of aquatic products from saltwater fishing worldwide, and stand in 4<sup>th</sup> rank among the countries with the highest fish production from inland freshwater fishing. It has opportunities to earn more income for the country and has opportunity of creation to produce various aquatic products. Aquatic products are exported about (10) percent of total production value. Myanmar's aquatic products are exporting to more than 40 countries in which China is included. More than 20 types of aquatic products are exported to China by using maritime and air transport as well as border trade. Myanmar's live fish and eel are competitive in export market. However, it is necessary to improve other aquatic products to achieve better quality and price in export market. For the competitiveness and trade facilitation of aquatic products, there are existing main challenges such as, irregular supply of electricity and fuel, inadequate quality food for fish and supply of fingerlings, lack of capacity to produce high-value aquatic products and trained technicians, requirement of advanced technical trainings for quality improvement and food safety, and Good Manufacturing Practices (GMP).

## ACRONYMS AND ABBREVIATIONS

AMD	Agricultural Mechanization Department
ASEAN	Association of South East Asia Nations
DAR	Department of Agriculture Research
CITES	Convention on International Trade in Endangered Species
DOA	Department of Agriculture
DOF	Department of Fishery
DOP	Department of Planning
EU	European Union
FAO	Food and Agriculture Organization
FOB	Freight on Board
GAA	Global Aquaculture Alliance
GACC	General Administration of Customs of the People's Republic of China
GMP	Good Management Practices
IPM	Integrated Pest Management
IWUMD	Irrigation and Water Utilization Management Department
MFF	Myanmar Fishery Federation
MOALI	Ministry of Agriculture Livestock and Irrigation
MOC	Ministry of Commerce
MOCRD	Ministry of Cooperatives and Rural Development
MOEP	Ministry of Electrical Power
MOGE	Ministry of Gas and Energy
MOPF	Ministry of Planning and Finance
MRF	Myanmar Rice Federation
MPBMSMA	Myanmar Pulses, Beans, Maize and Sesame Seeds Merchant Association
SEAFDEC	Southeast Asian Fisheries Development Center
SPS	Sanitary and Phytosanitary

## **1. Introduction**

### **1.1 Purpose**

The study made by the national consultants covers six commodities such as rice, maize, green gram, soybean, melon and aquatic products which are economically importance of the country. The study centers on competitiveness, export potential and trade facilitation processes of the agricultural commodities through market analysis and conduct assessments of the trade facilitation procedures and coordination mechanism of Lancang-Mekong Coordination (LMC) countries, especially China. This paper will express the summary of the important elements which are elaborated in the consultants' report. Based on the outcomes of the study, this report examines the opportunities and constraints in trade facilitation and gives policy recommendations and action plan to increase competitiveness in export and to improve trade facilitation of agricultural products. Specific objectives of the project are:

- (1) to review the existing policies, programs, investment processes, and institutional arrangement for trade facilitation which are being practiced by concerned agencies;
- (2) to analyze the prices, production, marketing, and quality competition of agricultural products of Myanmar with other competing countries;
- (3) to analyze competitiveness of the export agricultural commodities (rice, maize, green gram, soybean, watermelon and aquatic products), comparative advantage and trade potential of its commodities in exporting to trading partner countries;
- (4) to suggest policy recommendations on current trade strategies and implementation measures for trade facilitation in order to develop sustainable trade of agricultural products.

The main beneficiaries from this project are traders and wholesalers from Myanmar and LMC countries, especially China. In addition, the government officials participating in this project will benefit knowledge and experiences through multilateral and bilateral consultation meetings, exchange visits and analysis skill on market competitiveness and trade facilitation of agriculture products. The farmers from Myanmar will also gain increased income and better livelihoods since the agricultural products in Myanmar are competitive in the regional as well as international markets. Last but not the lease, marketing efficiency of Myanmar agricultural products will be improving through trade facilitation process between Myanmar and LMC countries.

### **1.2 Importance of agriculture in Myanmar economy**

Agriculture, livestock, fisheries and forestry, is indeed critically important for Myanmar economy in a multiple of ways and also the main source of raw materials and other inputs for the local agro-processing industries. Value of agricultural production (agriculture, livestock, fisheries

and forestry) contributed over 23.7% of total GDP (at constant producer's price).<sup>1</sup> About 60.7% of jobs are created by the agriculture sector which is also known as an important market for domestic manufactures.

Table 1. Share of Agriculture, Livestock, Fishery and Forestry in GDP (At Constant Producers' Prices)

Year	GDP (Millions of Kyat)				Share in GDP (%)			
	Agriculture	Livestock & Fishery	Forestry	Total	Agriculture	Livestock & Fishery	Forestry	Total
2014/15	11113012.3	4529326.4	126432.6	15768771.3	21.1	8.6	0.2	29.9
2015/16	11357413.2	4820334.8	128429.9	16306177.9	20.1	8.5	0.2	28.9
2016/17	11261660.5	4917638.2	51633.7	16230932.4	18.8	8.2	0.1	27.1
2017/18	1127222.2	5099501.9	66833.2	16439257.3	17.7	8.0	0.1	25.8
2018/19	12892194.0	6908242.0	71913.9	19872349.9	14.5	7.7	0.1	22.3
2019/20	12936166.4	7193024.8	67893.8	20197085.0	14.1	7.8	0.1	22.0
2020/21	12945535.5	7409502.8	51629.4	20406667.7	15.0	8.6	0.1	23.6
2021/22	10395687.6	4220167.2	18950.8	14634815.6	18.3	7.4	0.1	25.8
2022/23	13598693.9	7800855.2	38779.6	21438328.7	15.0	8.6	0.1	23.7

Source: Myanmar Agricultural Statistics, CSO, MOPF

Historically, one of the most striking features of economic development is the relative decline of the agricultural sector in growing economies. Agriculture's share of GDP (at constant producers' price) stood at 29.9% in 2014-2015 and has since gradually declined to 22.0% in 2019-2020. However, GDP of agriculture sector increased again steadily and stood at 23.7% in 2022-2023. In terms of value of agricultural sector in GDP stood at 15768771.3 (Million Kyat) in 2014-2015 and increased to 21438328.7 (Million Kyat)<sup>2</sup> in 2022-2023.

The population of Myanmar in 2022/23 was estimated 55.7 million with a growth rate of about 1.30%.<sup>3</sup> The estimated number of farm families was 7.17 million who were actually cultivating about 33.17 million acres (13.4 million ha) out of a total area of about 167 million acres (68 million ha) of total land area of the country. The average farm size was about 2.3 ha (5.8 acres), which, although seemed to be small by itself, was larger than the average farm sizes found in India, Indonesia and China. It should be cautioned, however, that it was an average figure, which did not represent the distribution of land sizes throughout the country. A large majority of farm families in Myanmar (about 70%) in 2022/23 was noted to be operating a farm unit of less than 2 ha (5 acres) on over two-

<sup>1</sup> Myanmar Agricultural Statistics (2014-1015 to 2022-2023), CSO, MoPF

<sup>2</sup> Myanmar Agricultural Statistics, MoPF

<sup>3</sup> Estimate based on population in 2021-22



thirds of the total cultivated land area, and the other 30% of farm families are tilling the land size from about 4.1 ha (10 acres) to more than 41 ha (100 acres).<sup>4</sup>

Large varieties of tropical and sub-tropical crops (numbering more than 60 different crops) can be grown in Myanmar as a result of the varied climatic conditions, which range from tropical to sub-tropical, and from low rainfall to high rainfall regions. The northern part of the country which accounted for about one-fourth of the total national area has the sub-tropical climate, while the southern three-fourth of the country has the tropical climate.

Table 2. Export of Agricultural Products

Commodity	Unit	2018/19	2019/20	2020/21	2021/22 (Apr-Mar)	2022/23 (Apr-Mar)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
<b>1. Rice &amp; Rice Products</b>						
Rice	US\$ (Million)	387.08	424.91	302.88	434.62	503.43
	MT (000)	1218.0	1286.0	746.0	1227.3	1220.1
Broken Rice	US\$ (Million)	130.49	227.66	161.58	226.78	305.41
	MT (000)	490.2	845.8	483.6	725.5	874.4
2. Maize	US\$ (Million)	44.82	125.54	62.82	196.0	593.04
	MT (000)	205.0	595.8	260.2	789.6	1911.6
<b>3. Pulses</b>						
Black Gram	US\$ (Million)	325.66	436.98	515.83	506.60	531.58
	MT (000)	686.7	595.8	665.1	687.2	650.1
Green Gram	US\$ (Million)	173.59	224.01	236.42	480.12	489.15
	MT (000)	234.6	263.6	260.40	600.7	691.5
Soy Bean	US\$ (Million)	*	4.35	2.59	1.24	-
	MT (000)	**	11.4	4.1	2.0	-
<b>4. Marine Products</b>						
Fish	US\$ (Million)	149.32	189.10	213.79	276.21	395.86
	MT (000)	107.9	122.5	118.8	143.4	346.7
Prawn	US\$ (Million)	69.36	57.72	57.92	72.01	92.86
	MT (000)	11.5	8.8	9.8	19.3	24.6
Dry Sea Maw (Fish)	US\$ (Million)	0.57	0.13	0.82	0.88	1.43
	MT (000)			0.2	0.2	0.2
Dried Fish	US\$ (Million)	4.15	6.08	9.93	13.06	5.38
	MT (000)	2.1	2.3	4.8	8.0	2.7
Crabs	US\$ (Million)	35.29	37.12	65.11	54.87	94.07
	MT (000)	4.1	3.8	10.3	9.5	19.5
Others	US\$ (Million)	34.99	43.02	42.47	34.52	126.80

Source: Myanmar Agricultural Statistics (2014-1015 to 2022-2023), CSO, MOPF:

\* Less than 0.005 US\$ Million; \*\* Less than 0.05 thousand Metric Ton

Annual export volume of rice is hanging at the level over 1.2 million MT while export of broken rice was increasing trend from 490.2 thousand MT in 2018-2019 to over 874 thousand MT in

<sup>4</sup> Myanmar Agricultural Statistics (2014-1015 to 2022-2023), CSO, MOPF

2022-2023. Indonesia and Philippines are the largest importers of Myanmar rice in South East Asian Region, and China and Bangladesh are the largest importers in the rest of Asia. Myanmar rice export also captured market opportunity in Africa and Europe in recent years. The recent increase in rice export has encouraged Myanmar to consider further export increases. Maize export showed stellar performance from 205 thousand MT in 2018-2019 to 1911.6 ('000MT) in 2022-2023 because of increased demand of China and Thailand across the border. Export of black gram is fairly stable over 620 thousand MT annually while export of green gram is increasing over years reaching from 234.6 thousand MT in 2018-2019 to 691.5 thousand MT in 2022-2023.<sup>5</sup> Export volume of soybean is insignificant and declining although domestic demand of livestock and fishery sectors are increasing over years. Export volume and earning of marine products including fish, prawn, dried fish, dry sea maw (fish), crabs and others are also increasing over years. The fisheries sector of Myanmar is divided into marine and freshwater fisheries sub-sectors. Marine fisheries include inshore and offshore, and freshwater fisheries include aquaculture, leasable, and open fisheries. In 2021, the contribution of capture fisheries was 81 % and aquaculture contributed 19% to the total fishery production of the country.<sup>6</sup>

The physical, social and natural environment of agriculture is therefore noted to be quite favorable for and conducive to agricultural development in general and development of crop cultivation and fisheries production in particular. Development of the agricultural sector is therefore seemed to be perceived by the policy makers as synonymous to the development of national economy so that better performance of agriculture is a pre-requisite for achieving the national economic development. Therefore, the Government has been actively formulating strategies and actions which will maximize the lessons from their experience at economic and social development after the reform measures at late 1990s and sustain growth and development into the future.

### **1.3 Myanmar's participation in regional cooperation for competitiveness and trade facilitation of agricultural goods**

#### **1.3.1 Myanmar's commitment to ASEAN-Regional Comprehensive Economic Partnership (RCEP)**

In joining the ASEAN in 1997, the Union of Myanmar committed itself to support the ASEAN's overall goals of shared regional progress and stability, supported by the achievement of food security and the alleviation of poverty in a policy environment anchored on private sector participation and national competitiveness. The Government of Myanmar (GOM) has to expose its agricultural sector to regional and global competition and modify its tariff structure within the free trade regulations of ASEAN's Free Trade Area (AFTA) and Common Effective Preferential Tariff (CEPT). Myanmar, as a member of ASEAN, has also committed itself to certain protocol of accession. In particular, harmony in trade policies among member-nations is a stated goal under the AFTA.

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<sup>5</sup> CSO, MOPF

<sup>6</sup> Fisheries country profile: Myanmar, SEAFDEC

In order to achieve free flow of goods in the region resulting to less trade barriers and deeper economic linkages among Member States, lower business costs, increased trade, and a larger market and economies of scale for businesses, the ASEAN Trade in Goods Agreement (ATIGA) was signed on 26 February 2009 and is the product of the enhancement and consolidation of all existing provisions under the CEPT-AFTA Agreement and relevant ASEAN economic agreements and instruments.

Trade facilitation as a key driver of economic development and is crucial to support regional integration to become a single market and production base in ASEAN region. During the 38<sup>th</sup> Meeting of ASEAN Economic Ministers (AEM) on 22 August 2016, the Ministers agreed to establish ASEAN Trade Facilitation Joint Consultative Committee (ATF-JCC) to give more emphasis on trade facilitation, reflecting key functions of reducing trade transaction costs, enhancing competitiveness of the products and encouraging the establishment of more production network in the ASEAN region. ATF-JCC covers the key following areas:

- a. Coordinate with relevant ASEAN sectoral bodies playing a role vis-à-vis trade facilitation and its implementation;
- b. Engage with relevant stakeholders including private sector, academic institutions, international organizations, and other relevant development partners to promote the exchange of information and generate feedback, inputs or proposals on ASEAN trade facilitation measures;
- c. Monitor the implementation of ATFF and trade facilitation measures/initiatives undertaken by the relevant sectoral bodies with ASEAN trade facilitation indicators against which the performance of trade facilitation implementation at national and regional levels can be measured and improved; and
- d. Support the acceleration and deepening of the implementation of trade facilitation measures in the AMS.<sup>7</sup>

Under the above conditions, the competitive ability of the agricultural sector and products of Myanmar requires the comprehensive and intensive knowledge and understanding of each component and functional area of the agricultural sectors and principal economic commodities. Such knowledge and understanding will enable good governance of the sector, in terms of enhancing the ability of GOM to focus on the competitive strengths to meet market demand and trade opportunities to enable higher returns and benefit from greater value-added.

### **1.3.2 ASEAN-CHINA Free Trade Area (ACFTA)<sup>8</sup>**

A Framework Agreement on Comprehensive Economic Cooperation between ASEAN and China was signed by all the ASEAN Member States and the People's Republic of China in 2002, leading to the creation of the ACFTA on 1 January 2010.

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<sup>7</sup> The 38th AEM Ministerial Meeting

<sup>8</sup> NES, page 48

In terms of consumer market size, the ACFTA is the biggest FTA in the world. The ACFTA comprises a trade in goods agreement, the ASEAN-China Trade in Goods Agreement (ACTIGA), signed in 2004, laying down the modality for tariff reduction and elimination for tariff lines categorized in either the ‘Normal Track’ or the ‘Sensitive Track’ under which products are subject to specific timeframes for tariff reduction.

An Agreement on Trade in Services between ASEAN and China, the ASEAN-China Trade in Services Agreement (ACTISA), has also been signed in 2007. It aims to liberalize and substantially eliminate discriminatory measures with respect to trade in services among the parties in various services sectors.

The third main Agreement under the ACFTA is the ASEAN-China Investment Agreement signed in 2009, aiming at creating a more transparent and facilitative environment for the investors and their investments from ASEAN and China, and giving companies from ASEAN a competitive edge to tap on thriving opportunities in China. This treatment provides elements that would ensure fair and equitable treatment for investors from both parties, including non-discriminatory treatment on nationalization or expropriation, and compensation for losses.

These agreements under the framework of ACFTA reflect the economic development of Myanmar as a member of ASEAN since China is currently the second largest trading partner of Myanmar after Thailand, and is the major source for imports.

### 1.3.3 Myanmar’s participation in CMEC and LMC

Historically, China and Myanmar have engaged in various economic collaborations, including infrastructure projects, trade agreements, and investments. Key areas of cooperation between China and Myanmar are shown as below:

- a. *Infrastructure Development*: China has been involved in developing infrastructure projects in Myanmar, such as roads, railways, and ports, which are crucial for enhancing connectivity and facilitating trade.
- b. *Trade and Investment*: Myanmar serves as an important partner for China in terms of trade, particularly in natural resources such as minerals and timber. Chinese investments in Myanmar have also expanded into sectors like energy, telecommunications, and manufacturing.
- c. *Border Economic Zones*: Both countries have established border economic zones to promote bilateral trade and economic exchanges. These zones aim to facilitate easier movement of goods and people across the border.
- d. *Belt and Road Initiative (BRI)*: Myanmar is a key participant in China's Belt and Road Initiative, which seeks to enhance regional connectivity and infrastructure development across Asia and beyond.

Myanmar is a key participant in the Lancang-Mekong Cooperation (LMC), which is a sub-regional cooperation mechanism involving six countries: China, Myanmar, Thailand, Laos,

Cambodia, and Vietnam. The LMC aims to promote comprehensive cooperation in various fields such as connectivity, production capacity, cross-border economic cooperation, water resources management, agriculture, and poverty reduction among the member countries.

Myanmar's participation in the LMC is significant for several reasons as follows:

- a. *Geopolitical Significance*: Myanmar's strategic location between South Asia and Southeast Asia makes it a crucial player in regional cooperation initiatives like the LMC. Its participation enhances connectivity and trade links between East and Southeast Asia.
- b. *Development Initiatives*: Myanmar benefits from development projects and initiatives under the LMC framework. These projects aim to improve infrastructure, boost agricultural productivity, enhance connectivity through roads and railways, and facilitate trade and investment.
- c. *Water Resource Management*: As a riparian state of the Mekong River, Myanmar is involved in discussions and projects related to water resource management within the LMC framework. This includes joint efforts to address issues such as flood control, drought management, and sustainable use of water resources.
- d. *Economic Cooperation*: Myanmar seeks to leverage the LMC platform to enhance economic cooperation with neighboring countries and attract investment in key sectors such as energy, agriculture, and manufacturing. The LMC provides a platform for joint projects and initiatives that promote economic growth and development.

Overall, Myanmar's participation in the Lancang-Mekong Cooperation underscores its commitment to regional integration, economic development, and cooperation on transboundary issues affecting the Mekong sub-region. In order to facilitate trade of agricultural goods between Myanmar and China, Myanmar had signed the nine SPS protocols up to November 2024 and coordination has been closely continuing to implement the activities as follows:

1. Protocol on Plant Inspection and Quarantine Requirements for Exporting Rice (17-1-2020)
2. Protocol of Phytosanitary Requirements for Exporting of Heat Processed Cocoon (17-1-2020)
3. Protocol of Quarantine and Health Requirements for Exporting of Slaughter Bovine (17-1-2020)
4. Protocol of Phytosanitary Requirements for Exporting of Maize (31-1-2022)
5. Protocol of Phytosanitary Requirements for Exporting of Banana (1-4-2022)
6. Protocol on Inspection, Quarantine and Veterinary Sanitary Requirements for Exporting of Wild Aquatic Products (15-9-2023)
7. Protocol on Inspection, Quarantine and Veterinary Sanitary Requirements for Exporting of Farmed Aquatic Products (15-9-2023)

8. Protocol of Phytosanitary Requirements for Exporting of Fresh Pineapple Fruits (6-11-2024)
9. Protocol of Phytosanitary Requirements for Exporting of Soybean (6-11- 2024)

In addition, the two countries are under negotiation to sign SPS Protocols such as macadamia, sweet potato, paddy, tapioca hips, avocado, pomelo, citrus, fresh betel nut, durian, edible aquatic products, etc. After signing the other SPS Protocols under negotiation, trade facilitation processes will be significantly illustrated to promote trade between the two countries.

Trade and investment facilitation as one of the agendas is included in the Five-Year Plan of Action on Lancang-Mekong Cooperation (2023-2027). Key areas of cooperation among the members of LMC are: (i) the establishment of the cooperation mechanism for custom inspection and quarantine among the six member countries; (ii) promotion in import of quality and safe agricultural and pasture products into China from member countries; (iii) advanced cooperation on the mutual recognition of Authorized Economic Operators (AEOs), pushing ahead cooperation on electronic verification of SPS certificates; and (iv) strengthen standardization exchanges and cooperation, information exchanges in conformity assessment areas, and policy and regulation transparency for market access.

Regarding trade capabilities with some neighboring countries, Myanmar has received 106 Special Funding Projects of Lancang-Mekong Cooperation: Myanmar had signed three trade agreements with the member states of Thailand, Lao, Vietnam, and China.<sup>9</sup>

The elements of the trade agreements, signed by members of the LMC are (a) to develop trade relations between the two governments, (b) to facilitate exports, imports, and the issuance of licenses in accordance with the regulations of member states; (c) to promote equal opportunity within member states with regard to custom rates, taxes, and customs supervision methods (d) while entering or departing of the ships from contracting country have the rights to receive same relevant laws and regulations which are given to ships of other non-contracting countries; (e) the exchangeable money that can be accepted by the two governments in all payments for the sale and purchase of traded goods.

Lancang-Mekong Cooperation Special Fund Projects participated by Myanmar:

- a. Special Fund (2017) consists of 10 projects, about \$2.4 million (agricultural sector, and reduced poverty, research sector, the law enforcement sector, the water resources sector, the cultural sector, and the public.)
- b. Special Fund (2018) consists of 19 projects, US\$7.3 million (Agriculture Sector, Water Resources Sector, Education, Research Sector, Welfare Sector, Capacity) Promotion, information sector, entrepreneurship, the fight against drugs, the border trade sector, the promotion of women's capacity, and rural development.)

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<sup>9</sup> Department of Planning, MOALI

- c. Special Fund (2020) consists of 22 projects, about \$6.3 million (agriculture, water resources, education, social and the cultural sector, the research sector, the information sector, the law enforcement sector, the human resources sector, the investment sector).
- d. Special Fund (2021) consists of 21 projects with US\$6.1 million (Unconventional Security, Workplace Education, Human Resources, Disaster Prevention, Animal Disease Vaccine Production, Science and Technology, Culture, Agriculture, Environmental Conservation, Forestry, Border Trade, Travel, Financial Sector)
- e. Special Fund (2022) consists of 20 projects, \$5.0 million (cultural sector, agriculture sector, paradise. the role of poverty, the fight against poverty, the role of capacity-building, the science and technology sector, the role of indigenous affairs and vocational education)
- f. Special Fund (2023) consists of 14 projects, \$3.8 million (agriculture, agriculture, electricity production, environmental conservation, quality enhancement, science and technology, trade and tourism).

Such projects can benefit at least three countries in the Mekong region and are projects that contribute to the development of the Mekong region.

Under the Lancang-Mekong-Cooperation Program, China established a special fund in 2017, allowing the Mekong countries to implement national projects annually. The Special Fund for Cooperation is being proposed by Myanmar from 2017 to 2023 annually to implement the projects in the areas of education, health, energy resources, science and technology, culture, agriculture, water resources, environmental conservation, natural disaster prevention, rural development, forestry, border trade and travel sectors. Under Lancang-Mekong- Special Fund Project from 2017 to 2024, the MOALI received \$13.32 million for 39 projects.

Table 3. The Projects (Lancang-Mekong Cooperation Special Fund) implemented by concerned Departments under MOALI

No	Year	Number of Projects	US\$ Million	Implementing Agencies
1	2017	5	1.09	Department of Agriculture (DOA)
2	2018	9	4.17	DOA, Settlement and Land Record Department (SLRD), Livestock Breeding and Veterinary Department (LBVD), Department of Fishery (DOF), YAU
3	2020	6	2.29	DOA, YAU
4	2021	4	1.51	Department of Planning (DOP), LVBD
5	2022	7	1.83	DOP, DOA, SLRD, DOF. YAU
6	2023	4	1.29	DOP, LVBD, YAU, Department of Agriculture Research (DAR)
7	2024	4	1.14	LBVD, DAR, University of Livestock Breeding and Veterinary Sciences
	<b>Total</b>	<b>39</b>	<b>13.32</b>	

Source: DOP, MOALI

According to the statistic, in 2020-2021 fiscal year the total trade volume of Myanmar is over 30 billion US\$ (export in 15.36 billion and import in 14.68 billion). Among this, trade volume of Myanmar to China contributes one third of total volume about 9.8 billion US\$ and 5.2 billion US\$ with Thailand. Regarding agricultural export, Myanmar reached 5.43 billion US\$ in which agricultural products include 4.62 billion, livestock products 0.02 billion and aquatic products 0.79 billion US\$ respectively.<sup>10</sup>

#### **1.3.4 Trade Development between Myanmar and China**

Myanmar and the People's Republic of China are neighbours with a 2,129 kilometre-long border, with bilateral trade reaching a peak of US\$ 12.1 billion in 2019-20 and US\$ 12.1 billion in 2022-23, accounting for US\$ 33.97 billion which was 27 percent of Myanmar's total international trade value.

The main exports from Myanmar to China are natural resources such as oil, natural gas, timber and minerals, agricultural products such as rice, beans, corn, watermelon, cucumbers, meat, shrimp and aquatic products, as well as importing machinery and equipment, electrical appliances, consumer goods, and chemical fertilizers and pesticides from China. Comparing exports and imports, it is found that in the last 10-year period, the value of imports has exceeded the value of exports in all other years except 2020-21.

Since the China-Myanmar Economic Corridor (CMEC) was signed in 2018, projects such as the China-Myanmar Oil and Gas Pipeline, the Kyaukphyu Sea Port, and the China-Myanmar International Corridor Project are being implemented, which is expected to further enhance bilateral trade in the long run.

China has approved 643 projects for foreign direct investment (FDI) of US\$22 billion by the end of September 2024, while making investments in Myanmar. This investment accounts for 23.56 percent of Myanmar's total foreign direct investment allowance and is the second largest among the investing countries (DICA, 2024). Such investments may contribute to the further development of bilateral trade.

#### **1.3.5. Negotiations towards an ASEAN-Canada Free Trade Agreement<sup>11</sup>**

On November 16, 2021, Canada and ASEAN agreed to negotiate towards an ASEAN-Canada Free Trade Agreement (FTA). Negotiations between negotiators from ASEAN and Canada have been made multiple times since the launch in November 2021. Canada hosted 12<sup>th</sup> round of the Trade Negotiating Committee (TNC) for the ASEAN-Canada Free Trade Agreement negotiations in ASEAN Headquarter in Jakarta, Indonesia from 6 to 7 March, 2025. The latest round of negotiations included meetings of seven working groups, covering crucial areas such as sanitary and phytosanitary measures, technical barriers to trade, regulatory best practices, trade in services, investment,

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<sup>10</sup> Improvement of Agriculture Trade Facilitation to Encourage Supply Chain of Myanmar's Agriculture Products in Collaboration with LMC Countries, Lancang-Mekong Cooperation Special Fund (2023), Project proposal

<sup>11</sup> ASEAN-Canada Free Trade Agreement negotiations in Bangkok, 15-17, 2025



intellectual property rights, and legal and institutional frameworks. The negotiation of text for agreement of all working groups of ACAFTA intended to close in September 2025.

The ASEAN-Canada Free Trade Agreement (ACFTA) can have significant impacts on trade in agricultural goods in both regions.

#### Trade in Agricultural Goods:

1. **Tariff Reductions:** The agricultural products such as grains, vegetables, fruits, meat, dairy products, and seafood could be subject to lower or zero tariffs when traded between ASEAN countries and Canada. Myanmar could export fragrant rice, green gram, tropical fruits and seafood to Canada subject to lower or zero tariffs and can import wheat, soybean cake and dairy products from Canada.
2. **Market Access:** Increased market access is a primary benefit for agricultural producers in Myanmar. Myanmar farmers might find it easier to access Canada's well-developed agricultural market.
3. **Non-Tariff Barriers:** In addition to tariff reductions, the agreement might address non-tariff barriers (NTBs) such as sanitary and phytosanitary (SPS) regulations which are crucial to ensure food safety and quality. Harmonization of these standards makes it easier for farmers and businesses in both regions to export agricultural goods without facing unnecessary delays or restrictions.

## 2. The Agricultural Development Policies and Strategies

Referring to agricultural policy launched in 2016, it is noted that the policy has vision which highlights “*an inclusive, competitive food and nutrition secured and sustainable agricultural system contributing socio-economic well-being of farmers and rural people and further development of the national economy*”. Main stream of the agricultural policy is to improve food and nutrition security and food safety and to enable small holder farmers to increase their incomes through higher productivity and diversified production in response to market demand as well as to enhance exports through and internationally competitive private agri-business sector.<sup>12</sup> Among the sub-sector policies, Marketing, Value-added Processing and Export Policy highlight the strategic thrusts regarding product competition, trade facilitation and export promotion.

### 2.1 Agriculture Development Strategy and Investment Plan (ADSP)

The Agricultural Policy vision underpins the ADSP (Agriculture Development Strategy and Investment Plan) formulated in 2018 which has vision to achieve inclusive, competitive, food and nutrition secure, climate change resilient, and sustainable agricultural system contributing to the socio-economic well-being of farmers and rural people and further development of the national economy.

### 2.2 Myanmar Rice Sector Development Strategy (MRSDS)<sup>13</sup>

Under the cooperation of the Ministry of Agriculture and Irrigation, the formulation of the MRSDS is made in 2015 possible through the technical assistance provided by the International Rice Research Institute, Food and Agriculture Organization of the United Nations, and World Bank. The MRSDS is anchored on improving farm productivity, raising rice farmers’ incomes, and enhancing the global competitiveness of Myanmar’s rice industry. The MRSDS highlights 10 key themes that ought to guide our efforts at developing the rice sector. These themes are (1) sustainable increase in rice productivity, (2) increased farm mechanization, (3) adaptation to climate change, (4) efficient and sustainable management of natural resources, (5) postharvest loss reduction, (6) increased access to credit, (7) capacity building, (8) increased investments in agriculture, (9) quality control and safety in rice production and marketing, and (10) enhanced rice research and development.

### 2.3 National Export Strategies (NES)<sup>14</sup>

Under the leadership of Myanmar Ministry of Commerce (MOC), the financial support from Germany’s Federal Ministry for Economic Cooperation and Cooperation (BMZ) in collaboration with GIZ and the technical assistance of the International Trade Centre (ITC), first phase (2015-2019) of National Export Strategy (NES) of Myanmar was promulgated in 2015; second phase (2020-2025) of NES was launched in 2020 and third phase (2025-2030) is under negotiation for its priority sectors

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<sup>12</sup> Agricultural Sector Policies and Thrusts for Second Five Years Short Term Plan, 2016, MOALI

<sup>13</sup> Myanmar Rice Development Strategy, MOALI, 2015

<sup>14</sup> National Export Strategy of the Republic of the Union of Myanmar 2015-2019

and cross sectors to be adjusted. The main objective of the NES is to promote export development and the competitiveness of Myanmar's products in international markets. With the identification of seven priority export sectors and four cross sectors, appropriate and consolidated strategies were formulated to extensively propagate Myanmar's exports into international markets. Priority export sectors identified in the NES (2020-2025) are: Rice and Rice Products, Pulses & Oilseeds, Fishery, Rubber, Textile & Garments, Food Processing, Fresh Fruits and Vegetables, Forestry Products, Electrical & Electronic Machinery, Gems and Jewellery, Handicrafts, Tourism, Digital Products and Services, and priority cross-sectors such as: Access to Finance, Logistics Services Sector, Quality management, Trade Information, Innovation and Entrepreneurship. Rice, pulses and bean are already emphasized in formulation of strategic activities in the NES which will be useful in setting up the recommendation for development of these commodities in this study. Based on the council and sub-sector committee of national export strategies, the following high-level officials from the Ministry of Agriculture, Livestock and Irrigation are members to in charge for the successful implementation;

<b>No.</b>	<b>Council/Committee/Sub-sector</b>	<b>Position</b>	<b>Duty</b>
1.	NES Public-Private Export Promotion Council	Union Minister	Member
2.	NES Public-Private Export Promotion Committee	Deputy Minister (Livestock)	Member
3.	NES Public-Private Export Promotion Committee	Deputy Minister (Agriculture)	Member
4.	Sector Development Committees		
	- Rice and rice products	Director General	Chairperson
	- Pulses and oil crops	Department of	
	- Rubber	Agriculture	
	- Fresh Fruits and vegetable		
	- Fishery	Director General Department of Fishery	Chairperson

### 3. Institutional Arrangement for Trade Facilitation Process in Myanmar

Since 2011, Myanmar has conducted comprehensive reforms of macroeconomic policies and the trade-related regulatory system in line with international commitments. The country has established cooperation with international organizations such as the World Trade Organization (WTO), the Association of Southeast Asian Nations (ASEAN), and the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation. These reforms aim to enhance both domestic economic development and economic integration.<sup>15</sup> ASEAN and China are Myanmar's largest trading partners. In 2018, Myanmar's exports to ASEAN ranked second after exports to China, contributing as much as 33% of total exports. ASEAN is also a major import source for Myanmar, accounting for 45% of total imports.<sup>16</sup>

Since 1948, Myanmar was the founder member of GATT which was transformed into WTO, Myanmar has continuously included as WTO member. The Myanmar government ratified the WTO Trade Facilitation Agreement in December 2015. In 2016 the Government of Myanmar also established the National Trade Facilitation Committee and extended formation of high-level committee headed by Deputy Ministers of Ministry of Commerce and Ministry of Planning and Finance, performing as Chairman and Deputy Chairman of the Committee respectively in 2017. This committee comprises of 19 members from respective departments and was working trade facilitation activities by supportive working groups such as (i) Transparency and Communication initiated by Department of Trade; (ii) Single Window initiated by Custom Department; (iii) Risk Management initiated by Custom Department and (iv) Test Procedures initiated by Department of Consumer Affairs in order to facilitate trade and trade flow smoothly. The Private Sector Development Committee, led and chaired by the Vice President, was established in 2014 to encourage private sector engagement in trade-related matters. Moreover, the National Trade Repository (NTR) was established to improve transparency and the trade facilitation environment in Myanmar. Myanmar has been undertaking a series of reforms in line with international best practices to improve trade facilitation in accordance with the WTO Trade Facilitation Agreement and the ASEAN Economic Community Blueprint.<sup>17</sup>

Trade facilitation study had been conducted during the second half of 2020 with government agencies on seven components: (i) transparency and information on laws, regulations, and procedures; (ii) communication with and active engagement of the private sector; (iii) release and clearance formalities; (iv) import/export formalities and coordination; (v) transport facilitation; (vi) cross-border coordination and transit facilitation; and (vii) e-commerce.

Some of the findings from the study are noted as below.

- i. Trade-related information of other agencies should be updated on a regular basis.

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<sup>15</sup> Chapter 7, Trade Facilitation in Myanmar and Results of the ASTFI Baselines Study, Doan Thi Thanh and Pa Pa, July 2021

<sup>16</sup> International Trade Center, 2018

<sup>17</sup> Chapter 7, Trade Facilitation in Myanmar and Results of the ASTFI Baselines Study, Doan Thi Thanh and Pa Pa, July 2021

- ii. The Customs Contact Centre should provide 24/7 help desk services for local and foreign enquiries.
- iii. Attracting and retaining qualified staff members and providing programs on English proficiency and information and communications technology will help Myanmar maintain the NTR.
- iv. National-level coordination amongst agencies is crucial for full implementation of cross border paperless trade, as some agencies have not fully implemented their E-Systems for applications and approvals.
- v. The National Single Window (NSW) should be made operational as soon as possible, as it would help implement national-level paperless trade while improving the efficiency of the cargo clearance process.
- vi. Agencies need to strengthen coordination not only with those of neighboring countries but also within Myanmar. The operational and functional institutional arrangements for border agency coordination in major ports should be set up, and this arrangement should be applicable for all ports.
- vii. The implementation of a transit system should be prioritized. Although Myanmar Customs Department (MCD) has been undertaking a legal review of a transit system, it still needs to overcome challenges such as lack of funding, shortage of skilled and professional staff, lack of modern and required laws and regulations, and inadequate public awareness about transit. These challenges can be overcome by enhanced cooperation and coordination amongst stakeholders and increased participation in regional cooperation programs.

The summary of the study results and recommendations are available in the survey report.<sup>18</sup>

The General Administration of Customs of the People's Republic of China (GACC) oversees imported facility and product registrations, entry and exit inspections, quarantines, and more. In accordance with the GACC declaration (248 and 249) issued by China on April 12, 2021, enterprises which want to export the foods (18 items) to China need to register the exported products through online registration or competent authority department starting from January 1, 2022. Three competent authorities from Myanmar designated for registration process are Department of Agriculture, Department of Fisheries and Livestock Breeding and Veterinary Department under the Ministry of Agriculture Livestock and Irrigation for 10 items of agro-food products, aquatic products and 4 items of livestock animals and animal products respectively. Competent authority for functional foods and special dietary foods is Food and Drug Administration Department under Ministry of Health. For other items apart from 18 food items the enterprises have to proceed the registration process directly to GACC through online (<http://cifer.singlewindow.cn>).

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<sup>18</sup> Chapter 7, ASEAN Trade Facilitation Indicator II: Myanmar; Pa Pa, Ministry of Commerce

## 4. Methodology used in the study

### 4.1 Price Competitiveness/ Differentials

In the sense “competitiveness” as used in this study refers to productivity, as indicated by the ration of domestic to international prices. As such, the degree to which a commodity may be competitive depends on a host of factors that can be firm-specific; industry-specific or country-specific.

Therefore, an economy may be considered competitive in the production of a particular commodity when the undistorted, sustainable domestic market price of the commodity is equal to or lower than the price of competing economies. It can be explained by mathematical equation as:

$$(1) \quad P_m \leq P_w$$

where:

(2)  $P_w$  is the international price of the commodity – which may be taken as the “competitive” price, and

(3)  $P_m$  is the observed price in the domestic market.

When  $P_w$  represents the undistorted (or free market) price, the percentage difference between  $P_m$ , the domestic price and  $P_w$ , the international price of a commodity is the nominal protection rate:

$$(4) \quad NPR = P_m / P_w$$

The NPR indicates the impact of government policies and interventions as well as other conditions influencing the domestic market price of the commodity under analysis.

### 4.2 Productivity and Quality Competitiveness

Productivity and quality are important indicators to be determined to explain the competitiveness of selected commodities. It is often assumed that technological improvements that enable farmers to produce a large volume of output with some inputs will increase the competitiveness of their products given international market price. Productivity can be assessed by comparing the yield of specific in Myanmar with the yield of some crops in other countries. Quality of the specified commodities in domestic produce is to be compared with that of other producing countries.

The comparative quality and price value is the division between (FOB) price of commodity of Myanmar and the (FOB) price of same commodity of other comparative country. If the quality and price value is greater than (1), it can be said that the grain export from Myanmar is more expensive and of better quality than the grain export from other comparable countries. If it is equal to (1), it can be said that the price and quality of that commodity is the same as that of other comparable countries. If it is smaller than (1), it can be said that it is cheaper and of inferior quality than that produced in other comparative countries.

In the essence, productivity reflects the nominal outcome of benefit-cost relations (BCR) and remains the cornerstone of comparative advantage in production among countries. Investment in productivity will have a beneficial effect on farm income. Therefore, comparison of the yield levels among the countries will be worked out in this study.

### 4.3 Revealed Comparative Advantage (RCA)

Revealed comparative advantage (RCA) is based on Ricardian trade theory, which posits that patterns of trade among countries are governed by their relative differences in productivity. Although such productivity differences are difficult to observe, an RCA metric can be readily calculated using trade data to "reveal" such differences.

RCA metric can be used to provide a general indication and first approximation of a country's competitive export strengths, it should be noted that applied national measures which affect competitiveness such as tariffs, non-tariff measures, subsidies and others are not taken into account in the RCA metric.

Country A is said to have a revealed comparative advantage in a given product  $i$  when its ratio of exports of product  $i$  to its total exports of all goods (products) exceeds the same ratio for the world as a whole:

That is,

$$RCA_{Ai} = \frac{\frac{X_{Ai}}{\sum_{j \in P} X_{Aj}}}{\frac{X_{wi}}{\sum_{j \in P} X_{wj}}}$$

Where

- $P$  is the set of all products (with  $i \in P$ ),
- $X_{Ai}$  is the country A's exports of product  $i$ ,
- $X_{wi}$  is the world's exports of product  $i$ ,
- $\sum_{j \in P} X_{Aj}$  is the country A's total exports (of all products  $j$  in  $P$ ), and
- $\sum_{j \in P} X_{wj}$  is the world's total exports (of all products  $j$  in  $P$ ).

When a country has a revealed comparative advantage for a given product ( $RCA > 1$ ), it is inferred to be a competitive producer and exporter of that product relative to a country producing and exporting that good at or below the world average. A country with a revealed comparative advantage in product  $i$  is considered to have an export strength in that product. The higher the value of a country's RCA for product  $i$ , the higher its export strength in product  $i$ .

Hypothesis (1)	$0 < RCA \leq 1$	have no comparative strength
Hypothesis (2)	$1 < RCA \leq 2$	Comparable weakness
Hypothesis (3)	$2 < RCA \leq 4$	Medium comparative strength
Hypothesis (4)	$4 < RCA$	Strong comparative strength

The Revealed Symmetric Comparative Advantage (RSCA) index is a function of the Revealed Comparative Advantage (RCA) for a country and product pair where  $RCA_{ir}$  is the revealed comparative advantage for product ( $i$ ) from country ( $r$ ) as following equation. The RSCA has been used extensively to quantify comparative advantage.

The RSCA index, which generates scores ranging between  $-1$  and  $+1$  and is symmetric around zero. Countries with RSCA scores close to  $+1$  have a higher revealed comparative advantage, and countries with scores close to  $-1$  have a lower one.

Equation: Symmetric revealed comparative advantage

$$RSCA_{ir} = \frac{RCA_{ir} - 1}{RCA_{ir} + 1}$$

#### 4.4 Trade Potential/Export Potential

The indicator of “Trade Potential” is employed to assess the export possibility and the level of competition which Myanmar faces in ASEAN and other top destinations. The rationale behind this characterization is that a higher trade potential with lower competition will offer an opportunity for agricultural producers in Myanmar to benefit from exports.

“Export potential is defined as the lower value between the country’s global exports and the partner country’s global imports, minus the actual trade between the two countries for a year”. It considers exports and imports as the country’s supply and demand potential, respectively. Trade potential for a commodity in a year is given by-

$$\text{Trade Potential for a year} = \text{minimum (country's global exports, partner country's global imports)} - \text{actual trade}$$

Note that this indicator estimates only the maximum possibility of trade between the two countries relative to the actual trade. It does not take into account the supply side constraints that a country may face in producing and exporting a specific product (Division of Market Development [ITC] 2014). It will be interchanged using the terms “trade potential” and “export potential.”

#### 4.5 SWOC Analysis on product competitiveness and trade facilitation

A SWOC analysis is a planning process that helps the organization overcome challenges and determines which new leads to pursue. “SWOC” stands for strengths, weaknesses, opportunities and challenges. The primary objective of a SWOC analysis is to help organizations develop a full awareness of the factors involved in making a decision. This is actually the area of strategy development where organizations have an opportunity to be most creative and where innovative ideas can emerge, but only if the analysis has been appropriately prepared in the first place.

It is possible to develop a corporate or individual strategy using SWOC analysis. Identifying internal and external elements (typically utilizing the well-known 2x2 matrices), selecting and



evaluating the most crucial factors, and identifying relationships between internal and external features are all steps required to carry out a strategy-oriented analysis. Matching and converting is one method of employing SWOC analysis. By matching strengths to opportunities, matching is utilized to gain a competitive edge. Converting challenges or weaknesses into opportunities is another strategy. By analyzing the external contents (challenges and opportunities) and internal contents, and (weaknesses and strengths), it can use the techniques to think about the strategy for the organization, a department or a team.

The SWOC analysis is a simple but comprehensive strategy for identifying not only the weaknesses and threats of an action plan, but also the strengths and opportunities it makes possible. Adding among others, analytic tools to consider include economic, social and technological analysis for mission, objective, strategies and tactics in order to solve the problems.

The key achievement sought in the technical assistance project was to introduce a framework of competitiveness assessment consistent with open markets and undistorted international trade. In this study a set of commodities are selected and analyzed using a consistent, market-oriented framework. The selection criteria included: (a) priority commodities identified in international trading; (b) potential commodities considered to be subject to competitive pressures in the region; and (c) commodities and issues of high potential importance in the medium to long-term.

The study provides the result which could be referred as catalyst for domestic reforms through an upgrade of existing rules, increase the international competitiveness of sub-regional countries, and realize the goal of regional coordinated development.

## 5. Summary Assessment of the Consultants' Reports: The Competitiveness and Trade Facilitation of Selected Agricultural Commodities

The project “Improvement of Agriculture Trade Facilitation to Encourage Supply Chain of Myanmar’s Agriculture Products in Collaboration with LMC Countries” was implemented by the Ministry of Agriculture, Livestock and Irrigation to deal with the competitiveness and trade facilitation of selected agricultural commodities of Myanmar in trading among the LMC countries, particularly with China under Lancang-Mekong Cooperation (LMC). The study was made by the national consultants and will cover the competitiveness of the selected commodities (rice, maize, green gram, soybean, watermelon and aquatic products) and look for effective mechanism on facilitation of trade within regional as well as international market in order to increase export of the selected commodities. Improving productivity of designated crops and promoting exports are top priorities for Myanmar.

The competition in export of rice is strong in the region, like Thailand and Vietnam which are starting diversify and capture higher value rice market. Investment in rice milling industry remains limited due to low attraction and other constraints to invest high value capital. Domestic livestock industry and other industrial uses consume about half of country’s maize production, while the remaining is for export. As the Myanmar Livestock Federation report, domestic maize production contributes 35-45 percent of total feed composition in the poultry sector. Green gram is one of the main export items of crop after rice and also one of the world leading producers and exporters. However, the sector faces many challenges of unstable market prices, trade barriers from importing countries and competition of other exporting countries. Soybean production is insufficient for domestic demand, especially in livestock and fishery industries which mostly rely on importation. Watermelon is outstanding export crop to China, which amount of production is sufficient for domestic consumption and surplus is being exported to China through border trade. However, the melon industry faces many constraints such as land use, input utilization, cultivation practices, fluctuation of market price, transportation, storage of perishable crop and among others. The fisheries sector of Myanmar is divided into marine and freshwater fisheries sub-sectors. Marine fisheries include inshore and offshore and freshwater fisheries include aquaculture, leasable, and open fisheries. In 2021, the contribution of capture fisheries was 81 % and aquaculture contributed 19 % to the total fishery production of the country.<sup>19</sup> The inland freshwater bodies cover 8.1 million ha of which 1.3 million ha are permanent and the remainder are seasonally inundated floodplains. It has exclusive economic zone of marine fishery, stretching 2138 km along the coastal line of the Indian Ocean, Bay of Bengal and Andaman Sea. The richness of the country’s aquatic resources makes the fisheries sector vital to the national economy and food security.

The national experts prepared papers reporting market competitiveness, trade facilitation and trade potential of the listed commodities by applying methodology covering the competitiveness

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<sup>19</sup> Fishery sector SEAFDEC 2023 country profile: Myanmar

assessments, comparative advantage, trade potential and SWOC analysis. This section highlights key outcomes of the consultants' reports.

## 5.1 Rice

### 5.1.1 Importance in Myanmar's economic development

Among the crops, rice crop plays an important role in food security and national economic development. Cultivated area of rice was 7.05 million hectares. Rice yield was 3.90 MT per hectare and 27.44 million MT of production (MOALI, 2022). Rice is Myanmar's main agricultural product, supplying nearly 43 percent of the total value of agricultural products. More than half of agricultural land is cultivated, and more than 70 percent of the population is rice consumers. Rice cultivation area accounts for 35.7 percent of all cropping areas. Rice is an important crop as a major crop of the country in terms of domestic consumption, as well as export every year. The labor force is also the highest in the rice sector, with nearly three-quarters of farm household income coming from rice cultivation (DOP, 2016). Rice production is an economic importance as it is a source of employment, food, and export income for Myanmar.

Rice and rice-based production for export promotion are among the priority commodities of the National Export Strategy. The vision of the Rice Export Promotion Strategy is "the production and export of high-quality and environmentally friendly and sustainable rice production and export for rural development and income growth".

### 5.1.2 Importance of product in both domestic and export markets

In Myanmar, rice is an important product in the domestic and foreign export markets. Rice is crucial for farmers' livelihoods and food security. Rice is a major energy source for Myanmar as it contributes about 73% of the total daily nutritional needs for urban households and about (80%) for rural households (CSO, 2022).

The main by-products of rice cultivation are rice, broken rice and rice bran. Although high-quality broken rice and rice brans can be exported abroad, most of the products are sold domestically. In the domestic market, low-quality broken rice is sold to change food products such as rice flour for noodles, and the lowest grade "point" is sold as pig feed. Broken rice and rice bran are mainly sold for livestock feed. Rice husk is also sold as a cheaper fuel source for food vendors.

The most commonly consumed and preferred types of rice are Pawsan belonging to the Medone group (E type), Aye Yarmin belonging to A type and Manosukha (B type) (Theingi Myint et al., 2016). The main export type of rice is A type which is long, thin, and clear (World Bank, 2014). In studying the global market outlook, it is found that the Middle East market favors the rice varieties that belong to the E type, such as Pawsan, Pawsan Hmwe, and Lone Thway Hmwe and Zira type. Sin Thukha belonging to B type is preferred by European and Asian countries (Khaing Khaing Htwe, 2019). The most popular rice varieties currently for the domestic and foreign markets are included in Medone (E type), A type, and B type.

Rice and broken rice are exported to regional countries, African countries and European Union member states through maritime trade, and neighboring countries, China and Thailand through border trade posts. Rice is mainly exported to China. with over 365,000 MT of rice and 411,329 MT of broken rice in 2022-2023. In addition (276,438) MT of broken rice are also exported to Belgium in 2022-2023.

Table 4. Exports of rice and broken rice by sea and border trade during the fiscal year 2010-2021 to 2022-2023

No.	Year	Sea Trade (‘000 MT)	Border Trade (‘000 MT)	Total (‘000 MT)
1	2010-2011	0.54	-	0.54
2	2011-2012	0.71	0.14	0.84
3	2012-2013	0.61	0.85	1.45
4	2013-2014	0.39	0.84	1.23
5	2014-2015	0.47	1.34	1.81
6	2015-2016	0.24	1.23	1.47
7	2016-2017	0.69	1.06	1.75
8	2017-2018	1.72	1.86	3.58
9	2018-2019	1.71	0.65	2.36
10	2019-2020	2.16	0.43	2.59
11	2020-2021	1.25	0.62	1.88
12	2022-2023	1.83	0.43	2.26

Source: MRF

Comparing rice and broken rice exports during the 2017-2018 to 2022-2023 fiscal years, the 2017-2018 fiscal year was the highest year for rice and broken rice exports, reaching a record of metric ton (3.59) million accounting for USD (1.14) million (Table 5).

Table 5. Export of Rice and Broken Rice by Fiscal Years (April to March)

Year	Rice		Broken Rice		Total	
	MT	Value (‘000 USD)	MT	Value (‘000 USD)	MT	Value (‘000 USD)
2017-2018	2,951,808	977	638,918	165	3,590,726	1,142
2018-2019	1,929,842	649	451,914	130	2,381,756	779
2019-2020	1,908,164	581	856,581	222	2,764,745	803
2020-2021	1,161,529	457	887,509	284	2,049,038	741
2021-2022	1,304,507	460	827,726	256	2,132,233	716
2022-2023	1,327,976	519	869,535	303	2,197,511	821

Source: Agribusiness Bulletin, 2023

### 5.1.3 Trade development between Myanmar and China

In relation to trade, the Myanmar-China bilateral agreements had been signed such as Memorandum of Understanding on Agricultural Sector Trade Cooperation, the Smooth Trade Promotion Task Force, the Establishment of the Border Economic Cooperation Zone, and the Mussel-Suzhou Border Economic Cooperation Zone (Nyi Nyi Aung, 2024).

On September 24, 2014, an Inspection and Pest Control Agreement was signed between the Ministry of Agriculture and Irrigation of Myanmar and the China Commodity Quality Supervision and Pest Control Authority (AQSIQ) for the legal export of rice from Myanmar to China.

On May 18, 2018, the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China was established as the General Administration of Customs of the People's Republic of China (GACC) to include the AQSIQ in addition to the original customs matters and the affairs that have been taken care of by the United States. Most of Myanmar's exports, which were previously easily exported from Myanmar to China, have experienced more SPS difficulties due to the tightening of policies and regulations on the presence of illegal activities in the border areas.

As the inspection and pest control agreement signed with AQSIQ was only for rice exports. In 2019, GACC of China approved an inspection and pest control agreement to supplement rice as well as broken rice. As a result of these negotiations, the Inspection and Pest Control Agreement for the Export of Rice and broken Rice from Myanmar to the People's Republic of China was signed between MOALI and GACC on January 17, 2020.

According to the agreement, the Ministry of Commerce, the Ministry of Agriculture, Livestock and Irrigation, the Myanmar Embassy of the People's Republic of China in Beijing, and the Myanmar Rice Federation (MRF) were cooperating to ensure rice exporting companies and rice mills from Myanmar meet the quality inspection requirements of the Chinese side and their registration at GACC in China. It is found that the agreement has been carried out in accordance with the terms of the contract for the processing, storage and export operations of the companies that apply for the export of rice and broken rice to GACC, China.

As a result of that, GACC also accepted 43 rice exporting companies in 2021, 18 rice exporting companies in 2022, 55 rice exporting companies in 2023, 9 rice exporting companies in 2024 from Myanmar in accordance with supervisory inspection points on the quality. Until April 2025, there were 125 companies that successfully registered for the export of rice and broken rice to GACC. Upon registration, these rice mills and its transit warehouses were selected to be entitled after inspection.

The Technical Working Group (TWG) for Myanmar Rice Export Supervisory Group has been established and amended in December, 2024 to ensure that rice and rice products from Myanmar can be exported to China in accordance with the quality standards. The TWG has been set up to select rice exporting companies for the export of rice and rice in accordance with the SPS Protocol. The Myanmar Rice Export Supervisory Board consists of (17) members from the Ministry of Commerce

and the Ministry of Agriculture, Livestock and Irrigation. In this TWG, non-government institutions are also involved as members such as, Myanmar Rice Federation (MRF), Myanmar Rice Millers Association, Myanmar Rice Traders Association. Myanmar exported rice to China, accounting (45) percent of its export volume to Asian countries in 2023. Similarly, Myanmar's main importer of broken rice is China, which was accounted as (79) percent of its total exports to Asian countries.

Table 6. Rice Export from Myanmar to China (2014 to 2023)

No.	Year	Export Volume (MT)	Export Value ('000 US\$)
1	2014	1,242,039	468,733
2	2015	1,410,410	510,492
3	2016	334,744	322,908
4	2017	656,330	572,514
5	2018	379,207	441,639
6	2019	427,663	234,072
7	2020	664,923	361,914
8	2021	627,450	302,015
9	2022	573,854	233,053
10	2023	440,158	205,798

Source:

#### 5.1.4 Domestic consumption and export

In Myanmar, according to their ecological zones rice-growing areas can be identified as delta, central arid region, coastal region, and mountainous region. The main rice-growing delta areas include the Irrawaddy region, the Bago region, and the Yangon region, while the tropical arid region includes the Mandalay region, the Sagaing region, and the Magway region. The coastal region includes the Tanintharyi Region, Mon State, and Rakhine State, while the mountainous region is not included in the above areas. About 83 percent of the rice production is harvested during the rainy season and the remaining (17) percent is harvested in the summer. The (52.2) percent total rice production is cultivated in the delta region, followed by (22) percent in the dry season. (10.6) percent in coastal areas, and (15.2) percent in mountainous areas. The (48.4) percent of total monsoon rice production came from the delta region, followed by (23.9) percent in the dry zone areas, (12.3) percent in the coastal regions and (15.4) percent in the mountainous regions. About 70.9 percent of total summer rice production is cultivated in the delta region, followed by (13) percent in the arid tropics, (2.1) percent in coastal areas, and (14) percent in mountainous areas. The nine largest rice-production occurs in Sagaing Region, Bago Region, Mandalay Region, Mon State, Rakhine State, Yangon Region, Shan State, Irrawaddy Region and Magwe Region in Myanmar.

Asia stands as one of the highest rice consumption regions in the world, with the most populous countries in Asia, such as China and India, consuming rice as the main consumers, and Indonesia, Vietnam, the Philippines, Thailand, and Japan, including Myanmar, are the main

consumers of rice. Data from 2022-2023 showed that Myanmar's rice consumption was (10,300) MT. Survey conducted by the Myanmar Rice Federation in 2016 reported that average annual rice consumption is (155) kg, with some variations upon regions. The average annual per capita rice consumption in urban area is (133) kg, the landless (160) kg and the farmers (170) kg.

Rice consumption is about (8) million MT per year for all people in the country, (2) million MT per year for urban and about (6) million MT per year for rural (Theingi Myint et al., 2016). Surplus rice production has been observed in the lower regions of Myanmar, namely Irrawaddy and Bago Regions, and Chin State, Mandalay Region and Sagaing Region are rice shortage areas.

For the (17.53) million acres of paddy planted as of April 2023, the amount of paddy to be left out as seed is (5.4) million MT, and the amount of waste grain in harvested is (1.0) million MT. The remaining paddy are (24.2) million MT which are milled to produce (9.2) million MT of milled rice. As calculation on census population in 2014, the volume of domestic consumption will be (3.6) million MT and surplus of rice will be (5.1) million MT which are available for export (Agribusiness Bulletin, 2023).

It is observed that Irrawaddy and Bago regions are rice surplus areas, while Chin State, Mandalay region and Sagaing region are rice shortage areas in the country.

### **5.1.5 Value chain of the product**

The main centers of rice trade and marketing are Patheingyi, Yangon and Mandalay. The surplus rice from various parts of the country is usually exported through Yangon and Mandalay and also is distributed to other regions for domestic consumption.

Rice mills are the essential node in the value chain's midstream because raw paddy is processed into head rice (the consumer product) prior to sale to consumers or export. Major rice mills are located near the main paddy production regions, with large concentrations in Bago, Yangon, and Ayeyarwady.

Mandalay is a major hub for the internal rice trade, connecting lower and upper areas as well as consolidating rice supplied by major producing regions and distributing to meet the demand of rice-shortage regions. Although the Bago Region is not a central location, the stock of rice collected from nearby areas could be transported to Yangon wholesale center to where it is easily accessible by both highway and rail from Bago. In Mon State, Mawlamyine town is a major rice market for lower coastal region and can be exported to the Thai-Myanmar border either through Myawaddy or Kawkaik towns.

The rice value chain starts from the supply of inputs (i.e., agrochemicals, machinery, seeds, credit, and extension services) to farmers for the paddy production. Cultivating paddy requires different activities, such as land preparation, sowing seeds, transplanting seedlings, weeding, applying fertilizers and pesticides, harvesting, threshing, drying, winnowing, storage, and then selling the surplus after allowing for home consumption. The primary collectors buy the paddy from the farmers with the financial support of millers. The millers then give fees to the primary collectors and mill the paddy into rice. They carry out different activities that add value, such as transportation,

processing, grading, and packing. The millers store and then distribute the rice mainly to wholesalers. Thereafter, wholesalers deliver the rice on their turn to retailers in order to supply the domestic consumers or exporters, who then supply consumers in foreign countries (Wong and Wai, 2013).

After milling, rice is distributed throughout the country (Figure 1) and consumed year-round. Analysis of the national 2015 MPLC survey shows that (72) percent of household rice consumption is obtained from the market indicating the importance of the value chain. A significant part of rice production is transported from the Southwest by land to Yangon (Myanmar's largest city with a population of over 5 million) or secondary cities in the South. Part of the rice is shipped by land or boat to the north to Mandalay (Myanmar's second largest city with a population of 1.7 million), secondary cities, or for export to China, most often through the border town Muse (Proximity Design, 2016). Rice is also shipped by boat from the port in Yangon to other countries.

The Myanmar rice value chain is incomplete and weak, resulting in high transaction costs for all stakeholders involved in production. Supply of quality seeds and inputs in the input sector is a major bottleneck that needs to be addressed. In addition, there are many inefficient rice mills in the production sector and they do not receive enough electricity to operate properly. The cost of essential transportation is rising due to the deteriorating condition of waterways and land ways.

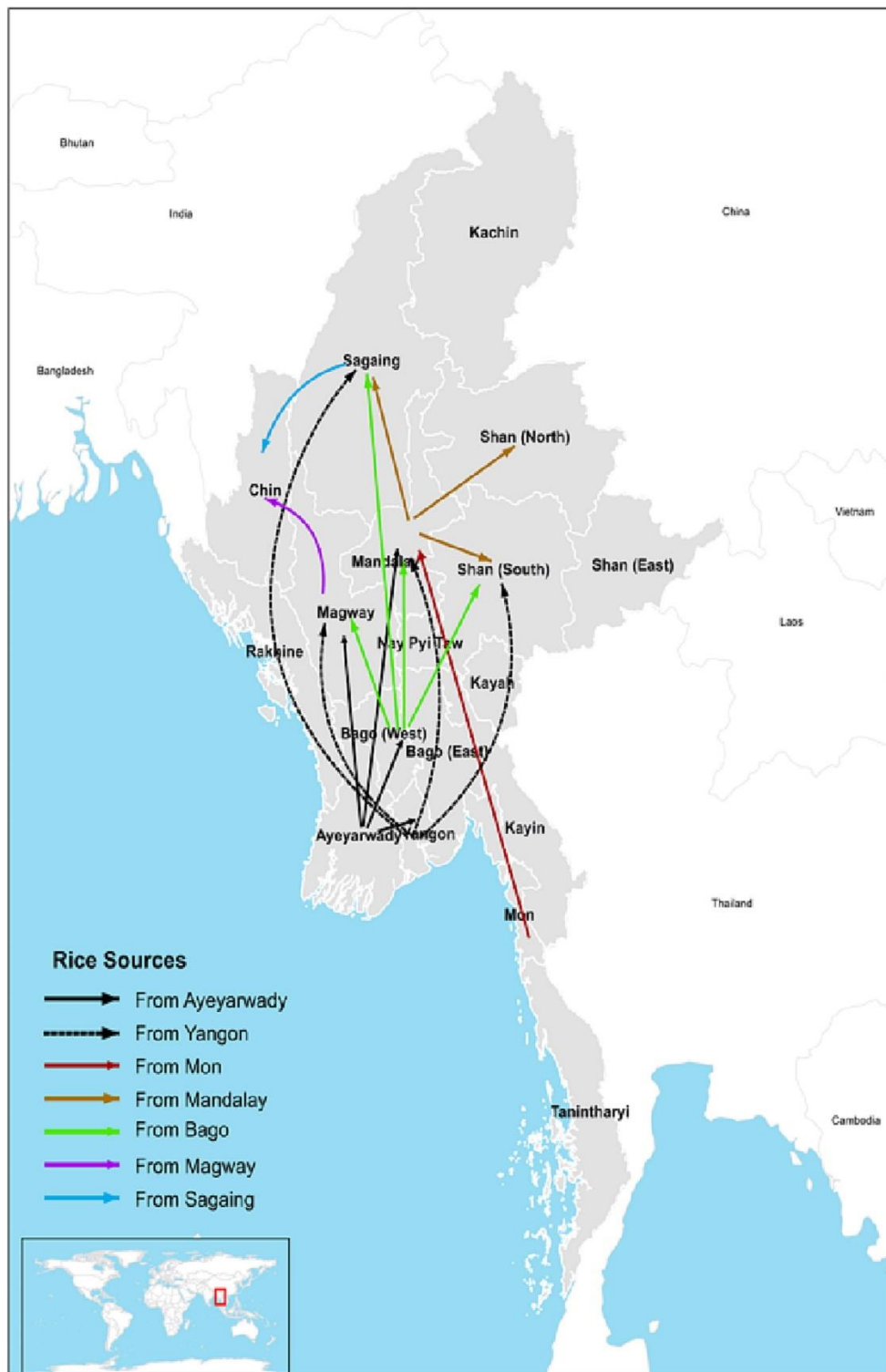
A study published by MOALI (2015) stated that the rice value chain in Myanmar is not well integrated with one another, so its efficiency should be enhanced. There are many different actors in different roles, and there are many levels from individual farmers to large-scale retailers and exporters. Because of the many shortcomings in the levels, the costs for participants in the chain are only going up (World Bank 2014; Raitzer et al., 2015; and MOALI, 2015).

Smallholder rice farmers often sell unmilled rice directly to traders (World Bank, 2022). Farmers who grow large areas of paddy in some areas sell their paddy directly to rice mills rather than to brokers (FAO, 2021). Village traders usually have close relationships with farmers and collect grain from villages and sell to big traders and rice mills (IFPRI, 2023). Urban traders then collect paddy from different villages and export it to rice vendors and rice mills from nearby towns (MRF, 2023). Small and medium-sized rice mills are often sold milled rice directly to local retailers and to large merchants, who can distribute them more widely (World Bank, 2022). Medium and heavy-duty rice machines are more efficient and produce high-quality rice that is sold directly to retailers, wholesalers, and urban markets.

China is the largest rice importer and is an important rice market of Myanmar. Myanmar rice is exported to China both through official trade routes and through border trade from Mussel border gate (FAO, 2021). Another important rice export market is European countries, from which only high-quality rice is usually imported. Since West African countries are the main buyers of low-quality rice, broken rice and low-quality rice are exported to these countries (World Bank, 2022). Myanmar also exports rice to neighboring ASEAN member countries such as the Philippines, Malaysia, and Indonesia.



Figure 1. Rice Flow in Myanmar



Source: Agricultural value chains in a fragile state: The case of rice in Myanmar; World Development, July 2023

### 5.1.6 Challenges in production and export

Rice productivity is being challenged resulting in a decline in crop yields that low-income farmers are facing difficulties in obtaining regular cash loans and microfinance services to buy quality fertilizers and other investment for farming.

Rising costs of transport and irrigation due to poor agricultural infrastructure, especially, irrigation facilities, and roads from farms to markets also reduce farmers' incomes. Difficulty in obtaining quality seeds of high-yielding rice varieties is also a challenge faced by farmers. Farmers are traditionally using their own seeds from the previous year's crop season or from nearby farmers because they are unable to obtain quality certified seeds.

Some farmers have low access to the quality pesticides recommended for pest control (FAO, 2023). Unable to use correct fertilizer application is also a challenge in paddy production. Another challenge is the lack of adequate investment in post-harvest technologies and in buying necessary farm equipment. Significant migration is expected to make it more difficult to find labors.

In 2021, international transportation costs in the East Asian region were about two to four times higher than usual. As a result, Myanmar is also facing increased price of imported fertilizer (IFPRI, 2022). Therefore, farmers are facing the challenges of rising input costs in paddy production.

Other challenges in rice production are observed as follows:

- 1) Need for affordable inputs and weak farmland systematization;
- 2) High demand for farm labour but poor ability to replace machinery;
- 3) Low yields compared to other countries;
- 4) Less recognition of new technologies over to traditional farming methods;
- 5) Poor water supply and availability for year-round farming, and poor access to water for year-round farming;
- 6) Weak development of post-harvest technologies and weak extension of research and education programmes;
- 7) Insufficient investment in farm equipment;
- 8) Weak inter-sectoral linkages along the value chain, and the need for technical and financial assistance.

Opportunities are observed as follows:

- 1) Availability of enough seed farms that can produce high-quality rice seeds;
- 2) Abundance of high-quality rice varieties;
- 3) Large rice cultivation areas and sufficient land area for expansion of planting area;
- 4) More interest in rice cultivation than other crops by farmers;
- 5) More work experience in paddy industry of the private sector;
- 6) Government support for research in paddy crop than any other crops;
- 7) Major crop with strong domestic and foreign markets, the successful operation of the efficient farming system and the existence of supporting institutions for rice;
- 8) Stronger cooperation among relevant organizations in implementation of rice industry.

### 5.1.7 Trading partners and export share in international market

Figure 2. Share of Myanmar rice export to trading partners

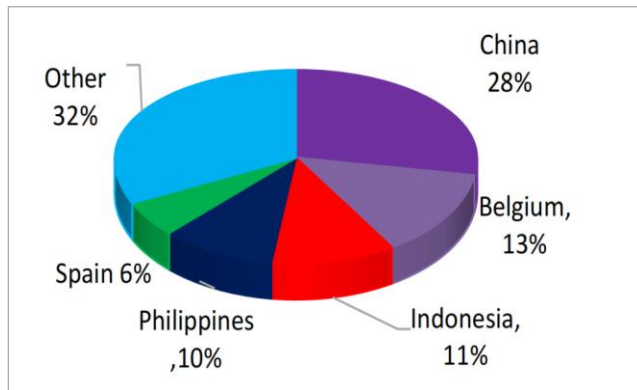
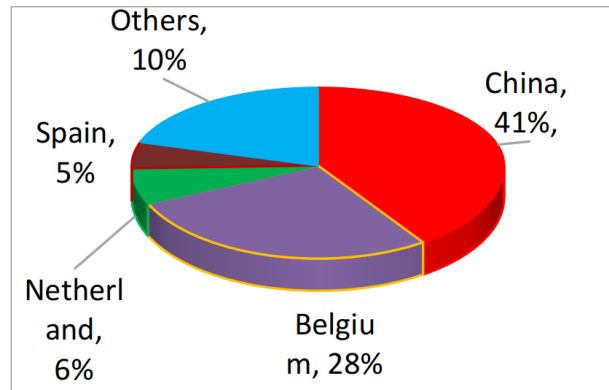


Figure 3. Share of Myanmar broken rice export to trading partners



Source: UN Comtrade 2023, ITC Trademap 2023

The global rice import market reached a total ton (51.17) million in 2023 and was valued at US\$ (33.36) billion. China, which has a large population, imports rice (2.60) million MT worth US\$ (1.41) billion, occupying the third position with (5) per cent of the world's total rice imports.

Table 7. Rice (HSC:1006) Top Importing Countries in the World (2023)

Rank	Importing Countries	Import Volume (MT)	Value ('000 USD)	Global Import (%)
	<b>World Total</b>	<b>51,173,123</b>	<b>33,359,719</b>	<b>100%</b>
1	Philippines	3,611,024	1,635,577	7.06%
2	Indonesia	3,062,858	1,789,024	5.99%
3	China	2,597,316	1,407,464	5.08%
4	Vietnam	2245393	743421	4.39%
5	Iraq	1,836,740	1,339,434	3.59%
6	Saudi Arabia	1,511,631	1,535,432	2.9%
7	Benin	1,487,643	652,788	2.91%
8	Malaysia	1,408,212	819,849	2.75%
9	USA	1,338,232	1,422,519	2.62%
10	Ivory coast	1,307,376	722,145	2.55%

Source: UN Comtrade 2023, ITC Trademap 2023

The total rice imports of Asian countries amounted to (24.62) million MT of rice, valued at US\$ (15.65) billion. The Philippines, Indonesia, China, Vietnam, Iraq and Saudi Arabia are the largest importers of rice worldwide, as well as the largest importers of rice in Asia. Other rice importers are Malaysia (1.41 million MT); The United Arab Emirates (0.83 million tons), Iran (0.75 million tons) and Turkey (0.71 million tons) each account for (3) to (6) percent of Asian rice imports (UN Comtrade 2023, ITC Trademap 2023).

Table 8. Rice (HSC:1006) Top Importing Countries in Asia (2023)

Rank	Importing Country	Import Volume (MT)	Import Value ('000 US\$)	Importing %
	<b>Total</b>	<b>24,616,714</b>	<b>15,652,187</b>	<b>100%</b>
1	Philippines	3,611,024	1,635,577	14.67%
2	Indonesia	3,062,858	1,789,024	12.44%
3	China	2,597,316	1,407,464	10.55%
4	Vietnam	2,245,393	743,421	9.12%
5	Iraq	1,836,740	1,339,434	7.46%
6	Saudi Arabia	1,511,631	1,535,432	6.14%
7	Malaysia	1,408,212	819,849	5.72%
8	UAE	832,096	670,007	3.38%
9	Iran	750,301	736,353	3.05%
10	Turkey	714,329	485,078	2.90%

Source: UN Comtrade 2023, ITC Trademap 2023

Asian countries are expected to increase the total volume of rice exports in 2023 (41.12) million MT accounting US\$ (26.63) million. India dominates Asia's rice export market, amounting (17.86) million MT of rice worth of US\$ (10.46) million. Thailand is the second largest rice exporter in Asia, with (8.75) million MT valued at US\$ (5.12) million. Vietnam is the third largest rice exporter in Asia, with (8.13) million MT valued at US\$ (4.78) million. Cambodia is also exporting 5.76 million MT of rice valued at US\$1.88 million, accounting for (14) percent of Asian rice exports. Pakistan has a market share (11) percent with 4.56 million MT of rice, China exports 1.63 million MT of rice, and Myanmar exports 1.60 million MT of rice, occupying 3.88 % of Asian rice export. It is found that the rice exports of Turkey, Singapore and Chinese Taipei account for less than (1) percent of the total rice exports in Asia. These data show that the rice export distribution of Asian countries plays an important role in meeting global rice demand (Table 9).

Myanmar exported a total of (969,966) MT of rice to Asian countries in 2023, with an export value of US\$467 million. The main importer of Myanmar rice is China. This export volume covers (45) percent of Myanmar's total exports to Asian countries, accounting (440,158) MT valued at US\$ (205.80) million. Indonesia imports (175,558) MT of rice valued at U.S. dollar (98.57) million from Myanmar, which volume covers (18) percent of Myanmar's total rice export. Export to the Philippines is (161,868) MT of rice worth at US\$ (76.13) million, covering (17) percent of Myanmar's total rice export. Malaysia, Bangladesh and Turkey each import (5) percent of rice exports from Myanmar, followed by Malaysia (52,336) MT, Bangladesh (51,525) MT and Turkey (46,966) MT. Myanmar's rice exports to various countries such as Vietnam, Thailand, Hong Kong, and Singapore are in the range of less than (1) percent to (2) percent respectively. Looking at these data, China is the main importer of Myanmar rice, while Indonesia and the Philippines are also the main importers of Myanmar.

Table 9. Top (10) Rice (HSC:1006) Exporters in Asian Countries (2023)

Rank	Exporting Countries	Export Volume (MT)	Value ('000 US\$)	Exporting Value %
	<b>Total</b>	<b>41,116,903</b>	<b>26,639,390</b>	<b>100%</b>
1	India	17,164,984	10,463,016	41.75%
2	Thailand	8,747,565	5,115,919	21.27%
3	Vietnam	8,130,000	4,780,000	19.77%
4	Cambodia	5,756,507	1,878,995	14.00%
5	Pakistan	4,560,394	2,880,907	11.09%
6	China	1,625,889	983,750	3.95%
7	Myanmar	1,595,315	743,513	3.88%
8	Turkey	258,016	178,425	0.63%
9	Singapore	156,797	81,924	0.38%
10	China Taipei	128,748	88,690	0.31%

Source: UN Comtrade 2023, ITC Trademap 2023

Table 10. Top (10) Myanmar's Rice (HSC:1006) Importers in Asian Countries (2023)

Rank	Rice Importers in Asian Countries	Export Volume (MT)	Value ('000 US\$)	Exporting %
	<b>Total</b>	<b>969,966</b>	<b>467,053</b>	<b>100%</b>
1	China	440,158	205,798	45.38%
2	Indonesia	175,558	98,569	18.10%
3	Philippines	161,868	76,131	16.69%
4	Malaysia	52,336	25,485	5.40%
5	Bangladesh	51,525	20,375	5.31%
6	Turkey	46,966	21,811	4.84%
7	Vietnam	23,559	10,704	2.43%
8	Thailand	5,179	2,065	0.53%
9	Hong Kok	3,794	1,789	0.39%
10	Singapore	3,770	1,784	0.39%

Source: UN Comtrade 2023, ITC Trademap 2023

The total volume of broken rice imported by the countries of the world is expected to reach (6.41) million MT at the value of US\$ (2.79) billion in 2023. Asian countries are the largest importers of broken rice in terms of total (1.97) million MT valued at US\$ (854.58) million in 2023 (Source: UN Comtrade 2023, ITC Trademap 2023).

Pakistan and Thailand dominate Asia's broken rice export market, accounting for (23) percent of the total exports in Asia. Pakistan exported (1.04) million MT valued at US\$ (409.07) million, while Thailand exported (1.02) million MT valued at US\$ (497.72) million. India exported (1.02) million MT valued at US\$ (497.72) million. Myanmar and Vietnam each own (16) percent of the

total broken rice export market share, while Myanmar exports (713,725) MT worth at US\$ (301.75) million (UN Comtrade 2023, ITC Trademap 2023).

Table 11. Asia's Largest Broken Rice (HSC:100640) Exporters (2023)

Rank	Exporting Countries	Export Volume (MT)	Value ('000 US\$)	Exporting %
	<b>Total</b>	<b>4,524,750</b>	<b>1,936,379</b>	<b>100%</b>
1	Pakistan	1,041,945	409,065	23.03%
2	Thailand	1,021,656	479,724	22.58%
3	India	971,385	329,643	21.47%
4	Myanmar	713,725	301,752	15.77%
5	Vietnam	709,248	348,569	15.67%
6	Kazakhstan	33,745	13,036	0.75%
7	Turkey	15,660	7,892	0.35%
8	Cambodia	10,647	6,067	0.24%
9	Lao PDR	4,088	2,666	0.09%
10	Hong Kong	1,260	812	0.03%

Source: UN Comtrade 2023; ITC Trademap 2023

Myanmar exported (368,806) MT of broken rice to Asian countries in 2023, with a total export value of US\$ (163) million. Main importer of Myanmar's broken rice is China, contributing (79) percent of Myanmar's exports to Asian countries, totaling (290,066) MT valued at US\$ (129.66) million. It is observed that China is a major importer of broken rice from Myanmar, while Indonesia and the Philippines are also important for the market of Myanmar's broken rice (Table 12).

Table 12. Export of Myanmar's Broken Rice (HSC: 100640) in 2023 to Countries in Asia

Rank	Trading Partner Country	Export Volume (MT)	Export Value ('000 US\$)	Export %
	<b>Total</b>	<b>368,806</b>	<b>163,914</b>	<b>100%</b>
1	China	290,066	129,659	78.65%
2	Indonesia	25,558	11,134	6.93%
3	Philippines	24,908	10,773	6.75%
4	Vietnam	20,734	9,283	5.62%
5	Thailand	5,179	2,065	1.40%
6	Singapore	1,317	540	0.36%
7	Malaysia	526	191	0.14%
8	Hongkong	518	269	0.14%

Source: UN Comtrade 2023, ITC Trademap 2023

### 5.1.8 Product Competitiveness, export potential and comparative advantage

#### ❖ Nominal Protection Rate (NPR)

If the NPR value is equal to (1) or less than (1), then the production of the product can be said to be competitive, and if the NPR value is greater than (1), it can be said that it is not competitive. Myanmar exports rice (HSC: 1006) mainly to European and Asian countries such as Belgium, China,

Hong Kong, Malaysia, the Philippines, Singapore and Turkey. In Belgium, China, Hong Kong, Singapore, and Turkey, NPR values were found to be lower than (1). The Nominal Protection Rate (NPR) of Myanmar rice status is shown in Table 13.

Table 13. Nominal Protection Rate (NPR) of Myanmar Rice (HSC: 1006) (2023)

Importing Countries	Pm	Pw	NPR (Pm/Pw)
	CIF Price at Importing Countries (US\$/ton)	Wholesale Price at Importing Countries (US\$/Ton)	
Belgium	452	730	0.62
China	416	619	0.67
Hong Kong	506	620	0.82
Malaysia	511	365	1.40
Philippines	1,101	448	2.46
Singapore	505	2,060	0.24
Turkey	576	2,835	0.20

Source: UN Comtrade 2023, FAOSTAT 2023, Myantrade 2023

Therefore, Myanmar's rice (HSC: 1006) is found to be able to export to their rice markets in competition with other exporting countries at the current world market price, but in Malaysia and the Philippines the NPR value is found to be greater than (1) which means that Myanmar's rice export to these countries could not be competitive with other exporting countries.

Table 14. Nominal Protection Rate (NPR) of Myanmar's Broken Rice (HSC: 100640) (2023)

Importing Countries	Pm	Pw	NPR (Pm/Pw)
	CIF price at Importing Countries (US\$/ton)	Wholesale Price at Importing Countries (US\$/Ton)	
Belgium	447	587	0.76
China	394	1,780	0.22
Hong Kong	506	645	0.78
Malaysia	390	348	1.12

Source: UN Comtrade 2023, FAOSTAT 2023, Myantrade 2023

Myanmar's broken rice (HSC: 100640) is mainly exported to European and Asian countries such as Belgium, China, Hong Kong and Malaysia. Since the NPR value is less than (1) in Belgium, China and Hong Kong, Myanmar Rice is able to export to these countries in competition with other exporting countries at the current global rice market price. However, since the NPR value in Malaysia is greater than (1), it is found that Myanmar rice is not competitive in Malaysia's rice market.

#### ❖ Productivity and Quality Competitions

Following Table 15 shows the paddy yield of Myanmar and other Asian countries from 2014 to 2022. Myanmar's paddy yield has remained stable from (3.86) MT per hectare in 2014 to (3.58) MT in 2022 and has declined slightly. In contrast, China has increased from (6.81) MT per hectare in 2014 to (7.08) MT in 2022. India's paddy yield has also been steadily improving since 2014. It reached (4.23) MT per hectare in 2022 from (3.59) MT per hectare.

Paddy yield in Pakistan rose from (3.63) MT per hectare in 2014 to (3.96) MT in 2021 and declined to (3.69) MT in 2022. Thailand and Cambodia produced (2.85) MT per hectare in 2015 and reached a peak of (3.07) MT in 2017, with a gradual decline. Cambodia produced (2.85) MT per hectare in 2015 and reached a peak of (3.07) MT in 2017. The rice yield across the country varies due to agricultural technology, climate conditions, and government policies aimed at boosting paddy production.

Table 15. Paddy Yield (MT/Ha) in Myanmar and other Asian Countries

Year	Cambodia	China	India	Myanmar	Pakistan	Thailand
2014	3.08	6.81	3.59	3.91	3.63	3.06
2015	3.08	6.89	3.60	3.93	3.72	2.85
2016	3.21	6.86	3.74	3.88	3.77	2.97
2017	3.30	6.91	3.86	3.86	3.85	3.07
2018	3.35	7.03	3.96	3.92	3.84	3.04
2019	3.34	7.06	4.08	3.86	3.67	2.92
2020	3.35	7.04	4.07	3.87	3.79	2.90
2021	3.49	7.11	4.20	3.90	3.95	2.95
2022	3.52	7.08	4.23	3.58	3.69	2.99

Source: FAOSTAT 2023, CSO 2023

Table 16. Comparison of FOB Prices of Rice (HSC:1006) of Myanmar and Asian Major Rice Exporter (US\$/Ton)

Year	Vietnam	India	Thailand	Cambodia	Pakistan	China	Myanmar
2014	464	708	496	667	582	903	398
2015	425	580	465	612	475	934	378
2016	449	536	443	571	430	888	766
2017	453	584	443	565	478	499	462
2018	906	631	503	732	512	425	512
2019	445	693	555	758	496	385	336
2020	496	546	648	719	527	398	396
2021	526	452	552	665	542	423	398
2022	729	484	515	648	511	467	365
2023	544	586	585	326	632	605	466

Source: UN Comtrade 2023, ITC Trademap 2023, Myantrade 2023

Table 17 shows a comparison of exporting rice (HSC: 1006) quality and price-value conditions of Myanmar and other Asian rice exporting countries. The comparative quality and price value are the division between the (FOB) price of rice in Myanmar and (FOB) price of the rice in another comparable country. If it is greater than 1, it can be said that Myanmar is getting high price due to its better quality than other comparable countries. If it is equal to (1), it can be said that it is of the same quality with the same price of rice in the market with other comparable countries. If it is less than (1), it can be said that it has low price and inferior quality than rice in other comparable countries.



Table 17. Comparison of Export Quality of Rice (HSC:1006) between Myanmar and other Asian Countries

Year	Vietnam	India	Thailand	Cambodia	Pakistan	China
2014	0.86	0.56	0.80	0.60	0.68	0.44
2015	0.89	0.65	0.81	0.62	0.79	0.40
2016	1.71	1.43	1.73	1.34	1.78	0.86
2017	1.02	0.79	1.04	0.82	0.97	0.93
2018	0.57	0.81	1.02	0.70	1.00	1.21
2019	0.75	0.49	0.61	0.44	0.68	0.87
2020	0.80	0.73	0.61	0.55	0.75	1.00
2021	0.76	0.88	0.72	0.60	0.73	0.94
2022	0.50	0.75	0.71	0.56	0.71	0.78
2023	0.86	0.80	0.80	1.43	0.74	0.77

Source: UN Comtrade 2023, ITC Trademap 2023, Myantrade 2023

In Table 17, it is observed that comparative quality between Myanmar and other comparable countries during the period of 2014 to 2023. It shows that the comparative indicators in many years are less than 1 in order to compete with other exporting countries in Asia. The results is indicating that efforts need to be made not only to boost the yield but to improve the quality of rice also in Myanmar.

Table 18. Comparison of FOB Prices of Broken Rice (HSC:100640) between Myanmar and other Exporting Countries in Asia (US\$/MT)

Year	Pakistan	Thailand	India	Myanmar	Vietnam
2014	416	376	300	385	388
2015	365	371	281	370	323
2016	346	385	278	706	368
2017	408	381	303	294	361
2018	387	414	309	312	404
2019	329	473	291	265	398
2020	336	528	297	344	490
2021	366	439	287	385	450
2022	331	428	309	341	372
2023	393	487	339	423	491

Source: UN Comtrade 2023, ITC Trademap 2023, Myantrade 2023

Table 19 shows a comparison of the export quality of broken rice (HSC: 100640) of Myanmar and other Asian rice exporting countries. During 2014 to 2023, the FOB prices of broken rice exports from Myanmar were found to be in the vicinity of (1) compared to other broken rice exporting Asian countries, meaning that the quality of broken rice exports from Myanmar was not low compared to other exporting countries. In order to achieve the sustainable price of broken rice in export market, it is necessary to maintain the quality as well.

Table 19. Comparison of Export Quality of Broken Rice (HSC: 100640) between Myanmar and Other Asian Countries

Year	Pakistan	Thailand	India	Vietnam
2014	0.93	1.02	1.28	0.99
2015	1.01	1.00	1.32	1.14
2016	2.04	1.83	2.54	1.92
2017	0.72	0.77	0.97	0.81
2018	0.81	0.75	1.01	0.77
2019	0.80	0.56	0.91	0.66
2020	1.02	0.65	1.16	0.70
2021	1.05	0.88	1.34	0.86
2022	1.03	0.80	1.10	0.92
2023	1.08	0.87	1.25	0.86

Source: UN Comtrade 2023, ITC Trademap 2023, Myantrade 2023

#### ❖ Analysis of trade/export potential of Myanmar Rice (HSC:1006)

Table 20 shows the export potential of Myanmar rice (HSC: 1006) to partner countries during 2023. The most promising trading partners for Myanmar rice exports are China, Indonesia, the Philippines and Malaysia. Other potential trading partners are Belgium, Bangladesh, Turkey, Thailand, Hong Kong, and Singapore.

Table 20. Trade/Export Potential of Myanmar Rice (HSC. 1006) in 2023

Trading Partners with Myanmar	Total Export Volume of Rice by Myanmar to World Market (MT)	Total Importing Volume of Rice by Trading Partners from World Market (MT)	Export Volume by Myanmar to Trading Partners (MT)	Export Potential of Myanmar
Belgium	1,595,315	681,448	214,300	467,148
China	1,595,315	2,597,315	440,158	1,155,157
Indonesia	1,595,315	3,062,857	175,558	1,419,757
Philippines	1,595,315	3,611,023	161,868	1,433,447
Malaysia	1,595,315	1,408,213	52,336	1,355,877
Bangladesh	1,595,315	379,427	51,525	327,902
Turkey	1,595,315	714,328	46,966	667,362
Thailand	1,595,315	15,748	5,179	10,569
Hong Kong	1,595,315	270,441	3,794	266,647
Singapore	1,595,315	434,132	3,770	430,362

Source: UN Comtrade 2023, ITC Trademap 2023

The export potential for Myanmar broken rice (HSC: 100640) to trading partners in 2023 is shown in Table 21. The most promising trading partners for Myanmar broken rice exports are China, Indonesia, Belgium, and the Philippines. Other potential trading partners are Vietnam, Singapore, Hong Kong and Malaysia.

Table 21. Trade/Export Potential of Myanmar Broken Rice (HSC:100640) in 2023

Trading Partner Countries with Myanmar	Total Export Volume of broken rice by Myanmar to World Market (MT)	Total Import Volume of broken rice by Trading Partners from World Market (MT)	Export Volume of broken rice by Myanmar to Trading Partners (MT)	Export Potential of Myanmar (MT)
Belgium	713,725	343,177	200,050	143,127
China	713,725	845,597	290,066	423,659
Indonesia	713,725	345,687	25,558	320,129
Philippines	713,725	147,709	24,908	122,801
Malaysia	713,725	7,436	526	6,910
Vietnam	713,725	40,910	20,734	20,176
Hong Kong	713,725	11,887	518	11,369
Singapore	713,725	13,900	1,317	12,583

Source: UN Comtrade 2023, ITC Trademap 2023

### ❖ Revealed Comparative Advantage (RCA) and Revealed Symmetric Comparative Advantage (RSCA)

Table 22 shows the global market comparative advantage of Myanmar exports (HSC: 1006) for a period of 10 years from 2014 to 2023 in terms of values of Revealed Comparative Advantage (RCA) and Revealed Symmetric Comparative Advantage (RSCA). During this period, the global market comparative strength of Myanmar rice is observed to be substantial, as the RCA values are greater than (4) and the RSCA values are greater than (0.6).

Table 22. Global market comparative advantage (RCA and RSCA) of Myanmar Rice (HSC: 1006)

(Value = '000 US\$)

Year	Value of Rice Export by Myanmar ('000 US\$)	Value of Total Export by Myanmar ('000 US\$)	Value of World Rice Export ('000 US\$)	Value of World Total Export ('000 US\$)	*RCA	**RSCA
2014	621,314	11,451,861	26,608,303	18,856,957,626	38.45	0.95
2015	611,826	11,431,792	23,250,044	16,418,063,890	37.79	0.95
2016	438,936	11,672,718	20,684,884	15,924,203,652	28.95	0.93
2017	1,030,824	13,877,953	24,390,082	17,563,586,196	53.49	0.96
2018	883,378	16,702,159	25,984,528	19,329,050,174	39.34	0.95
2019	782,429	18,117,605	24,138,788	18,761,814,917	33.57	0.94
2020	773,175	16,949,755	25,633,168	17,514,968,797	31.17	0.94
2021	670,698	15,153,408	27,489,935	22,154,054,456	35.67	0.95
2022	786,839	17,084,513	30,343,342	24,719,795,601	37.52	0.95
2023	743,513	14,752,993	34,353,932	23,291,072,313	34.17	0.94

\*RCA = Revealed Comparative Advantage, \*\*RSCA = Revealed Symmetric Comparative Advantage

Source: UN Comtrade 2023, ITC Trademap 2023

The global market comparative advantage of Myanmar broken rice (HSC: 100640) during the 10-year period from 2014 to 2023 is presented in Table 23. Since the values of RCA are greater than (4) and the RSCA values are greater than (0.6), comparative advantage of the Myanmar broken rice in the global market is also significantly high.

Table 23. Global market comparative advantage (RCA and RSCA) of Myanmar broken rice (HSC: 100640)

(Value = '000 US\$)

Year	Value of Broken Rice Export by Myanmar ('000 US\$)	Value of Total Export by Myanmar ('000 US\$)	Value of World Broken Rice Export ('000 US\$)	Value of World Total Export ('000 US\$)	*RCA	**RSCA
2014	91,597	11,451,861	1,661,689	18,856,957,626	90.77	0.98
2015	145,703	11,431,792	1,935,891	16,418,063,890	108.09	0.98
2016	92,860	11,672,717	1,638,863	15,924,203,652	77.30	0.97
2017	201,370	13,877,953	1,947,621	17,563,586,196	130.85	0.98
2018	138,999	16,702,159	1,768,888	19,329,050,174	90.94	0.98
2019	192,545	18,117,605	1,640,689	18,761,814,917	121.53	0.98
2020	268,929	16,949,755	2,051,145	17,514,968,797	135.48	0.99
2021	257,880	15,153,408	2,804,949	22,154,054,456	134.41	0.99
2022	279,160	17,084,513	3,235,258	24,719,795,601	124.85	0.98
2023	301,752	14,752,993	2,634,250	23,291,072,313	180.84	0.99

\*RCA = Revealed Comparative Advantage, \*\*RSCA= Revealed Symmetric Comparative Advantage

Source: UN Comtrade 2023, ITC Trademap 2023

### 5.1.9 Strength, Weakness, Opportunities and Challenges (SWOC)

Strength	Weakness
<ul style="list-style-type: none"> <li>✓ The government encouragement in the implementation of MSMEs, which provides support to milling and rice-based value-added products</li> <li>✓ Strong border trade with China, and Myanmar's already secure a market place</li> <li>✓ Contract farming can be proceeded so that there is sufficient availability of raw materials</li> <li>✓ Demand for rice in global market as Food Security Issues</li> <li>✓ Having a contract with the GACC</li> <li>✓ The Department of Agriculture's laboratory tests have been accredited with ISO 17025</li> </ul>	<ul style="list-style-type: none"> <li>✓ Inadequate access to electricity</li> <li>✓ Need to upgrade small and medium rice mills and establish international standard of rice complexes</li> <li>✓ Weak performance of domestic and international market research and supply chain analysis</li> <li>✓ Require more internationally accredited laboratories capable of quality analysis and the lack of service delivery capacity</li> <li>✓ Need to upgrade border trading posts and the lack of a warehouse receipt financing system</li> <li>✓ Need for development in the logistics sector, which is a key requirement for the smooth flow of trade</li> <li>✓ There are not enough containers, long waiting times</li> <li>✓ Rising costs for forklifts and other rentals</li> <li>✓ Insufficient number of dryers</li> <li>✓ Despite contracting with the GACC face difficulty in border trade due to territorial conditions</li> </ul>

Opportunity	Challenges
<ul style="list-style-type: none"> <li>✓ the expansion of domestic and foreign markets</li> <li>✓ The potential for increased domestic investment opportunities</li> <li>✓ Attracting more foreign direct investment and increasing the availability of technology</li> <li>✓ There are G to G agreements</li> <li>✓ Creating Job Opportunities in Factory Zones</li> </ul>	<ul style="list-style-type: none"> <li>✓ Rising input material prices, higher costs in the transportation sector</li> <li>✓ Compensation issues can lead to higher costs for re-cleaning</li> <li>✓ Delays in paperworks</li> <li>✓ Shipping is difficult in rainy season</li> <li>✓ The lack of access to electricity has led to high costs and high costs of running on their own diesel</li> <li>✓ Shipping through the border is fast, but the border situation is unstable, so shipping by sea is not easy</li> <li>✓ There are losses due to the estimation of price fluctuations, and unexpected reactions from buyers</li> <li>✓ Increasing competitiveness in the global rice market</li> <li>✓ Weak infrastructure and facilities of commercial ports, resulting in higher costs</li> </ul>

## 5.2 Maize

### 5.2.1 Importance in Myanmar's economic development

Maize has great export potential and it is mainly supported on domestic animal feed. Therefore, the plantation area of corn is increasing every year and the production is also increasing. Maize is one of the most basic raw materials for Myanmar's livestock sector, and it is used up to (40-55) percent in livestock feed. Maize does not have as much protein content as milled cake from oil crops. However, it is widely used in the domestic animal feed market due to its consistency with the specified quality of feed mills; the need for starch; being the main raw material used in food formulations; more reasonable price than other raw materials.

Major growing regions of maize are Shan State, Sagaing Region, Kachin State and Central regions of Myanmar. The main domestic markets are Yangon and Mandalay markets. Yangon market is mainly supported by Irrawaddy and lower regions of Myanmar and Mandalay market is supported by Shan State, Central Myanmar and Kachin State where are the main contributing areas of the country. Maize from Northern Shan State, which is the main source maize, is exported to the Chinese market rather than the domestic market. Maize, produced in southern and east regions of Shan State, is mainly exported Thailand through Tachileik.

Although the target yield of maize crop was (5.13) MT/Ha, the average yield of one hectare over a period of ten years was only about (3) MT/Ha. Although most of the seeds ordered from abroad are planted, local and well-quantified local varieties are also being produced and distributed by DOA and seed entrepreneurs. Shan State accounts for (65) percent of domestic maize production, and

Sagaing region accounts for (12) percent of total agricultural production; (5) percent from Kachin State; (4) percent from Karen State and (3) percent from Irrawaddy Region are growing and producing, respectively. The regions with the lowest maize production are Mandalay Region, Bago Region, Yangon Region, Magway Region. The Rakhine State and Mon State, Tanintharyi Region has no maize production.

Table 24. Sown Area, Yield and Production of Maize in Myanmar (2012-2013 to 2022-2023)

Year	Sown area ('000 Ha)	Yield (MT/Ha)	Production ('000 MT)
2012-2013	422	3.64	1,526
2013-2014	441	3.70	1,626
2014-2015	459	3.75	1,721
2015-2016	472	3.79	1,779
2016-2017	490	3.80	1,856
2017-2018	504	3.87	1,936
2018-2019	520	3.87	2,012
2019-2020	519	3.90	2,013
2020-2021	557	3.91	2,106
2021-2022	607	3.75	2,274
2022-2023	601	3.83	2,303

Source: DOP, 2022 & CSO, 2024

CP varieties of maize such as CP-888, CP-808, CP-868, CP-222, CP-809 are mostly grown due to demand of Thailand. Maize seed such as Yezin-3, Yezin-4, Yezin-10, Yezin-11 and other varieties released by the Department of Agriculture Research (DAR) of MOALI are also grown. An agreement on plant health requirements to export maize from Myanmar to China was signed between Myanmar and China's GACC on 31-1-2022. Therefore, Myanmar should expand the areas of maize cultivation in order to meet not only domestic demand and also more demand of export market. Export of maize by Myanmar was (1.92) million MT in 2022-2023 and slightly decreased to (1.81) million MT in 2023-2024. Maize is mainly exported to India by water way and to Thailand through the border check points of Kawthaung and Tachi leik.

### 5.2.2 Role of maize in both domestic and export markets

There are 165 maize producing countries around the world according to FAOSTAT data. The most productive countries are the United States, China, Brazil, Argentina and India by 2022. These five countries' production accounts for about (77) percent of the world's maize production (1.4) billion MT. Myanmar's maize production is standing still at (45) ranking of world production.

According to data from the World Integrated Trade Solution, 86 countries exported (192.34) million MT of maize to the world market by 2023, at worth US\$ (49.7) billion. The main exporter countries are Brazil, the United States, Ukraine, Argentina, and the European Union. Myanmar stands at the world level 16 among the maize exporting countries and are found to export mostly to India and Thailand.

About (40) percent of maize production in Myanmar is mainly used in local livestock foodstuffs, and (60) percent of its production is exported. Export channels were not only to border trade but also by water way to 19 countries during from 2007-2018 to 2023-2024 fiscal years. Myanmar's maize export to China were (97) percent and (45) percent of the total export volume in 2007-2008 and 2008-2009 respectively. The SPS Protocol on maize was officially signed between Myanmar and the General Customs Authority of China (GACC) in 31<sup>st</sup> January 2022. Exports to Thailand have increased since 2019–2020. Export to Thailand reached (73) percent of total export and increased to (86) percent of total export in 2020-21. Since October 2021, Myanmar's exports to the Philippines and Vietnam have risen dramatically.

According to the ASEAN Free Trade Agreement (AFTA), Myanmar has the right to export maize to Thailand through the border with tax exemption in 2022. More than (95) percent of Thailand's maize imports are mainly imported from Myanmar. Therefore, Thailand is a good prospect for Myanmar's maize export market. During the 2024–2025, more than (0.87) million MT of maize were exported by Myanmar, being worth of more than US\$ (196) million. It is also a good prospect for Myanmar to export maize to India since the Indian government allowed to import (500,000) tons of maize as country's requirement.

### **5.2.3 Trade development between Myanmar and China**

Four areas of trade facilitation between the two countries are: (1) transparency (transparent publication by the government for public awareness of trade information); (2) simplification (abolishing unwanted trade procedures and methods) and (3) harmony (local trading processes (standardization, law and procedures) to be conformed with international recognition practices. Sanitary and Phytosanitary protocol of potential crops, livestock and aquatic products are being signed to facilitate trading goods to be exported to China.

Areas to benefit from trade facilitation are (1) government sector (increased taxes from trading, better use of resources, and improved recognition and compliance of traders in trading business); (2) the private sector (improved predictive capacity, faster in trading operation, and reduced transportation costs; increased competitiveness of MSMEs in international trading); (3) the economic sector (increasing exports, increasing competitiveness on the international market, and increasing international trade); and (4) Trade sector (reducing costs and delays, faster customs permits, increased efficiency).

According to reports by the Department of Consumer Affairs, the processes undertaken to transport maize between Myanmar and the People's Republic of China are:

- (a) Department of Agriculture calls on Expression of Interest -EOI;
- (b) the storage facilities, dryers, and sunscreens of the applicants are on ground checked by MITS;
- (c) checking the warehouses of corn export companies whether or not compliance with SPS Protocol regulations and then inspection findings are submitted to the Working Task Force;

- (d) the warehouse, dryer, and sunscreen records of companies selected by the Working Task Force are being sent to the Department of Agriculture;
- (e) The Department of Agriculture submits details and final inspection report to MOALI in order to register companies' list of storage, dryers, and sunscreens on the GACC Website;
- (f) in order to receive export permission from MOALI, the information needed in registration process and the Inspection Report are sent to the Ministry of Foreign Affairs, and
- (g) the inspection report and the information needed in Registration of companies are sent by Ministry of Foreign Affairs to GACC to issue export permit.

#### 5.2.4 Domestic consumption and export

In Myanmar, production of quality maize is not only crucial for the livestock feed but also important for local markets and foreign trade throughout the chain. Therefore, effective changes and adjustment in production, marketing, use, domestic markets, and external trade are effective to the farmers. It is necessary to analyze production, consumption, market positions, and competition.

Maize is mainly purchased and used by large factories located in Yangon Region, Mandalay Region and Shan State that produce feed for fish, pork and poultry. The number of factories has also increased steadily (Mekong Business Initiative, 2017). In Myanmar, maize is mainly used for the livestock sector, and the demand for maize in Myanmar is in tandem with the growth of the livestock sector (Agribusiness Bulletin, 2023). Domestically, the main consumer of corn is animal feed, accounting for (40) to (60) percent.

As for the livestock sector, maize production in Myanmar is an average of about 3 million MT per year, which is not entirely consumed by Myanmar's livestock sector. Maize production is often used as the first priority in most animal feeds, especially poultry. The export of surplus quantities of maize to foreign countries has also increased, resulting that farmers are growing more maize sown area.<sup>20</sup> Maize is one of the raw materials used in livestock feeds which include 46.94 percent of it. (Agribusiness Bulletin, 2023). It is estimated that about (1) million MT of maize will be used in animal feed processing plants in Myanmar<sup>21</sup>, and the surplus will be exported. According to the data, Myanmar will produce about (2.30) million MT of maize in 2023 and about (0.50) million MT of maize will be used for domestic animal feed. About (1.80) million MT of surplus maize is to be exported to foreign countries such as Thailand, China, India, the Philippines, and Vietnam (Global New Light of Myanmar, 2024).

Myanmar exported (1.22) million MT of maize to Asian countries in 2023 with a value of US\$ (453.03) million. Myanmar's main importer of maize is Thailand, which absorbs (80) percent of its exports to Asian countries, amounting to (987,106) MT, worth of US\$ (379.39) million. Myanmar

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<sup>20</sup> Excerpted from Key Informant Interview (Traders).

<sup>21</sup> Key Informant Interview (Official)



exports (9) percent of total maize export to the Philippines amounting (110,433) MT worth of US\$ (30.05) million. China imports (8) percent (98,937) MT of Myanmar's total export worth at US\$ (32.95) million. Vietnam imports (19,590) MT of maize at US\$ (5.89) million and Bangladesh imports (15,400) MT worth of US\$ (4.62) million from Myanmar. Maize exported to China-Taipei, Brunei, Singapore, Nepal and India account for less than (1) percent of total exports. It can be observed that Thailand, the Philippines, and China are very important to Myanmar's maize export market (Table 25).

Table 25. Top Asian Countries Importing maize (HSC: 1005) from Myanmar (2023)

Rank	Myanmar's Maize Importing Countries	Export Amount (MT)	Export Value ('000 US\$)	Export % to Asian Countries
	<b>Total</b>	<b>1,222,930</b>	<b>453,026</b>	<b>100%</b>
1	Thailand	978,106	379,389	80%
2	Philippines	110,433	30,053	9%
3	China	98,937	32,947	8%
4	Vietnam	19,590	5,886	2%
5	Bangladesh	15,400	4,620	1%
6	China Taipei	192	50	0%
7	Brunei	120	36	0%
8	Singapore	115	33	0%
9	Nepal	32	10	0%
10	India	5	2	0%

Source: FOASTAT 2023, Myantrade 2023

Myanmar exported maize to 19 countries including Thailand, the Philippines, Vietnam, Bangladesh, and China, being the main importers during the 2017-2018 to the 2022-2023. The highest export year for maize was the 2020-2021, accounting (2,613,000) MT in terms of volume.

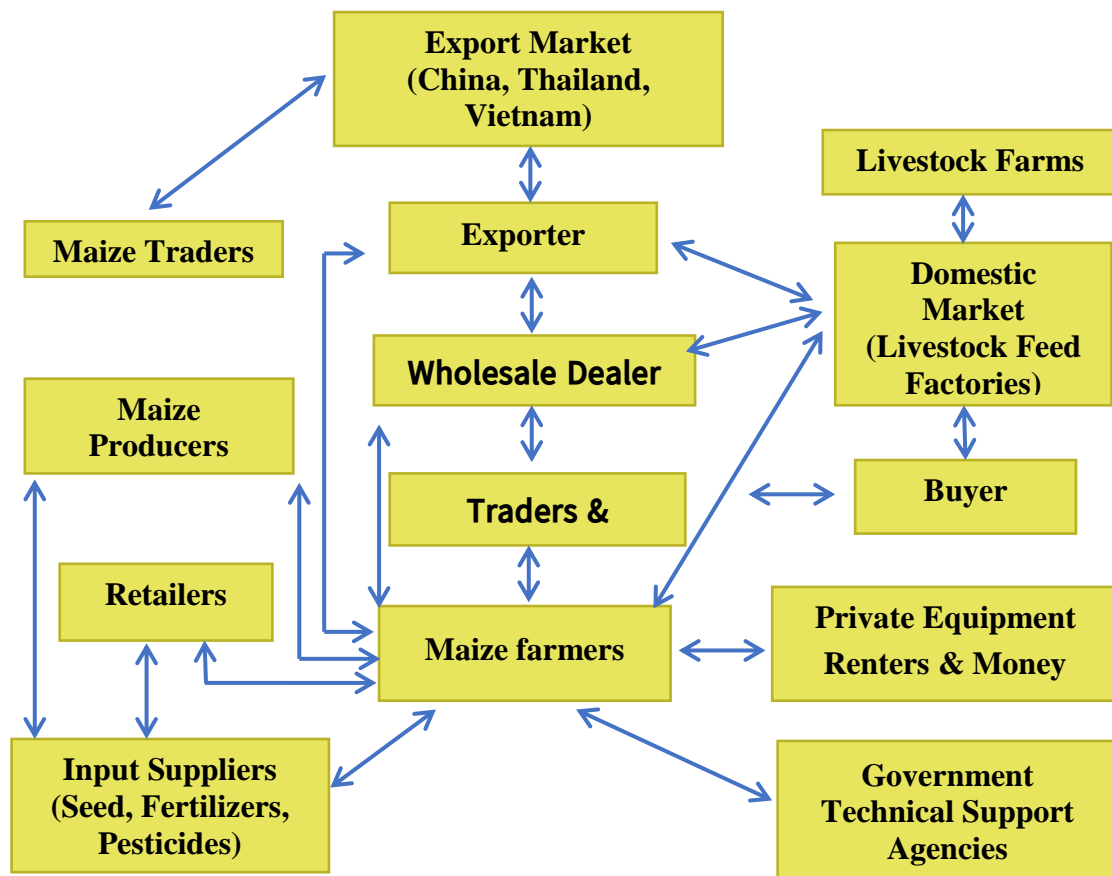
### 5.2.5 Value chain of the maize

The maize value chain includes maize growers, agricultural input suppliers, government organizations to provide technical support, maize associations, retailers/buyers of seeds, exporters and sellers from abroad, and producers of value-added maize products, etc.

In the maize value chain, we find that corn growers sell the grain with the market price at the time of crop production to their local maize retailers and traders. Some farmers sell directly to the wholesale grain collection centers. Some farmers are waiting the rising price of grain and sell their stocks to maize buyers from animal feed factories located in Yangon, Mandalay and Taunggyi Towns. Maize vendors deliver maize kernels purchased from farmers to the maize collecting centers located in the nearest town in their area. Maize vendors are engaged in the business, taking only labor and transportation costs as commissions. However, some traders buy grain from farmers with their own capital investment and resell it only when the maize market is good.

Maize farmers sell their produce to brokers and wholesale trading centers. The wholesale dealers sell their collected grains to animal feed processing plants in the domestic market, and surplus grains are sold to exporters. Products produced by local animal feed factories are widely used in livestock farms in the country. Maize can be used as a livestock feed and also produced as value-added products such as corn oil (cooking oil), starch, glucose (liquid/powder), starch, ethanol fuel, brewing, and more.

Figure 4. Maize Value Chain Diagram



### 5.2.6 Challenges in production and export

According to a study of the percentage of post-harvest crop losses of maize conducted by the Department of Agricultural Research, it was found that there are losses of up to an estimated (20-30) percent in the implementation of post-harvest processes of maize (DAR, 2020). Due to prolonged rains after the harvest (especially in Shan State) after harvest problems have occurred in which the maize becomes damp and infest fungus on stock. Therefore, post-harvest techniques need to be used effectively to avoid deterioration in the quality of maize. Since Myanmar's maize production is dominated by varieties imported from Thailand, efforts should be made to cultivate varieties produced at home country. In order to reap the maximum benefits from maize cultivation and to ensure the long-term sustainability of maize cultivation, it is necessary to ensure that processes such as the selection of suitable maize varieties according to the regions concerned, the systematic use of fertilizer, the proper control of weeds and the use of effective small farming equipment. Farmers are

now facing with issues such as rising input prices, especially seed, fertilizer and fuel prices, affecting crop productivity.

The payment systems in Thailand and Vietnam, which are purchased as payment for the export of maize, have treated Myanmar exporters equally, but when exporting from the border to China, they have faced unequal treatment in terms of payment for goods purchased from Chinese buyers, and they have faced backlogs and money laundering.<sup>22</sup> The current challenges faced by Myanmar's maize production and export sectors are rising prices of seeds and inputs, rising labor wages, and labor shortages. In the international market, the high cost of producing a ton of maize is a major weakness for market competition. The company faces challenges such as payment banking systems, high logistical costs, long waiting times at the port and high costs of shipping by sea.<sup>23</sup>

As information from study visit of the project team to Eastern Shan, (73) percent of tariff imposed by Thailand site on maize export from Myanmar starting from 1<sup>st</sup> September to 31<sup>th</sup> January in every year even though imposing zero tariffs on maize exported to Thailand on other months of the year. This type of tariff imposing seasonally on maize is announced by Thailand site annually to be aware of exporters from Myanmar site. This issue of seasonal tariff imposing on maize export by Thailand should be discussed in trade facilitation meetings and raised in free trade consultation in ASEAN. Maize is grown on upland after slash and burn practices is prohibited to import Thailand, giving reason of smog issue which delays in shipping routes, affecting crop quality and price fluctuations. Importers also demand for fumigation certificate on stored maize before importation.<sup>24</sup> The export industry has become more difficult on the whole from the last (5) years, because of the fluctuations in the domestic market and the exchange of money which affect increased costs throughout the process.<sup>25</sup>

Regarding crop sector development, the Myanmar Rice Development Strategy and the Myanmar Pulses Sector Development Strategy have been formulated, but there is lacking maize crop development strategy until now (DAR, 2019) In order to improve maize production.

### **5.2.7 Trading partners and export share in international market**

Maize is the third-largest productive crop in the world (Farming and Trade Branch, 2022). There are 165 nurturing countries in maize production, and by 2023, global maize production produced up to about (1.22) billion MT (US\$A). The United States, China, Brazil, and the European Union (EU) are top ranking in the world's most productive countries which include Argentina, India, Ukraine, Mexico, Russia and Canada.

By 2023, maize production conditions in the most productive countries are (389.69) million MT in the United States, (288.8) million MT in the People's Republic of China, (122) million MT in Brazil. Myanmar stands at 33<sup>rd</sup> in the world's list of maize producing countries (USA, 2024).

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<sup>22</sup> Key Informant Interview (Traders)

<sup>23</sup> Focus Group Discussion (Traders)

<sup>24</sup> Focus Group Discussion (Traders), Tachi Leik

<sup>25</sup> Key Informant Interviews from Economic Attaches of Embassies of Myanmar in overseas

Table 26. Ten Largest Maize Producing Countries and Myanmar

No.	Countries	Production of Maize (Million Metric Ton)	
		2023	2022
1	USA	389.69	346.70
2	China	288.84	277.20
3	Brazil	122.00	137.00
4	EU	61.41	52.30
5	Argentina	50.00	36.00
6	India	37.50	38.10
7	Ukraine	32,50	27.00
8	Mexico	22.70	28.10
9	Russia	16.60	15.80
10	Canada	15.42	14.50
11	Myanmar	2.30	2.27

Source: CSO, 2024 & US\$A, 2024

The main trading partners of Myanmar maize are Thailand, China and Philippines. Thailand dominates Myanmar's corn market by importing (80) percent, followed by the Philippines with the second largest share of importing (9) percent of total exports, and China with (8) percent. Remaining (3) percent of maize are exported to other countries. Brazil is China's main maize exporter, accounting for (45) percent of total imports. Secondly, it was found that (27) percent of the total imports were imported from the United States, (21) percent from Ukraine and (1) percent from Myanmar.

Argentina is the main seed exporter to the Philippines, accounting for (34) percent of total imports. (24) percent of the maize import was imported from Vietnam, (12) percent from Indonesia and (11) percent from Myanmar. Thailand mainly imports (89) percent of its total imports from Myanmar and (8) percent was imported from Laos and (3) percent from Cambodia.

## 5.2.8 Product Competitiveness, export potential and comparative advantage

### ❖ Product Competitiveness

The National Protection Rate (NPR) of Myanmar's maize (HSC: 1005) is expected to be updated in the 2023. If the NPR value is equal to (1) or less than (1), then the production of the product can be said to be competitive, and if the NPR value is greater than (1), it can be said that it is not competitive. Myanmar maize exports (HSC: 1005) are mainly exported to Asian countries such as China, the Philippines, Singapore and Thailand. Since NPR values in such exports are less than 1 which can be determined that Myanmar's maize is competitive in export to these importing countries at current global market price.

Table 27. National Protection Rate (NPR) of Myanmar Maize (HSC: 1005) (2023)

Countries Importing Maize from Myanmar	Pm	Pw	NPR (Pm/Pw)
	CIF Price of Maize to Importing Countries (US\$/Ton)	Wholesale Piece of Maize at Importing Countries (US\$/Ton)	
China	338	405	0.84
Philippines	341	3145	0.11
Singapore	661	3220	0.21
Thailand	339	1020	0.33

Source: FAOSTAT 2023, ITC Trademap 2023, Myantrade 2023

### ❖ Productivity and Quality Competitiveness

Table 28. Maize Yield Comparison of Myanmar and other Asian Countries (MT/Ha)

Year	Bangladesh	China	Myanmar	Philippines	Thailand	Vietnam
2014	6.92	5.81	3.70	2.98	4.25	4.41
2015	6.98	5.89	3.72	2.93	4.18	4.54
2016	7.30	5.97	3.75	2.91	4.38	4.55
2017	7.76	6.11	3.81	3.10	4.60	4.65
2018	8.21	6.10	3.82	3.09	4.60	4.72
2019	8.02	6.32	3.85	3.17	4.35	4.80
2020	8.51	6.32	3.85	3.18	4.45	4.85
2021	8.58	6.29	3.75	3.24	4.55	4.94
2022	8.91	6.44	3.75	3.27	4.57	5.00

Source: FAOSTAT 2023, CSO 2023

Table 28 is showing the maize yield of Myanmar and other Asian countries from 2014 to 2022). The yield of Myanmar increased from 3.70 MT/Ha in 2014 to 3.78 MT/Ha in 2020 but slightly decreased in the following years. In comparison of yield with other Asian countries, maize yield of Myanmar is lower than that of China, Thailand, Vietnam and Bangladesh except Philippines.

Table 29. Comparison of FOB Prices of Maize Grain (HSC:1005) Exported by Myanmar and Asian Countries during (2014-2023) (US\$/MT)

Year	Turkey	India	Pakistan	Myanmar	Vietnam
2014	725	235	296	292	399
2015	673	239	193	269	296
2016	1,103	275	220	787	304
2017	445	275	225	682	377
2018	750	251	152	895	215
2019	251	379	220	253	185
2020	307	220	195	321	198
2021	472	259	233	477	262
2022	469	321	290	425	304
2023	298	304	238	370	341

Source: FAOSTAT 2023, ITC Trademap 2023, Myantrade 2023

❖ **Comparison of grain export quality and price-value**

Table 30. Comparison of Quality and Price Status of Maize Export (HSC: 1005) from Myanmar and Other Asian Countries (FOB Price)

Year	Turkey	India	Pakistan	Vietnam
2014	0.40	1.24	0.99	0.73
2015	0.40	1.12	1.39	0.91
2016	0.71	2.86	3.57	2.58
2017	1.54	2.48	3.04	1.81
2018	1.19	3.57	5.91	4.17
2019	1.01	0.67	1.15	1.37
2020	1.05	1.46	1.64	1.62
2021	1.01	1.84	2.05	1.82
2022	0.91	1.32	1.46	1.40
2023	1.24	1.22	1.56	1.09

Source: UN Comtrade 2023, ITC Trademap 2023, Myantrade 2023

The comparative quality and price value is the division between the maize (FOB) price of Myanmar and the maize (FOB) price of other comparative country. If the quality and price value is greater than (1), it can be said that the grain export from Myanmar is more expensive and of better quality than the grain export from other comparable countries, and if (1) is met, it can be said that the price and quality of maize are the same as that of other comparable countries, and If it is smaller than 1, it can be said that it is cheaper and of inferior quality than maize produced in other comparative countries.

❖ **Export Potential and Comparative Advantage**

Table 31 shows trade potential of maize (HSC: 1005) of Myanmar in 2023. The most promising trading partners for Myanmar maize exports are shown as Chinese Taipei (1.22) million MT, Vietnam (1.20) million MT and China (1.12) million MT. Other potential trading partners are Thailand (0.24) million MT, Philippines (0.82) million MT, Bangladesh (0.74) million MT and Brunei (0.01) million MT.

Table 31. Myanmar Maize Export Trade Potential (HSC: 1005) 2023

Trading Partner Countries	Total Export Volume of maize by Myanmar to Global Market (MT)	Import Volume of maize by Trading Partners from Global Market (MT)	Export Volume of maize by Myanmar to Trading Partners (MT)	Export Potential (MT)
Thailand	1,222,930	1,354,658	978,106	244,824
Philippines	1,222,930	931,305	110,433	820,872
China	1,222,930	27,139,976	98,936	1,123,994
Vietnam	1,222,930	10,114,029	19,590	1,203,340
Bangladesh	1,222,930	7,55,796	15,400	740,396
China-Taipei	1,222,930	42,45,161	192	1,222,738
Brunei	1,222,930	14,409	120	14,289

Source: UN Comtrade 2023, ITC Trademap 2023

❖ **Revealed Comparative Advantage (RCA) and Revealed Systematic Comparative Advantage (RSCA)**

The comparative situation of the global market strength of Myanmar maize exports (HSC: 1005) during the 10-years period from 2014 to 2023 is presented in Table 32. Hypothesis of the Values of the Revealed Comparative Advantage (RCA) and the Revealed Systematic Comparative Advantage (RSCA):

- Hypothesis (1) If RCA or RSCA value is  $(0 < RCA \leq 1)$  or  $(-1 < RSCA \leq 0)$  there is no comparative advantage.
- Hypothesis (2) If RCA or RSCA value is  $(1 < RCA \leq 2)$  or  $(0 < RSCA \leq 0.33)$ , comparative advantage is low.
- Hypothesis (3) If RCA or RSCA value is  $(2 < RCA \leq 4)$  or  $(0.33 < RSCA \leq 0.6)$ , There is comparable as medium status.
- Hypothesis (4) If RCA or RSCA value is  $(4 < RCA)$  or  $(0.6 < RSCA)$ , It can be said that it has highly comparative advantage.

During the (10) year period from 2014 to 2023, the values of RCA of Myanmar maize exports (HSC: 1005) were greater than (4) and the RSCA values were greater than (0.6), indicating that Myanmar maize (HSC: 1005) is highly comparative advantage in global market.

Table 32. Comparative Advantage of Myanmar maize (HSC: 1005) in Global Market (RCA and RSCA)

(Value: '000 US\$)

Year	Value of Maize Export by Myanmar	Value of Total Export by Myanmar	Value of Total Maize Export by Global Market	Value of Total Export by Global Market	*RCA	**RSCA
2014	355,746	11,451,861	32,937,913	18,856,957,626	17.78	0.89
2015	340,855	11,431,792	28,688,034	16,418,063,890	17.06	0.89
2016	223,451	11,672,717	29,333,137	15,924,203,652	10.39	0.82
2017	304,901	13,877,953	30,292,367	17,563,586,196	12.74	0.85
2018	222,483	16,702,159	33,810,554	19,329,050,174	7.62	0.77
2019	236,632	18,117,605	35,837,938	18,761,814,917	6.84	0.74
2020	382,738	16,949,755	36,700,677	17,514,968,797	10.78	0.83
2021	615,943	15,153,408	51,910,339	22,154,054,456	17.35	0.89
2022	658,382	17,084,513	62,865,913	24,719,795,601	15.15	0.88
2023	453,026	14,752,993	53,068,466	23,291,072,313	13.48	0.86

\*RCA = Revealed Comparative Advantage, \*\*RSCA = Revealed Symmetric Comparative Advantage

Source: UN Comtrade 2023, ITC Trademap 2023

**5.2.9 Strength, Weakness, Opportunities and Challenges (SWOC)**

According to observations of key informant interviews and focus group discussions, the challenges and opportunities regarding the export potential and market competitiveness of Myanmar

maize are identified as Strength, Weakness, Opportunities and Challenges (SWOC analysis) as follows:

Strength	Weakness
<ul style="list-style-type: none"> <li>✓ Sown area of maize is steadily increased.</li> <li>✓ Highly comparative advantage and competitiveness in international markets at current market price</li> <li>✓ Close proximity to China and Thailand, the high demand for its livestock industries</li> <li>✓ Maize could be sown in most areas of the country.</li> <li>✓ Existing potential areas for expansion of maize cultivation</li> </ul>	<ul style="list-style-type: none"> <li>✓ Need upgrade road Infrastructure way to border areas of Thailand and China</li> <li>✓ Need research on varietal improvement of maize to compete imported hybrid seed</li> <li>✓ Weakness in postharvest technology to improve grain quality</li> <li>✓ Need for quality improvement</li> <li>✓ Productivity per unit area is low compared with other maize producing countries in Asia.</li> <li>✓ Need to invest in value added producing industries</li> <li>✓ Unstable exchange control on export earning</li> <li>✓ Facing trade policy changes being practiced by trading partners in terms of imposing high tariff or temporary importation during maize producing peak season of importing countries.</li> </ul>
Opportunity	Challenges
<ul style="list-style-type: none"> <li>✓ Rising international demand for maize</li> <li>✓ Productivity and profit from farming is attractive to farmers</li> <li>✓ Gaining access to new markets</li> <li>✓ Rising demand of domestic food industries for livestock and fish farming</li> <li>✓ Having GACC registration for export to China</li> <li>✓ Gaining 0 % tariff in exporting maize to Thailand and China</li> </ul>	<ul style="list-style-type: none"> <li>✓ The emergence of competitive exporting countries</li> <li>✓ Facing trade barriers for protection by trading partners</li> <li>✓ Confronting climate change</li> <li>✓ Price volatility</li> <li>✓ Unstable exchange rate</li> </ul>

## 5.3 Green Gram

### 5.3.1 Importance in Myanmar's economic development

Green gram plays an important role in the development of the country's economy, as it is a major crop source of export income. Out of (20.8) million hectares of the total crop area in the country, sown area of green gram covers (6.4) percent of total, amounting (1.3) million hectares which are grown in all states and regions. It directly and indirectly contributes to the country's economic development, such as providing employment opportunities and generating an average annual foreign income from export.

By incorporating green gram into the Myanmar agricultural sector's cropping system, crop diversification and dependence on rice and other crops can be reduced if these crops suffer damage



due to natural disasters, pests or diseases, etc. It will also mitigate the effects of market instability and price declines, and provide opportunities for more stable economic development of the country.

Table 33. Contribution of Green gram in Pulses production in Myanmar (2023)

No.	Pulses	Sown ('000Ha)	Harvest ('000ha)	Yield (MT/Ha)	Production (MT)
1	Green gram	1323	1316	1.42	1865
2	Black gram (Matpe)	993	993	1.80	1787
3	Pigeon pea	439	439	1.11	486
4	Chick pea	396	396	1.33	527
5	Black-eyed bean	152	152	1.34	203
6	Cow pea	141	141	1.34	1.88
7	Soybean	139	139	1.51	210
8	Dolichos bean	114	114	1.22	139
9	Sultapyar	91	91	1.20	110
10	Other pulses	497	497	1.15	574
	<b>Total</b>	<b>4285</b>	<b>4279</b>	<b>1.41</b>	<b>6089</b>

Source: MOALI

### 5.3.2 Importance of product in both domestic and export markets

Green gram can be grown year-round in the rainy season (40) percent and winter (60) percent, making it an important commodity in various regional markets. Out of (20.8) million hectares of the total crop area in the country, sown area of green gram covers (6.4) percent of total, amounting 1.3 million hectares which are grown in all states and regions.

In these markets, green beans are traded for sprouting, cooking, making food, hulling and wholesaling for export market. As for the overseas market, China, Vietnam, Indonesia, the Philippines, Thailand, Malaysia, Japan, and the EU countries are the important markets. Among these oversea markets, the Chinese market is the largest for Myanmar green gram. Most of the peas are exported as raw materials, but there are also exports as peeled form. Most of the green peas exported to EU countries are used for sprouting.

### 5.3.3 Trade development between Myanmar and China

With regard to exports, it was announced that the import of food products into China will be permitted after GACC registration from 1 January 2022 onwards, from (1-12-21) to (2-9-24). During the period to date, a total of 3,253 applications have been submitted from 1,608 businesses. According to the records of the Myanmar Pulses, Bean, Maize and Sesame Seed Merchants Association, a total of (326) companies registered by GACC to export a variety of peas and beans, including green gram.

The SPS Protocols on maize has been signed between the Ministry of Agriculture, Livestock and Irrigation of Myanmar and the General Administration of Customs (GACC) of China on January 31, 2022.

#### 5.3.4 Domestic consumption and export

Myanmar's green gram production has grown from (1.54) million MT in 2014-15 to a record production of (1.87) million MT in 2023-24, registering a compound annual growth rate (CAGR) of (1.96) percent. During the last decade, the average annual production of green gram was (1.56) million MT, but it fell below (1.50) million tons in the three-year period from 2018-19 to 2020-21, and the production in 2023-24 was the highest.

Green pea paste/peeled balls/sides, powder, paste, etc., are used to cook and eat a variety of traditional pea vermicelli, pea stews, curd, pea sprout and pea milk, etc. In addition to being used in the making of plant-based meat alternatives, such as artificial meat and eggs, these are also used in making cosmetics, protein powders, protein concentrates, protein isolates, and in animal foods.

Green gram is cultivated in all regions and provinces in the country, and the major growing regions are Bago (31) percent, Sagaing (17) percent, Mandalay (17) percent and Yangon (13) percent. Myanmar's green gram production is about (1.87) million MT in 2023-24, with no import from abroad. If the annual per capita consumption of different varieties of each legume, including green gram is calculated at a rate of (0.65), it is estimated that there would be about (16.6) million MT of green gram consumption and a surplus of (1.70) million MT.

According to the 2023-24 statistics, the production of green gram was (1.87) million MT. The overseas exports were 504 thousand MT and earning US\$ (336.9) million. The year with the highest export of green gram during the last ten years was 2021-22, with exports of (734) thousand MT at worth of US\$ (555.1) million.

#### 5.3.5 Value chain of the product

There are strong market chains, covering from production to processing, distribution, and consumption and export. Green gram plays an important role and is competitive in the global green gram market. The low consumption of green peas domestically, the lack of production capacity of value-added food products, and the export of raw materials only indicate that there is a demand gap in the market chain between growers and end users. As a green gram grower, it is necessary to work closely with reprocessing producers and exporters to produce quality green peas that are suitable for the local climate and will be potential for export in the international market. In terms of the cultivated area where green gram is currently predominantly grown, it is found that green gram is the most cultivated type of pulses in the country.

Since prices play an important role in the linkage of the market chain, it will also be necessary to analyze the price changes associated with the factors such as farm inputs, transportation costs, labour costs, access to electricity in refineries, exchange rates in international exports, etc. Previously, green gram was mainly exported to China through border trade, and the volume of border trade reached (59) percent of the total value of green gram exports in 2016-17 and 2018-19.

### 5.3.6 Challenges in production and export

According to the focus group discussions and key informant interviews, the challenges and opportunities regarding the export potential and market competitiveness of Myanmar green gram are identified in means of Strength, Weakness, Opportunities and Challenges (SWOC) as follows:

Strength	Weakness
<ul style="list-style-type: none"> <li>✓ Huge expansion of green gram cultivation capacity</li> <li>✓ Extensive experience in exporting to international markets</li> <li>✓ Close proximity to China and India, the world's largest consumers of green gram</li> <li>✓ Government Encouragement</li> </ul>	<ul style="list-style-type: none"> <li>✓ Incomplete Infrastructure</li> <li>✓ Agricultural technology and the need for good varieties</li> <li>✓ Weak processing</li> <li>✓ Need for quality improvement</li> </ul>
Opportunity	Challenges
<ul style="list-style-type: none"> <li>✓ Rising international demand for green gram</li> <li>✓ Productivity and export of value-added products</li> <li>✓ Gaining access to new markets</li> <li>✓ National nutrition sector development</li> </ul>	<ul style="list-style-type: none"> <li>✓ The emergence of competitive exporting countries</li> <li>✓ Facing trade barriers</li> <li>✓ Confronting climate change</li> <li>✓ Price volatility</li> </ul>

### 5.3.7 Trading partners and export share in international market

Myanmar has grown from producing only (9,485) MT of green gram in 1962-63 to over (1.1) million MT in 2006-07 and up to (1.8) million MT in 2023-24, making it the world's top exporter of green gram. Asian countries imported a total of (1.83) million MT of green gram and matpe (black gram) in 2023 with an import value of US\$ (1.70) billion. India imports US\$ (603.36) million MT of green gram and matpe and stands as the largest importer. It accounts for (33) percent of all imports of green gram and matpe in Asia. Secondly, China, which imports (31) percent of Asia's green gram and matpe imports, imported (572,681) MT worth of US\$ (469.62) million. Vietnam imported (127.081) MT, accounting (7) percent of Asian green gram and matpe imports worth at US\$ (84.41) million. Indonesia imported is less than Vietnam as (117,614) MT (6) percent of Asian green gram and matpe imports), but the trade value is higher than that of other countries. The United Arab Emirates imported (67,444) MT of green gram and matpe with a value of US\$ (51.16) million, and Thailand imported US\$ (58.41) million, accounting (65,638) MT. The Philippines (60,480) MT, Japan (52,473) MT and Malaysia (50,588) MT can be accounted each for (3) percent of Asian green and matpe imports, and Chinese Taipei Import of (18,103) MT accounted as (1) percent (Table 34).

Table 34. Green gram and Matpe (HSC: 071331) Top Importing Countries in Asia (2023)

Rank	Importing Countries	Import Volume (MT)	Import Value ('000 US\$)	Import %
	<b>Total</b>	<b>1,831,770</b>	<b>1,699,861</b>	<b>100%</b>
1	India	610,355	603,356	33%
2	China	572,681	469,619	31%
3	Vietnam	127,081	84,408	7%
4	Indonesia	117,614	118,049	6%
5	UAE	67,444	51,155	4%
6	Thailand	65,638	58,411	4%
7	Philippines	60,480	47,998	3%
8	Japan	52,473	96,339	3%
9	Malaysia	50,588	50,873	3%
10	China Taipei	18,103	19,901	1%

Source: UN Comtrade 2023, ITC Trademap 2023

Asian countries exported a total of (1.87) million MT of green gram and matpe (HSC: 071331) in 2023 with a value of US\$ (1.54) billion. Myanmar dominated Asia's green gram and matpe export market, accounting for (69) percent of Asia's total exports. Myanmar exported (1.28) million MT of exports worth at US\$ (1.06) billion.

Table 35. Green Gram and Matpe (HSC: 071331) Top Exporting Countries in Asia (2023)

Rank	Exporting Countries	Export Volume (MT)	Export Value ('000 US\$)	Export %
	<b>Total</b>	<b>1,865,034</b>	<b>1,542,785</b>	<b>100%</b>
1	Myanmar	1,283,712	1,062,426	69%
2	Uzbekistan	171,194	139,779	9%
3	Oman	147,787	208,000	8%
4	China	74,584	133,023	4%
5	India	71,756	84,278	4%
6	Thailand	50,981	49,540	3%
7	Indonesia	35,799	38,256	2%
8	Malaysia	19,509	19,000	1%
9	Turkey	5,655	5,323	0%
10	Vietnam	2722	2,247	0%

Source: UN Comtrade 2023, ITC Trademap 2023

Myanmar exported (1.27) million MT of green gram and matpe to Asian countries in 2023, with a total export value of US\$ (1.05) billion. India is the main importer of green gram and matpe, which counts (45) percent of the volume exported by Myanmar to Asian countries, with a total volume of (566,143) MT and valued at US\$ (501.95) million. China imported (334,352) MT of green gram and matpe from Myanmar worth at US\$ (266.94) million, accounting for (25) percent of Myanmar's exports.

Table 36. Green Gram and Matpe (HSC: 071331) Top Importing Countries in Asia from Myanmar

Rank	Importing Countries in Asia	Import Volume (MT)	Import Value ('000 US\$)	Import %
	<b>Total</b>	<b>1,270,705</b>	<b>1,050,997</b>	<b>100%</b>
1	India	566,143	501,945	45%
2	China	334,352	266,938	26%
3	Singapore	130,978	89,087	10%
4	Vietnam	60,538	41,736	5%
5	Pakistan	36,100	33,085	3%
6	Thailand	31,142	25,236	2%
7	Malaysia	29,604	24,387	2%
8	UAE	23,105	19,900	2%
9	Japan	17,826	17,467	1%
10	Indonesia	15,425	11,885	1%

Source: UN Comtrade 2023, ITC Trademap 2023

### 5.3.8 Product Competitiveness, export potential and comparative advantage

To study the price competitiveness of Myanmar green gram in comparison with other Asian countries, it is found that Myanmar green gram prices are the lowest among Asian countries while China, Thailand and Indonesia have the highest prices in February and India has the highest prices in November. The results of the calculation of the Nominal Protection Rate (NPR) of green gram show that Myanmar is well competitive in the UAE, China, Japan, Pakistan and India, but not in Malaysia and Singapore.

Table 37. Green gram and Matpe (HSC: 071331) Nominal Protection Rate (NPR) (2023)

Importing Countries from Myanmar	Pm	Pw	NPR (Pm/Pw)
	CIF Value of Green Gram and Matpe (US\$/Ton)	Wholesale Price of Green Gram & Matpe at Importing Countries (US\$/Ton)	
China	718	1,750	0.41
Japan	1,319	3,000	0.44
Malaysia	1031	971	1.06
Pakistan	842	1,200	0.70
India	999	1,251	0.80
Singapore	1,099	788	1.40
UAE	1,425	9,000	0.16

Source: UN Comtrade 2023, FAOSTAT 2023, Myantrade 2023

### 5.3.9 Productivity and Quality Competitions

Table 38 shows the production of green gram from 2014 to 2022 in Myanmar and Asian countries. Myanmar's production of green gram during the past decade reached a peak of (3.19)

million MT in 2015 and then declined year-on-year to (2.66) million MT (green gram and matpe) in 2022. India, the largest producer of green gram and matpe in the world, kept producing from (4.23) million MT in 2014 to (6.61) million MT in 2022.

Table 38. Myanmar and Asia Green Gram and Matpe Production by Year (million MT)

Year	China	India	Indonesia	Myanmar	Thailand	Turkey	Vietnam
2014	1.06	4.23	0.24	3.06	0.09	0.22	0.16
2015	1.11	4.26	0.27	3.19	0.08	0.24	0.17
2016	1.21	5.89	0.25	3.16	0.09	0.24	0.15
2017	1.33	6.34	0.24	2.86	0.09	0.24	0.16
2018	1.34	6.22	0.24	2.72	0.09	0.22	0.18
2019	1.35	5.31	0.20	2.72	0.09	0.23	0.17
2020	1.30	5.46	0.22	2.66	0.09	0.28	0.16
2021	1.30	6.12	0.21	2.69	0.09	0.31	0.15
2022	1.30	6.61	0.10	2.66	0.09	0.27	0.15

Source: FAOSTAT 2023, CSO 2023

Table 39 shows the yield of green gram in Myanmar and other Asian countries from 2014 to 2022. In 2015, the highest yield was (0.97) MT, while in India the yield was stable in the range of (0.41 to 0.42) MT, while in China (1.75 to 1.77) MT, in Thailand (0.76) MT. Green gram yield in Turkey increased slightly, from (2.38) MT to (2.78) MT and the yield increased from (1.04) to (1.22) MT in Vietnam.

Table 39. Green gram and Matpe yield (MT/Ha) of Myanmar and Asian countries

Year	China	India	Indonesia	Myanmar	Thailand	Turkey	Vietnam
2014	1.75	0.42	1.18	0.95	0.76	2.38	1.04
2015	1.65	0.41	1.18	0.97	0.76	2.51	1.06
2016	1.64	0.41	1.13	0.96	0.76	2.65	1.03
2017	1.76	0.41	1.17	0.93	0.76	2.67	1.09
2018	1.77	0.41	1.22	0.93	0.76	2.59	1.25
2019	1.74	0.41	1.19	0.93	0.76	2.53	1.23
2020	1.74	0.42	1.03	0.93	0.76	2.71	1.22
2021	1.75	0.42	0.98	0.94	0.76	2.83	1.21
2022	1.77	0.42	0.94	0.93	0.76	2.78	1.22

Source: FAOSTAT 2023, CSO 2023

Table 40 shows the findings comparing the FOB prices of Myanmar green gram with those of other countries. In the average prices over the last ten years, it is found that the price of Myanmar green gram is lower than in other countries, except Indonesia.

Table 40. Comparison of FOB Prices of Green Gram and Matpe (HSC: 071331) Exported from Myanmar and other Asian Countries (US\$/Ton)

Year	Myanmar	China	India	Thailand	Indonesia	Malaysia	Turkey	Vietnam
2014	1172	1978	1412	1301	1016	996	1209	1140
2015	1383	2124	1560	1209	1016	1274	1926	1038
2016	1589	1970	1833	1219	1004	1489	2254	1019
2017	741	2123	1255	1012	1050	1073	1527	900
2018	546	1776	1079	796	931	794	832	1264
2019	748	1655	1143	1033	1015	998	857	1237
2020	897	1661	1320	1159	1061	928	934	1039
2021	862	1996	994	1177	1318	869	1009	850
2022	793	2057	1226	1095	1366	1019	1013	800
2023	828	1784	1175	972	1069	974	941	825

Source: UN Comtrade 2023, ITC Trademap 2023, Myantrade 2023

Table 41 shows the FOB prices of green gram of Myanmar and 7 Asian countries exporting green gram. The comparison data is less than (1) in most of the years. It means that cheaper price of green gram in Myanmar is competitive in terms of price. Therefore, the Myanmar green gram market is found to be competitive in the rest of the world, except Thailand, Indonesia, Malaysia and Vietnam in some years 2014, 2015 and 2016.

Table 41. Comparison of Quality and Price Value of Green Gram (HSC: 071331) Exported by Myanmar and Other Asian Countries (FOB Price)

Year	China	India	Thailand	Indonesia	Malaysia	Turkey	Vietnam
2014	0.59	0.83	0.90	1.15	1.18	0.97	1.03
2015	0.65	0.89	1.14	1.36	1.09	0.72	1.33
2016	0.81	0.87	1.30	1.58	1.07	0.70	1.56
2017	0.35	0.59	0.73	0.71	0.69	0.49	0.82
2018	0.31	0.51	0.69	0.59	0.69	0.66	0.43
2019	0.45	0.65	0.72	0.74	0.75	0.87	0.61
2020	0.54	0.68	0.77	0.85	0.97	0.96	0.86
2021	0.43	0.87	0.73	0.65	0.99	0.85	1.01
2022	0.39	0.65	0.72	0.58	0.78	0.78	0.99
2023	0.46	0.70	0.85	0.77	0.85	0.88	1.00

Source: UN Comtrade 2023, ITC Trademap 2023, Myantrade 2023

### 5.3.10 Analysis of the Trade Potential of Green Gram Exports

Regarding the trade prospects of Myanmar green gram, an analysis based on (10) countries, including China, India, and Thailand, where Myanmar exported green gram in 2023, found that China and Indonesia are the most promising countries, while Vietnam and the UAE, India, Japan, Thailand and Malaysia have good prospects for exports, while Pakistan and Singapore have poor prospects. The findings are presented below in Table 42.

Table 42. Myanmar Green and Matpe (HSC: 071331) Trade Potential (2023)

Trading Partner Countries	Export Volume by Myanmar to World market(MT)	Import Volume by Importing Countries from World Market (MT)	Export Volume by Myanmar to Trading Partners (MT)	Export Potential of Myanmar (MT)
India	1,283,712	610,355	566,143	44,212
China	1,283,712	572,681	334,352	238,329
Singapore	1,283,712	3,878	130,978	(-) 127,100
Vietnam	1,283,712	127,081	60,538	66,543
Pakistan	1,283,712	12,026	36,100	(-) 24,074
Thailand	1,283,712	65,638	31,142	34,496
Malaysia	1,283,712	50,588	29,604	20,984
UAE	1,283,712	67,444	23,105	44,339
Japan	1,283,712	52,473	17,826	34,647
Indonesia	1,283,712	117,614	15,425	102,189

Source: UN Comtrade 2023, ITC Trademap 2023

### 5.3.11 Revealed Comparative Advantage (RCA) and Revealed Symmetric Comparative Advantage (RSCA)

Table 43. Global Market Comparative Strength (RCA and RSCA) of Myanmar Green and Matpe (HSC: 071331)

(Value = '000 US\$)

Year	Export Value of Green Gram & Matpe by Myanmar	Total Export Value of all Commodity by Myanmar	Total Export Value of Green Gram & Matpe in the World Market	Total Export Value of Commodities in the World Market	*RCA	**RSCA
2014	743,809	11,451,861	1,271,390	18,856,957,626	963.34	1.00
2015	1,012,903	11,431,792	1,644,360	16,418,063,890	884.66	1.00
2016	1,113,393	11,672,717	1,821,321	15,924,203,652	833.97	1.00
2017	747,275	13,877,953	1,356,398	17,563,586,196	697.24	1.00
2018	568,734	16,702,159	1,235,508	19,329,050,174	532.72	1.00
2019	762,002	18,117,605	1,322,077	18,761,814,917	596.86	1.00
2020	1,019,781	16,949,755	1,748,097	17,514,968,797	602.82	1.00
2021	1,097,486	15,153,408	2,037,813	22,154,054,456	787.37	1.00
2022	1,129,486	17,084,513	1,904,230	24,719,795,601	858.23	1.00
2023	1,062,426	14,752,993	1,906,136	23,291,072,313	879.94	1.00

\*RCA = Revealed Comparative Advantage, \*\*RSCA = Revealed Symmetric Comparative Advantage

Source: UN Comtrade 2023, ITC Trademap 2023

Subsequently, the comparative advantages of the global market are presented in Table 43 using Revealed Comparative Advantage (RCA) and Revealed Symmetric Comparative Advantage (RSCA). This ratio of total export value to green gram export value is considered to be "comparatively strong" because the RCA and RSCA of Myanmar are greater than (1) according to



the calculation of RCA and RSCA annually for a 10-year period compared with Myanmar and the world.

## 5.4 Soybean

### 5.4.1 Importance in Myanmar's economic development

Soybean is the seventh most cultivated crop of legumes currently under cultivation in Myanmar. It is a crop that has great potential to contribute to the livestock sector, to reduce the annual import of soybean paste from abroad for animal feed, and to increase the export of surpluses to neighboring countries.

Soybean crop is cultivated in Shan State and Bago, Ayeyarwaddy, and Sagaing Regions. The produces are engaged in trading, transportation, oil mills, soybean-based food processing operations, and other activities in the production of produce, creating job opportunities through the production of crushed beans as animal feed, and exporting them abroad, etc. It also earns foreign income from exporting (229) MT of soybean to abroad, amounting US\$ (0.20) million (2023-2024). The cropping system of cultivating soybean will promote crop diversification.

Soybeans are high in protein, with a maximum content of (40) to (45) percent, edible oils with a content of (19) to (20) percent, and high levels of fiber, potassium, folate, magnesium, iron, and vitamins, which contribute to nutritional integrity and food security. As a type of legume, soybean can be nitrogen fixated from the atmosphere, which can reduce the use of fertilizers, improve soil conservation, and thus benefit the natural environment and contribute to the economic development of the country.

### 5.4.2 Importance of product in both domestic and export market

Table 44. Soybean production ('000 Ha and MT)

Year	Rainy Season				Winter Season				Total			
	S	H	Y	P	S	H	Y	P	S	H	Y	P
2014-15	60	60	1.46	87	92	91	1.55	142	151	151	1.53	229
2015-16	57	57	1.47	83	92	92	1.56	143	149	148	1.52	226
2016-17	54	54	1.47	79	89	89	1.56	139	143	143	1.53	218
2017-18	51	51	1.48	75	89	89	1.55	138	140	140	1.52	213
2018-19	48	48	1.49	71	91	91	1.53	139	139	139	1.51	210
2019-20	47	47	1.48	70	90	90	1.53	138	137	137	1.51	208
2020-21	45	45	1.48	67	86	86	1.52	132	132	131	1.51	198
2021-22	45	45	1.48	66	85	85	1.52	130	130	130	1.51	196
2022-23	44	44	1.46	65	88	88	1.52	134	132	132	1.50	199
2022-23	46	46	1.49	69	93	93	1.52	141	139	139	1.51	210

Source: MOALI (Notation: S: Sown; H: Harvest; Y: Yield; P: Production)

The soybean crop is cultivated in all regions and states except Tanintharyi Region and Rakhine State, especially in states such as Shan and Kachin States. The raw form of soybean is processed into different food products according to the region. About (30) percent of sown area is in the rainy season and (70) percent in the winter. It stands as an important commodity in markets in various regions. Myanmar's soybean crop production fell from (229) MT in 2014-15 to (196) MT in 2021-22 and rebounded to (210) MT in 2023-24.

Among the states and regions in the country, it is found that cultivated area as well as production is highest in Shan State. However, the highest yield is found in Ayeyarweddy Region and the lowest yield in Nay Pyi Taw.

Table 45. Exports of various peas and beans by Myanmar in 2023-24

No	Pulses	US\$ (Million)			MT		
		Maritime	Border	Total	Maritime	Border	Total
1	Black gram	721.911	2.995	724.907	781,229	2,721	783,949
2	Green gram	297.953	38.940	336.893	446,782	57,189	503,871
3	Pigeon pea	198.643	-	198/643	207,596	-	207,596
4	Red bean	30.908	25.883	56.791	49,046	32,302	81,347
5	Kidney bean	21.478	29.012	50.490	21,358	20,816	42,175
6	Cowpea	34.067	3.411	37.478	52,511	5,560	58,070
7	Groundnut	1.343	23.538	24.881	1,022	16,758	17,780
8	Butterbean	15.524	8.19	23.714	15,140	7,385	22,525
9	Soybean	0.200	-	0.200	229	-	229
10	Other pulses	20.831	9.41	30.241	27,726	14,679	42,406
	<b>Total</b>	<b>1,342.858</b>	<b>141.38</b>	<b>11,484.238</b>	<b>1,602,638</b>	<b>157,410</b>	<b>1,760,048</b>

Source: Ministry of Commerce

Although large amount of soybean was exported to China in the past, Thailand, China, and India are important export markets at present. Most of the soybean exports are in raw form and peeled grain. According to the 2023-24 statistics, the production of soybeans was (210) thousand MT while the export volume was (229) MT/value of US\$ (0.2) million. The year with the highest export of soybeans in the last ten years was 2017-18, with exports of (12.8) thousand MT valued at US\$ (6.82) million.

Asian countries imported a total of (126.07) million MT of soybean in 2023 with an import value of US\$ (76.04) billion from international market. China imported (100.42) million MT of soybean with a value of US\$ (60.46) billion, ranking as the largest importer of soybeans in Asia, accounting for (80) percent of the region's soybean imports.

### 5.4.3 Trade development between Myanmar and China

The soybean crop is mostly cultivated in Shan, Bago, Ayeyarwaddy and Sagaingbut no cultivated area can be found in Tanintharyi and Rakhine. The cultivated areas are especially in.

Soybean is included in the major commodities not only for export but also for the various processed food used in many regions.

The domestic market of soybean occurs in main producing areas that is Shan, Bago, Ayeyarwaddy and Sagaing, and major export markets take place in Yangon, Mandalay, Muse and Myawati, etc. Soybeans are traded for oil extraction, cooking, making substitutes, and exporting them abroad. In terms of foreign markets, Thailand, China and India are important markets. Myanmar exported larger amount of soybean to China in the past. Majority of soybean export as raw form but some amounts are exported in forms after reeling and breaking grain.

Table 46. Top 10 Soybean (HSC: 1201) Importing Countries in Asia (2023)

Rank	Importing Country	Import Volume (MT)	Value ('000 US\$)	Importing %
	<b>Asia Total</b>	<b>126,065,663</b>	<b>76,043,027</b>	<b>100%</b>
1	China	100,416,792	60,462,803	80%
2	Thailand	3,284,969	2,011,886	3%
3	Japan	3,155,521	2,210,124	3%
4	Turkey	2,902,042	1,646,216	2%
5	China Taipe	2,542,540	1,553,596	2%
6	Iran	2,356,499	1,241,044	2%
7	Indonesia	2,274,428	1,474,651	2%
8	Vietnam	1,844,588	1,039,795	1%
9	Bangladesh	1,774,643	962,542	1%
10	South Korea	1,297,859	913,002	1%

Source: UN Comtrade 2023, ITC Trademap 2023

Table 47. Soybean (HSC: 1201) Exporting Top Countries in Asia (2023)

Rank	Exporting Country	Export Volume (MT)	Value ('000 US\$)	Exporting %
	<b>Asia Total</b>	<b>329,981</b>	<b>240,620</b>	<b>100%</b>
1	Turkey	80,080	52,347	24%
2	China	72,024	84,128	22%
3	Pakistan	70,933	38,702	21%
4	Kazakhstan	46,120	23,046	14%
5	India	22,477	18,213	7%
6	Cambodia	18,630	10,167	6%
7	Malaysia	9,888	7,465	3%
8	Azar Bijan	3,002	1,892	1%
9	Indonesia	2,561	1,164	1%
10	Tami stan	1,340	836	0%

Source: UN Comtrade 2023, ITC Trademap 2023

Main soybean importing countries in Asia are shown in the Table 46. It is found that China, Thailand and Japan are taking the position of first, second and third soybean importing country

respectively. As position of exporting countries in Asia, Turkey, China and Pakistan are having rank as first, second and third respectively (Table 47).

Myanmar exported a total of (484) MT of soybean to Thailand, Singapore and Japan in 2023 with an export value of US\$ (67,000). Myanmar's main importer of soybean is Thailand, which imports (98) percent of the total exports. Myanmar exported (475) MT of soybean from Myanmar to Thailand, with a value of US\$ (60,000). Singapore and Japan each imported (1) percent of Myanmar's total exports, Singapore with US\$ (4,000) and Japan with US\$ (3,000). However, it is found that Myanmar has not exported soybean to other countries in Asia (Table 48).

Table 48. Top Asian Countries Importing Myanmar Soybean (HSC: 1201) (2023)

Rank	Importing Country from Myanmar	Import Volume (MT)	Value ('000 US\$)	Importing %
	<b>Asia Total</b>	<b>484</b>	<b>67</b>	<b>100%</b>
1	Thailand	475	60	98%
2	Singapore	5	4	1%
3	Japan	4	3	1%

Source: UN Comtrade 2023, ITC Trademap 2023

#### 5.4.4 Domestic consumption and export

Beans are also made up form of grain, tofu, soya sauce, soy milk, etc., just as they are traditionally cooked and eaten in a variety of dishes, etc. It is also used in making plant-based meat alternatives and accessory commodities for skincare, protein powder, protein concentrate, protein isolate and animal feed.

Myanmar's soybean crop production in 2023-24 is about (210) thousand MT, with no imports from abroad, and only (484) MT of foreign exports, indicating that domestic consumption is sufficient and surplus. If the annual per capita consumption of soybean at (0.65) Pyi<sup>26</sup> as the rate for (54.58) million population of the country; by (8) Pyi as the seed rate per acre of land; and by (2) percent of the waste in production of soybean per acre are assumed, total consumption will be (82,000) MT and the surplus will be (128,000) MT which could cover (256) percent of food sufficiency in the country.

#### 5.4.5 Challenges in production and export

Myanmar has grown from producing only (11) thousand MT of soybeans in 1962-63 to over (20) thousand MT from 1982-83, 110 thousand MT in 2000-01, (200) thousand MT in 2006-07 and a record high of (250) thousand MT in 2010-11. Production was declining to (210) thousand MT in 2022-23. The main challenges faced in relation to the fluctuations in soybean production are as follows:

<sup>26</sup> 1 PYI = 1/16 basket = 4.32 lbs.

- 1) The need for modern agricultural technology. The COVID-19 pandemic and political instability have delayed agricultural technology education services, weakened technology adoption, and are having an impact on crop yield and liquidity.
- 2) Inability to consume standard of seed and farm inputs. Rising seed and input prices, decreasing available quantities resulting in the use of only available seeds and inputs, and reduced consumption of agricultural inputs.
- 3) Climate change and agricultural water availability: Unforeseen floods, droughts, high temperatures, and natural disasters often affect soybean production and productivity, so it is necessary to implement climate-adapted planting, agricultural water availability, and soil moisture conservation.
- 4) Pest infestation: Pest control system (IPM) is to use appropriate insecticides to prevent the occurrence of diseases such as stem borer, spotted pea beetle, green bean beetle, rust, downy mildew, charcoal rot, etc. Residue content needs to be monitored and maintained.
- 5) Price volatility and dependence on few markets: Changes in market demand, policy changes in soybean-importing countries, fluctuations in foreign exchange rates, excessive dependence on a large market (Chinese market), pose a challenge to sustainable trade.
- 6) The need for modern processing and value-added products: The benefits are increased availability of animal feed for domestic livestock sector, the creation of local employment opportunities, adoption of modern technologies, further development of domestic consumption, and contribution to national nutrition.

#### 5.4.6 Trading partners and export share in international market

Table 49. Top 10 Importing Countries of Soybeans in Asia (HSC: 1201) (2023)

Rank	Importing Asian Countries	Import Volume (MT)	Import Value (*000 US\$)	Import %
	<b>Total</b>	<b>126,065,663</b>	<b>76,043,027</b>	<b>100%</b>
1	China	100,416,792	60,462,803	80%
2	Thailand	3,284,969	2,011,886	3%
3	Japan	3,155,521	2,210,124	3%
4	Turkey	2,902,042	1,646,216	2%
5	China Taipe	2,542,540	1,553,596	2%
6	Iran	2,356,499	1,241,044	2%
7	Indonesia	2,274,428	1,474,651	2%
8	Vietnam	1,844,588	1,039,795	1%
9	Bangladesh	1,774,643	962,542	1%
10	South Korea	1,297,859	913,002	1%

Source: UN Comtrade 2023, ITC Trademap 2023

Asian countries imported a total of (126.07) million MT of soybean in 2023, with an import value of US\$ (76.04) billion. China imports (100.42) million MT of soybean with a value of US\$ (60.46) billion, making it the largest importer of soybean in Asia, accounting for (80) percent of Asia's soybean imports. Thailand and Japan each imported (3) percent of the total soybean imports; Thailand imports (3.28) million MT of soybean with US\$ (2.01) billion, and Japan imports US\$ (2.21) billion with (3.16) million MT of soybean.

Asian countries exported a total of (329,981) MT of soybeans in 2023 with a value of US\$ (240.62) million. Turkey dominated Asia's soybean export market, exporting (80,080) MT, having (24) percent of the total exports in Asia valued at US\$ (52.35) million. China, the second largest exporter, exports (72,024) MT of soybeans at US\$ (84.13) million and takes (22) percent share of total soybean exports of Asian countries.

Table 50. Soybean (HSC: 1201) Top Ten Exporting Countries (2023)

Rank	Exporting Asian Countries	Export Volume (MT)	Export Value ('000 US\$)	Export %
	<b>Total</b>	<b>329,981</b>	<b>240,620</b>	<b>100%</b>
1	Turkey	80,080	52,347	24%
2	China	72,024	84,128	22%
3	Pakistan	70,933	38,702	21%
4	Kazakhstan	46,120	23,046	14%
5	India	22,477	18,213	7%
6	Cambodia	18,630	10,167	6%
7	Malaysia	9,888	7,465	3%
8	Azar Bijan	3,002	1,892	1%
9	Indonesia	2,561	1,164	1%
10	Tami stan	1,340	836	0%

Source: UN Comtrade 2023, ITC Trademap 2023

Myanmar exported a total of (484) MT of soybeans to Thailand, Singapore and Japan in 2023, with an export value of US\$ (67,000). Thailand's importance to the Myanmar soybean market is seen as (475) MT of soybean were exported from Myanmar to Thailand, valued at US\$ (60,000). Singapore and Japan each imported (1) percent of Myanmar's total exports, with Singapore importing (5) MT worth at US\$ (4,000) and Japan importing (4) MT worth at US\$ (3,000). However, it is found that Myanmar soybeans are not exported to other countries in Asia (Table 51).

Table 51. Top Asian Countries importing Myanmar Soybean (HSC: 1201) (2023)

Rank	Importing country	Import Volume (MT)	Value ('000 US\$)	Import %
	<b>Total</b>	<b>484</b>	<b>67</b>	<b>100%</b>
1	Thailand	475	60	98%
2	Singapore	5	4	1%
3	Japan	4	3	1%

Source: UN Comtrade 2023, ITC Trademap 2023

## 5.4.7 Product Competitiveness, export potential and comparative advantage

### ❖ Product Competitiveness

#### Price Comparison and Nominal Protection Rate (NPR)

It was found that the prices of Myanmar soybean were lower than those in China and Japan, but also higher than those in Turkey and Thailand, and the prices were highest in Japan.

Table 52. Wholesale Price of Soybean (HSC: 1201) of Myanmar and Asian Countries (US\$/MT) (2023)

Month/2023	China	Turkey	Japan	Thailand	Myanmar
January	1,278	689	2,143	1,054	972
February	1,227	750	4,500	500	999
March	1,198	847	4,205	860	1,240
April	1,295	667	3,909	832	1,120
May	1,246	628	4,735	3,559	1,150
June	1,185	1,842	1,800	729	1,100
July	939	2,005	1,805	985	988
August	967	574	1,810	772	980
September	924	573	3,833	982	1,200
October	1,129	626	2,988	609	1,120
November	1,093	581	2,143	729	1,086
December	1,061	598	1,810	520	1,100

Source: ITC Trademap 2023, Myantrade 2023, FAOSTAT 2023

According to a study calculated by the Nominal Protection Rate (NPR) of the Burmese soybean, it is observed that Myanmar soybean, can compete in Japan and Thailand except Singapore.

Table 53. Nominal Protection Rate (NPR) of Myanmar Soybean (HSC: 1201) (2023)

Importing Countries from Myanmar	P <sub>m</sub>	P <sub>w</sub>	NPR (P <sub>m</sub> /P <sub>w</sub> )
	CIF Price to Importing Countries (US\$/Ton)	Wholesale Price at Importing Countries (US\$/Ton)	
Japan	1,367	2,556	0.53
Singapore	1,425	961	1.48
Thailand	612	1,010	0.61

Source: UN Comtrade 2023, FAOSTAT 2023, Myantrade 202

### ❖ Productivity and Quality Competitions

Table 54 shows the yield of soybeans obtained from 2014 to 2022 in Myanmar and other Asian countries. Myanmar soybean yield was (1.04) MT per hectare from 2014 to 2017, a slight decline since 2018 but a stable yield. Turkey's soybean yield peaked in 2017 and 2020 reaching (4.42) MT. Soybean yield in China also reached (1.79) MT/Ha in 2014 and a year by year increased to

(1.98) MT/Ha in 2022. Cambodia's soybean yield has been fluctuating year-on-year, peaking at (2.00) MT per hectare in 2018 and then gradually declining to (1.56) MT per hectare in 2022. India had the lowest output in 2015 at (0.73) MT per hectare and rebounded to a yield of (1.07) MT in 2022.

Table 54. Yield of Soybean in Myanmar and Asian Countries (MT/Ha)

Year	Cambodia	China	India	Myanmar	Turkey
2014	1.44	1.79	0.94	1.04	4.37
2015	1.46	1.81	0.73	1.04	4.40
2016	1.67	1.80	1.18	1.04	4.32
2017	1.75	1.85	1.18	1.04	4.42
2018	2.00	1.90	1.06	1.03	4.26
2019	1.64	1.95	1.19	1.03	4.25
2020	1.51	1.98	0.92	1.03	4.42
2021	1.59	1.95	0.98	1.03	4.15
2022	1.56	1.98	1.07	1.03	4.08

Source: FAOSTAT 2023, CSO 2023

Table 55 shows the comparative findings of the FOB prices of Myanmar soybean with those of other countries. It is found that the price of Myanmar soybean is lower than that of other countries except Indonesia in terms of ten-year average prices.

Table 55. FOB Price of Soybean in Myanmar and Exporting Asian Countries (US\$/MT)

Year	Turkey	China	Katzenstein	India	Malaysia	Indonesia	Myanmar	Thailand	Vietnam
2014	650	961	542	740	628	591	480	630	630
2015	593	939	449	682	554	414	480	539	470
2016	589	853	508	651	256	207	480	587	564
2017	550	813	408	569	397	172	480	617	947
2018	569	747	454	586	512	227	550	625	444
2019	482	806	464	584	493	304	413	597	355
2020	473	898	496	613	543	197	439	621	400
2021	629	1155	733	817	740	311	605	626	538
2022	813	1169	713	926	856	687	730	610	633
2023	654	1168	500	810	755	455	140	834	659

Source: UN Comtrade 2023, ITC Trademap 2023, Myantrade 2023

Table 56 shows the FOB prices of soybeans in the 8 Asian countries and Myanmar mentioned above. If the figure is greater than (1), it shows that the price of soybeans is cheaper than Myanmar and is competitive in terms of price. The price ration of soybeans in Indonesia is higher than (1) in most years and price ration of soybean in Vietnam as well in most years. Therefore, Myanmar soybean is less competitive in terms of price in these countries. In all other countries, the price of Myanmar soybeans is found to be competitive in general.



Table 56. Comparison of Quality and Price (FOB Price, US\$/MT) of Soybean (HSC:1201) among Myanmar and other Exporting Asian Countries

Year	Turkey	China	Kazakhstan	India	Malaysia	Indonesia	Thailand	Vietnam
2014	0.74	0.50	0.89	0.65	0.76	0.81	0.76	0.76
2015	0.81	0.51	1.07	0.70	0.87	1.16	0.89	1.02
2016	0.81	0.56	0.94	0.74	1.88	2.32	0.82	0.85
2017	0.87	0.59	1.17	0.84	1.21	2.78	0.78	0.51
2018	0.97	0.74	1.21	0.94	1.07	2.42	0.88	1.24
2019	0.86	0.51	0.89	0.71	0.84	1.36	0.69	1.16
2020	0.93	0.49	0.89	0.72	0.81	2.23	0.71	1.10
2021	0.96	0.52	0.83	0.74	0.82	1.95	0.97	1.13
2022	0.90	0.62	1.02	0.79	0.85	1.06	1.20	1.15
2023	0.21	0.12	0.28	0.17	0.19	0.31	0.17	0.21

Source: UN Comtrade 2023, ITC Trademap 2023, Myantrade 2023

#### ❖ Trade/Export Potential of Myanmar Soybean

An analysis based on Myanmar's soybean exports to Thailand, Singapore, and Japan in 2023 found that there is potential for exports of up to about (480) MT each to Japan and Singapore, with only (9) MT of soybean export potential to Thailand, which is the largest importer of soybeans in Asia. The findings are shown below in Table 57.

Table 57. Trade/Export Potential of Soybean (HSC: 1201) from Myanmar (2023)

Trading Partner Countries with Myanmar	Export Volume from Myanmar (MT)	Import Volume by Trading Partners from International Market (MT)	Export Volume From Myanmar to Trading Partners(MT)	Export Potential of Myanmar
Thailand	484	3,284,969	475	9
Singapore	484	21,936	5	479
Japan	484	3,155,521	4	480

Source: UN Comtrade 2023, ITC Trademap 2023

#### ❖ Revealed Comparative Advantage (RCA) and Revealed Symmetric Comparative Advantage (RSCA)

The global market comparative advantages are presented in Table 58 using RCA – Revealed Comparative Advantage and RSCA – Revealed Symmetric Comparative Advantage. According to the calculation of the RCA and RSCA for the 10-year period comparing Myanmar with the world, the ratio of the total export value to the value of soybean exports is considered to be "comparatively weak" because the RCA of Myanmar is less than (1) and the RSCA is below zero (minus zero).

Table 58. Revealed Comparative Advantage (RCA) and Revealed Symmetric Comparative Advantage (RSCA) of Myanmar Soybean (HSC: 1201)

(Value = '000 US\$)

Year	Export Value of Soybean by Myanmar	Total export Value of Myanmar	Export Value of Soybean in World Market	Total export Value in World Market	*RCA	**RSCA
2014	2,483	11,451,861	59,032,822	18,856,957,626	0.07	-0.87
2015	2,525	11,431,792	51,145,169	16,418,063,890	0.07	-0.87
2016	1,262	11,672,717	52,525,777	15,924,203,652	0.03	-0.94
2017	1,334	13,877,953	58,051,094	17,563,586,196	0.03	-0.94
2018	524	16,702,159	59,266,153	19,329,050,174	0.01	-0.98
2019	1,922	18,117,605	55,259,429	18,761,814,917	0.04	-0.93
2020	6,974	16,949,755	63,835,418	17,514,968,797	0.11	-0.80
2021	1,761	15,153,408	78,160,886	22,154,054,456	0.03	-0.94
2022	168	17,084,513	93,793,746	24,719,795,601	0.00	-0.99
2023	68	14,752,993	93,503,149	23,291,072,313	0.00	-1.00

\*RCA = Revealed Comparative Advantage, \*\*RSCA = Revealed Symmetric Comparative Advantage

Source: UN Comtrade 2023, ITC Trademap 2023

#### 5.4.8 Market demand of trading partners

Thailand dominates Myanmar's soybean market by importing (98) percent of Myanmar's bean exports, followed by Japan and Singapore with (1) percent each of the total exports.

Myanmar exported a total of (484) MT of soybeans to Thailand, Singapore and Japan in 2023, with an export value of US\$ (67,000). Myanmar's main importer of soybean is Thailand, which imports (98) percent of the total exports. Thailand's importance to the Myanmar soybean market is seen as (475) MT of soybean were exported from Myanmar to Thailand, valued at US\$ (60,000). Singapore and Japan each imported (1) percent of Myanmar's total exports, with Singapore importing (5) MT of soybeans worth at US\$ (4,000) and Japan importing (4) MT of soybean worth at US\$ (3,000).

Asian countries imported a total of (126.07) million MT of soybeans in 2023, with an import value of US\$ (76.04) billion. China imports (100.42) million MT of soybeans with a value of US\$ (60.46) billion, making it the largest importer of soybeans in Asia, accounting for (80) percent of Asia's soybean imports.

The main exporters of soybean to Thailand are Cambodia, with (98) percent of the total imports, (2) percent from China, and the remaining (1) percent from others. Malaysia is a major exporter of soybean to Singapore, with (89) per cent of the total imports coming from Malaysia, (10) per cent from China, and the remaining (1) per cent from other countries. Japan is found to be importing (100) percent of its soybeans from China.

#### ❖ Demand in the domestic and export markets

In the domestic market, soybean is purchased for the production of various food products, such as soy milk, tofu, wet and dry soybean paste, miso, various sauces, artificial meat, etc. The use of soybean oil is considerably low in domestic market. Soybean cake after extraction of oil is used for animal feed. Trading business is also taking place in domestic market for human consumption and export surplus to foreign markets.

Export market demand is fluctuating so that the annual export volume is not being stable depending on price and market demand conditions. Domestic demand is likely to increase based on the development of soybean-based food manufacturing industries in the country. It is necessary to support investment on establishment of solvent extraction method in oil milling industry that will benefit to reduce importation of edible oil and to support extracted soybean cakes as animal feed to domestic livestock sector.

The demand for palm oil is being imported from abroad due to insufficiency of edible oil in the country. If the soybean oil production industry develops, the demand for soybean will also be stronger. In addition, (500) to (600) thousand MT of soybean cakes are imported annually for livestock feed. If soybean industry is developed, it will be possible to reduce outflow of the foreign currency for importing edible oil and soybean cake as animal feed.

Hence, the development of Myanmar soybean industry mainly depends on the consumer choice and preferences on soybean products, development of oil extracting mills and bean paste manufacturing industry.

#### **5.4.9 Market Chain (Producer-Domestic Processors-Exporter)**

The lack of enough mills for edible oil extraction and production of livestock feed indicates the existence of a gap in the grower-oil miller-livestock market chain. Soybean growers are working in a chain with reprocessing producers for oil extraction and various food making in domestic market and dealing with traders for export. Development of the soybean varieties is depending upon market demand for processing and food making. Especially if it is grown for oil milling, only soybean varieties with a good oil content should be grown.

Since most of the soybean areas are located in Shan State where traders can export their soybeans to China and Thailand, through border check points. They can be able to export them at lower transportation costs, thus making it more profitable.

#### 5.4.10 Strength, Weakness, Opportunities and Challenges (SWOC)

Strength	Weakness
<ul style="list-style-type: none"> <li>✓ Having good soil and soil infrastructure for soybean cultivation</li> <li>✓ Lower production costs</li> <li>✓ Increasing domestic demand for edible oil and animal feed</li> <li>✓ Provision of subsidies by the State Government</li> </ul>	<ul style="list-style-type: none"> <li>✓ Other competitive crops in rice-based cropping areas</li> <li>✓ The need for agricultural technology and good varieties for oil extraction</li> <li>✓ Poor processing facilities of oil mills</li> <li>✓ Need for variety improvement to increase productivity</li> </ul>
Opportunity	Challenges
<ul style="list-style-type: none"> <li>✓ Increasing global demand for soybeans</li> <li>✓ Ability to manufacture and export value-added products</li> <li>✓ Availability of new markets</li> <li>✓ Support domestic demand for edible oil and livestock sector development.</li> <li>✓ Demand for edible oil is increasing</li> </ul>	<ul style="list-style-type: none"> <li>✓ Emergence of competitive countries in Asia region</li> <li>✓ Facing trade barriers of importing countries</li> <li>✓ Confronting climate change</li> <li>✓ Occurrence of price volatility</li> </ul>

**Considerations:** The review on Myanmar's soybean exports and market competitiveness on of agriculture, processing, domestic consumption, exports, market competitiveness, export prospects and trade facilitation is as follows:

**Production:** Soybean crop acreage and production are declining and yields are lower than in other countries. Poor access to good varieties and needs to be converted to high-yielding varieties. Rising prices of agricultural inputs, shortage of farm labor, climate change. Crop prices are unstable.

**Refined milling:** Modern soybean oil mills, high-value soybean food production plants, warehouses are needed. Investment in the milling sector is needed. Technology is required. Factories are not getting enough electricity. Good Manufacturing Practices (GMP) are required. Changes in global soybean consumption patterns should be studied.

**Domestic consumption:** There has been no significant improvement in the consumption of soybean. Traditional soybean foods should be modernized, new soybean-based foods should be developed, and the public needs to be educated on the benefits and methods of eating soybeans. Food safety should always be observed.

**Exports:** Indian and Chinese markets are larger demand for soybean. Efforts should be made to facilitate the export of raw materials as well as soybean oil and bean cake. Efforts should be made to reduce transport costs, stabilize foreign exchange rates, facilitate trading services.

**Competitiveness:** Competitive in terms of price should be considered since soybean from Myanmar is not competitive in the global market in terms of comparative advantages (RCA, RSCA).

**Export potentials:** There is good export potential to China and India, which have a huge demand for soybeans. Soybean can be exported as the main exporter to China and India at low cost, which is required policy support by the government.

**Expedited Trade:** Efforts should be made to reach the "standard" level in the Expedited Trade Index as soon as possible. Public-private partnerships, the application of modern computer technologies, and the complementary work of both the software and hardware sectors are needed.

## 5.5. Watermelon

### 5.5.1 Importance in Myanmar's economic development

Myanmar is an agriculture-based country, and Myanmar agricultural products are being exported to other countries. The mangoes, watermelons, mangosteen, avocado, pomegranates, rambutan, and a variety of other vegetables as spices are also exported.

In 2017 October, AQSIQ approved that Myanmar can export mangosteen, rambutan and lychees by both sea and from the border, and mangoes, watermelons, sweet melons and gooseberry can be legally exported from the border trade routes, namely the Muse-Ruili and Myilar-Taalok routes. At present, ten types of fruits, some of Myanmar's agricultural products, have been officially exported to China through all border routes. The ten varieties of fruit that have been legally exported to China are mangoes, watermelons, almonds, rosters, sweet melon, lychees, Indian jujubes, bananas and pineapple. GACC has lifted this restriction from the import of four fruits, mangoes, watermelons, sweet melon, and Indian jujube through only two border gates.

There are more than 120 countries around the world that grow watermelon and are a viable crop in any climate. Watermelon is economically viable because it can be harvested 100 days after it is planted, and is favored by farmers as a fast-growing fruit. China, Turkey, India, Brazil, and Algeria are among the major producers of watermelon. China is the world's largest producer of watermelons, producing more than (70) million MT of watermelons, followed by Turkey (over 4 million MT), Iran (over 3.8 million MT), Brazil (over 2 million MT), and Egypt (over 1.8 million MT). The Chinese are the most avid consumers of watermelon in the world, and it is not only produced domestically but also imported from abroad.

According to 2022 World Watermelon Production data, China is the largest producer of watermelons, accounting for (61) percent of the world's watermelon production, followed by Turkey, India, Algeria, Brazil, Russia, Pakistan, the United States, Senegal, and Uzbekistan. Most of the domestically produced watermelons about 70 million tons are consumed in China annually (Chinese news outlet People.cn reports).

Watermelons from Myanmar are exported to China annually through the border trade. Watermelon seeds from China are distributed through Chinese and Myanmar merchants to domestic

producers and all watermelon produced from these distributed seeds are purchased and imported into China. In this way, a strong market is provided for Myanmar watermelon farmers, and their income is increased. It's a win-win process.

### **5.5.2 Importance of product in both domestic and export markets**

World watermelon exports totaled (5.1) million MT, valued at US\$ (3.6) billion, and there were 86 watermelon exporting countries. The major exporting countries were Spain, Mexico, Guatemala, the United States and Morocco, and the export volume of these (5) countries accounted for (53) percent of the world's exports. Myanmar ranked 15<sup>th</sup> in the world with exports of over (94.1) thousand MT worth of over US\$ (44.04) million. Myanmar's watermelon is currently exporting to countries such as China, Thailand, India, Singapore and Bangladesh.

In 2022, there were 101 countries importing watermelons in the world, with an import volume of (5.7) million MT with worth of more than US\$ (4.5) billion. Import value of the United States, the European Union, Germany, France, and the UAE is accounting for (53) percent of the world's imports. During 1-10-2020 to 8-1-2021, Myanmar's watermelon exports were found to be (116,070.3) MT valued at US\$ (11.431) million. The earnings from export of watermelon accounted for about (6) percent of earnings from total fruit exports, making it as the second largest export earnings.

Myanmar exported watermelons to six countries during five (5) years from the 2018-2019 to 2022-2023 fiscal year. The main importing countries are China and Thailand, which accounted for more than (99) percent of the total export of watermelon. The other importing countries are India, Singapore, Russia, and the UAE.

Watermelon can be grown in Myanmar in three seasons, and it is also a commodity that takes longer growing period in different places than other seasonal crops and produces a lot of fruits selling in the market with longer period of time than other fruits. Farmers are always facing unpredictable market changes year after year, suffering good sale in some years and lose sale in some years. Myanmar watermelons are mainly exported to China and are also exported to Thailand, Vietnam, and Laos. Among Myanmar's seasonal fruit export, watermelon export occupies the longest period in the market

According to the current 2023 statistics, from January to August, Myanmar exported a total of (7,048) watermelon trucks to China, with a ton of more than 100,000 tons (source: Muse Fruit Cargo Dashboard). As wholesalers are aware of delivery times and profits because watermelons are a perishable fruit, they are exploring new markets in Middle Eastern markets such as the UAE, Qatar and also Singapore in order to export quality fruits without relying solely on the Chinese market.

### **5.5.3 Trade development between Myanmar and China**

Watermelon varieties which are in high demand from China, are grown in Myanmar and exported to China. In 2023, the Xuanli-Wantain border gate on the China-Myanmar border opened a fast lane for imports of imported fruits, and the Import Inspection Department at the gate inspect watermelons from Myanmar and transport them to the Wantain fruit trade market. The Wantian Border Gate, the Mengmen Route, is a major route for the import of Myanmar fruits into China. The

Wantian Customs Department expedite customs clearance services for fruits at the Chinese border gate and the priority line service for fruit trucks have enabled the fast export of fresh fruits, including watermelons, from Myanmar to China. The two countries have different harvest seasons of watermelon, resulting 80 percent of them imported from Myanmar. From January to the end of August 2023, Myanmar's watermelon exports to China amounted to over (1,113,000) MT. In addition to domestic consumption, Myanmar watermelons are the largest export to China through the border route, as well as to Thailand and India.

Myanmar is the main exporter of watermelons to China, totaling over (93.9) thousand MT in 2022, valued at over US\$ (43.96) million. Myanmar's exports of watermelons to countries of the world totaled more than (94.1 thousand MT), valued at US\$ (44.04) million, of which (99.99) percent of those exports were exported to China. There were exporting to other countries, namely Korea, Malaysia, the UAE, and the United States, but very few compared with export volume to China (WITS, World Bank, 2022).

Because the delays have affected the quality of the watermelons, only (1) out of (5) trucks exported to China can be shipped safely without damaging quality of the watermelons. Therefore, wholesalers of watermelon are seeking new markets for exports to Middle Eastern markets such as the UAE, Qatar and Singapore in addition to China. At present, the Chinese market is the only foreign market for watermelon. Therefore, it is necessary to expand overseas markets in the long run.

#### **5.5.4 Domestic consumption and export**

The amount of watermelon production and domestic consumption remained the same and there was no surplus until 2010. It was found that from 2011 onwards, foreign exports were launched. Watermelons from Myanmar are being exported and also sold throughout the country. Yangon watermelon market is mainly supplied by Myingyan, Meiktila and Wun Dwin towns. According to field surveys by the Department of Consumer Affairs, watermelons from Mahlaing, Chaung U and Tada-U are ordered and sold in the town markets of west Bago region.

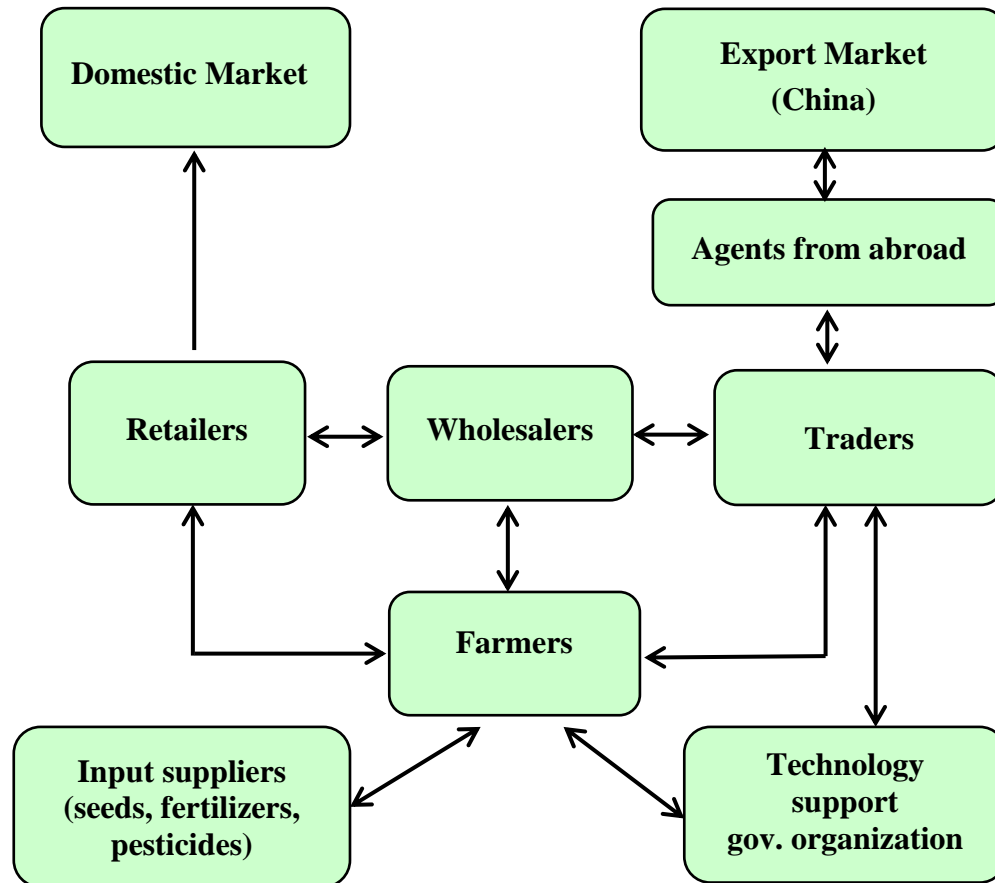
During (5) year, the 2018-2019 fiscal year was the highest export year for watermelons, with exports to 4 countries, amounting (796,936.2) MT, valued at US\$ (67.48) million. The study found that in the 2019-2020 fiscal year, exports to six (6) countries was accounted for (614,077.62) MT with a value of US\$ (54.53) million. In 2020-2021, it was exported to four countries, amounting (464,170.35) MT with value at US\$ (43.76) million. It was exported to three countries amounting (152,971.1) MT valued at US\$ (16.44) million in 2022-2023. The 2018-2019 fiscal year was the highest export year in 5 years, with exports to China accounting for about (99) percent of total exports, resulting an increase in export volumes.

#### **5.5.5 Value chain of the product**

The value chain of watermelon production and export mainly includes producers, brokers at the Muse border trading post and purchasing and selling agents in mainland China. The farmers are selling the products to the foreign market through traders and to the wholesalers for the domestic market.

The varieties of watermelons they want to buy from China are distributed to farmers through Chinese merchants and agents, and the resulting watermelons are imported into China. The technology, fertilizers, pesticides, etc., needed for watermelon cultivation are also provided by Chinese agents in connection with government agencies and domestic and foreign import and marketing organizations.

Figure 5. Value Chain of Watermelon



### 5.5.6 Challenges in production and export

Cultivation of watermelon has declined due to rising agricultural input prices and difficult conditions for the Chinese market to forecast. Watermelon is the main export crop to China. Due to its high-weight and tonne crop, that commodity is rarely exported by sea and sold through the border. Presently, the cultivating area is declining and facing losses due to difficulties of transport route to border and trade conditions with China. In the past, there were 600-800 buses per day to Muse, and the average travel time was only (3) days. Road traffic conditions are now being delayed for up to 10 days due to instability in the area, and in some places impassable conditions have caused a lot of damage and are facing a lot of casualties.

Because of unaffordable trade to China through border trading check points of northern Shan and Kachin States, watermelon and muskmelon produced in Sagaing, Mandalay and Shan are exported to China through Wuntar Pon check point, Minelar township and Wun Pon check point, Tarlae township by marine transport along the Mekong River.



If there is an imbalance between supply and demand and there is a decline in demand, there may be more losses due to perishable crop in nature. Process of making value-added products also requires a lot of investment.

There are three types of farming in production of watermelon: self-growing of buyers/sellers, traders co-farming with farmers and large groups/companies engaged in private farming. As information in terms of losses occurred in 2023, it was (30) percent loss for farmers and (60) percent loss in the hands of traders due to territorial settlements. Private companies suffered a lot due to such risks. Since the farmers grow this crop by using much inputs which prices are high, it has high risk upon uncertain condition of transport and communication to the border gate.

Offering sale price of watermelon in border area is mostly influenced by the buyers from China side. If it is not good deal to buy all fruits, the farmers will shoulder the cost of remaining fruits after marketing. Intergovernmental cooperation needs to take a major role in ensuring that exports are not rejected or returned. Essentially, there is a need for government and private organizations to collaborate in support of inputs such as fertilizer, pesticides, seed etc., and to develop software that can provide market information for farmers in a timely manner.

There are difficulties such as reduction of domestic watermelon cultivation, increased export costs, and increased uncertainty as the only crop to be sold by China. In the watermelon cultivation and export business, watermelon (F1) seeds are purchased and grown from China. Watermelon varieties, which are mainly grown in Myanmar, are less popular for export to other countries and are preferred only by Chinese buyers.

### 5.5.7 Trading partners and export share in international market

Asian countries imported a total of (415,485) MT of watermelon in 2023, valued at US\$ (136.22) million. China imports (73,607) MT of watermelon valued at (11.34) million, accounting for (18) percent of Asian imports. China, Turkey, and Kazakhstan lead the way as the top importers.

Table 59. Watermelon (HSC:080711) Importing Countries from Myanmar (2023)

Rank	Importing Countries	Import Volume (MT)	Value ('000 US\$)	Import %
	<b>Total</b>	<b>57,726</b>	<b>18030</b>	<b>100%</b>
1	China	57,636	18004	99.80%
2	Thailand	90	26	0.20%

Source: UN Comtrade, 2023, ITC Trademap, 2023

Asia countries exported a total (571,192) MT in 2023, valued at US\$ (212.08) million. Turkey is taking place of major exporter in Asia. Myanmar exported a total of (57,726) MT of watermelon to China and Thailand in 2023, with a total export value of US\$ (18.03) million. Myanmar's main importer is China, which imports nearly (100) percent of the total exports. Myanmar exported (57,636) MT of watermelon to China, with a value of US\$ (18) million, which shows China's importance to Myanmar's watermelon market. Only (90) MT of watermelon (less than 1 percent of

total exports) were imported by Thailand at worth US\$ (26,000), and there was no export to other countries in Asia.

Table 60. Top Asian Countries Exporting Watermelon (HSC:080711)

Rank	Exporting Country in Asia	Export Volume (MT)	Export Value ('000 US\$)	Export %
	<b>Total</b>	<b>571,192</b>	<b>212,083</b>	<b>100%</b>
1	Turkey	131,082	39,233	23%
2	Iran	61,031	17,909	11%
3	Uzbekistan	59,428	10,582	10%
4	Myanmar	57,727	18,030	10%
5	China	56,269	54,269	10%
6	India	51,727	11,795	9%
7	Vietnam	42,977	7,948	8%
8	Malaysia	38,383	14,347	7%
9	Oman	13,766	11,364	2%
10	Pakistan	13,211	1,898	2%

Source: UN Comtrade, 2023, ITC Trademap, 2023

### 5.5.8 Product Competitiveness, export potential and comparative advantage

#### ❖ Product Competitiveness (NPR)

If the NPR value is equal to (1) or less than (1), then the production of the goods can be said to be competitive, and if the NPR value is greater than (1), then it can be said that it is not competitive. Myanmar exports watermelon (HSC: 080711) mainly to China. The NPR value is less than (1), so it is found that Myanmar's watermelon can be exported to China in competition with other exporting countries at the current world market price.

Table 61. Nominal Protection Rate (NPR) of Myanmar Watermelon (HSC:080711) (2023)

Country	P <sub>m</sub>	P <sub>w</sub>	NPR (P <sub>m</sub> /P <sub>w</sub> )
	CIF Value to Importing Country (US\$/MT)	Wholesale Price of Watermelon in Importing Country (US\$/MT)	
China	114	1,695	0.07

Source: UN Comtrade, 2023, FAOSTAT, 2023, Myantrade, 2023

#### ❖ Productivity and Export Potential

Myanmar's watermelon production is only producing a very small tonne volume compared to other countries, rising to (0.52) million MT in 2021 and declining to (0.14) million MT in 2022. China, the largest producer of watermelon, maintained stable production from (61.70) to (60.54) million MT over the period, with a slight decline in production in 2022.

Table 62. Watermelon (HSC:080711) Production in Myanmar and Asian Countries (Million MT/Year)

Year	China	Iran	Malaysia	Pakistan	Turkey	Uzbek	Vietnam	Myanmar
2014	61.70	4.01	0.18	0.54	3.89	1.70	1.10	0.24
2015	62.89	3.71	0.18	0.53	3.92	1.85	1.08	0.27
2016	62.41	4.09	0.19	0.53	3.93	2.04	1.10	0.29
2017	63.36	1.70	0.17	0.55	4.01	2.03	1.12	0.32
2018	61.76	1.46	0.15	0.54	4.03	1.84	1.20	0.33
2019	61.04	1.64	0.14	0.57	3.87	1.23	1.36	0.34
2020	60.53	1.41	0.13	1.01	3.49	1.25	1.46	0.29
2021	60.59	1.25	0.13	2.31	3.47	1.21	1.21	0.52
2022	60.54	1.20	0.14	1.58	3.39	1.44	1.20	0.14

Source: CSO, 2023, ITC Trademap, 2023, FAOSTAT, 2023

Table 63. Comparison of FOB Price/Ton of Watermelon among Exporting Countries in Asia and Myanmar (US\$ Million)

Year	Turkey	Iran	Myanmar	China	India	Vietnam	Malaysia
2014	259	231	486	860	407	555	343
2015	229	224	600	756	416	575	306
2016	225	171	682	879	419	488	332
2017	259	192	547	739	343	500	359
2018	288	206	415	848	333	510	355
2019	200	237	492	860	262	554	351
2020	281	223	384	810	272	602	332
2021	243	231	549	903	231	568	340
2022	276	218	453	1069	245	585	368
2023	299	293	312	964	228	185	374

Source: UN Comtrade, 2023, ITC Trademap, 2023, Myantrade, 2023

The comparative quality and price value is the division between the Myanmar watermelon (HSC:080711) (FOB) price and the watermelon (FOB) price of other comparable countries. If the quality and price value is greater than (1), then the quality of watermelon exported from Myanmar is better than that exported from other comparable countries. If it is equal to (1), it can be said to be of the same quality as the price of the other comparable countries, and if it is less than (1), it can be said that it is cheaper and of inferior quality than the price of the other comparable countries.

Myanmar watermelon (HSC:080711) is more expensive and of better quality compared to the price of watermelon in the rest of the comparative countries except China and Vietnam.

Table 64. Comparable Price and Quality of Watermelon (HSC: 080711) between Asian Exporting Countries and Myanmar (FOB Price)

Year	Turkey	Iran	China	India	Vietnam	Malaysia
2014	1.88	2.10	0.56	1.19	0.88	1.42
2015	2.62	2.67	0.79	1.44	1.04	1.96
2016	3.03	4.00	0.78	1.63	1.40	2.05
2017	2.11	2.85	0.74	1.60	1.09	1.52
2018	1.44	2.02	0.49	1.25	0.81	1.17
2019	2.46	2.08	0.57	1.88	0.89	1.40
2020	1.37	1.73	0.47	1.41	0.64	1.16
2021	2.26	2.38	0.61	2.38	0.97	1.61
2022	1.64	2.08	0.42	1.85	0.78	1.23
2023	1.04	1.06	0.32	1.37	1.69	0.84

Source: UN Comtrade, 2023; ITC Trademap, 2023; Myantrade, 2023

The most promising trading partners for Myanmar exports (HSC:080711) are China, while Myanmar's watermelon export potential is (91) MT (Table 65).

Table 65. Trade Potential of Myanmar Watermelon (HSC 080711) (2023)

Trading Partners with Myanmar	Total Export Volume of watermelon by Myanmar to World market (MT)	Import Volume of watermelon by trading partner from global market (MT)	Export Volume of Watermelon by Myanmar to Trading Partner Country (MT)	Trade Potential (MT)
China	57,727	73,607	57,636	91

Source; UN Comtrade, 2023, ITC Trademap, 2023

#### ❖ Comparative advantage of Watermelon

During 10 years period from 214 to 2023, the RCA value of watermelon exported from Myanmar are greater than (4) and RSCA values are greater than (0.6). Therefore, it is observed that watermelon exported by Myanmar is standing at highly comparative advantage level in international market.

Table 66. Comparative Advantage of Myanmar Watermelon (HSC: 080711) in World Market (RCA and RSCA)

(Value: '000 US\$)

Year	Export Value of Watermelon from Myanmar	Total Export Value of Myanmar	Total Export value of Watermelon in World Market	Total Export Value in World Market	*RCA	**RSCA
2014	72,461	11,451,861	1,548,816	18,856,957,626	77.04	0.97
2015	64,925	11,431,792	1,509,664	16,418,063,890	61.76	0.97
2016	73,240	11,672,717	1,706,382	15,924,203,652	58.55	0.97
2017	74115	13877953	1673341	17,563,586,196	56.05	0.96
2018	77,044	16,702,159	2,026,177	19,329,050,174	44.00	0.96
2019	78,169	18,117,605	2,010,701	18,761,814,917	40.26	0.95
2020	57,435	16,949,755	2,104,472	17,514,968,797	28.20	0.93
2021	69,057	15,153,408	2,155,240	22,154,054,456	46.84	0.96
2022	38,539	17,084,513	2,278,162	24,719,795,601	24.48	0.92
2023	18,030	14,752,993	2,277,634	23,291,072,313	12.50	0.85

\*RCA = Revealed Comparative Advantage, \*\*RSCA = Revealed Symmetric Comparative Advantage  
Source: UN Comtrade, 2023, ITC Trademap, 2023

### 5.5.9 Strengths, Weaknesses, Opportunities and Challenges (SWOC)

Strength	Weakness
<ul style="list-style-type: none"> <li>✓ Prolong season of fruit harvest due to different agro-ecological conditions of growing areas</li> <li>✓ Access to market with closed collaboration with importing countries</li> <li>✓ Having benefits from high demand in export market.</li> </ul>	<ul style="list-style-type: none"> <li>✓ market instability</li> <li>✓ Heavy inputs, high investments, uncertain returns</li> <li>✓ Nature of fresh fruit without cold storage facilities</li> <li>✓ There will be more losses in export if delay in transport.</li> </ul>
Opportunity	Challenges
<ul style="list-style-type: none"> <li>✓ High demand in both domestic and foreign markets;</li> <li>✓ It can be easily exported directly through border to China market</li> <li>✓ Signing up with the GACC would make exporting goods to China easier and more profitable.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Difficulties to deliver goods on time due to unexpected geopolitical instability and road connectivity to export through border areas.</li> <li>✓ Rising costs for investment and transportation</li> <li>✓ Facing labor shortages</li> <li>✓ Increased risk due to unstable market demand</li> </ul>

## 5.6 Aquatic products

### 5.6.1 Importance in Myanmar's economic development

Myanmar has about 2,400 kilometers of coastline and inland freshwater rivers such as the Irrawaddy River, Chindwin River, Sittaung River and Salwin River. In addition to large freshwater rivers there are also many other freshwater small rivers and lakes in various parts of the country. The inland freshwater bodies cover (8.1) million Ha of which (1.3) million Ha are permanent and the remainder are seasonally inundated floodplains.

Table 67. Total fishery production of Myanmar by quantity (MT)

	2021	2020	2019	2018	2017	2016	2015
Total	6,074,820	6,013,781	5,931,815	5,877,460	5,675,462	5,598,003	5,316,950
Capture Fisheries	4,907,470	4,872,903	4,849,750	4,747,110	4,626,770	4,577,410	4,317,320
Marine Capture	3,295,070	3,264,837	3,249,700	3,152,140	3,036,410	2,996,740	2,854,200
Inland Capture	1,612,400	1,608,066	1,600,050	1,594,970	1,590,360	1,580,670	1,463,120
Aquaculture	1,167,350	1,140,878	1,082,065	1,130,350	1,048,692	1,020,593	999,630

Source: Fishery Statistical Bulletin of Southeast Asia 2021

The richness of the country's aquatic resources makes the fisheries sector vital to the national economy and food security and also bring about employment opportunities and foreign income seeking issues. There are two types of main resource industries producing aquatic products in Myanmar such as (a) Aquaculture/Culture Fisheries and (b) Capture Fisheries. The fisheries sector of Myanmar is divided into marine and freshwater fisheries sub-sectors. Marine fisheries include inshore and offshore, and freshwater fisheries include aquaculture, leasable, and open fisheries. In 2021, the contribution of capture fisheries was (81) percent and aquaculture contributed (19) percent to the total fishery production of the country.

Table 68. Production of major species/groups of species from aquaculture of Myanmar by quantity (MT)

Major species/group	2021	2020	2019	2018	2017	2016	2015
Roho labeo	686,540	687,582	361,345	548,962	647,974	615,352	619,512
Common carp	119,047	123,047	303,731	120,982	19,289	18,934	18,441
Silver barb	171,281	175,281	259,542	231,607	11,091	10,887	10,604
Tilapias	39,050	33,050	69,472	44,511	33,755	33,134	32,273
Shrimps/prawns	70,183	59,650	51,796	22,571	59,944	67,724	52,220
Carps	53,689	46,612	19,913	97,519	178,420	175,138	170,583
Catfishes	21,859	103	–	55,184	57,866	56,801	55,324

Source: Fishery Statistical Bulletin of Southeast Asia 2021

With the annual increase in the production of aquatic products Myanmar's aquatic industry has been ranked 6<sup>th</sup> among the world's aquaculture producing countries. In addition, Myanmar is ranked as 18<sup>th</sup> in the countries with the highest fish production from saltwater fishing worldwide, and

stand in 4<sup>th</sup> rank among the countries with the highest fish production from inland freshwater fishing (FAO, 2024). It contributes to (2) percent of Myanmar's Gross Domestic Product and up to (50) percent of meat consumption (World Bank, 2019). Due to the diverse nature of the fishing industry, it is an industry that employs about (800,000) full-time workers and (2.4) million part-time workers.

Fish is usually the main food consumed by the Myanmar population and provides the most protein, so the fisheries sector plays an important role in the country's food and nutrition security. By exporting to the markets of ASEAN member counties, European countries and the United States, there will be opportunities to earn more income for the country and has opportunity of creation to produce various aquatic products.

### **5.6.2 Importance of product in both domestic and export markets**

For the domestic market, (50) to (60) percent of total fish, shrimp and crab production and 80 percent of processed aquatic products are sold in the domestic market. For the domestic market, the wholesale markets in Yangon such as Shwe Patauk Fish Market, Sanpya Wholesale Market and Thiri Mingalar Wholesale Market are the main distribution wholesale markets for the lower Myanmar region. Mandalay Waterfront Road is the main distribution point for the upper region of Myanmar. Wholesale markets are the main sales channel for aquatic products in the domestic market. Wholesale markets in Yangon trade an average of (500,000) to (600,000) tons of aquatic products per day from both capture and farming (source: Thura Swiss Co.,)

Through wholesale markets, they distribute and trade to retail markets such as: supermarkets and local retail wet markets. Small-scale fishermen sell their catch directly to consumers in wet market. In marketing to the supermarket, it required freshness, size, quality that sets cleanliness and deicing. Clean and properly packaged premium products as well as frozen or processed products are usually sold in supermarkets, hypermarkets and chain stores. Processed aquatic products, which are being sold on the local market, are fridges, cookie-made shrimps, shrimps, or fish bread, dried fish-rice powder cookie, and dried fish.

Aquatic products are exported about (10) percent of total production value. In doing so, they are exported in a variety of ways, such as The Normal Trade and the Border Trade System. The export of Myanmar's aquatic products can be found primarily by alive products and processed products, such as squirrels, ells, fish, shrimps, scorpions and crustaceans in forms of chilled type, frozen type, dried form, salted form, smoked forms depending on the request of the relevant markets. Myanmar's aquatic products are exporting to more than 40 countries. Outstanding trading partners in international markets cover 21 countries such as China, Japan, the United States, Philippines, the United Arab Emirates, Oman, Taiwan, Kuwait, Korea, India, Hong Kong, United Tecan, Bahrain, Iraq, Qatar, Australia, Italy, Canada, France, Belgium, and South Africa. The five countries with the highest demand export markets are Thailand, Singapore, Malaysia, Philippines and Vietnam.

According to Fisheries Department statistics, the total income generated from the export of aquatic products in May 2024 can be observed that (20467.63) MT of fish worth of US\$ (23.0) million, (410.95) MT of shrimp worth of US\$ (1.37) million and (18,349.61) MT worth of US\$ (28.42) million of other aquatic products (DOP, 2024).

Table 69. Export of aquatic products of Myanmar by quantity and value

Year	Export	
	Quantity (MT)	Value ('000 US\$)
2021	403,987	806,667
2020	473,563	887,776
2019	439,663	812,165
2018	568,224	711,717
2017	487,886	696,302
2016	394,397	561,826
2015	338,284	482,237

Source: FAO Fishery and Aquaculture Information and Statistics Service

Out of more than 40 countries where Myanmar is exporting aquatic products. The five countries with the highest local markets are Thailand, Singapore, and the United States. Malaysia, Vietnam, and the Philippines. Outstanding trading partners in international markets cover 21-countries such as China, Japan, the United States, Philippines, the United Arab Emirates, Oman, Taiwan, Kuwait, Korea, India, Hong Kong, united Tecan, Bahrain, Iraq, Qatar, Australia, Italy, Canada, France, Belgium, and South Africa.

### 5.6.3 Trade development between Myanmar and China

According to the Economic Cooperation Agreement, signed in 1989 between Myanmar and China, loans and support from China to Myanmar began and traded. The foundation of economic cooperation for the development of the sector has been established in such a way that Border Trade Agreements to facilitate cross-border trade were signed in 1988 and 1994. During the period of 2014 and 2009, six Economic and Technology Cooperation Agreements were signed for the development of the trade sector.

The Treaty of Regional Comprehensive Economic Partnership (RCEP) in Asian countries, including Myanmar, China, Japan, Korea, Australia, and New Zealand were signed on November 15, 2020, resulting active in cooperation between Myanmar and China on May 1, 2022. Bilateral trade between Myanmar and China has improved by 2018. According to the Organizations Reform Program, the AQSIQ was reformed as GACC. China later implemented reform measures in trade policies and procedures to facilitate trade between two countries.

During the President of China's trip to Myanmar in 2020, an understanding agreement was established to form a trade promotion team between the two countries to facilitate border trade and also signed agreement for rapid progress in bilateral discussion in the Establishment of the Ruili-Muse Border Economic Zone. Commodities are being exported after signing SPS protocols with the GACC in China. Fish, shrimps, and other water products from Myanmar are exported to China which is one of the second-largest exporters of Myanmar's aquatic products after Thailand. More than 20 types of aquatic products, including shrimps, tiger shrimp, fish and cactus, are exported to China by using maritime transport, air transport, and border trade. The export amount and value of aquatic products to China from 2014–2015 fiscal year to 2022-2023 is shown in following Table 70.



Table 70. Export of Aquatic products from Myanmar to China from 2014-2015 to 2022-2023

Fiscal Year	Export Volume (‘000 MT)	Export value (US\$ Mil)
2014-2015	75.73	169.69
2015-2016	75.73	169.69
2016-2017	100.2	190.12
2017-2018	117.79	197.96
2018-2019	137.26	204.82
2019-2020	173.45	254.92
2020-2021	111.08	222.89
2021-2022	50.97	107.15
2022-2023	118.89	244.53

Source: DOF, 2023

#### 5.6.4 Domestic consumption and export

Myanmar's abundance of freshwater rivers, long coastlines and various climate conditions produce aquatic products for not only local consumption but also export. Aquatic products produced by rich freshwater resources are very important for the country's economic development and food security. By 2021, (8.6) percent of Gross Domestic Product (GDP) of Myanmar was earning from fishery sector. In 2021, Myanmar's fishery industry could produce (67) kilograms of fish and seafood for individual consumption, and the actual amount of consumption per person was (42.82) kg (FAOSTAT, 2023). Therefore, the excess amount after domestic consumption could be available for export.

The domestic market demand for aquatic products accounts for (50) to (60) percent of the total production and about (80) percent of the processed aquatic products (Thura Swiss Co., Ltd., 2021). For the lower regions of Myanmar, a wide range of seafood products can be purchased at retail through the Shwe Padauk Fish Market, Kyimyindaing central fish Market and the Thirimingalar Fish Market. For the upper regions of Myanmar, the Mandalay Waterfront Market is one of the main markets where there is a lot of domestic demand (Thura Swiss Co., Ltd., 2021). Domestic demand at wholesale markets in Yangon averages about (500,000) to (600,000) tons per day.

It is known that there are about 500-600 retail sellers in the fresh market in Yangon and approximately 200 sellers in the Central Model Fish Market, but there is no system to keep an accurate record of the amount of buying/selling in these markets, so the exact amount of domestic demand and sales is not known (Thura Swiss Co., Ltd., 2021). The products are mainly distributed to those who will resell them to hotels, restaurants, coffee shops, supermarkets and nearby retail markets through local hypermarkets. In domestic markets, consumers buy from resellers through wet markets at a price set by the seller according to the size, appearance and freshness of the product. Domestic demand and sales volumes for processed aquatic products are low and sales figures are not available.

In addition to the Normal Trade routes such as sea and air trade, Myanmar's aquatic product is exported and sold abroad through the border gates of Myawadi, Kok Thong, Sitwe, Myeik, MUS\$, Mong Taw, Tamu, Chin Shwehaw, Tai Kee, Reed, Mau Tung and Kyai Lat as border trade routes.

Table 71 shows the annual volume and value of Myanmar exports by sea, air and border trade routes from the 2014-2015 fiscal year to the 2022-2023 fiscal year.

Table 71. Annual Export Volume and Value of Aquatic Products by various Trade Routes from Fiscal Year 2014-2015 to Fiscal Year 2022-2023

Year	Export Volume ('000MT)		Export Value (US\$ Mil)	
	Sea & Air	Border Trade	Sea & Air	Border Trade
2014-2015	145.41	192.88	217.16	265.09
2015-2016	148.56	220.41	214.86	287.77
2016-2017	142.09	296.61	240.96	364.86
2017-2018	152.99	415.24	263.72	447.99
2018-2019 (April to Sept)	67.14	153.93	119.39	174.13
2018-2019 (Oct to Sept)	149.58	434.10	289.54	438.72
2019-2020	170.38	499.30	332.22	520.92
2020-2021	178.68	379.55	399.54	386.96
2021-2022 (Oct to March)	127.90	208.17	261.10	219.57
2022-2023	224.43	290.41	414.58	359.65

Source: DOF, 2023

Table 72 shows the export volume and value of aquatic products sold abroad from livestock and fisheries in the 2022-2023 fiscal year. With 345 types of freshwater and saltwater fish, shrimp and other aquatic products from farming and fishing industries, saltwater fish, aquarium fishes and aquatic products account for the largest export volume as well as foreign earnings.

Table 72. Export volume and value of aquatic products exported abroad in the 2022-2023

No.	Type of Fishes	Export Volume ('000 MT)	Export Value (US\$ Mil)
1	Sea Water Fish (ရေငန်ငါး)	270.26	295.53
2	Aquarium Fishes (အလှမွေးငါး)	136.53	217.44
3	Other (Live) (အခြား (အရှင်))	31.84	132.3
4	Fresh Water Fish (Culture) (ရေချိုငါး (မွေးမြူ))	57.17	65.25
5	Sea Water Prawn (Capture) (ရေငန်ပုစွန် (ဖမ်းဆီး))	15.22	49.3
6	Fresh Water Fish (Capture) (ရေချိုငါး (ဖမ်းဆီး))	2.98	7.07
7	Sea Water Prawn (Culture) (ရေငန်ပုစွန် (မွေးမြူ))	0.77	6.71
8	Fresh Water Prawn (ရေချိုပုစွန်)	0.07	0.63
	<b>Total</b>	<b>514.84</b>	<b>774.23</b>

Source: DOF, 2022

Table 73 shows the volume of exports of the top 10 seafood products exported abroad in the fiscal year 2022-2023 and the respective foreign earnings earned.

Table 73. Top 10 Seafood Products Exported Abroad in Fiscal Year 2022-2023

No	Name of Fishery Product	Export Volume ('000 MT)	Export Value (US\$ Mill)
1	Live Mub Crab (ရွှေကလေးအရှင်)	14.89	65.21
2	Fish Meal (ငါးကြေမှုန့်)	68.92	64.78
3	Live Eel (ငါးရှဉ့်အရှင်)	13.44	48.34
4	Rohu (ငါးမြစ်ချင်း)	35.14	43.93
5	Soft Shell Crab (ကလေးပျော့)	3.31	28.44
6	Plathukae	35.13	27.59
7	Hilsa (ငါးသလောက်)	8.00	27.55
8	Ribbon Fish (ငါးတံခွန်)	21.22	24.10
9	Thread Fin Bream (ရွှေငါး)	19.60	18.06
10	White Shrimp (ပုစွန်ဖြူ)	5.82	17.32

Source: DOF, 2022

### 5.6.5 Value Chain of the Product (Producers-Domestic Market- Export)

The market value chain for aquatic products relies on four systems for production such as freshwater/saltwater aquaculture, open fisheries, onshore and offshore fisheries. All of the individual entrepreneurs to large retailers, foreign exporters are involved in the market value chain of production, collection, processing distribution of aquatic products.

#### (a) Producers

Medium-sized businesses in the freshwater fish are intermediaries that facilitate the settlement of transactions. Some of them are holders of inland leasable fishery and holders of tender fishing license, large aquaculture farm holders. Holders of inland leasable fishery and tender fishing license holders are the main controllers of the fish market and the integrators of the upstream and bottom of the value chain. They are also the regulators of the ups and downs of the fisheries market chain. Small-scale fishermen are often the ones who want to raise their prices, but they are often allowed to enter the fishing grounds and sell their catch at a discount because of lack of the fishing permit and unaffordable fishing appliances. Large-scale fishery companies sell shrimp and fish caught in their own fishing nets at fishing ports and sell them directly to refrigeration companies. Large-scale fish farmers raise ponds in three categories: a nursery farm under 5 acres, a hatchery farm (between 5 and 10 acres), and a grow-out farm over 10 acres.

#### (b) Manufacturers and sellers of aquatic inputs

Importers manufacture and sell inputs necessary for offshore fisheries, inland fisheries, such as auction fishing nets, trout, bait, fish/shrimp fry, certificates and permits, fishing boats and fishing gear, containers, ice, ice rigs and other chemicals. Hatchery ponds are generally located in villages along the coast where there are many fry/shrimp hatchlings. Some households raise their cubs and sell them back to agents and breeders. Fish/shrimp/wild shrimp buyer agents buy fry from these farms and resell them at retail to the farmers (ILO, 2015).

**(c) Aquatic products collection sites**

Fish collection centers are located along the riverbank and are built to make it easy for fishermen to come and sell their catch. The owners also own commercial fish collection centers, which select, wash, and store the fish in refrigerated buckets once the fish are received. Since fish stock collection centers are source of information that connects fishermen with fish markets and provides fishery workers with information on fish prices and market standards. Fish collected locally continues to be sold to local fish dealers in the city, to fish wholesalers in the township, or to fish wholesalers in Yangon and the upper region. There is also direct sale to large fish wholesalers in Yangon as well as some local trout (ILO, 2015).

**(d) Aquatic products Wholesale Stock Collection Centers**

The fish wholesale stock collectors are specialized as fisheries operators who purchase and ship the fishery products to the markets in Yangon throughout the year. Fish produced by the fish farming industry are sold directly to the wholesale collection centers, while fish from the fishing industry are traded to the wholesale through the trawlers. These dealerships continue to sell to fish retailers/butchers in the township or to fish dealers in Yangon and the Upper Region. They set fish prices based on the quality of the fish, the status\$ of fish imports, and the quantity of fish market demand (ILO, 2015).

**(e) Aquatic products Exporters**

Since 2019, the Department of Fisheries has been providing technical assistance to the export and sale of Myanmar aquatic products, such as issuing certificates of certification for food safety and quality required by the markets of the European Union countries.<sup>27</sup>

Among the aquatic products, soft fish from aquaculture is mainly exported to China, Hong Kong, Taiwan, Korea, New Zealand, Malaysia and Dubai, while a variety of fish and shrimp are exported to China and also distributed domestically.

Myanmar's aquatic products is exported and sold to more than 40 countries around the world, including Thailand and China. A total of about 11 types of Myanmar aquatic products, including saltwater white shrimp, have been certified by GACC to be exported to China.<sup>28</sup> The Department of Fisheries is coordinating laboratory tests on food safety in the industry and processing factories sector along the seafood value chain. Laboratories used by factories and processing plants have been able to obtain internationally recognized ISO certificates as early as 2012, which has helped to export Myanmar seafood to European countries.<sup>29</sup>

As for the Myanmar fisheries sector, there are about 500,000 acres of fish/shrimp farming ponds and 124 factories operating in the major provinces, as well as coastal fishing vessels (3,200), offshore fishing vessels (19192) and fishing vessels (260) operating in the coastal areas, making it a sector that not only satisfies domestic consumption but also generates foreign income due to its

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<sup>27</sup> Excerpted from Key Informant Interview (Traders)

<sup>28</sup> Excerpted from Key Informant Interview (Traders)

<sup>29</sup> Key Informant Interview (Gov. Official)

annual exports<sup>30</sup> abroad. There is a total of 11 associations that export and sell Myanmar's aquatic products. The Myanmar Fishery Product Processor and Exporter Association (MPEA) are mainly engaged in trade facilitation.<sup>31</sup> The Ministry of Agriculture, Livestock and Irrigation is developing the necessary projects for the development of Fish Processing Economic Zones that will produce high-value aquatic products for both domestic and foreign markets.<sup>32</sup>

### 5.6.6 Challenges in production and export

Overview of the obstacles and challenges facing the production of Myanmar's aquatic products are shown as follows.

#### (a) Lack of regular electricity (electricity and fuel)

The lack of regular access to electricity (electricity and fuel) increases production costs and causes production problems. The lack of regular electricity in industrial zones (future special economic zones) presents a difficulty in ensuring goods quality and goods supply for processors. The lack of electricity in rural areas also poses a major challenge for the fishery industry since adequate regular ice production in local areas is for difficult for ice plants to maintain stockpiles of fresh goods. In addition to the challenges of generating electricity, high prices of fuel increase the cost of fishery farming.

#### (b) Lack of adequate quality food for fish and supply of fingerlings

A major challenge to fish fingerling production is low demand from fish farmers. This lack of demand is due to stagnant demand in the domestic markets. As for the domestic market, the fish fingerlings are delivered to fish farming located in Mon State, Myingyan, Myitkyina, Kalay, Tamu and Lashio, but now it is no longer possible to deliver them due to road connectivity difficulties.

The difficulty of obtaining adequate quality feed for fingerling farming is also a challenge for the sector. In addition, the Ministry of Commerce's trade stipulation that only those that receive foreign currency can buy and import goods from abroad, so the fish feed operators do not receive any foreign income to import the materials necessary for the production of fish feed from abroad. Rising exchange rates are a major challenge for the fishing industry.

In addition, the fact that the price of bait is the highest in Asia and the fact that the fish are mainly farmed in few fish species also poses a major challenge for aquarists. The inadequacy of hatchery production techniques also poses serious challenges in the production of saltwater shrimp, which has great potential for export to the foreign market.

The lack of sufficient genetic experts to produce good breeds, along with the lack of legal subsidies to fish farmers and high interest rates on external private loans, are also obstacles for fish farmers to expand their fishery business. In addition, the lack of sufficient number of experts to educate them on production methods, e.g. modern farming systems, regulations on the use of

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<sup>30</sup> <https://www.moi.gov.mm/news/12327>

<sup>31</sup> Key Informant Interview (Gov. Official)

<sup>32</sup> <https://www.moi.gov.mm/news/12327>

chemicals for safety in fish ponds, etc., is key to the long-term development of the fish farming industry.

**(c) Limiting the effective application of Good Aquaculture Practices (GAqP)**

GAqP has many procedures and systems to ensure product quality, environmental sustainability, and Responsible Farming Practices. The use of GAqP is to reduce health and disaster consequences to produce high-quality products.

It is inadequate to provide adequate fishing technologies and technical training. Lack of extension and educational services impedes the effective distribution of manufacturing technologies and the monitoring of fishing industries. Most fish and shrimp ponds are cultivated only by traditional infrastructure, which is not suitable for intensive farming, and a lot of investment is needed to upgrade infrastructure and technology (National Export Strategy: Fisheries Sector Strategy, 2015-2019).

**(d) Difficulties in operation of Hazard Analysis and Critical Control Points (HACCP) non-compliance with Good Manufacturing Practices (GMP)**

GMP systems are set to produce goods consistently at a specific quality standard. By applying GMP standards at the manufacturing process level, they guarantee productivity and safety. The main challenge for increasing GMP standards and quality management is lack of trained technicians who use GMP practices in buildings, ice plants, and fisheries. Current public vocational training programs are outdated and these subjects do not include the University curriculum.

One of the major challenges facing fish processors is the lack or insufficient availability of clean water for consumption, in which fish farms and ice factories contributes to contamination of fish and shellfish. The lack of access to clean water in reprocessing plants makes it incompatible with sewage systems, phytosanitary systems, and creates barriers to trade standards. To achieve compliance, producers need to invest heavily in water remediation measures, which can reduce production costs. The successful development of the aquaculture sector depends a lot on the ability to produce products that are consistent with quality standards. If it can be promoted in line with GMP standards, the sector will not only be able to improve its brand name, its long-term relationship with customers, its exports to countries in need, or new products in line with changing market trends (National Export Strategy: Fisheries Sector Strategy, 2015-2019).

**(e) Maximum Sustainable Yield (MSY) Management Challenge Mitigates Catch**

MSY refers to a renewable resource that can produce products in a sustainable manner in the long term without compromising its renewable use through natural growth or replenishment. MSY is an essential way for every country to manage its fish resources in the long term. There are many challenges in implementation.

The current framework is outdated and undermines the knowledge of the true MSY. Although the current catch level is above the MSY published in 1979-1980, it is difficult to verify that the actual catch is robust due to the lack of statistical data. The level is hard to determine.

Even if MSY has adequate data management capabilities, there are many problems in the government's enforcement of regulations. Authorities have few resources to combat illegal,

unregulated and unreported fishing (IUU). There are few ways to control illegal fishing, even during off-season fishing seasons. Although a shift from natural capture to shrimp farming may address the problems associated with the decline of fish population, the situation will continue without effective control of fishing zones. It is particularly important for Myanmar to manage its fish resources responsibly in these matters. Overfishing is not only having dire consequences for the future fisheries sector, but also has many negative consequences for the people and ecosystems that consume the aquatic products (National Export Strategy: Fisheries Sector Strategy, 2015-2019).

**(f) Myanmar's lack of capacity to produce high-value aquatic products**

A major challenge for producers in the fishery sector is the difficulty of increasing production due to the lack of regular raw material availability. The problem can be seen in the export statistics because of the irregular availability of raw materials. Export relations continue to deteriorate at a low rate and market share is declining particularly in China and Thailand. However, products such as shrimp/shrimp packages cannot be exported from some production zones to factories due to transportation difficulties. The lack of qualified food production experts also undermines the ability of industries to produce new products. The ability of companies undergoing manufacturing to adapt to their products depends solely on their own knowledge and expertise. Manufacturers and exporters are often left without access to relevant and reliable market information, and at trade shows (or less participation in other intellectual gatherings also reduces the productivity of high-value products (National Export Strategy: Fisheries Sector Strategy, 2015-2019).

**(g) Climate changes**

Myanmar is one of the countries most affected by climate change in terms of increasing evidence of rainfall and annual temperature rises such as variable rainfall and cyclones with a profound impact on Myanmar's water sector. Climate change processes high inland water temperatures that lead to droughts due to deterioration in water quality and changes in oxygen availability in rainfall, and changes in salinity due to rising sea levels. It has a profound effect on the distribution of pathogens (World Bank, 2014). In the tropics, low water availability in summer and low temperatures in winter have a profound impact on aquatic resources. Changes and declines in water and aquatic resources in both aquaculture and fishing operations, extreme weather events and the increasing frequency of occurrences are contributing to increased competition and conflict, and the need for resource conservation. Along with rising costs, this leads to the displacement of fishermen (FAO, 2010).

**5.6.7 Trading partners and export share in international market**

According to Myanmar's National Export Strategy (2020-2025), which aims to increase Myanmar's trade in seafood. Myanmar's exports to foreign countries reached a record high of over US\$ (720) million in the 2018-19 fiscal year. Myanmar exported the largest volume of aquatic products to China. In the 2023-2024 fiscal year, foreign revenue from the export of Myanmar aquatic products earned US\$ (714.8) million, a decrease of US\$ (51.04) million compared to the previous\$ fiscal year 2022-2023.

Myanmar's fishery product exports made (514.84) thousand MT to more than 40 countries during the 2022-2023 fiscal year, valued at US\$ (774.23) million. Myanmar products are mainly exported to Thailand, China, Japan, South Korea, Singapore, Malaysia, Bangladesh, the United States, the UAE and the United Kingdom and the respective export volumes and export values during the financial year 2022-2023 are shown in Table 74.

Table 74. Volume and export value of Myanmar aquatic products exports to major trading countries in the 2022-2023

No	Countries	Export of Aquatic products			
		Export Volume		Export Value	
		('000 MT)	(%)	(US\$ Mil)	(%)
1	Thailand	239.91	46.60	263.02	33.97
2	China	118.90	23.09	244.53	31.58
3	Japan	9.80	1.90	40.65	5.25
4	South Korea	33.44	6.50	28.94	3.74
5	Singapore	21.78	4.23	28.26	3.65
6	Malaysia	10.16	1.97	22.48	2.90
7	Bangladesh	15.51	3.01	19.81	2.56
8	US\$A	5.74	1.11	18.94	2.45
9	UAE	13.75	2.67	13.94	1.80
10	UK	6.15	1.19	13.56	1.75
11	Others	39.70	7.71	80.11	10.35
	<b>Total</b>	<b>514.84</b>	<b>100.00</b>	<b>774.23</b>	<b>100.00</b>

Source: DOF, 2023

In the 2022-2023 fiscal year, more than (85) percent of Myanmar's seafood exports were mainly exported to Asian countries, with about (239.91) thousand MT to Thailand and (118.90) thousand MT to China. Thailand and China can be said to be the most major trading partners of Myanmar's seafood exports, accounting for about (46.60) percent of Myanmar's seafood exports to Thailand and (23.09) percent to China. Not only in terms of export volume, but also about (65) percent of Myanmar's total export value comes from exports to Thailand and China. Myanmar seafood exports were valued at US\$ (263.02) million to Thailand and US\$ (244.53) million to China (Table 74).

A third-party organization which is accepted by Saudi Arabia was hired to obtain Best Aquaculture Practice (BPA) certification for the restoration of Myanmar's seafood exports to Saudi Arabia. The European Union countries have also been allowed to import Myanmar seafood since May 2019, which has increased its external market reach.<sup>33</sup>

Myanmar is the third largest exporter of live fish in Asia, exporting (22,538) MT with a value of US\$ (57.78) million, accounting for (11) percent of live fish exports in the Asian region.

<sup>33</sup> Key Informant Interview (Government Official)



Table 75. Live fish (HSC:0301) Top Exporting Asian Countries (2023)

Rank	Exporting Countries	Export Volume (MT)	Export Value ('000 US\$)	Export %
	<b>Total</b>	<b>211,759</b>	<b>1,595,907</b>	<b>100%</b>
1	China	102,972	789,308	49%
2	Philippines	46,546	83,903	22%
3	Myanmar	22,538	57,779	11%
4	Taipei (China)	10,641	125,059	5%
5	Japan	8,990	127,428	4%
6	Bangladesh	6,624	24,118	3%
7	Indonesia	4,861	64,870	2%
8	South Korea	4,223	63,694	2%
9	Thailand	2,493	25,099	1%
10	Sri Linka	534	26,609	0%

Source: UN Comtrade 2023, ITC Trademap 2023

Myanmar exported a total of (22,523) MT of fish to Asian countries in 2023, with an export value of US\$ (57,75) million. The main importer of raw fish is China, which exports (50) percent of its exports to Asian countries, totaling (11,360) MT worth of US\$ (41.76) millions. Thailand imports (46) percent of Myanmar's live fish exports, accounting (10,341) MT worth of US\$ (14.01) million.

Table 76. Myanmar Live fish (HSC:0301) Top Exporting Asian Countries (2023)

Rank	Importing Countries	Import Volume (MT)	Import Value ('000 US\$)	Import %
	<b>Total</b>	<b>22,523</b>	<b>57,748</b>	<b>100%</b>
1	China	11,360	41,760	50%
2	Thailand	10,341	14,007	46%
3	Saudi Arabia	225	719	1%
4	Singapore	224	393	1%
5	India	133	326	1%
6	Bangladesh	113	197	1%
7	Bahrain	69	81	0%
8	Japan	34	217	0%
9	Arab	24	35	0%
10	Malaysia	0	4	0%

Source: UN Comtrade 2023| ITC Trademap 2023

Turkey is first rank exporter of fresh fish in Asia. Myanmar is the second-largest exporter of fresh fish in Asia earning US\$ (168) million from exporting (105,609) MT of fresh fish to the Asian region. Thailand is the third largest exporter of fresh fish in Asia, having value of US\$ (42) million from (61,358) MT fresh fish exports in Asia.

Table 77. Fresh Fish (HSC:0302) Top Exporting Countries in Asia (2023)

Rank	Exporting Countries	Export Volume (MT)	Export Value ('000 US\$)	Exporting %
	<b>Total</b>	<b>536,140</b>	<b>1,813,314</b>	<b>100%</b>
1	Turkey	130,868	694,610	24%
2	Myanmar	105,609	168,735	20%
3	Thailand	61,358	42,471	11%
4	India	54,260	62,477	10%
5	Indonesia	48,145	106,751	9%
6	China	37,685	276,881	7%
7	Malaysia	26,738	38,058	5%
8	Bangladesh	15,934	44,068	3%
9	Japan	8,735	114,908	2%
10	Taipei (China)	8,604	33,535	2%

Source: UN Comtrade 2023, ITC Trademap 2023

Myanmar exported a total of (104,994) MT of fresh fish to Asian countries in 2023, with an export value of US\$ (167.35) million. Thailand is main importer of fresh fish from Myanmar which exports kept (89) percent of its exports to Asian countries, totaling (93,714) MT valued at US\$ (145.90) million.

Table 78. Myanmar Fresh Fish (HSC:0302) Top Importing Countries (2023)

Rank	Importing Countries	Import Volume (MT)	Import Value ('000 US\$)	Importing %
	<b>Total</b>	<b>104,994</b>	<b>167,345</b>	<b>100%</b>
1	Thailand	93,714	145,900	89%
2	Saudi Arabia	4,865	4,907	5%
3	China	2,262	7,384	2%
4	Singapore	1,259	1,713	1%
5	Bangladesh	1,248	2,842	1%
6	India	910	3,416	1%
7	Iraq	221	271	0%
8	UAE	170	261	0%
9	Malaysia	90	226	0%
10	Kuwait	85	114	0%

Source: UN Comtrade 2023, ITC Trademap 2023

Myanmar exported a total of (130,601) MT of frozen fish to Asian countries in 2023, with an export value of over US\$ (173) million. Saudi Arabia is the main importer of frozen fish, which exports (25) percent of its exports to Asian countries. China imports (15) percent of Myanmar's frozen fish exports, valuing US\$ (30.89) million on (19,147) MT of imported amount.

Table 79. Myanmar Frozen Fish (HSC:0303) Top Importing Countries in Asia (2023)

Rank	Importing Countries	Import Volume (MT)	Import Value ('000 US\$)	Import %
	<b>Total</b>	<b>130,601</b>	<b>173,517</b>	<b>100%</b>
1	Saudi Arabia	32,446	28,715	25%
2	China	19,147	30,893	15%
3	Singapore	17,212	20,874	13%
4	UAE	14,988	14,699	11%
5	Thailand	14,228	24,150	11%
6	Bangladesh	6,391	9,733	5%
7	Kuwait	4,523	4,926	3%
8	Oman	4,353	4,571	3%
9	Iraq	3,614	4,189	3%
10	Carta	3,387	3,928	3%

Source: UN Comtrade 2023, ITC Trademap 2023

Myanmar exported a total of (5,657) MT of fish fillets (HSC:0304) to Asian countries in 2023 with an export value of US\$ (15.73) million. The main importer of Myanmar fish fillets is Thailand, which kept (36) per cent of the export volume to Asian countries. Korea, China, Taipei (China), the UAE and Hong Kong are importers of Myanmar fish fillets, accounting for (5) percent, (2) percent and (1) percent of exported fish fillet by Myanmar in Asia region respectively (Source: UN Comtrade 2023, ITC Trademap 2023).

Myanmar exported a total of (8,069) MT of dried fish and smoke (HSC: 0305) to Asian countries in 2023, with an export value of US\$ (20.20) million. The main importers of dried fish are Malaysia and China, which export (34) percent and (33) percent of the volume exported by Myanmar to Asian countries respectively (Source: UN Comtrade 2023, ITC Trademap 2023).

Myanmar exported a total of (34,274) MT of shellfish (HSC:0306) to Asian countries in 2023, with an export value of US\$ (145) million. The main importer of shellfish is China, which exports (71) percent of its exports by Myanmar to Asian countries (Source: UN Comtrade 2023, ITC Trademap 2023).

Myanmar exported a total of (7,371) MT of snails (HSC 0307) to Asian countries in 2023, with an export value of US\$ (26.32) million. The main importer of Myanmar's snails is Thailand, which imports (57) percent of its exports by Myanmar to Asian countries. China imports (24) percent of Myanmar's snails exports which was accounted for (1,777) MT worth of US\$ (3.74) million (Source: UN Comtrade 2023, ITC Trademap 2023).

Myanmar exported a total of (348) MT of marine invertebrates (HSC:0308) to Asian countries in 2023, with an export value of US\$ (1.5) million. The main importer of marine invertebrates from Myanmar is Japan, which imports (51) percent of its exports by Myanmar to Asian countries. Hong Kong imports (22) percent of Myanmar's marine invertebrate exports, with US\$ (0.85) million worth. Thailand, Malaysia, Korea, Taipei (China) and China accounted for (12) percent, (9) percent, (4)

percent, (2) percent, and (1) percent of Myanmar's marine invertebrate exports respectively (Source: UN Comtrade 2023, ITC Trademap 2023).

Korea, China, Taipei (China), the UAE and Hong Kong imported fish fillet from Myanmar, accounting for (5) percent, (2) percent and (1) percent of fish fillet exported by Myanmar to Asian countries respectively.

## 5.6.8 Product Competitiveness, export potential and comparative advantage

### ❖ Product Competitiveness

The Nominal Protection Rate (NPR) of the eels in 2023 is shown in Table 80. If the NPR value is equal to or less than (1), the production of the product can be said to be competitive, and if the NPR value is greater than (1), it can be said that it is not competitive. It is found that Myanmar is exporting live eels mainly to China and Thailand, where the NPR value in China and Thailand is found to be lower than (1). Thus, it is found that the live eels can be exported competitively with other exporting countries at the current global market price.

Table 80. Nominal Protection Rate (NPR) Myanmar's Eel (HSC: 030192) (2023)

Eel from Myanmar Importing Countries	P <sub>m</sub>	P <sub>w</sub>	NPR (P <sub>m</sub> /P <sub>w</sub> )
	CIF Price at Importing Countries (US\$/Ton)	Wholesale Price at Importing Countries (US\$/Ton)	
Thailand	1,808	16,478	0.11
China	5,755	16,473	0.35

Source: UN Comtrade 2023, FAOSTAT 2023, Myantrade 2023

Myanmar exported live fish (HSC: 0301) mainly to China and Thailand, where the NPR value is less than (1). Thus, it is found that Myanmar live fish can be exported to the live fish market of these countries in competition with other exporting countries at the current world live fish market price.

Table 81. Nominal Protection Rate (NPR) of Myanmar's Live Fish (HSC: 0301) (2023)

Myanmar's Live Fish Importing Countries	P <sub>m</sub>	P <sub>w</sub>	NPR (P <sub>m</sub> /P <sub>w</sub> )
	CIF price at importing Countries (US\$/MT)	Wholesale Price at Importing Countries (US\$/MT)	
Thailand	1,151	3,149	0,37
China	4,173	6,774	0.62

Source: UN Comtrade 2023, FAOSTAT 2023, Myantrade 2023

### ❖ Quality Comparison

Table 82 shows a comparison of FOB prices during the year (2014-2023) of Myanmar and Asian countries' major exporters of live fish (HSC:0301). The price per tonne of Myanmar's live fish is the lowest compared to other countries.

Table 82. The FOB Price of Live Fish (HSC:0301) of Myanmar and Exporting Countries in Asia (US\$/MT)

Year	China	Myanmar	Japan	Bangladesh	Indonesia	Korea	Thailand
2014	6,582	2,558	20,024	3,627	3,494	12,234	6,555
2015	5,924	2,659	16,581	1,957	5,442	12,643	5,906
2016	6,405	1,851	17,128	3,717	7,180	13,871	6,195
2017	6,027	2,240	17,621	3,726	8,473	14,600	12,254
2018	7,247	2,154	16,654	3,693	8,975	14,768	7,900
2019	6,698	2,675	16,461	4,093	9,063	12,496	8,627
2020	6,539	3,474	13,698	3,840	11,216	13,455	10,320
2021	7,242	2,143	14,067	3,871	10,596	16,462	8,246
2022	8,053	3,360	14,740	4,101	11,552	15,563	8,607
2023	7,665	2,564	14,174	3,641	13,345	15,083	10,068

Source: UN Comtrade 2023, ITC Trademap 2023, Myantrade 2023

Table 83 shows a comparison of the quality and price of live fish exports of Myanmar and other Asian countries. The comparative quality and price of live fish (HSC: 0301) (FOB) is division between the price (FOB) of live fish of Myanmar and the price (FOB) of live fish of other comparable exporting countries.

Table 83. Comparison of Quality and Price (FOB) of Live Fish (HSC:0301) between Myanmar and Other Exporting Countries in Asia

Year	China	Japan	Bangladesh	Indonesia	Korea	Thailand
2014	0.39	0.13	0.71	0.73	0.21	0.39
2015	0.45	0.16	1.36	0.49	0.21	0.45
2016	0.29	0.11	0.50	0.26	0.13	0.30
2017	0.37	0.13	0.60	0.26	0.15	0.18
2018	0.30	0.13	0.58	0.24	0.15	0.27
2019	0.40	0.16	0.65	0.30	0.21	0.31
2020	0.53	0.25	0.90	0.31	0.26	0.34
2021	0.30	0.15	0.55	0.20	0.13	0.26
2022	0.42	0.23	0.82	0.29	0.22	0.39
2023	0.33	0.18	0.70	0.19	0.17	0.25

Source: UN Comtrade 2023, ITC Trademap 2023, Myantrade 2023

If the quality and price value is greater than (1), it can be said that the fish exported from Myanmar is better quality than the fish exported from other comparable countries. If it is equal to (1), it can be said that the price of live fish is the same as that of other comparable countries. If it is less than (1), it can be said that it is cheaper and of inferior quality than the fish of other comparable

countries. As the result of comparison analysis, live fish export from Myanmar needs to be of better quality in order to achieve the same fish quality and prices as other countries.

Comparison of FOB prices during (2014-2023) of Myanmar's major exports of fresh fish (HSC:0302) is shown in Table 84. The prices of fresh fish exported from Myanmar are lower compared to other countries, but they are higher than those of Malaysia and Thailand.

Table 84. The FOB Prices of Fresh Fish (HSC:0302) in Myanmar and other Asian Countries (US\$/MT)

Year	Myanmar	Thailand	India	Indonesia	China	Malaysia	Bangladesh	Japan
2014	1,224	717	2,150	2,203	4,920	1,215	3,151	7,284
2015	1,168	683	2,120	2,560	5,713	946	2,532	5,885
2016	1,273	835	2,326	2,196	6,518	856	980	6,282
2017	1,480	602	2,126	2,044	5,789	961	2,981	5,526
2018	1,357	690	2,554	1,932	6,842	1,243	3,389	5,647
2019	1,352	818	1,974	2,320	6,656	1,165	3,455	7,253
2020	1,386	752	2,085	2,179	6,249	1,192	4,480	10,488
2021	2,004	741	1,717	2,143	6,951	1,350	4,206	12,749
2022	1,959	671	1,758	2,134	7,568	1,313	3,576	13,226
2023	1,598	692	1,151	2,217	7,347	1,423	2,766	13,155

Source: UN Comtrade 2023, ITC Trademap 2023, Myantrade 2023

Table 85 shows a comparison of the fish quality and price value conditions of Myanmar and other Asian countries exporting fresh fish (HSC: 0302). The comparative quality and price value is the division between the price of fresh fish (FOB) of Myanmar and the price of fresh fish (FOB) in other comparable countries.

If the quality and price value is greater than (1), it can be said that fresh fish exported from Myanmar is cheaper and of better quality than fresh fish exported from other comparable countries, if it is equal to (1), it can be said that the price of fresh fish is the same as that of other comparable countries, and if it is less than (1), it can be said that it is cheaper and of inferior quality than fresh fish from other comparable countries.

It can be said that Myanmar fresh fish is inferior in quality due to its low price compared to its own fresh fish. Therefore, it is found that fresh fish exported from Myanmar needs to be of better quality in order to achieve the same quality and price as other countries exporting fresh fish.

Table 85. Comparison of Quality and Price (FOB) of Fresh Fish (HSC:0302) in Myanmar and other Exporting Countries in Asia

Year	Thailand	India	Indonesia	China	Malaysia	Bangladesh	Japan
2014	1.71	0.57	0.56	0.25	1.01	0.39	0.17
2015	1.71	0.55	0.46	0.20	1.23	0.46	0.20
2016	1.52	0.55	0.58	0.20	1.49	1.30	0.20
2017	2.46	0.70	0.72	0.26	1.54	0.50	0.27
2018	1.97	0.53	0.70	0.20	1.09	0.40	0.24
2019	1.65	0.68	0.58	0.20	1.16	0.39	0.19
2020	1.84	0.66	0.64	0.22	1.16	0.31	0.13
2021	2.71	1.17	0.94	0.29	1.49	0.48	0.16
2022	2.92	1.11	0.92	0.26	1.49	0.55	0.15
2023	2.31	1.39	0.72	0.22	1.12	0.58	0.12

Source: UN Comtrade 2023, ITC Trademap 2023, Myantrade 2023

Table 86 shows the comparison of FOB prices during (2014-2023) of frozen fish (HSC:0303), a major exporter of frozen fish (HSC:0303) from Myanmar and Asian countries. Myanmar peaked at US\$ 1,901 per MT of frozen fish in 2020, but the price was not stable and fluctuated.

Table 86. FOB Prices of Frozen Fish (HSC:0303) in Myanmar and other Exporting Countries in Asia (US\$/MT)

Year	China	Korea	India	Japan	Vietnam	Indonesia	Myanmar
2014	2,565	1,885	2,176	1,481	2,032	981	1,098
2015	2,593	1,667	2,396	1,202	2,032	1,564	1,031
2016	2,555	1,876	2,345	1,181	2,032	1,819	1,332
2017	2,319	2,399	2,094	1,228	1,970	1,772	1,242
2018	2,531	1,901	2,039	1,239	2,254	1,763	1,367
2019	2,476	1,761	2,196	1,293	1,435	1,739	1,697
2020	2,668	1,736	2,056	1,374	2,285	1,687	1,901
2021	3,340	1,660	1,973	1,294	2,148	1,903	1,588
2022	3,338	1,847	1,784	1,262	2,138	2,267	1,394
2023	2,535	1,875	1,720	1,516	1,992	2,420	1,368

Source: UN Comtrade 2023, ITC Trademap 2023, Myantrade 2023

It can be said that Myanmar fish fillet (HSC: 0304) is less expensive and inferior in quality than fish fillet in other countries because the quality and comparative value of fish fillet is below (1) compared to the comparative value of fish fillet in other countries. In order to achieve the same quality and price of fish fillet as other exporting countries, it was found that the quality of fish fillet exported from Myanmar needed to be improved.

Table 87. Shows a comparison of fish quality and price value conditions for frozen fish (HSC: 0303) exports of Myanmar and other Asian countries

Year	China	Korea	India	Japan	Vietnam	Indonesia
2014	0.43	0.58	0.50	0.74	0.54	1.12
2015	0.40	0.62	0.43	0.86	0.51	0.66
2016	0.52	0.71	0.57	1.13	0.66	0.73
2017	0.54	0.52	0.59	1.01	0.63	0.70
2018	0.54	0.72	0.67	1.10	0.61	0.78
2019	0.69	0.96	0.77	1.31	1.18	0.98
2020	0.71	1.10	0.92	1.38	0.83	1.13
2021	0.48	0.96	0.80	1.23	0.74	0.83
2022	0.42	0.75	0.78	1.10	0.65	0.61
2023	0.54	0.73	0.79	0.90	0.69	0.56

Source: UN Comtrade 2023, ITC Trademap 2023, Myantrade 2023

It is found that Myanmar dried fish (HSC: 0305) is inferior in quality due to its low price compared to other countries' dried fish. Therefore, it is found that Myanmar exports of dried fish need to be of better quality in order to achieve the same quality and price of dried fish as other exporting countries.

The finding shows that the Myanmar shellfish (HSC: 0306) is inferior in quality due to its low price compared to its countries. Therefore, in order to achieve the same quality and price as other countries exporting the Myanmar shellfish, it is necessary to improve the quality of the Myanmar shellfish. Also, the quality of molluscs (HSC:0307) exported from Myanmar needs to be improved in order to achieve the same quality and price as other exporting countries.

In addition, the quality of the marine invertebrate (HSC: 0308) is inferior due to its low price compared to the marine invertebrate of its countries. Therefore, in order to obtain the same quality and price of the marine invertebrate exported by other exporting countries in Asia, Myanmar is to be improved in need of better quality.

#### ❖ Export potential

The export potential of most promising aquatic products from Myanmar to Thailand are (0.14) MT of frozen fish (HSC:0303) and (0.01) MT of fresh fish (HSC: 0302). These include (0.004) MT of fish fillets (HSC:0304), (0.003) MT of dried fish (HSC:0305), and (0.003) MT of snails (HSC:0307).

The export potential of most promising aquatic products from Myanmar to China are (0.13) MT of frozen fish (HSC:0303), (0.09) MT of fresh fish (HSC:0302) and (0.01) MT of live fish (HSC:0301). Other aquatic products with good trade prospects from Myanmar to China are (0.005) MT of fish fillets (HSC:0304), (0.006) MT of dried fish (HSC:0305), and (0.006) MT of shellfish (HSC:0307).



### ❖ Revealed Comparative Advantage (RCA) and Revealed Symmetric Comparative Advantage (RSCA)

Values of Revealed Comparative Advantage (RCA) and Revealed Symmetric Comparative Advantage (RSCA): Hypothesis (1) If the value of RCA or RSCA is  $(0 < RCA \leq 1)$  or  $(-1 < RSCA \leq 0)$ , there is no comparative advantage; Hypothesis (2) if the value of RCA or RSCA is  $(1 < RCA \leq 2)$  or  $(0 < RSCA \leq 0.33)$ , there is weak comparative advantage; Hypothesis (3): if the values of RCA or RSCA are  $(2 < RCA \leq 4)$  or  $(0.33 < RSCA \leq 0.6)$ , the comparative strength is medium. Hypothesis (4) if RCA or RSCA value is  $(4 < RCA)$  or  $(0.6 < RSCA)$ , the comparative advantages are strong and significant.

During the (10) years period from 2014 to 2023, the values of RCA, which are the comparative values of the global market of Myanmar live fish exports (HSC: 0301), were greater than (4) and the RSCA values were greater than (0.6). The global market comparative strength of the Myanmar live fish (HSC: 0301) is substantial. The values of RCA, which are the comparative values of the global market for the fresh fish (HSC: 0302), are greater than (4) and the RSCA values are greater than (0.6). The global market comparative advantage of the Myanmar fresh fish (HSC: 0302) is found to be substantial.

During 2012 and 2015 period, the values of RCA and RSCA, which are the global market comparative advantages of frozen fish (HSC: 0303), were found to be comparatively unfavorable because the RCA value were between  $(0 < RCA \leq 1)$  or the RSCA value were between  $(-1 < RSCA < 0)$ . In 2016, the RCA value was found to be less comparatively weak because the RCA value was between  $(1 < RCA < 2)$  or the RSCA value was between "0" and "0.33". In the other years, global market comparative advantage of frozen fish (HSC: 0303) were significant since RCA values were greater than 4 and RSCA values were greater than 0.6.

It is found that there was no global market comparative advantage of fish fillet (HSC:0304) because the values of RCA were  $(0 < RCA \leq 1)$  and the RSCA values were between "-1" and "0". The values of RCA, which were the comparative values of the global market of the dried fish (HSC: 0305) are greater than (4) and the RSCA values are (0.6). The global market comparative advantage of Myanmar dried fish (HSC: 0305) is found to be substantial.

The values of RCA of Myanmar crustacean (HSC: 0306), were greater than (4) and the RSCA values were greater than (0.6). Therefore, the global market comparative advantage of the Myanmar crustacean (HSC: 0306) is significant.

From 2019 to 2023, the RCA values of the Myanmar molluscs (HSC: 0307) were greater than (4) and the RSCA values were greater than (0.6). Therefore, the global market comparative advantage of the Myanmar molluscs (HSC: 0307) is found to be substantial. In 2018, 2020 and 2022, the RCA values of the marine invertebrate (HSC: 0308), were greater than (4) and the RSCA values were greater than (0.6). The global market comparative advantage of the marine invertebrate (HSC: 0308) is found to be substantial.

Table 88. Revealed Comparative Advantage (RCA) and Revealed Symmetric Comparative Advantage (RSCA) of Myanmar Aquatic products

Year	Live fish (HSC:0301)		Fresh fish (HSC:0302)		Frozen fish (HSC:0303)		Fish fillets (HSC:0304)		Dry fish (HSC:0305)		Crustaceans (HSC:0306)		Molluscs (HSC:0307)	
	RCA	RSCA	RCA	RSCA	RCA	RSCA	RCA	RSCA	RCA	RSCA	RCA	RSCA	RCA	RSCA
2014	53.64	0.96	19.51	0.90	0.35	-0.48	0.01	-0.99	6.06	0.72	7.84	0.77	1.28	0.12
2015	46.18	0.96	19.96	0.90	0.28	-0.56	0.09	-0.84	6.41	0.73	8.38	0.79	1.93	0.32
2016	43.02	0.95	17.77	0.89	1.07	0.03	0.09	-0.82	8.25	0.78	9.59	0.81	2.18	0.37
2017	42.06	0.95	14.10	0.87	7.28	0.76	0.43	-0.40	7.83	0.77	8.84	0.80	3.03	0.50
2018	22.60	0.92	14.44	0.87	5.27	0.68	0.68	-0.19	8.48	0.79	8.29	0.78	3.87	0.59
2019	19.00	0.90	11.34	0.84	7.24	0.76	0.41	-0.41	5.76	0.70	8.22	0.78	4.21	0.62
2020	16.08	0.88	11.32	0.84	11.91	0.85	0.44	-0.39	10.31	0.82	6.81	0.74	7.57	0.77
2021	35.04	0.95	9.37	0.81	16.44	0.89	0.89	-0.06	7.10	0.75	7.03	0.75	4.16	0.61
2022	31.20	0.94	10.91	0.83	11.63	0.84	0.43	-0.40	4.64	0.65	8.02	0.78	3.72	0.58
2023	32.47	0.94	10.36	0.82	12.80	0.86	0.85	-0.08	4.87	0.66	7.99	0.78	2.93	0.49

\*RCA = Revealed Comparative Advantage, \*\*RSCA= Revealed Symmetric Comparative Advantage

Source: UN Comtrade 2023, ITC Trademap 2023, Myantrade 2023

### 5.6.9 Strengths, Weaknesses, Opportunities and Challenges (SWOC)

Strength	Weakness
<ul style="list-style-type: none"> <li>✓ The availability of abundant natural resources for development of aquaculture sector.</li> <li>✓ The country has a high per capita fish consumption rate</li> <li>✓ Efficient use of domestic water resources increases domestic product output.</li> <li>✓ National-level programs, policies, mandates, and laws are being put in place to ensure the long-term development of fishery sector.</li> <li>✓ Having internationally recognized ISO-certified laboratories that can inspect food safety and quality of aquatic products;</li> <li>✓ Existence of QCRS section (audit for processing plant/ ice facility/ storage facility)</li> <li>✓ Practicing Catch Certificate-CC and health certificate-HC system</li> <li>✓ Connectivity with SEAFDEC Member Country/ SEAFDEC Departments</li> <li>✓ Having digital platform</li> <li>✓ MPEA and other fisheries associations, including the Federation of Fisheries Associations</li> </ul>	<ul style="list-style-type: none"> <li>✓ There is less profit margin based on calculation of earnings and cost under the rules prescribed for the exchange of foreign income earned from exports at a ratio of 25:75.</li> <li>✓ According to the Ministry of Commerce and Trade Regulations, only those who earn foreign income can buy and import goods from abroad, which requires the sole proprietors of the fish industry to buy and import materials necessary for the production of fish feed.</li> <li>✓ Freshwater fish farming is also a part-time occupation and is experiencing labor shortages, high labor and staffing costs, as well as rising food costs.</li> <li>✓ The seafood export and sales industry face storage difficulties due to insufficient electrical power to operate the essential refrigeration plants and high cost of transport with refrigeration systems.</li> <li>✓ The processing sector is facing the challenges of declining market competitiveness.</li> <li>✓ Insufficient access to fuel, which is a key requirement for offshore fisheries.</li> </ul>

<ul style="list-style-type: none"> <li>✓ The Trade Training Institute – TTI, an internationally accredited training institute support developing human capital involved in trade</li> </ul>	<ul style="list-style-type: none"> <li>✓ Facing high gas and diesel costs due to insufficient electricity to run the generators for cooling and ice machines.</li> <li>✓ Transportation costs are high due to inconvenience of safety and road connectivity to export markets.</li> <li>✓ Foreign revenues derived from the export and sale of marine products are also facing difficulties in exporting and processing payments due to unstable exchange rates.</li> <li>✓ Limitations on financial and human resources to implement in line with established processes for the sustainability of fishery resources</li> <li>✓ Limitation on regular review of fisheries resource availability and appropriate management and conservation practices</li> <li>✓ limited financial resources and technology to implement projects such as NADP / NPOA IUU fishing / NPOA Sharks and Rays</li> <li>✓ limited routine review of laboratory facilities, capacity and skill</li> <li>✓ Limited technology to enforce the CITES certification system and to regular review on compliance with FAO/WHO/Codex Alimentarius\$.</li> <li>✓ limited funding, expertise, and experience to conduct regular market research</li> <li>✓ Weakness in capacity assessment and development strategy/plan in connection with export</li> <li>✓ Lack of regular analysis of the regulations/requirements of the exporting countries concerned</li> <li>✓ Weakness in regular flow of information among exporting countries and domestic factories;</li> <li>✓ Promoting professional awareness and the exchange of experience/knowledge between departments, organizations and sectors.</li> <li>✓ Weakness in regular training to ensure regional competency in fisheries, and extensive monitoring and evaluation (M&amp;E) plans in the implementation of operations</li> </ul>
<b>Opportunity</b>	<b>Challenges</b>
<ul style="list-style-type: none"> <li>✓ Since number of domestic producers is small it makes a lot of individual profits.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Climate change, changing consumer preferences, the stability of the fish market, the lack of government support and policy instability make it difficult to keep the business going.</li> </ul>

- ✓ Since seafood exporters have the industry expertise and ease of operation in nature, the export of aquatic products, including fish, is more profitable than other businesses.
- ✓ Due to the large area of saltwater areas, there are good opportunities to breed and sell the fish that are in high demand for rock fish, yellowtail, red carp, etc.
- ✓ Signing with GACC, resulting increase export volumes and foreign earnings.
- ✓ Availability of local, regional and international community assistance and use of laws, policies, and operational guidelines on seafood exports for development of fishery sector
- ✓ The ability to increase the use of aquaculture production methods in accordance with the requirements of Myanmar's exporting countries
- ✓ The ability to link with international organizations such as FAO, WTO, WHO, and EU to continuously improve institutional frameworks/institutional capacities
- ✓ Improving technical/operational guidance/policies in link with SEAFDEC/ASEAN, obtaining ICT technical support
- ✓ Linking up with the Global Aquaculture Alliance (GAA), an aquaculture advocate organization, to make Myanmar aquatic products more reliable for export
- ✓ Market expansion (e.g., Saudi Arabia)
- ✓ Consistent compliance with the regulations of regional and international organizations, including neighboring countries, and good publicity of Myanmar's seafood
- ✓ Environmental regulatory requirements, transport supply chain issues and global economic downturn are challenges that may affect Myanmar fishery production and exports.

## 6. Policy Recommendations and Action Plans

### 6.1 Key points

- 1) Importance of Agriculture sector in Myanmar's economy; about one-fourth of GDP; over 60% of job created; over 23% of export; inputs for local agro-processing industries; a critical role in Myanmar's economic growth and poverty reduction.
- 2) Wide range of agronomic zones; significant increase in rice export to China through border trade; stellar performance of maize export in recent years; increasing export of green gram over years; high demand for watermelon by China; insufficient production of soybean and rely import for domestic livestock and fishery sector; over 20 varieties of aquatic products are exported to China.
- 3) Regional Comprehensive Economic Partnership in ASAN; Myanmar participation in ASEAN- CHINA Free Trade Area, China Myanmar Economic Cooperation (CMEC) and Lancang-Mekong Cooperation (LMC); Enjoy LMC's commitment to regional integration, economic development, and cooperation on transboundary issues.
- 4) With signing nine SPS protocols closely coordination between two countries in trade facilitation of agriculture goods; under negotiation to sign SPS protocols for other goods; trade volume of Myanmar to China contributes one third of total volume.
- 5) The Agricultural Development Policies and Strategies (2016); Agricultural Development Strategy and Investment Plan (ADS, 2018); Myanmar Rice Sector Development Strategy (MRSDS, 2015); National Export Strategies (2015).
- 6) The Myanmar government ratified the WTO Trade Facilitation Agreement in December 2015. In 2021 the Government of Myanmar also established the National Trade Facilitation Committee with supportive working groups. Myanmar has been undertaking a series of reforms in line with international best practices to improve trade facilitation in accordance with the WTO Trade Facilitation Agreement and the ASEAN Economic Community Blueprint;
- 7) Rice, maize, green gram, soybean, watermelon and aquatic products covered under study for competitiveness, export potential and trade facilitation; Strong competition in export of rice in the region; need boost the yield and improvement in quality of rice; competitiveness and comparative advantage of maize in Asian export market; competitive, comparatively strong and trade potential of green gram in export market; well competitive and comparatively strong of watermelon; competitiveness of aquatic products in export market and need to improve quality and safety standard.

## 6.2 Rice

### 6.2.1 Policy Recommendations

- 1) Timely provision of accurate market information collected by the government on production, consumption, exports, prices, and stocks is the key to allow a smooth functioning of the rice market and enable more informed policy decisions. Information on prices and exports, as well as the main parameters of rice policy and agricultural spending programs, should be better disseminated timely. This would also create more trust between the private and public.
- 2) Public spending programs should be considered on rice sector development, ranging from promotion of adoption of modern technologies through agricultural research and extension, better water management; improved road connectivity; access to electricity and affordable credit; and other programs of a public good nature.
- 3) Existing export procedures and monetary policy on trade especially border trade should be reviewed with a view towards improving the competitiveness of Myanmar rice in international market.
- 4) Quality control, extension support to farmers and multiplying seeds need to be improved. Rice research efforts should be more refocused on rice varieties with prospect to export potential and developing varieties with grain characteristics desirable to overseas buyers.
- 5) Farmers are dealing with the factors that contribute to low yield, such as planting low-quality seeds, poor water management, poor chemical fertilizer quality, and the use of inappropriate pesticides. Since the role of private sector is taking place in the development of agricultural sector in accordance with the market economy, it is necessary to strengthen public agricultural extension by exploring partnerships with the private sector to effectively transfer appropriate technology to match the needs of farmers through contracting farming arrangement.
- 6) There is a need for more focus on water management and irrigation facilities to enhance the ability of farmers to increase productivity and quality improvement of products respond to market demand.
- 7) Myanmar's rice mills are crippled by the lack of reliable electrical power. The mills and power distribution, which are the infrastructure for rice milling, are outdated, costly and unreliable, resulting in poor rice quality that does not meet the standards required for export. Diesel is not an attractive alternative because it costs two to three times the price of electricity. In the near future, gasifiers powered by rice husks provide a solution that can replace 75 percent of diesel costs, but some of the technology is inefficient and pollutes the environment. The donor community could provide technical assistance in the form of experts who can provide information and contacts for green gasifier equipment.

- 8) Modernize the existing port facilities in Yangon Port and Thilawa Port. Invest in equipment in port platform that allows covered loading during the rainy season.
- 9) The stakeholders in the supply chain face a lack of capital to invest in production, operation, and sales and distribution activities. Loans are needed for small and medium enterprises (SMEs) to be provided to facilitate post-harvest operations such as drying, crushing, and storage.

### 6.2.2 Action Plan on the Recommendations

Constraints	Recommendations	Time Frame	Implementing Agency
<b>Production Sector</b>			
<ul style="list-style-type: none"> <li>✓ Low productivity of rice production systems limits growth of paddy production, and thus exportable surpluses.</li> <li>✓ Need certified seed to generate significant yield increases when combined with good farming practices</li> </ul>	<ul style="list-style-type: none"> <li>✓ Set the workplan of multiplication of certified seed in farm level throughout the country.</li> <li>✓ Work out rice varietal research programs in line with market demand by overseas buyers and promote seed production.</li> <li>✓ Invest in rehabilitation of irrigation and water management system</li> <li>✓ Strengthen the public agricultural extension service in corporation with private sector</li> <li>✓ Encourage contract farming arrangement between private sector and farmers</li> </ul>	Medium to long run	<p>Department of Agriculture (DOA)</p> <p>Department of Agriculture Research (DAR)</p> <p>Irrigation and Water Utilization Management Dept DOA in collaboration with MRF</p> <p>DOA in collaboration with MRF</p>
<ul style="list-style-type: none"> <li>✓ Poor rural infrastructure increases input prices and reduces output prices</li> </ul>	<ul style="list-style-type: none"> <li>✓ Invest in farm to market roads, in particular in the Ayeyarwady Delta where the half of the nation's rice is grown.</li> </ul>	Medium to long run	Ministry of Cooperatives and Rural Development, in collaboration with MOALI
<b>Milling Industry</b>			
<ul style="list-style-type: none"> <li>✓ Unreliable and limited electricity supply increases milling costs and poor rice quality.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Loan support to upgrade small and medium rice mills and establish international standard integrated rice complexes</li> <li>✓ Invest in electricity generation and distribution</li> <li>✓ Support technical assistance to mills on green gasifier equipment</li> </ul>	Short to long run	Rice millers in collaboration with MOEP and MOC

Constraints	Recommendations	Time Frame	Implementing Agency
<b>Export Sector</b>			
✓ Poor port infrastructure increases the costs of exports.	<ul style="list-style-type: none"> <li>✓ Modernize the existing equipment and facilities in Yangon Port and build new berths in Thilawa Port</li> <li>✓ Invest in equipment that allows covered loading during the rainy season</li> </ul>	Medium to long run	MOC and Port Authority, in cooperation with MRF
✓ Limited information on commodity balance, prices, and export projections creates uncertainty in the market.	<ul style="list-style-type: none"> <li>✓ Provide more timely and accurate market information</li> <li>✓ Support domestic and international market research and supply chain analysis</li> </ul>	Short to medium run	MOC in cooperation with MRF
✓ Unpredictable trade and monetary policy reduce investments in rice value chain	<ul style="list-style-type: none"> <li>✓ Existing export procedures and monetary policy on trade especially border trade should be reviewed</li> </ul>	Short to long run	MOC and MOPF
✓ Less investment in production, operation, and sales and distribution activities through supply chain	<ul style="list-style-type: none"> <li>✓ Loans are needed for small and medium enterprises (SMEs) to facilitate post-harvest operations such as drying, crushing, and storage.</li> </ul>	Short to long run	MOC and MOPF in cooperation with MRF

## 6.3 Maize

### 6.3.1 Recommendations

- 1) The country's economy can only be developed if the export of raw form of commodities could be changed into process form. Development of MSMEs could be encouraged in industrialization of raw materials into process forms in order to be more competitive in the international trade.
- 2) In addition to China and Thailand, Myanmar should consider to carry out long-term cooperation agreements with other trading partners (e.g., India, Vietnam etc.) to improve the export sector.
- 3) Although GACC- SPS Protocol has been signed since 2022, Myanmar maize exporters are facing import ban by China currently. Myanmar maize export to Thailand gain 0 tariff on seasonally from 1 February to 31 August and afterwards Thailand imposes 73% tariff on importation of maize. These issues should be raised in consultative meetings with China and Thailand based on Free Trade Agreement.



- 4) Information sharing about GACC protocols with China; HACCP; ISO certification process, and trade related matters should be shared to the traders in the border trade areas.
- 5) There should be cooperation between government and private entities and business owners to ensure sustainable exports with stable product quality, quantity and price by providing updated market information including supply and demand situation.
- 6) In addition to inter-agency negotiations, closed discussion or meeting between two countries in such a way that organizations such as China Council for the Promotion of International Trade (CCPIT) and business owners should be invited to Myanmar or relevant entities from Myanmar site to visit China in order to be more awareness and interest on productivity, quality of exported products and trade related matters.
- 7) As a shipping route to China, the Port of Qingqiang in Kwanxi Province, China, is the nearest port to Myanmar. Since the Chinese government is upgrading the port as a major port for trade with ASEAN countries, Myanmar exports should be considered to be exported to other provinces as well, leveraging China's supply chain through the port of Qingqing.
- 8) Since Wun Pon port (Tar Lae) located Mekong River site could be considered as one of the export routes to China, existing export check point infrastructure should be upgraded for trade facilitation.
- 9) Renovation of road communication to the border trade check points should be prioritized to facilitate the trade between Myanmar and border countries in order to reduce transport cost and delay in transport of goods.
- 10) In selecting crops/commodities to comply with the GACC-SPS Protocol with China, it is important to prioritize crops/commodities that have low production capacity and high demand in China.
- 11) Develop necessary technologies for production complied with quality standards in order to access to the world market, utilization of farm machineries from sowing to post harvest operations.
- 12) Attention should be made on training and demonstration on sloping land agricultural technology in upland cultivation in order to reduce the slash and burn practices, causing smog issues raised by Thailand
- 13) Providing information awareness on weather condition, pest incidence, international market demand, and prices and export opportunities'
- 14) Public information sharing about GACC registration, ISO certification, HACCP, importation of seeds and other trade related matters should be conducted, especially to the traders in border areas.

- 15) Currently most of the farmers are depending on the CP hybrid seeds. It is necessary to expedite the research activities on seed production which would meet the quality requirements of importing countries in medium to long run.
- 16) Strengthen irrigation system and water management technology in corn cultivation areas to increase productivity and quality improvement.
- 17) Public sector in collaboration with private sector provides extension and education activities to the farmers in the areas of production, postharvest technology and quality control of the grain.
- 18) Government support for the accelerated development of Micro, Small and Medium Enterprises (MSMEs) will support industries as an ancillary unit, thereby contributing enormously industrial development of the country.
- 19) In order to improve the trade sector and the export of goods in the future, there should be easier access to information; the level of permitting should be minimized; the cost of services should be minimized through the more use of digital technology; the need for paperwork should be minimized; and the public-private partnership should be promoted.
- 20) Need for shelters/facilities to transport goods during the rainy season. If the loading and unloading processes can be carried out quickly with skilled workers in day/night shifts, losses can be minimized.
- 21) Need for high-yielding and weather-resistant varieties for increased productivity and post-harvest technologies for quality improvement.

### 6.3.2 Action Plan on the Recommendations

Constraints	Recommendations	Time Frame	Implementing Agency
<b>Production Sector</b>			
✓ Mostly depend on hybrid seed imported from abroad	✓ Expedite the research activities on seed production which would meet the quality requirements of importing countries	Medium to long run	Department of Agriculture Research
✓ Farmers mostly rely on traditional farming practices and require farm machineries	✓ Increased utilization of farm machineries from sowing to harvest operations.	Short to long run	Agriculture Mechanization Department & DOA
✓ Smog issue raised by Thailand in maize export	✓ Conduct training and demonstration of sloping land agricultural technology to reduce slash and burn practices.		Department of Agriculture (DOA)
✓ Productivity and quality improvement of maize is necessary for sustainable increase in export	✓ Distribution of high-yielding and weather-resistant varieties for increased productivity.	Short to long run	Department of Agriculture (DOA)

Constraints	Recommendations	Time Frame	Implementing Agency
	<ul style="list-style-type: none"> <li>✓ Support post-harvest technology to farmers for quality improvement.</li> <li>✓ Public sector in collaboration with private sector provide extension and education activities to the farmers</li> <li>✓ Strengthen irrigation system and water management technology</li> </ul>		<p>DOA</p> <p>DOA</p> <p>Irrigation and Water Utilization Management Department</p>
<b>Processing sector</b>			
<ul style="list-style-type: none"> <li>✓ Export of maize as raw form to importing countries</li> <li>✓ Weakness in post-harvest technology especially in storage</li> </ul>	<ul style="list-style-type: none"> <li>✓ Development of MSMEs could be encouraged in industrialization of raw materials into process forms in order to be more competitive in the international trade.</li> <li>✓ Technical consultation between government agencies and traders should be made.</li> </ul>	<p>Medium to long run</p> <p>Short to medium run</p>	<p>Ministry of Commerce (MOC)</p> <p>DOA and Maize Traders Association</p>
<b>Export Sector</b>			
<ul style="list-style-type: none"> <li>✓ Maize export mostly relies on Thailand, Philippines and China</li> </ul>	<ul style="list-style-type: none"> <li>✓ Explore long term cooperation trading agreement with other trading partners (India and Vietnam)</li> </ul>	<p>Medium to long run</p>	<p>MOC</p>
<ul style="list-style-type: none"> <li>✓ Weakness in information sharing for sustainable export</li> </ul>	<ul style="list-style-type: none"> <li>✓ Provide updated market information including price, supply and demand situation in export sector.</li> </ul>	<p>Short to long run</p>	<p>MOC</p>
<ul style="list-style-type: none"> <li>✓ To improve trade sector and export of goods in the future</li> </ul>	<ul style="list-style-type: none"> <li>✓ The level of permitting should be minimized;</li> <li>✓ The cost of services should be minimized through the more use of digital technology</li> <li>✓ The need for paperwork should be minimized</li> </ul>	<p>Short to long run</p>	<p>Collaboration of Department of Trade, Custom Department and Department of Agriculture</p>
<ul style="list-style-type: none"> <li>✓ To minimize loss of commodities in loading to ship</li> </ul>	<ul style="list-style-type: none"> <li>✓ Facilitate to support shelters/ facilities in transport of goods during the rainy season</li> </ul>	<p>Medium to long run</p>	<p>Myanmar Pulses, Beans, Maize and Sesame Seeds Merchant Association (MPBMSMA) in collaboration with Port authority</p>
<ul style="list-style-type: none"> <li>✓ Need consultative meeting between CCPIT*,</li> </ul>	<ul style="list-style-type: none"> <li>✓ Closed discussion or meeting between CCPIT in China and business owners, inviting</li> </ul>	<p>Short to Medium run</p>	<p>MOC in cooperation with Ministry of</p>

Constraints	Recommendations	Time Frame	Implementing Agency
China and business owners, Myanmar	authorities from CCPIT to visit Myanmar to be more awareness and interest on productivity, quality of exported products and trade related matters.		Foreign Affairs and MPBMSMA
✓ Poor road communication to some border trade areas (eg. Shan East) increases transport cause and delay in good transport	✓ Renovation of roads in connection with border trade areas should be given priority	Short to Long run	Road Transport Administration Department
✓ Currently import ban from China and seasonally high tariff imposing by Thailand	✓ These issues should be raised in trade related consultative meetings with China and Thailand	Short to long run	DOP collaborating with Trade related Departments

\*CCPIT- China Council for the Promotion of International Trade

## 6.4 Green Gram

### 6.4.1 Recommendations

- 1) Infrastructure: To develop and implement infrastructure such as modern peas and beans mills, green gram processing plants and warehouses, roads, bridges, ports, and other logistics facilities, and quality control infrastructure.
- 2) Departmental Bodies: Establish a multi-disciplinary green gram organization to enable the development of green gram policies; to formulate development strategies; to arrange analysis and management of operational progress status\$, and to strengthen the cooperation with international organizations.
- 3) Performance enhancement: To enhance the capacity of the government-private sector cooperation, farmers, traders, refiners, exporters involved in the green gram market chain.
- 4) Technology and financial investments: To provide access to the necessary technological and financial investments for agricultural production, milling, and the post- harvest process of raw grain.
- 5) Policy Implementation: To undertake, implement, and review the implementation of green gram policies.
- 6) Strategic Approaches: To adopt strategic measures such as designating green gram as an "important crop" based on its agricultural production, exports and good potential, aligning it with the country's economic objectives, implementing bio-safety measures, and moving towards sustainability and a market economy.

## 6.4.2 Action Plan on Recommendations

Constraints	Recommendations	Time Frame	Implementing Agencies
<b>Production sector</b>			
✓ Demand gap in market chain between growers and end users	<ul style="list-style-type: none"> <li>✓ Encourage close cooperation program among growers, processors and exporters to produce quality products</li> <li>✓ Analyze the price changes associated with the factors such as farm inputs, transportation costs, labour costs, access to electricity in refineries, exchange rates in international exports, etc.</li> <li>✓ Support information of consumers' demand on value added products to increase export.</li> </ul>	Short to long run	MOALI and MOC  DOA  MOC
✓ Low yield in Myanmar compared with China, Indonesia, Turkey and Vietnam	<ul style="list-style-type: none"> <li>✓ Public service of technology dissemination and varietal improvement to increase productivity</li> <li>✓ Strengthen certified seed production and distribution in farm level</li> <li>✓ Enhance extension and education services for IPM system to control pest and disease incidence</li> </ul>	Short to long run	DAR and DOA  DOA  DOA
<b>Processing sector</b>			
✓ Weakness in production of value-added products and post-harvest process	<ul style="list-style-type: none"> <li>✓ Technical support and financial investment to value added processing mills and post-harvest processing technology</li> </ul>	Medium to long run	MOC cooperation with green gram trader association
<b>Export sector</b>			
✓ Decrease and volatile fob price in export since 2017	<ul style="list-style-type: none"> <li>✓ Enhance the capacity of the government-private sector cooperation, farmers, traders, refiners, exporters involved in market chain to reduce cost.</li> <li>✓ Financial investment on construction of rural roads and bridges, port facilities, other logistics facilities, and quality control infrastructure.</li> </ul>	Short to long run	-MOALI cooperation with MOC  MOALI cooperation with concerned agencies
✓ Less price competitive in some Asian countries (Malaysia and Singapore)	<ul style="list-style-type: none"> <li>✓ Conduct the quality and price analysis with other competing countries in the Asia market</li> <li>✓ Explore market expansion (refer: export potential and RCA &amp; RSCA) and quality control (MRLs, storage, check list of product source, etc.)</li> </ul>	Medium to long run	MOALI cooperation with MOC

Constraints	Recommendations	Time Frame	Implementing Agencies
	✓ Review monetary policy on exported value (Exchange ratio on export earning)		MOPF cooperation with exporters and traders

## 6.5 Soybean

### 6.5.1 Recommendations

- 1) *Infrastructure*: To develop the operation of modern soybean oil mills and warehouses, roads, bridges, ports, and other logistics facilities, as well as quality infrastructure.
- 2) *Departmental Bodies*: To establish a multi-disciplinary community of stakeholders to enable the development of policies, strategies, processes, review and management of operational progress, and cooperation with international organizations.
- 3) *Performance enhancement*: To enhance the capacity of the public-private sector, farmers, traders, processors, exporters involved in the whole soybean market chain.
- 4) *Technology and financial investments*: To provide access to the necessary technological and financial investments for agriculture, soybean oil milling, and the production of value-added edibles.
- 5) *Policy Implementation*: To undertake and review the formulation, implementation, and implementation of public private partnership policies.
- 6) *Strategic Approaches*: To take strategic measures such as designating soybean as a "priority crop" based on its potential, aligning it with the country's economic objectives, implementing bio-safety measures, and moving towards sustainability and a market economy.

## 6.5.2 Action Plan on Recommendations

Constraints	Recommendations	Time Frame	Implementing Agencies
<b>Production Sector</b>			
✓ Decline in production and export	<ul style="list-style-type: none"> <li>✓ Encourage production of certified seed which can meet market demand</li> <li>✓ Support extension services for correct application of inputs and IPM system</li> <li>✓ Technical services and infrastructure development for quality control of grain and soybean oil</li> <li>✓ Conduct value chain analysis to identify the constraints along the supply chain from cultivation to export</li> <li>✓ Support contract farming arrangement in production and loan support to buy farm machineries</li> <li>✓ Support research for varietal improvement with high protein content</li> <li>✓ Encourage contract farming arrangement between farmers and investors in production of soybean</li> </ul>	Short to long run	DOA and DAR  DOA  Department of Consumer Affairs, MOC  DOA in cooperation with producers, traders and exporters  DOA  DAR  DOA in cooperation with farm business companies and investors
<b>Processing Sector</b>			
✓ Low demand for soybean oil and high demand of soybean oil cake for livestock sector in domestic market	<ul style="list-style-type: none"> <li>✓ Technical and financial investments for soybean solvent-type oil extraction mills and production of value-added edibles</li> <li>✓ Technical and financial support for post-harvest technology and processing facilities (dryers, storage, etc.)</li> <li>✓ Support loan to establish oil extraction mills</li> </ul>	Medium to long run	MOC  MOALI  MOC in cooperation with MOPF
✓ High demand for soybean oil cake in international market	<ul style="list-style-type: none"> <li>✓ Technical support to extraction, drying and storage of soybean oil cake for export</li> </ul>	Short to long run	MOC
<b>Export Sector</b>			
✓ High demand in Asia market and low quantity of export from Myanmar	<ul style="list-style-type: none"> <li>✓ Planning to increase sown areas and productivity</li> </ul>	Medium to long run	DOA

Constraints	Recommendations	Time Frame	Implementing Agencies
	<ul style="list-style-type: none"> <li>✓ Review international market demand for value-added products and byproducts</li> <li>✓ Conduct strategic measures such as designating soybean as a "priority crop" based on its potential for export</li> <li>✓ Support signing GACC-SPS Protocol for export and extend contract with other importing countries</li> </ul>		<p>MOC</p> <p>MOALI</p> <p>MOALI collaborating with MOC</p>
✓ Insufficiency of edible oil in Myanmar	✓ Technical and financial support in purification of by-product soybean oil and market expansion in domestic market	Short to long run	MOC

## 6.6 Watermelon

### 6.6.1 Recommendations

- 1) If there is imbalance between supply and demand, the farmers and traders will face more loss in marketing because of perishable goods in nature. If road condition to border is good, it will be more convenient for suppliers.
- 2) There is also a lack of understanding of farmers on post-harvest technology, so that the necessary technology services and education is needed.
- 3) Buying watermelons is depending on price given and choice decided by China side. If the watermelons are rejected or having unfair price at border marketing centers, the costs will be burden of sellers. Intergovernmental cooperation needs to take a major role in ensuring that exports are not rejected or returned.
- 4) There is a need for government and private organizations to collaborate on formation of committees such as fertilizer, pesticides, seed committees to reduce the input cost for growers.
- 5) Provide market information to farmers in a timely manner.
- 6) Due to difficulty of obtaining market information from China, which is released in a general sense with Chinese language, it is necessary to request officially to the relevant authorities.



## 6.6.2 Action Plan on Recommendations

Constraints	Recommendations	Time Frame	Implementing Agencies
<b>Production Sector</b>			
✓ Cultivating area is declining	<ul style="list-style-type: none"> <li>✓ Government and private organizations to collaborate in support of inputs such as fertilizer, pesticides, seed etc., and post-harvest technology</li> <li>✓ Develop software that can provide market information to farmers in a timely manner.</li> </ul>	Short to long run	DOA
✓ High risk upon uncertain condition of transport and communication to the border gate.	<ul style="list-style-type: none"> <li>✓ Logistic support with local authorities</li> </ul>	Short to long run	Department of Trade in cooperation with local authorities
✓ Watermelon (F1) seeds are purchased from China	<ul style="list-style-type: none"> <li>✓ Conduct research on variety improvement as market demand</li> </ul>	Medium to long run	DAR
✓ Varieties, which are mainly grown are less popular for export to other countries and preferred only by Chinese buyers	<ul style="list-style-type: none"> <li>✓ Need Intergovernmental cooperation between Myanmar and China not to reject or return exported products in border trade</li> </ul>	Medium to long run	DOA in collaboration with MOC
<b>Export Sector</b>			
✓ Farmers shoulder the cost of remaining fruits after marketing	<ul style="list-style-type: none"> <li>✓ Expand of exports since it is included among the ten types of crops officially approved for import by China, there is no need to sign SPS Protocol with GACC,</li> </ul>	Short to long run	Department of Planning, MOALI
✓ More depend on China market	<ul style="list-style-type: none"> <li>✓ Investigation on preference of market demand from other countries such as Dubai and EU countries</li> </ul>	Medium to long run	Department of Trade in cooperation with exporters
✓ More losses due to perishable crop in nature due to imbalance of supply and demand	<ul style="list-style-type: none"> <li>✓ Financial support to investment for cold storage facilities and ware houses in transport and storage</li> </ul>	Medium to long run	Department of Trade in cooperation with investors
✓ Difficult in obtaining market information from China, which is released in a general sense with Chinese language	<ul style="list-style-type: none"> <li>✓ Request officially to the relevant authorities</li> </ul>	Short to long run	DOA in cooperation with relevant authorities from China side

## 6.7 Aquatic products

### 6.7.1 Recommendations

- 1) Facing Less profit under the trade rules prescribed for the exchange of foreign income earned from commercial exchange rate at a ratio of 25:75. As a rule of only those who earn foreign income can import goods from abroad, it has difficulties to be the sole proprietors of the fish industry to import materials necessary for the production of fish feed. Foreign revenues derived from the export and sale of marine products are also facing difficulties in exporting and processing payments due to unstable exchange rates. Recommend to consider the existing exchange rule on export earning to some extent of relaxation.
- 2) The seafood export and sales industry face storage difficulties due to insufficient electrical power to operate the essential refrigeration plants, as well as the high cost of transporting them with refrigeration systems and the damage to the freezer. Electric supply should be given priority to the critical fish and seafood export and storage areas.
- 3) Insufficient access to fuel, which is a key requirement for offshore fisheries. The company is also facing high gas and diesel costs due to insufficient electricity to run the generators for cooling and ice machines. Recommend to supply the sufficient fuel to offshore fishing industry.
- 4) Limitation on regular review of fisheries resource availability and limited discussion of appropriate management/conservation practices. Recommend to arrange practicing regular analysis on availability of fishery resources.
- 5) Limited routine review of laboratory facilities/capacity/skill and limited technology to enforce the CITES certification system. Limited technology for regular review of compliance with FAO/WHO/Codex Alimentarius-International Food Standards/ WTO/ SPS. Recommend technical and financial support to establish capacity building for development of laboratory which can support issuing CITES certificates and international food standard.
- 6) Need regular training and M&E plan for which training courses should be conducted to ensure regional competency in fisheries and M&E plan.
- 7) The processing sector is facing the challenges of declining market competitiveness for which loan should be supported to the fishery processing owners to deploy new machineries.
- 8) Facing difficulties in exporting and processing payments due to unstable exchange rates. Arrangement should be made to arrange payment system in accordance with unstable exchange rate from time to time.

- 9) Limited routine review of laboratory facilities/capacity/skill and limitation in regular market research. Technical and financial support should be arranged to establish capacity building for development of laboratory and regular market research.
- 10) It is necessary to speed up the constant flow of information and to develop a regular meeting and negotiation program with domestic exporters. It has also limitation of regular review of free trade agreements within ASEAN and partner countries. It is recommended that a focal point/coordination network, including exporting countries and domestic factories should be established to conduct regular meeting and negotiation program with domestic exporters
- 11) Insufficient number of experts to educate production methods and lack of extension and educational services to provide adequate fishing technologies to local aquaculture farms. Recommend to request SEAFDEC and FAO to provide experts and trainers in respective fields.
- 12) The lack of trained technicians who use Good Manufacturing Practices (GMP practices) in buildings, ice plants, and fisheries. Current public vocational training programs needs to be updated and include this subject in the university curriculum.

### 6.7.2 Action Plan on Recommendations

Constraints	Recommendations	Time Frame	Implementing Agencies
<b>Production Sector</b>			
<ul style="list-style-type: none"> <li>✓ Less profit under the trade rules prescribed for the exchange of foreign income earned from exports at a ratio of 25:75</li> <li>✓ As a rule of only those who earn foreign income can import goods from abroad, it has difficulties to be the sole proprietors of the fish industry to import materials necessary for the production of fish feed</li> </ul>	<ul style="list-style-type: none"> <li>✓ Reconsider the existing exchange rule on export earning to some extent of relaxation</li> </ul>	Medium to long run	Department of Fishery (DOF) in cooperation with MOC
<ul style="list-style-type: none"> <li>✓ Seafood export and sales industries face storage difficulties due to insufficient electrical power</li> </ul>	<ul style="list-style-type: none"> <li>✓ Priority be given to supply electricity to cold storage facilities of fishery industry</li> </ul>	Short to long run	DOF in cooperation with Ministry of Electrical Power (MOEP)
<ul style="list-style-type: none"> <li>✓ Insufficient access to fuel for offshore fisheries</li> </ul>	<ul style="list-style-type: none"> <li>✓ Access of fuel for off shore fishing</li> </ul>	Short to long run	DOF in collaboration with MOGE
<ul style="list-style-type: none"> <li>✓ Limitation on regular review of fisheries resource availability</li> </ul>	<ul style="list-style-type: none"> <li>✓ Practicing regular analysis on availability of fishery resources</li> </ul>	Medium to long run	DOF

Constraints	Recommendations	Time Frame	Implementing Agencies
✓ Need regular training and M&E plan	✓ Conduct training courses to ensure regional competency in fisheries and M&E plan	Medium to long run	DOF in collaboration with FAO and Myanmar Fisheries Federation (MFF)
✓ Insufficient number of experts to educate production methods, e.g. modern farming systems, regulations on the use of chemicals for safety in fish ponds, etc.	✓ Arrange program of training for trainers, requesting SEAFDEC to provide experts in respective fields	Short to medium run	DOF in collaboration with MFF
✓ Lack of extension and educational services to provide adequate fishing technologies to local aquaculture farms and lack of trained technicians who use GMP practices in buildings, ice plants, and fisheries	✓ Establish technical trainings, requesting FAO to provide education and extension services to fish farms	Medium to long run	DOF in collaboration with MFF
<b>Processing Sector</b>			
<ul style="list-style-type: none"> <li>✓ The processing sector is facing the challenges of declining market competitiveness</li> <li>✓ The lack of access to clean water in reprocessing plants makes it incompatible with sewage systems, phytosanitary systems, and creates barriers to trade standards</li> <li>✓ lack of capacity to produce high-value aquatic products</li> </ul>	<ul style="list-style-type: none"> <li>✓ Loan support to processing industries to deploy new machineries</li> <li>✓ Arrange education program concerned with GMP practices in fish farms</li> <li>✓ Arrange oversea training in the areas of high-value aquatic production</li> </ul>	Medium to long run	<p>DOF in cooperation with MFF</p> <p>DOF in cooperation with MFF</p> <p>MOALI</p>
<b>Export Sector</b>			
✓ Facing difficulties in exporting and processing payments due to unstable exchange rates.	✓ Review payment system in accordance with unstable exchange rate	Medium to long run	DOF in cooperation with MFF
✓ limited routine review of laboratory facilities/capacity/skill	✓ Technical and financial support to establish capacity building for development of laboratory which can support issuing CITES certificates and international food standard	Medium to long run	DOF in collaboration with MFF

Constraints	Recommendations	Time Frame	Implementing Agencies
<ul style="list-style-type: none"> <li>✓ Limitation in regular market research</li> </ul>	<ul style="list-style-type: none"> <li>✓ Support funding and expertise for market research strategic plan for market competition and export promotion</li> <li>✓ Linking up with the Global Aquaculture Alliance (GAA)</li> </ul>	Short to long run	DOF in cooperation with MFF, GAA and SEAFDEC
<ul style="list-style-type: none"> <li>✓ Need regular flow of information about export market</li> </ul>	<ul style="list-style-type: none"> <li>✓ Establish a focal point/coordinator network, including exporting countries and domestic factories and conduct regular meeting and negotiation program with domestic exporters</li> </ul>	Medium to long run	DOF in cooperation with MFF

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