YANGON UNIVERSITY OF ECONOMICS
DEPARTMENT OF APPLIED ECONOMICS
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A STUDY ON AGRICULTURAL POLICIES AND RICE SECTOR DEVELOPMENT IN MYANMAR

KYAW MYO TUN
EMPA - 10 (19th BATCH)

SEPTEMBER, 2024

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A thesis is submitted as a partial fulfilment towards the requirements for the Degree of Master of Public Administration (MPA)

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This is to certify that this thesis entitled "**A Study on Agricultural Policies and Rice Sector Development in Myanmar",** submitted as a partial fulfilment of the requirement for the degree of Master of Public Administration (MPA) has been accepted by the Board of Examiners.

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ABSTRACT

This study intends to identify the policies in rice sector and to analyze rice sector in terms of sown area, production and export, and perception of stakeholders. There are various policies intervened in difference eras, the similar objectives of successive governments were to upgrade farmers' livelihood, secure self-sufficiency and promote rice export. Commercialization of rice production started during colonial period and Myanmar was rice bowl of Asia. After independence, sown area and production of rice gradually increased due to expansion of area, improvement in irrigation system, implementation of using high yield varieties and summer paddy progrmmme, and involvement of private sector in rice sector. During the study period from 2010-11 to 2022-23, rice sown area and production decreased gradually except in 2017-18 and 2018-19. However, rice export increased significantly since 2017-18 and highest in 2019-20. Again, it sharply decreased in 2020-21 and increased slightly in 2021-22 and 2022-23. It is found that the exporters, traders members of MRF views there is a good situation in current production and export of rice, potential for increase in production and export. They criticized frequent policy change and lack of transparency and coordination. Based on the current situation and their suggestions, knowledge and education, technology, quality seed, secure export are important and, transparency, appropriate rules and regulations, and public-private partnership should be encouraged by the government.

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LIST OF ABBREVIATIONS

SoEs	-	State owned Enterprises
GDP	-	Gross Domestic Products
ASEAN	-	Association of Southeast Asian Nations
GMS	-	Great Mekhong Sub-Region
HYV	-	High Yield Verities
SLORC	-	State Law and Restoration Control
MRF	-	Myanmar Rice Federation
MAPT	-	Myanmar Agricultural Produce Trading
DOA	-	Department of Agriculture
DAR	-	Department of Agriculture Research
NGOS	-	Non-Government Organizations
MRSCS	-	Myanmar Rice Specialized Companies
UMFCCI	-	Union of Myanmar Chamber of commerce and Industry
MSDP	-	Myanmar Sustainable Development plan
UAB	-	United Amera Bank
MADB	-	Myanmar Agricultural Developing Bank
JICA	-	Japan International cooperation Agency
MAPCO	-	Myanmar Agribusiness Public Company
CSO	-	Central Statistics Organization
MOAI	-	Ministry of Agriculture and Irrigation
RSCS	-	Rice Specialized companies
FAO	-	Food and Agriculture Organization

CHAPTER I
INTRODUCTION

For most people on the planet, especially in Asia and Africa, rice is the most important and widely eaten staple meal. Additionally, rice supplies about half of the daily calories consumed. The consumption of rice has been rising globally in tandem with population expansion. Despite the fact that rice output has been steadily increasing worldwide since the 1960s—from 605 million tons in 2005 to 755.48 million tons in 2020—since the 1960s. In Asia, mostly China and India, over 90% of the world's rice production occurs. In 2021, the top exporters of rice will be Thailand, Vietnam, and India (FAOSTAT, 2022). More specifically, 787 million tons of rice were produced worldwide in 2021, with China and India accounting for 52% of the total.

Furthermore, only 7.1% of the world's consumption and 8% of rice output are traded globally, despite rice's status as a fundamental staple. It indicates that although most nations have enough rice to meet their needs, there will be more price volatility when there is a shortage of the grain. The adoption of protectionist measures to accomplish national policy goals of domestic food security and support for producer prices and incomes in major rice producing and consuming nations is the primary cause of the thinness of trade in rice.

Because developing countries were compelled to implement more extensive and restricted market access reforms as part of the Uruguay Round, rice policy in developing nations have not altered much since the early 1990s. The absence of changes to the rice policy has increased price volatility, which has put a significant strain on low-income customers and governments to fund food distribution programs for the underprivileged. In order to achieve food self-sufficiency while guaranteeing a reasonable price for farmers and stable pricing for consumers, almost all nations heavily interfere in the market. To lessen the issue, governments must work together more closely on a regional and international level to foster mutual confidence under bilateral and multilateral accords. Therefore, international organizations, especially the WTO, may be very helpful in fostering confidence amongst the world's leading producers and consumers of rice.

1.1 Rationale of the Study

The primary food crop and staple in Myanmar is rice, with an annual per capita consumption of around 154 kg (IRRI, 2017). Prior until now, Myanmar was the world's largest distributor of rice. The rice business is crucial to maintaining political stability as well as food security. The rice industry has always been given priority by the government of Myanmar. 17.5 million acres are used to produce rice, of which about 15 million are used for monsoon paddy (or 85.1% of the total area) and approximately 2.6 million are used for summer paddy (or 14.9% of the total seeded area). Among the top 10 rice-producing nations in the world in 2021, Myanmar's output came in at number seven. Compared to its Asian neighbors, Myanmar's population is remarkably dependent on rice, as seen by the country's per capita consumption of the grain.

Because of the export-oriented, commercialized agricultural revolution under British Administration, Myanmar was once referred to as the "Rice Bowl of Asia". Following independence, the industry had a slow down and eventually stopped controlling the global market for many reasons. Indeed, Myanmar has a lot of promise since it has enough arable land for rice, a nice climate, a skilled work force, and water resources. Regretfully, Myanmar's potential for the growth of the rice industry was not fully realized. A number of factors have contributed to this, including government policies that differ from those of neighboring rice exporting nations that have achieved notable increases in rice production and have significant shares in the global rice trade, particularly with regard to marketing and export policies. Additionally, the industry is sluggish because to land fragmentation, price instability, variety diversity, expensive cultivation, production, and transportation costs.

Since rice is a staple meal in Myanmar, producing it has always been the country's top priority. It is crucial for foreign currency profits and government income in addition to ensuring food security. Because of this, successive administrations in Myanmar have placed a high value on political stability and recognized that maintaining a steady supply of rice is essential to preserving economic stability. Because rice plays such a crucial role in Myanmar, rice policy and agricultural policy are the same.

Following the implementation of a market-oriented economic system in 1988, there have been significant changes and liberalization efforts in the agricultural sector, namely in the area of rice. For instance, the summer paddy program and the 1987 and 2003 liberalizations of rice export and trade. Following the 2003 liberalization of rice export, private sector involvement—such as that of Rice Specialized Companies (RSCs)

and the Myanmar Rice and Paddy Traders Association (MRPTA), which actively participated in paddy trading and milling—also progressed and gained significance. The Myanmar Rice Industry Association was founded in 2010 and upgraded to MRF in 2012. The Myanmar Rice industry Development Strategy was introduced in 2015 with the aim of increasing productivity in rice production and developing the rice industry. Although Myanmar has a significant portion of its land dedicated to rice cultivation—roughly 17 million acres total—its productivity in producing rice is poor when compared to other nations or its bordering countries. Although the globe produces a fair amount of rice—it ranks seventh among the top ten nations in the world in 2021—very little of it is sold on the global market. This is due to the fact that the majority of the rice produced in the nation is consumed domestically, with just a little portion—roughly 10% of total production—being exported or exchanged on the market. It demonstrates that, in line with government strategy, self-sufficiency and domestic consumption come first. On the other side, as the population grows, so does the number of people who eat rice. As a result, more rice should be produced together with improved technology for both home and foreign markets, as well as changes in policy (including institutional and governmental support).

In Myanmar, rice farming is mostly done for subsistence in the lowlands. It is a traditional practice, with most farmers having access to fewer than five acres of land. Due to insufficient post-harvest facilities, a lack of roads connecting farms to markets, limited access to formal sources of financing, restricted availability of inputs, and limited access to irrigation systems, the application of inputs to support crops is low. Rice production suffers as a consequence of farmers not reaching their yield potential, which results in much lower rice yields than other Southeast Asian nations (FAOSTAT, 2022).

The government has recently focused on the production and cultivation of a few key crops, particularly rice, and supported these efforts with technology, funding, and the easing of laws, regulations, and processes in addition to providing necessary inputs like seed, fertilizer, and pesticides.

Furthermore, Myanmar prefers to have a stable local food market over depending on foreign commerce, considering the significance of rice and the volatility of the global rice market. As a result, one of the key goals of Myanmar's rice policy is to ensure sufficient supply of rice, especially in metropolitan areas, at reasonably cheap and steady prices. The policy's other goals are to boost agricultural income and producer incentives,

achieve more economic justice and better nutrition for the impoverished, and increase government revenues by preserving valuable foreign currency.

Through a combination of policies and interventions in both domestic and export markets, the rice sector in Myanmar has been able to achieve a number of goals. These include directly influencing output and input prices, enforcing productivity standards, introducing trade barriers, and implementing projects, programs, and strategies. Development of the rice industry is essential in this scenario for farmers, local consumption, and export revenue. In order to do this, it is crucial to examine the historical context of the rice industry, identify policies and interventions in the sector, the involvement of the private sector, and look into the present state and future prospects of the sector.

1.2 Objectives of the Study

The main objectives of the study are:

(1) to overview the back ground situation of rice sector
(2) to identify agricultural policies in rice sector
(3) to analyze the rice production and export
(4) to evaluate the perceptions of stakeholders on current situation of rice production and export and policies

1.3 Method of Study

This study applies descriptive analysis. It is based on quantitative and qualitative approaches. For the secondary data, it is collected from Ministry of Agriculture, Livestock and Irrigation (MOALI), Ministry of Commerce (MOC) and other relevant reports, reviews, policies and guidelines of government and international organizations such as FAO, related researches, articles, and journals, and NGOs and private companies concern. Key Informant Interview (KII) is conducted to MRF members, Rice Traders, Rice Specialization Companies and Rice Export Companies regarding to perceptions on current situation and policy changes in rice sector.

1.4 Scope and Limitation of the Study

Rice production and export are the primary topics of investigation in this research, which covers the years 2010-2011 through 2022-23. Included in this document are brief explanations on policy changes in the rice sector as well as the historical backdrop of the

rice sector, beginning with the colonial era and continuing through the market-oriented period up to 2010.

1.5 Organization of the Study

This investigation is broken up into five chapters. The motivation for the study, the goals of the investigation, the technique of study, the scope and limitations of the study, and the structure of the study are all included in the first chapter, which comprises the introduction. A literature review on the significance of rice, government interference in the agricultural sector, and agricultural policies, especially rice policy in developing nations, are discussed in the second chapter. Within the third chapter, a comprehensive description of the rice industry in Myanmar is presented. In the fourth chapter, an analysis of the present condition in Myanmar's rice industry is covered. In the fifth chapter, results and recommendations are presented.

CHAPTER II
LITERATURE REVIEW

This chapter is organized by importance of rice and rice sector, government intervention in agriculture, agricultural policies in developing countries, Asian rice policy and review on previous studies.

2.1 Importance of Rice and Performance of Rice Sector

Rice, along with maize and wheat, is considered to be one of the three most significant food crops from a global perspective. More over half of the world's population relies on rice as their primary source of nutrition, particularly in the regions of Asia and Africa. One kind of cereal grain is rice. The seeds of rice are the seed of the grass species Oryza sativa, which is also known as Asian rice. Oryza glaberrima, which is also known as African rice, is also known, although less often. Approximately 3,000 years ago, African rice was farmed in Africa. On the other hand, Asian rice was domesticated in China between 13,500 and 8,200 years ago. Rice is already used in a great number of civilizations all over the world; in 2021, it ranked fourth in terms of production, behind only sugarcane, maize, and wheat, with 787 million thousand tons produced.

According to Juliánio (1985), it is composed of 80% carbs, 7-8% proteins, 3% fat, and 3% fiber. 15% of the world's protein and 21% of its calories come from rice per person.China consumed the most rice in 2016 (29% of total consumption), followed by India and Indonesia. Bangladesh has surpassed Indonesia to gain third position by 2020. China used 154 million tons of rice year on average between 2020 and 2023, followed by India with 109 million tons and Bangladesh and Indonesia with around 36 million tons each. In the 21st century, rice consumption decreased globally per person as people in Asia and other regions consumed more meat and less grain. Sub-Saharan Africa is an anomaly, since both population growth and per capita rice consumption are there.

The entire amount of rice that was produced throughout the world in 2021 was 787 million tons, with China and India being responsible for 52 percent of the quantity. As other key producers, Vietnam, Indonesia, and Bangladesh were also involved. Over 90

percent of the world's production is accounted for by Asia. In the year 2022, the average output of rice throughout the world was 4.7 metric tons per hectare, which is equivalent to 2.1 short tons per acre. On account of the fact that only around 8% of rice is sold internationally, the statistics on worldwide commerce are far lower than those on production. There are a number of rising countries that are key players in the global rice trade. In 2012, India was the largest rice exporter, followed by Thailand and Vietnam. China, which had been a rice exporter in the early 2000s, has become the biggest importer of rice in the world by the year 2013. At the moment, China and India are the two countries that produce and eat the most rice in the world.

More than half of the world's population is fed by rice, which is a key dietary staple throughout Asia, Latin America, and certain portions of Africa. However, poor milling, storage, and shipping practices may result in a significant loss of grain after harvest.Over 50% of the world's population depends on rice as a food crop. About 35 percent to 80 percent of the calories consumed by individuals in Asia come from rice. It also significantly improves people's diets in Latin America, the Caribbean, and Sub-Saharan Africa. Rice is produced and consumed in more than 100 countries worldwide, regardless of whether they are developed or poor nations. Because rice has a greater impact on lower-class economies and people, governments see it as crucial for advancing agricultural development and reducing hunger and poverty.

Rice may be grown on less than one hectare of land by millions of farmers worldwide. Many farmers and landless laborers who work on these rice fields rely on the cultivation of rice as a source of income. The majority of Asian farmers make their living from growing rice. Asia's 250 million farmers are thought to be dependent on rice farming. FAO, 2010

Despite the fact that rice is produced in vast quantities, there is little of it traded globally. The main cause of this is because the nations that produce rice are often big consumers of the grain, with domestic consumption accounting for the bulk of production. Little variations in rice output throughout the globe have an impact on price volatility. People with low incomes throughout the globe suffer greatly from hunger as a result of market volatility.

Asia is the area where rice is mostly produced. Since rice is grown mostly in Asia due to its geographic concentration, monsoon is essential to rice production. The inadequate rainfall in the Asian area might lead to a scarcity of rice supply and volatility

in the global rice market. This implies that bad rice harvests coincide, placing pressure on the global market to handle increased import demand and declining supply.

With 31 million tons of the world's total rice commerce in 2010, Asian emerging nations dominate the global rice market. The world's biggest exporters of rice are four Asian giants: Vietnam, China, India, and Thailand. Combined, their exports account for about 75% of global commerce. Global rice output reached 787 million tons in 2021, with China and India leading the way.

2.2 Government Intervention in Market and Agriculture

Government actions have a wide range of unintended repercussions in addition to a wide range of intended outcomes. A portion of these treatments help to raise the overall level of income by improving the efficiency with which resources are used. It's obvious that others seek non-efficiency goals, which often come at the expense of efficiency. Policies that increase efficiency may become politically feasible by generating net societal benefits, provided that there are no losers or that the gainers can control the compensation of the losers. Political viability may be attained by policies with non-efficiency goals either directly or indirectly via political management if such policies result in efficiency benefits. If not, the relative political strength of winners and losers determines whether non-efficiency objectives are politically feasible. Thus, controlling the political viability of policy improvements requires understanding the frequency and size of these benefits and losses (Gardner, 1987).

2.2.1 Government Intervention in Market

Generally speaking, the majority of economic policies implemented in emerging nations focus on increasing agricultural output and have an effect on rural poverty. Furthermore, governmental involvement in agriculture to increase market efficiency has often resulted in inefficiencies like decreased revenue and output (World Development Report, 1986). As a result, understanding how the government functions in the market is crucial. In general, it is not advised for the government to get involved on a regular basis; instead, it should act as a facilitator and only indirectly interfere to enhance institutional, informational, and market infrastructure. However, in order to cut prices for urban customers, the majority of governments often actively participate in the markets by establishing the price. However, government participation via marketing boards is not as widely acknowledged as it formerly was (FAO, 2017). In the past, the majority of

governments in less developed nations attempted to lower farm prices in an effort to protect food prices for the benefit of urban residents and to prevent a rise in urban wages. However, in industrialized nations, the government aimed to raise agricultural prices in order to appease the farm lobby group.

2.2.2 Government Intervention in Agriculture

Governments in wealthy and developing nations use trade and domestic assistance programs to interfere in the agricultural markets, and the results are quite different in terms of how farmers, consumers, and taxpayers are affected. During the 1986–1994 Uruguay Round Agreement on Agriculture (URAA) discussions of the World Trade Organization (WTO), support for agriculture in industrialized nations came under intense scrutiny. Government policies in the OECD countries support agriculture to the tune of about one billion dollars per day, a level of assistance that has a substantial impact on agriculture in developing nations (Orden, et al 2007).

According to Schiff and Valdés (1992), many developing nations have made protecting food farmers a public priority as they have worked to increase their degree of self-sufficiency in reaction to the perceived instability of global markets. Another common tactic to stabilize local producer pricing in relation to global market prices is direct intervention. On the other hand, the government of several emerging nations has also meddled in the agricultural markets, either by setting caps on producer prices or by regulating retail food prices by government decree, thereby lowering the cost of food for urban consumers. Establishing dual pricing schemes that maintain high producer prices and low consumer prices while having the government make up the difference with its own budgetary resources is an alternative strategy.

Generally speaking, intervention resulted in a reduction in the percentage of GDP that was contributed by agriculture and delayed the growth of agricultural exports and production. The manufacturers and dealers of the product moved to illegal activities such as smuggling in order to escape the costs that are connected with price intervention. This, in turn, led to an increase in the administrative complexity of the intervention process. It was not uncommon for policymakers to make inaccurate assessments of the influence that price intervention would have on factors such as agricultural output, the government budget, and the balance of payments. Moreover, they often made inaccurate estimations on the reactions of certain groups to price intervention. As a result of all of these

variables, policymakers often found themselves in the position of needing to either develop new policies or adjust those that were already in place.

According to Timmer (1975), because neither producers nor consumers are sensitive to price fluctuations, food prices have little effect on the process of long-term growth. Political leaders may thus freely manipulate food prices to achieve any desired short-term political outcome. This manipulation often manifests as maintaining low urban food costs to appease middle-class urbanites, workers, and politically engaged students. Furthermore, even in relatively conventional peasant economies, farmers make choices about what crops to cultivate and how intensively to grow them based in large part on food costs. Price incentives have a big role in deciding the yields that farmers will obtain in the context of new biological and chemical technologies that, when used correctly in a package, promise much greater yields for fundamental food crops.

Sadoulet and de Janvry (1995) argued that a key component of wellbeing is security. This necessitates the ability of the impoverished to practice consumption smoothing. The best policy tool for this relies on the sources of money and institutional systems that the impoverished employ to get food. In order to stabilize prices for net purchasers, actions such as buffer inventories, price fixing and rationing, usage of futures markets, and international trade regulations (varying taxes and quotas) may be necessary. For net sellers, what matters most is revenue stability rather than product pricing. To do this, we need to use crop insurance plans, diversity, and irrigation. Having access to finance for consumption smoothing is a useful tool for enabling the impoverished to take on more risk while generating revenue, increasing efficiency and improving wellbeing. Food subsidies and social grants are two examples of policies and programs that are implemented to offset the welfare impacts of unforeseen external shocks.

According to the World Development Report (2008), complementing policies and programs are required to help rising comparative advantages adapt quickly and fairly, as well as to compensate developing country losers. The public's investments in essential public goods including roads, irrigation, R&D, education, and related institutional support determine how the supply reacts to trade changes. But regressive subsidies waste far too many public expenditures in agriculture. There is still more space to increase investments in high-priority public goods in order to increase the efficiency of public resources. Actions to improve commitment, accountability, and information are required. Increased public awareness and openness in budget allocation and assessment are necessary to

bridge information gaps in the public's understanding of public expenditure on agriculture and its effects.

According to Ellis (1992), one of the most frequent justifications for government involvement in the agricultural market is stability, which is a key component of agricultural policy in both industrialized and developing nations. Timmer (1989) said that the government attempts to keep prices stable for a variety of reasons. By reducing the need for farmers to depend only on their own output and stabilizing farm income, the goal is to reduce risk and enhance market supply in terms of production. Securing a constant wage cost for the non-farm sector is the goal from the standpoint of consumption. In addition, it aims to prevent starvation and malnourishment among the urban poor.

Since the agricultural sector plays a significant role in the majority of developing nations, policymakers also use this sector to generate money by taxing commodities. As was already established, the urban labor market population is more affected by government efforts to cut food prices. However, this move may also result in decreased agricultural output and distorted trade between the industrial and agricultural sectors. As a result, it may cause adjustments to domestic trade policies that favor urban industrial regions over agrarian goods. Errors in policy led to the development of intervention and policy management instruments in many nations. Occasionally, state-owned enterprises and independent agencies have intervened without direct supervision from higher authorities. Lastly, it may potentially affect the nations' welfare state. However, taking away the intervention might cause distortions to reappear, therefore it should be done carefully and with sufficient funding. L. Roe (1987).

2.3 Trade, Price and Production Policies in Agriculture Sector

Trade and price policies are significant factors in the growth of agriculture. The relative shift in agricultural prices, especially for staple foods, may have a significant impact on the distribution of income in low-income countries, as opposed to production impacts (Mellor, 1978). "Policies designed to influence the level and stability of the prices received by farmers for farm outputs" is the definition of pricing policies given by Ellis (1992). These are the rules that lower farmers' units for selling paddy.

Moreover, they included the government pressuring farmers to purchase at the official pricing. In order to protect the domestic supply market, the government also controls exports in order to cut consumer prices. Three primary areas are affected by pricing policy: increasing agricultural production; stabilizing prices and income; and

influencing the distribution of revenue. It should be stressed, nevertheless, that price and income stability are not entirely dependent on the tool used in price regulation. A significant alternative strategy for stabilizing agricultural production is climatic variance, and research and technology should be taken into account in addition to pricing policy. Additionally, Krishna R. (1967) contended that price regulation ought to be restricted to a small number of strategically significant commodities, such as export-oriented goods or staple foods. The pricing policy becomes more complicated as more commodities are included, and this has an impact on the linkages between the commodities it covers and each subsequent commodity.

Instruments of trade policy include export taxes, import tariffs or subsidies, and trade restrictions. A producer of agricultural goods may choose not to produce for export as a result of export levies. It is advised for sustainable development in the global context to have low taxes, an open foreign trade framework, and fewer import and export restrictions (FAO, policy choices and tools). Numerous variables influence agricultural production. Unless labor is scarce and production tools and resources are few, technical advancements account for the majority of the rise in agricultural output. Furthermore, one of the most crucial elements for manufacturing is the suitable weather. However, there are several additional factors that influence production policy, including international commerce, land ownership, laws and regulations, and pricing policies. Furthermore, research and educational initiatives are suggested for the advancement of this field (Steward & Steward, 1947). The human resources used in the agricultural sector are increasingly closely linked to the agriculture production plans for sustainable development (Clark, 1947). However, a lot of situations fall beyond the purview of policymakers.

The Food and Agriculture Organization of the United Nations (FAO) published "A Regional Rice Strategy for Sustainable Food Security in Asia and the Pacific" in the year 2014. A variety of solutions relating to technology and politics were proposed, all of which were classified under the eleven key topic areas, which are as follows: Policy on rice price, trade, and stock; Climate change mitigation/adaptation and risk management; Environment and rice heritage; Water and irrigation; Smallholder farmers and farmer organizations; Gender roles and youth and women's empowerment; Food quality, safety, and nutrition; Value chains and post-harvest operations; Regional cooperation on rice; Food and nutrition security in Pacific Island countries (PICs). Increased rice output that is both sustainable and sustainable. In the main book, all of these significant subjects,

choices, and the trade-offs that are involved in picking various options are covered in great detail. In addition, this research suggested four primary areas of action, which are as follows: (1) Research and development investments to encourage and facilitate technological innovations at every stage of the rice value chain for the purpose of increasing resilience, improving quality and nutritional value, increasing productivity, and protecting the environment; (2) Information and communication technologies (ICT) and technology promotion; (3) institutional and policy innovations to support rural income growth and the rapid adoption of better technologies and to create a robust food security system that is accessible to everyone; (4) Investment in the infrastructure of rural areas.

2.4 Agricultural Policies in Developing Countries

Generally speaking, emerging nations vary from one another, and the approaches used by governments also changed depending on the situation. Four well-known components make up agriculture strategies for emerging nations. First, by safeguarding imports and enacting import substitution policies that fueled competition among local producers, the majority of emerging nations attempted to advance industrialization. The second is the currency control regime, which is kept in place by an exchange rate system that is too valuable and has turned into a mechanism for granting import licenses by making it more stringent than in other nations that have implemented import substitution. Regarding the third component, the majority of developing nations made an effort to lower producer prices for primary goods via export taxes and quotas, as well as government procurement programs (such as agricultural marketing boards). Regarding the last element, some governments prioritized input policy subsidies and increased their investments in irrigation and other capital sector inputs (Krueger, Schiff, & Valde's, 1988).

According to Brooks (2012), governments have a variety of goals for the agricultural development sector, including raising agricultural output, advancing gender equality, and improving resources to make them more sustainable. The government may choose from a wide range of alternatives to determine which instruments are best for each country based on its unique aims and ambitions. These possibilities include the following: (Brooks, 2012)

a. Interventions in the markets for inputs and outputs, such as marketing strategies, price and trade regulations, and input subsidies (for example, working capital credits, fertilizer, and seeds).

b. The supply of public goods, such infrastructure in rural areas
c. Transfers of income
d. Institutional changes, such as the creation or dissolution of marketing boards, land reforms, banking sector reforms, property rights, and legal framework.

Furthermore, despite the abundance of natural resources in poor nations, these markets are often smaller than those in high-income nations due to greater transaction costs for output markers and fewer opportunities for farmers to participate in the market. Because credit and insurance markets are absent in developing nations, market failure occurs more often there than in industrialized nations. The majority of farm families in developing nations are customers rather than sellers, thus implementing agricultural policies like price support and input subsidies there is ineffective (Zezza et al., 2008).

On the other hand, strategies like price stability and diverse market types are advised for emerging nations. On the other hand, input subsidies have also been used in nations such as Africa in order to encourage food production and alleviate poverty and hunger. According to Brooks (2010), while these policies are adopted in developing nations with the intention of achieving either short-term or long-term goals, the prevalence of market failures in these regions has caused these policies to be implemented in an alternate, easy manner.

According to the OECD (2003), nations that have created or implemented social protection systems tend to have weak social protection systems and subpar agriculture policies. Input suppliers and landowners outside of the farming sector will benefit from shared benefits like price support and input subsidies given to farmers. This will result in deadweight efficiency losses (like the effects of domestic resource allocation effects and, for exporting nations, containing the transfers to overseas consumers via lower world prices).

2.5 Rice Policy in Asia

In Asia, agricultural policies have always been widespread, particularly those concerning rice, which is a staple food for half of the world's population and a means of subsistence for around a billion people. Numerous policy interventions have been made in the rice industry due to its strategic and political significance. In an attempt to attain rice self-sufficiency and stabilize domestic prices by more forceful policy interventions, several Asian nations have redoubled their efforts in recent years. Most Asian nations

regulate rice imports and exports using a range of trade policies, such as quantitative trade restrictions and state trading, in order to protect their internal markets from external uncertainties.

A few nations that export rice impose minimum export prices in order to limit exports and, in some situations, temporarily prohibit rice exports in order to guarantee rice supply for local customers. In order to boost domestic rice production, a number of major rice-growing nations have raised the minimum support price for farmers and implemented a number of short-term policy initiatives to subsidize inputs including gasoline, power, fertilizer, and seed. Conversely, net-importing nations subsidize the price of rice to make it more accessible to lower-class customers in addition to enacting programs to increase local production by offering farmers incentives. Governments often implement well thought out policies aimed at increasing farmer income via increased rice output. This covers the application of price floors, loans with financial assistance, payments to promote fallow land, etc. Because any changes to these policies primarily impact the behavior of local producers or consumers, the policies pertaining to the production, consumption, and stock of rice may be generally classified as domestic policies.

A number of significant rice exporting nations used various policies to stabilize the domestic rice market, including short-term export prohibitions and minimum export prices to guarantee a supply of rice for the home market (India and Vietnam). In contrast, to guarantee a supply of rice for the home market, two significant rice-importing nations—Nepal and Bangladesh—lifted the tariff on imported rice without providing any preferential treatment to domestic growers.

When it comes to how policies are implemented, Asian nations differ and are similar at the same time. Generally speaking, every nation is quite concerned about food security. Because of this, trade and domestic policies are essentially the same; they all seek to provide rice farmers a good income while keeping public prices affordable.

India is the Asian nation with the most number of trade policies in place. Trade support measures include import and export restrictions, stock policy, direct income transfers, production subsidies via price support and input subsidies, and consumption subsidies. Furthermore, rice farmers have received the most subsidies from India. In addition to encouraging farmers to produce more, these incentives also contribute to increasing farmers' incomes. Additionally, with increased production—primarily through area expansion—subsidies lower the price of rice. (Tobias and others, 2012)

State-owned businesses (SOEs) are the primary source of procurement for most Asian economies, including those in India, Pakistan, Nepal, China, Japan, South Korea, Vietnam, Cambodia, Indonesia, Lao PDR, Malaysia, and the Philippines. In order to regulate overseas commerce and maintain price stability at home, state-owned enterprises (SOEs) often have significant procurement power.

Price support was widely adopted in Asia by both net rice exporting and importing nations, mostly to safeguard the interests of farmers.

Following the global food crisis of 2007–2008, some of the world's leading rice exporting nations established minimum export prices, mostly to regulate free trade and guarantee rice availability on the domestic market (USITC 2009).

In conclusion, a variety of government regulations and actions are imposed on rice since it is a staple food in many nations. Governments in developing Asia should adopt policies that support free trade and investment if they want to see sustained economic progress. In order to achieve food self-sufficiency while guaranteeing a reasonable price for farmers and stable pricing for consumers, almost all nations heavily interfere in the market. To lessen the issue, governments must work together more closely on a regional and international level to foster mutual confidence under bilateral and multilateral accords. Therefore, international organizations, especially the WTO, may be very helpful in fostering confidence amongst the world's leading producers and consumers of rice.

2.6 Review on Previous Studies

Rice sector and policy in particular have been the subject of a significant number of studies, which have been conducted on agricultural sector and rural development in general. In relation to Myanmar, a great number of academics, both local and foreign, place an emphasis on rice marketing, agricultural policy, and rice policy, as well as the influence that these factors have.

Kenneth B. Young, Gail L. Cramer, and Eric J. Wailes were the researchers that carried out the study titled "An Economic Assessment of the Myanmar Rice Sector: Current Development and Prospects" in the year 1998. The categorization of the Myanmar rice sector covered variables such as policy, methods of production, marketing, and the capacity of land and water resources to improve rice production. Additionally, the classification took into account the country's comparative advantage in rice production from the time of colonial rule until the 1990s.

"Dynamics of Rice Production Development in Myanmar: Growth Centers, Technological Changes, and Driving Force" was the subject of a 2009 study by Masahiko. It explains how rice's economic significance led the previous governments to focus on the crop. This essay discusses and critiques the rice industry's policies. In the last ten years, Myanmar's rice output has increased dramatically despite partial deregulation in the rice industry. In addition to the fact that government policy was the primary driver of this increase, the mechanics of this expansion have not received enough attention.
(2010) Hnin Yu Lwin made an effort to examine how Myanmar's rice market changed as a result of shifting governmental preferences. This research focused on the effects of three government intervention policies on the trade of rice: export quotas, price ceilings, and production control regulations. These policies clash between the goals of promoting exports and maintaining a stable local food market.

According to a 2013 research by Glenn Denning et al., rice productivity improved in Myanmar. They suggested a two-pronged approach—a short game and a long game—to increase rice yield. Understanding the resource basis, documenting strategies to increase farm-level production, and demonstrating change are all included in this brief game. Long-term institutional transformation is the second component of our suggested strategy, and it involves the University Development Outreach Corps, Myanmar Rice Research and Development Center, and Transformative Extension Service.

Nan Khine Su Thwin et al. (2016) published "The Activities of Rice Specialized Companies in the Supply Chain of Rice in Myanmar." Using descriptive analysis, they contrasted the supply chains of Rice Specialized Companies (RSCs) with typical businesses. The study's findings demonstrated that the RSC supply chain outperforms the old one by offering farmers higher-quality agricultural inputs, manufacturing superior milled rice, and exporting it to compete on the global market.

Nang Nu Nu Yee (2017) investigated how Myanmar's rice policies changed the nation from being a leading exporter of rice to producing enough rice on its own. This analysis found that the government of Myanmar has continuously interfered in rice policy ever since British rule ended in the 1940s. This led to poor administration and inefficient rice-related policies under every succeeding political administration. It is clear that throughout Myanmar's history, the rice sector suffered most during the communist era. These policies prioritized rice production above the creation of plans to increase rice exports. The administration saw rice as one of the elements fostering the nation's political stability, which explains why. This led to the continuation of the low price of rice, which

has been shown to be ineffective for both farmers and producers, which in turn caused a fall in rice exports on the international market.

Chit Su Win wrote a study on paddy production in Myanmar in 2018. She examined the conditions that were adequate for paddy production between 2008–09 and 2016–17. It has been determined that Myanmar is capable of producing enough rice each year to meet its own needs and to export any excess. However, as the population increased and production decreased, the excess paddy quantity decreased annually.

In 2020, Lai Yi Win conducted research on Myanmar's "The Effects of Export Barriers on Performance of Rice Exporting Companies." The research discovered a statistically significant inverse link between export success and export restrictions. Informational and marketing barriers are two internal hurdles that significantly hinder export success. Procedural, governmental, and task constraints are among the external hurdles that significantly impair export performance. The research also showed that the performance of rice exporting enterprises and export restrictions are not significantly mediated by the size of the company.

Mohanty, S., Baruah, S., and Janaiah, A. wrote "The Asian Rice Sector at a Crossroads" in 2020. By examining supply, demand, and trade scenarios over the last five decades, this article investigated the trend in rice production in Asia, the importance of rice for human nutrition, and the structure of the rice market in key Asian countries. Over the last fifty years, rice output and area have grown much faster than Asia's population growth rate. As a consequence, there was an increase in the amount of rice available per person, which greatly improved nutrition security. They discovered that as simultaneous rice imports and exports expand across Asian nations in response to shifting consumption patterns, achieving 100% self-sufficiency may become less important. After the 2007 rice crisis, several national governments have been attempting to become more self-sufficient and less dependent on imported rice; nevertheless, they may need to reevaluate their objectives in light of their population' shifting consumption patterns. With regard to Myanmar, there's also a chance that small exporters like Cambodia and Myanmar may eventually grow into significant competitors in the Asian market. However, this would need for supporting policies and enabling infrastructure including farm roads, storage, market connections, irrigation, port facilities, and encouragement of automation, the growth of the seed industry, and financing availability.

CHAPTER III
OVERVIEW OF RICE SECTOR IN MYANMAR

This chapter is organized by importance of rice and rice sector in Myanmar, historical background of rice sector, and private sector participation in rice sector in Myanmar.

3.1 Importance of Rice and Performance of Rice Sector

With one of the greatest annual per capita consumptions in the world (167 kg; USDA, 2024), rice is the most important staple food in Myanmar. The total amount of rice consumed in the union was around 15.5 million tons annually, of which 2.3 million tons were consumed in urban areas and 13.2 million tons in rural areas.

According to World Population Review 2024, Myanmar stands as the 7th largest rice consumer with 14,457 (in thousand tons), roughly (6.4) % of total world rice consumption. (Table 3.1)

Table (3.1) Top Ten Rice Consuming Countries in the World

Country	Rice Consumption (1000 Tons)
China	183995
India	147448
Indonesia	50148
Bangladesh	44257
Vietnam	22612
Philippines	21657
Myanmar	14457
Thailand	12217
Japan	9257
Brazil	8537

Source: world population review.com

In most nations, rice is a basic food. In actuality, nevertheless, it belongs to the grass family. The most prevalent types of rice are African rice (O. glaberrima) and Asian rice (Oryza sativa). One of the four genera of Zizania that produces wild rice is also known as undomesticated rice. Rice was first domesticated 13,500 years ago in the Yangtze River valley of China, and it is widely available across Asia and Africa. The amount of rice consumed worldwide has surpassed 520 million metric tons and is still growing. Roughly 20% of global calories come from rice, which is consumed daily by more than 50% of the world's population, according to the UN Food and Agriculture Organization. With an annual consumption of 257.48 kg per person, Bangladesh leads the area in rice consumption. At 204.16 kg per person, Vietnam is the fourth-highest user of rice products. Thailand's population weighed 168.22 kg, the Philippines 190.31 kg, and Myanmar 188.83 kg.

Rice growing has a long history in Myanmar. It remained among the top 10 rice-producing nations even after being the world's greatest rice producer in the years just before World War II. Table 3.2 illustrates that, in terms of total rice output, Myanmar ranks eighth globally, producing 12 million metric tons of rice, or almost 2 percent of the world's total rice production.

Table (3.2) Top Ten Rice Production in the World (2023-24)

Country	Total Production (Million Metric Tons)	% of Global Production
China	144.62	28 %
India	137	26 %
Bangladesh	37	7 %
Indonesia	33.02	6 %
Vietnam	27	5 %
Thailand	20	4 %
Philippines	12.5	2 %
Myanmar	11.95	2 %
Pakistan	9.87	2 %
Japan	7.27	1 %

Source: fas.usda.gov/data/production/commodity

Moreover, rice is also an important export product. Between 1900 and 1940, Myanmar exported 2 to 3 million metric tons rice annually, up to 70% of national production (Win 1991). However, currently rice export is about 2.1 million tons with diminishing Myanmar's role in international trade as a relatively minor player, standing as 8th among world's top 10 and Myanmar is still being a net exporter of rice. (Table 3.3).

Table (3.3) Top Ten Rice Exporting Countries in the World

Country	Rice Exporting (1000 Metric Tons)
India	16500
Thailand	8200
Vietnam	7600
Pakistan	5000
United States	2675
China	2200
Cambodia	1950
Myanmar	1800
Brazil	1300
Uruguay	950

Source: gnlm.comm.mm

As a staple food of Myanmar, rice production is historically the priority of the nation. It is significant for foreign currency revenues and government income in addition to ensuring food security. Assuring a steady supply of rice is crucial politically for preserving economic stability, according to successive administrations. Because rice plays such a crucial role in Myanmar, rice policy and agricultural policy are the same.

Given the increasing global demand, a large region that is conducive to rice cultivation, and prospects for enhancing productivity along the whole value chain, Myanmar might potentially reclaim its position as a top exporter of rice. The rice industry, along with the agricultural sector overall, is seeing positive signs from economic liberalization, sector policy changes, and increased receptivity to innovation and international collaboration. In Myanmar, where agriculture is the main industry, about 31.7% of the land area is expected to be arable in 2022–2023. Approximately 17.74% of the total agricultural land, or 29,665,840 acres, is seeded in net area. The land area

categorization showed that 34,952,063 acres were classified as timber land and 16,306,937 acres as cultivable waste land (Table 3.4).

Table (3.4) Land Utilization in Myanmar 2022-2023

Type of Land	('000 acres)	(%)
Reserved Forests	48,443	28.9%
Current Fallows	1,285	0.77%
Net Area Sown	29,666	17.7%
Occupied Area	30,931	18.5%
Cultivable Waste Land	16,307	9.75%
Other Wood Land	34,952	20.9%
Others	36,553	21.7%
Total Area	**167,186**	

Source: CSO, 2023

Rice, the most significant food crop, continues to be a crucial industry. It is significantly increasing Myanmar's GDP, revenue, and job creation. Currently, the value of DGP (Gross Domestic Products), which is 125,338,952 million kyats, is contributed by the agricultural sector by around 22.3%. With 27,541 ('000 tons), paddy production accounts for about 15.7% of all agricultural goods produced.

Agriculture is dominated by rice when it comes to production value. Among the top 20 commodities, rice makes about 43% of the overall value of production. 7.2 million hectares, or 34% of the total crop planted area, are used for rice cultivation. Rice requires a lot of work. Particularly in Myanmar's primary rice-growing regions, rice farming and allied activities account for over three-fourths of farm family income.

The rice industry in Myanmar is defined by market forces, with farmers and the business sector playing an active role. Myanmar has always placed the greatest focus on the rice industry since the nation views food security as its top concern, followed by the social and political implications of being a rice exporter in addition to being self-sufficient in the grain.

Myanmar's advantageous geographic position in relation to China and India, together with its membership in regional groups like ASEAN and GMS, provide it with strong access to markets for agricultural products, particularly rice. As a result, Myanmar

has the ability to produce rice at a competitive advantage within Southeast Asia, with prospects for exporting rice to nearby markets.

About six million farmers grow rice in the regions of Northen Sagaing, Bago, Yangon, and the Ayeyarwady Delta. Among the primary crops, rice still accounts for 45.7% of harvested lands and 53.4% of production value, making it the dominate production crop.

The majority of farmers in Myanmar rely mostly on rice cultivation as their source of income and for the industry's growth. It essentially decides whether a family enters or exits poverty. In order to ensure food security in Myanmar, rice cultivation is and will continue to be a crucial industry.

According to a number of studies, the growth of the rice industry should prioritize both productivity and the creation of suitable rice varieties. In Myanmar, the average yield of monsoon paddy (rice) is now 3.5 MT/ha, whereas the average production of summer paddy in 2021 is 4 MT/ha.

Enhancements in the seed industry are needed to raise yields, particularly in the areas of input accessibility, agricultural extension, and private sector participation. An important component in the growth of the rice industry is the informal local seed producing sector's marketing system. Welthungerhilfe, Wageningen University & Research, and associate technical partners Myanmar Rice Federation, Resilience B.V., and Mukushi Seeds are collaborating to manage the rice seed sector development initiative.

3.2 Historical Background of Rice Sector in Myanmar

It was clear that the political structure of Myanmar during the reign of the Kings was feudal. The land possessed became the cultivator's private property under the dama-u-gya land system. During the feudal era, rice, wheat, sugarcane, cotton, pulses, maize, tobacco, and indigo were the principal crops farmed. During this time, the agricultural system was for home use. Rice is a staple meal that is significant to the people and economy of Myanmar. Prior to the colonial era, rice production was mostly focused on subsistence farming. Prior to the Suez Canal's opening, Myanmar's agriculture was domestic and included substance cultivation, even during the British colonial era. Domestic agriculture was replaced by commercial agriculture with the advent of the Suez Canal. Thus, commercialization in rice production and marketing originated in colonial

period. In this section, chronological changes of rice sector is presented such as colonial period, post-independence period, socialist period and market-oriented.

3.2.1 Colonial Period

The area under cultivation rose from 2 million acres to 19 million acres as a consequence of the commercialization of agriculture, particularly for rice, which made up two thirds of the entire cultivated area. Because of the laissez-faire policies and the strong international market for rice, Myanmar's agriculture was primarily focused on the production and export of rice, or monoculture or monocrop farming.

From 1895 to 1940, the average amount of rice produced climbed from 3.7 million tons in 1895–1896 to 7.4 million tons. During this time, there were between 2 and 3.2 million tons of rice exported. Prior to World War II, Myanmar was the top exporter of rice worldwide and the leader in the regional economy in the late 1930s and early 1940s.Due to the British government's export-focused commercialized agricultural revolution, Myanmar became Asia's top rice producer and home to the Rice Bowl.

The Ayeyarwady Delta, which was constructed not too long ago and is located in Lower Myanmar, was responsible for 59% of the total rice production thanks to its highest average annual yield. The establishment of export grades and standards, the provision of a tax exemption for a period of twelve years on land that had been recently cleared, the provision of government loans, the promotion of the rice milling industry and trade, the provision of secure ownership titles to property owners, and the creation of a "lassiez faire" competitive environment with little government interference in production and trade were some of the key measures that were taken to support the development of the rice industry during the time that the British colonial government was in control. Rice production, rice exports, and rice prices were all remarkably stable over a very extended period of time because to the free business system that was implemented during the time of British colonial rule.

3.2.2 Post –Independence Period (1948-1962)

Following independence, the Burmese government began implementing the six goals of the national food grain policy (Appendix 1), releasing less rice for export after rationing each year as significant changes in rice policy were made while upholding the "export promotion" tenet. The acquisition and export of food grains constituted the majority of the government's involvement and control measures at the start of the post-

independence era; yet, considerable intervention in domestic retail marketing was also implemented to provide the impoverished with subsidized rice. In a free trade environment, individual merchants carried on with other food grain wholesale and retail operations. Between 1948 and 1962, the government kept inflation under reasonable control and the rice market mostly constant.

Paddy productivity and sown area varied throughout this time. Paddy was seeded on 65% of all sown land, reaching a total of around 10 million acres in the late 1950s. With an average yield of 30 baskets per acre, post-independence paddy output was very low, at just 5 million tons, and there was no rise in yield for sustenance. Because of the political climate, insufficient agricultural inputs and tools, and decreased paddy yield compared to pre-war levels, there was a very gradual increase in the area planted and paddy production. The amount of rice and rice products exported during this time climbed from 1.2 million tons in 1948 to 1.8 million tons in 1961.

3.2.3 Socialist Republic Government Period (1962-1988)

The administration adhered to the food grain policy outlined in the post-independence era throughout this time. Almost all aspects of food grain production, including sourcing, distribution, milling, storing, shipping, and domestic wholesale and retail sales, were subject to government interference and restrictions. Farmers' prior landholding rights were superseded by "the land tilling right," and governmental ownership of private land took its stead. Food grain producers were forced to sell the government a certain amount of their food grains—known as the "Compulsory Delivery Quota"—for a set price as a result of the shift in property rights. The communist government's policies prioritized the welfare of the customer, heavily relying on food subsidies, and outlawed private marketing. Rice was supplied via the state economic enterprise (SEE) system and was subsidized by the government when it came to consumer sales.

When the government nationalized rice marketing in 1963, it gave the domestic rice distribution system particular consideration. The distribution of rice throughout the country was handled by the Public Trade Corporation, which is a State Enterprise. In support of domestic distribution, the Union of Burma Agricultural Board provided the necessary quantity of rice. Since 1964, the national price of rice has been set by the government, irrespective of the region's rice production status.

The newly formed communist government of 1971 established high growth targets for the agricultural sector and actively began aggressively promoting the use of technology and strengthened institutions in order to accomplish the anticipated development objectives. This was done in order to fulfill the potential development goals. Rice production increased by 80 percent between the years 1973 and 1983, and by the 1978–1979 crop year, it had attained an average yield of more than 2 metric tons per hectare. The percentage of rice that was produced by high yield varieties (HYVs) increased from 4.3 percent in 1972–1973 to over half of all paddy in the years 1986–1987. Between 1970 and 1983, the amount of fertilizer that was applied to an average hectare increased from around 5 kg to 49 kg. During a significant campaign that took place in 1973, the government extension service introduced a rice technology package that included various improved practices for reducing crop losses. These practices included the utilization of high-yielding varieties (HYVs), the utilization of proper tillage, the maximization of plant population, the maximization of seedling age at transplanting, the increased utilization of farm yard manure and chemical fertilizers, modern methods of weed control, insect and disease control, and other improved practices. At the beginning of the 1970s, all administrative regions had experiment stations established in order to conduct research that was particular to the place.

By using modern technology (HYVs), rice output increased in Myanmar between 1975 and 1985. The pace of increase of the paddy seeded area was quite slow throughout this time. The green revolution had a major impact on rice HYVs, as seen by the large rise in rice yield from 1975–1976 and the growth rate of rice output from 1973–1974 to 1985–1986, respectively. But from 1965–1966, the amount of rice exported has decreased. The primary export commodity at the time was rice. Its percentage of overall exports, however, decreased from almost 60% in 1962–1963 to 12% in 1972–1973. Due to an increase in rice output, it rose from 1974 and 1985 before beginning to drop in 1986.

3.2.4 State Law and Restoration Council Period (1988-2010)

The adoption of a market-oriented economy was carried out by the State Law and Restoration Council (SLORC). The SLORC's official food grain policy goals were to: (1) generate excess paddy for export and local food security; (2) become self-sufficient in vegetable oils; and (3) increase export-oriented pulse and bean output.

The SLORC defined methods of increasing food supply as: (1) converting wasteland to cropland; (2) increasing irrigation capacity and sources; (3) increasing cropping intensity; (4) increasing the use of high-yielding seed varieties, modern inputs, improved and locally suitable practices and technologies; and (5) fostering farmers' innovative and entrepreneurial spirit.

Due to enhanced irrigation during the dry season, rice agriculture has expanded since 1988. The 1992–1993 summer paddy program was started. Around 5 million hectares of paddy were planted at this time, and the yield per hectare was around 3 metric tons. The amount of paddy produced was between 13 and 17 million metric tons. The goal of food grain policy after 1989 has shifted from increasing consumption to increasing output, up to the SLORC government. In addition, the SLORC has raised the cost of water, power, gas, and phone service while deregulating the price of agricultural commodities. Nevertheless, in spite of certain major liberal changes, the state has continued to be very interventionist, for example, by prohibiting market speculation and giving preferential treatment to quasi-government joint venture enterprises. The persistence of fragmented markets and pricing distortions, notably persistently high inflation, has been facilitated by these ongoing actions.

The first phase of market liberalization started with the domestic agriculture market in September 1987. The selling of rice and paddy was handled by Myanmar Agricultural Produce Trading (MAPT), which also established a rice rationing program for target populations such social welfare recipients and public employees at a fair price. The elimination of governmental control mechanisms over agricultural production and marketing was part of the policy changes implemented after 1988.

Due to the summer paddy program, rice output and seeded area increased significantly during the market-oriented phase, from 1992–1993. Once again, since 1999–2000, rice yield and output have progressively increased—with the exception of 2002–2003—due to the use of fertilizers, hybrid seeds, high yield variety seeds, and other rice inputs. Conversely, developing irrigation systems and offering loans helped to boost rice output as well. During this time, there were fluctuations in the export of rice and rice-based goods. The years with the highest export volume were 1993–1994; 2001–2002; 2002–2003; and 2007–2008 to 2009–2010. It resulted from market and price liberalization, as well as private sector involvement in rice export.

Due to massive participation in summer paddy programme which was launched in 1992-1993, farmers’ response to price incentives and demand for export, growth rate of

paddy sown area was about 3% in average during 1988-2010. Dramatic increase in growth rate of paddy sown area was found during 1992-93 and 1995-96. Again, sown acreage of paddy climbed during 1999-2000 and 2006-07 due to permission to grant to cultivate large scale farming to private companies. As a result, paddy production also increased about 4% during 1988-2010

3.3 Private Sector Participation in Rice Sector of Myanmar

Based on historical accounts, successive administrations in Myanmar implemented a variety of policies with the common goals of improving farmers' livelihoods, ensuring self-sufficiency, and fostering rice exports. Farmers in Myanmar were free to cultivate whatever crop they want to after the country gained independence in 1948. Private merchants were also free to engage in the rice selling industry from 1948 and 1961. But from 1962 until 1987, the government controlled the entire rice market. Once again, rice was marketed by the state-owned public company Myanmar Agricultural Produce Trading (MAPT), despite the fact that market liberalization had been started in 1987. Only MAPT was in charge of rice exports. The Myanmar government ended the mandatory rice quota system in 2003 and began a second round of rice liberalization in the hopes of providing farmers with a higher paddy price and fair prices for consumers. 10% export tax was levied, and investors were granted the opportunity to export 50% of the rice produced by such expansive, developed farms. This encouraged them to develop uncultivated land, particularly in deep-water locations, for rice cultivation. During that time, MAPT was eliminated, and a large number of new rice export businesses joined the global market.

In addition, land leasing programs for foreign direct investment and private investment were implemented to increase agricultural product output. About 875 billion US dollars in foreign direct investment had been made in the agricultural industry by 38 corporations as of 2023. The government allowed private business and cooperatives to export rice. During the market-oriented period, NGOs, INGOs, Development Companies, and Specialized Companies were involved in credit markets in agriculture sector.

3.3.1 Private Companies in Rice Sector

(i) Rice Specialized Companies (RSCs)

In 2003, low levels of technology and investment, underdeveloped infrastructure, restricted market access, and the use of subpar seeds and agricultural inputs were some of

the issues that rice farmers faced in relation to rice production and marketing. To address these issues, the government established in 2008 the policy of awarding export licenses to Rice Specialized Companies (RSCs) that engage in contract farming with rice farmers. RSCs support the rice supply chain at every stage, from marketing to manufacturing. One group of rice dealers is made up of RSCs. According to government policy, they have been active in rice production since 2008 via contract farming, rice processing, and rice distribution in both local and foreign markets. The goal of the government's RSC licensing program was to increase output by enticing the private sector to provide the materials and know-how that rice farmers need.

In addition to contract farming, RSCs have supplied seeds, fertilizer, and mechanized services on credit. In order to carry out contract farming between farmers and RSCs, RSCs hold meetings in the relevant village tracts where they provide an explanation of their operations, contract guidelines, promises, and protocols. In order to produce and export high-quality rice, RSCs also made processing investments in new and renovated mills.

But in 2011–12, the practice of giving RSCs priority when applying for export permits was discontinued, meaning that anybody dealing in rice may now apply for one. As a result, RSCs were no longer granted priority access and encountered some issues with contract farmers. Because of this, only a small percentage of RSCs in Myanmar were engaged in contract farming; the majority of RSCs have instead become ordinary merchants. A research conducted up to 2011–2012 found that 57 RSCs had contracted to cultivate over 922 thousand acres; RSCs exported more than 80% of their rice, accounting for approximately 5% of Myanmar's total rice output (Koshi Maeda et al., 2016).

(ii) Private Rice Millers

In semi-urban and urban trade cities, millers or processors have a pivotal position in the rice value chains. Although the milling capacity differed across the three categories, it was noted that the nation's rice was ground into three sizes: big, medium, and tiny. Present-day medium- and large-scale rice mills generate greater rice output yields with fewer broken grains and higher-quality by-products. Because they lacked the funds to upgrade their mills, the proprietors of small rice mills were often farmers. They also milled their domestic consumption and commercial excess paddy. The majority of big millers marketed milled rice to wholesalers and retailers after purchasing paddy on commission from farmers and collectors. Large millers in excess areas sometimes served

as wholesalers as well, selling their milled rice to wholesalers in other regions' key marketplaces. Total number of rice mill companies are about 54. Table 3.5 shows some of rice milling companies and their capacity.

Table (3.5) Number of Private Organizations in Rice Storage and Milling

No.	Company Name	Description of Duties
1	United New Generation Co., Ltd	Rice Soya Blend producer
2	Shwe La Win Rice Mill, Pyapon	Rice Mill
3	Myanmar Rice Millers' Association – MRMA	Rice mill information
4	MAPCO Rice Mill	Rice Mill
5	MEC Ton 100 rice Mill	Rice Mill,Daily Milling Capacity-60 Mt
6	Pyae Sone Kyaw Rice Mill,	Rice Mill and produce Export quality rice,Daily Milling Capacity-80 Mt
7	Ngwe Sabe Rice Mill	Rice Mill, Daily Milling Capacity-50 Mt
8	Taintakhun Rice Mill	Rice Mill, Daily Milling Capacity-90 Mt
9	Thusaitta Rice Mill	Rice Mill,Daily Milling Capacity 100 Mt
10	San Padaythar Rice Milling Co. Ltd	Rice Mill,Daily Milling Capacity 15 Mt
11	Royal Ayeyar Rice Milling Co. Ltd.	Rice Mill,Daily Milling Capacity 60 Mt
12	Shwe Zee Kwet Rice Milling Co. Ltd.	Rice Mill,Daily Milling Capacity 30 Mt
13	Aye Myitta Rice Milling Co. Ltd	Rice Mill,Daily Milling Capacity 160 Mt
14	NayLaWun Rice Mill, Bago	Rice Mill,Daily Milling Capacity -50-100 Mt
15	Three Diamonds Rice Mill, Bago	Rice Mill,Daily Milling Capacity -50-100 Mt

Source: https://dica.logcluster.org/myanmar-46-storage-and-milling-company-contact-list

Because more people were becoming aware of the ideal conditions for good milling standards and performance, rice millers needed high-quality seeds. They had previously spent several years establishing confidence with farmer associations. They functioned primarily as marketplaces, connecting buyers and sellers; local merchants brought the harvest and sold it straight to distributors, while processors collected a charge to process the agricultural commodity. Additionally, farmers paid for transportation directly as they delivered their harvest to millers. Millers may get high-quality seeds and paddy by engaging in contract farming in the Ayeyarwady Delta's rice seed sector. Development organizations may be able to collaborate effectively with Miller groups,

who have strong economic and social ties to farmers, dealers, retailers, and collectors. RSSD and them should keep collaborating to promote the contract farming zone.

(iii) Mechanization Companies

There was little automation in the production of rice. Myanmar. Seasonally, farmers, or landowners, used agricultural laborers to harvest and weed rice transplants. However, some farm workers in outlying areas of Yangon started to go to the city for employment, or they found other occupations locally in other sectors including manufacturing and service industries. As a result, individual farms found it difficult to hire agricultural workers in accordance with their needs. There is a recent introduction of power tillers (from Thailand or China) at reduced costs. Tractors and combines were, nonetheless, introduced in small quantities.

In several regions, contract mechanization services for land preparation, mechanical threshing, and, to a lesser degree, combine harvesting have been made available by some of the Rice Specialized Companies (RSCs). Additionally, a few RSCs were experimenting with mechanized seeders and transplanters. However, contract farming for rice in AD does not efficiently use mechanizations. While some service providers have given farmers machinery, it is necessary for businesses and service providers to collaborate in order to supply farmers with contract farming more successfully.

Tractor-wielding farmers or specialist farming businesses have recently begun to charge for their services to cultivate land. The pressing need for agricultural automation stems from the growing scarcity of labor in rural regions. But the absence of medium-sized agricultural finance organizations that provide long-term loans at moderate interest rates prevents most farmers from investing in agricultural equipment. Due to the existing lack of access to official funding, farmers are forced to borrow money at exorbitant interest rates from unofficial moneylenders, which lowers the earnings they may generate from their crops. 2 million agricultural families get loans from the Myanmar Agricultural Developing Bank (MADB) at subsidized interest rates of 8% annually. But it may only lend up to 10 acres for a year at a rate of MMK150,000 per acre.

(iv) Private Seed Companies

There are some seven seed companies which are implemented contract farming with Rice Seed Sector Development Project in Myanmar. They are Ayer Dagon Company, Ayer Pathein Company, Monsoon Foundation, Mone Thida Company, Good Brothers Company, KyaikLat Company, and Gold Delta Rice Specialized Company. Myanmar rice seed top companies are: (1) Bayer AG; (2) Dagon Group of Companies; (3) Groupe Limagrain; (4) Myanma Awba Group; and (5) SL Agritech Corporation (SLAT).

(v) Rice Export Companies in Myanmar

Currently, there are 113 rice export companies in Myanmar. Of which, there are top 45 rice exporters based on their export levels in 20018-19 to 2023-2024. Among rice exporters, there are 43 companies for rice import to China. The lists of top rice exporters and rice companies are shown in Appendix (1) and Appendix (2). Table (3.6) shows top rice exporters with the volume of export in 2022-23.

Table (3.6) Number of Rice Exporters

No.	Company Name	Total Export (MT)
1	Shwe Wah Yaung Agriculture Production Co.,Ltd	389844
2	Min Hla Agricultural Products Trading Special Rice Paddy Co.,Ltd	149744
3	Wakhema Trading Co.,Ltd	139394
4	Ayeyar Hinthar Trading Co.,Ltd	139036
5	Shan State (Northern) Rice and Paddy Development Public Co.,Ltd	124607
6	Wilmar Myanmar Rice Land Limited	97404
7	Thamadi Family Trading Co.,Ltd	87264
8	Htoo San Linn Let Trading Co.,Ltd	86861
9	Good Brothers' Co.,Ltd	85289
10	Shwe Wah Nadi Agriculture Production Co.,Ltd	78912

Source: MRF 2022, 2023 export

3.3.2 Private Banks Supporting to Agriculture Development

United Amera Bank (UAB): The commercial bank mostly invests in commerce, construction, and other industries; it does not, however, fund the agricultural sector, despite the fact that agriculture accounts for a large portion of Myanmar's economy and is riskier. Farmers who wanted to buy agricultural equipment might do so with a 6-month payment plan from UAB. Fertilizer and other microfinance enterprises received funding from UAB. There was less enthusiasm from UAB and other commercial banks to invest in the seed industry. Nonetheless, UAB is interested in providing farmers who choose to preserve their seeds or goods with a comfortable lending scheme. Yoma Bank: This commercial bank also offers financing to the following businesses: 1) large-scale rice farmers in the Ayeyarwad region with 200 acres of land for contract farming (insurance required), 2) input dealers, who are manufacturers, importers, and dealers; 3) contract farming companies; 4) traders; and 5) rice millers. Plush loans and the locking system for paddy are also of interest to Yoma Bank (Agri-inventory discounting). Working with a third party, such an Indian commodities management business, is required for this approach.

Myanmar Apex Bank (MAB): It is a commercial bank as well, but it serves the rice industry and MAPCO. Financial services offered by MAPCO for warehouse operations will finance the system. Additionally, MAB offers long-term loans for the improvement of input distribution and rice exporting. As directed by the Myanmar Central Bank, pay for three to five years. Development projects like weather-based insurance will be explored under the USAID initiative.

Since the DOA and DAR lack the funding, the system would benefit from the private sector's strategic collaboration with the DOA (Department of Agriculture) and DAR (Department of Agricultural Research) to manufacture registered seed and small farmers' certified seed. Under such a plan, contracted smallholder farmers would receive registered seed (and possibly farming inputs) from private companies, which would then buy back the certified seed that was produced. Contract farming on the rice seed sector in the Ayeyarwady Delta would then clean, grade, and package the seed for sale the following year. The Myanmar government will need to supplement this program with a revised seed legislation that specifically protects smallholder farmers who produce certified seed against unfair contracts, volatile prices, and quality problems brought on by uncontrolled environmental factors.

Increasing the demand for high-quality seed should be a goal of the Department of Agriculture (DOA), and this may be accomplished via marketing activities that emphasize the benefits of certified adapted seed and diverse extension tactics. The establishment of a pilot program that establishes connections between registered private breeding businesses and informal seed communities that are currently in existence would be of great assistance to this approach. Furthermore, the development of an institution that would lead and supervise the transition to a privatized seed sector would be beneficial for Myanmar. This is because the seed production system of the country is now being hampered by a lack of coordination among the different parties. This body would be responsible for organizing the entry of agribusinesses, non-governmental organizations, and international investors into key problem regions, as well as fostering public-private conversation in the process of developing a strategy for the reform of the seed sector. Last but not least, as Myanmar's research and development capabilities increase, farmer cooperatives will be entrusted with the responsibility of regulating seed demand in distant locations and decreasing restriction extension and shipping costs for all stakeholders. This will occur when better seeds become available. The reason for this is that the success of seed research and development is dependent on the existence of channels that link farmers to seeds and their knowledge.

3.3.3 Non-Government Organizations (NGOs)

(i) UMFCCI

UMFCCI (established in 1919 as the Myanmar Chamber of Commerce, later UMCCI- Union of Myanmar Chamber of Commerce and Industry) was responsible for purchasing the paddy at various levels of township, district, state and region. According to the rice trade policy in 2003, Rice Traders' Association purchased rice freely from the farmers at market prices and export was handed by the First Company Limited of Myanmar Rice Import and Export in Yangon. Commodity Exchange Centers have been set up in states and divisions for the purpose of trading rice since 2006. Thirteen agricultural crop-related organizations were established at the central level under UMFCCI between 1988 and 2010. Three associations—the Myanmar Paddy Producers Association, the Myanmar Rice and Paddy Traders Association, and the Myanmar Rice Millers Association—were focused on rice.

As a national non-governmental organization, the UMFCCI represents and defends the interests of the private business sector. In order to integrate activities along

the supply chain with the main objectives of developing an efficient and competitive Myanmar rice industry and supporting sustainable production development through public-private partnerships (PPP), the Myanmar Rice Industry Association was formed. This association is made up of the segmented associations known as the Myanmar Paddy Producers Association, Myanmar Rice Millers Association, Myanmar Rice and Paddy Traders Association, and Rice Specializes Companies. Myanmar Rice Specialized Companies (MRSCs) work in partnership with farmers in designated regions, offering financial and input assistance to ensure high-quality rice production as well as certified seeds to meet export quality requirements.

Under the Myanmar Sustainable Development Plan (MSDP), the government of Myanmar places a strong emphasis on PPPs and encouraging the private sector in the country's development. Investor trust in Myanmar PPP projects is fueled by risk sharing and more equitable competition with the government. In order to guarantee that contracts for the provision of public services by a private firm may be made, laws and rules governing PPP projects and government initiatives including PPPs may need to be modified.

(ii) Myanmar Rice Federation (MRF)

The Myanmar Rice Industry Association (MIRA) was replaced in 2012 by the Myanmar Rice Federation. The MRF and the Chinese organization CITIC collaborated in July 2017 to carry out a feasibility assessment for the establishment of 33 agricultural business centers in Myanmar. The organization's website was momentarily compromised in September 2017 in opposition to the Rohingya crisis.

From very little to 752,000 tons, Myanmar's rice exports to China increased between 2010 and 2012. The two nations formally organized their rice trade in 2014 by signing their first agreement.

The MRF faced backlash in March 2015 due to their narrow selection of rice growers authorized to ship rice to China. Due to the severe flooding that was plaguing the nation in early August 2015, the MRF said that rice exports would be suspended for a period of fifteen days. The MRF pushed the newly elected Burmese government to privatize the Myanmar Agricultural Development Bank in order to expand the bank's lending capabilities in April 2016.

The MRF Stakeholder Forum 2018 was arranged by the Myanmar Rice Federation and took place on March 7, 2018, in Naypyidaw. A floor rice policy for paddy

was proclaimed by the MRF to support small-holder farmers. MRF is in charge of negotiating rice export agreements with India and China, among other neighbors. More than a million tons of rice are exported by Myanmar to fifty countries, with China receiving 70% of its exports (data from April 2016 to January 2017).

In Myanmar rice industry, there are national and regional level associations, networks and committees, formed by the private sector stakeholders. Myanmar Rice Federation (MRF) was established in 2012 as the non-government, non-profit sharing organization, in order to lead, ensure effective coordination and provide guidance to those national and regional rice associations, networks and committees. The key objectives of the Myanmar Rice Federation (MRF) are as follows:

- To sustain export-led growth strategies, thereby promoting trade and investment activities
- To implement and encourage market- based mechanism and private sector development to ensure food and nutrition security, supply and price stability
- To optimize the effective and efficient utilization and modernization of all the available resources in Myanmar rice industry
- To foster sustainability, development and competitiveness
- To represent the private rice sector in dealing with local and international development partners
- To stand as a member-driven Federation, which always acts in the interest for the welfare of members and stakeholders

With government funding and supervision to maintain local supply and pricing, the nation's 100,000 metric ton rice stockpile was managed by the newly established commercial branch of MRF in 2012–13.

(iii) INGOs

GRETs has been promoting rice seed certification in AD. The supported the establishment of non-financial (input purchases, storage, rice seed certification) and financial (hire-purchase, inventory credit) economic services for members of over fifty village-based farmers' organizations. The Japan International Cooperation Agency (JICA) is engaged in the modernization of government seed farms as well as the production of C seed (CS). Since storm "Nargis," Mercy Corp has collaborated with a few local NGOs and CSOs in the Labutta region. MC persisted in collaborating to promote the rice seed industry. Another example of contract farming for rice growth in AD is Golden Sunland.

In partnership with a local NGO, RadanarAyar Associate Law Ka Ahlin, GRET is assisting small and medium-sized farmers in AD by facilitating market connections for rice seed products with private partners.

CHAPTER IV
ANALYSIS OF RICE SECTOR IN MYANMAR

This chapter is emphasized in rice policy in Myanmar, rice production, marketing and export of Myanmar, and perception and inside of stakeholders on rice production and future prospect of rice sector.

4.1 Vision, Mission, Strategy, Policy and Objectives of Ministry of Agriculture, Livestock and Irrigation

The Ministry of Agriculture, Livestock and irrigation set up the Vision, Mission, Strategy, Policy and Objectives for agricultural sector development, socio-economic and sustainable development of the economy.

Vision : An inclusive, competitive, sustainable agricultural system in which food and nutrition are secured, that contributes to the socio-economic well-being of farmers and rural people and to the further development of the national economy.

Mission : In order to meet the increasing demands of both domestic and international markets, innovative and sustainable production, processing, packaging, logistics, and marketing technologies are being used to enable the rural population and agribusiness enterprises to benefit from the production and trade of diverse, safe, and nutritious foods and agricultural products.

Policy

(1) Land Use and Management Policy

(2) Water Use and Management Policy

(3) Agricultural Mechanization and Input Sector Policy

(4) Research, Development and Extension Policy

(5) Marketing, Value-added Processing and Export Policy

(6) Governance, Institutional and Human Resource Development Policy

(7) Environmental Conservation and Climate Change Resilience Policy

Objectives

(1) To ensure food and nutrition security and food safety
(2) To safeguard the rights of farmers and to enhance their welfare and livelihoods
(3) To advance and upgrade the agricultural sector by organizing farmers' associations and cooperatives, inclusive of smallholders and subsistence farmers, with promotion of gender equality
(4) To promote domestic and foreign direct investment in the agricultural sector
(5) To promote competitiveness and value-added production of exportable agricultural commodities
(6) To develop effective linkages between production, trading, processing, services and consumers along the value chains of agricultural commodities
(7) To improve the coordination mechanism of inter-government agencies, to foster public-private partnerships (PPP), and to establish collaboration among all stakeholders including public agencies, academia, research institutions, farmers' associations, civil societies, and the private sector, with a view to enhance rural development and reduce poverty.

The Ministry of Agriculture and Irrigation (MOAI), the Ministry of Co-ops, the Ministry of Livestock, and the Ministry of Fishery and Rural Development were amalgamated into the Ministry of Agriculture, Livestock, and Irrigation (MOALI) as part of an institutional restructuring. The Ministry of Co-ops and Rural Development was split off from the Ministry as of 2021. But the Ministry of Agriculture, Livestock, and Irrigation continues to go by the same name.

4.2 Rice Policy in Myanmar

As a rice exporting country, Myanmar has been trade-off between maintaining food security and promotion of rice export. Because of the economic and political importance of rice in Myanmar, the government of Myanmar has been undertaking rice policies including price stability, marketing and export policy and intervention in production and input utilization.

Through a complicated combination of interventions in both domestic and export markets, the rice industry in Myanmar has achieved a number of goals, including directly influencing production and input pricing, imposing productivity requirements, and erecting trade barriers.

4.2.1 Brief History of Rice Policy in Myanmar during 1973-2010

In Myanmar, rice is a major crop and crucial for livelihood and economic development. Agricultural policies in the country are mostly the same as rice policies. After independence and economic system changes to Burmese Way to Socialism, government of Myanmar had made effort to agricultural sector development with some policies and activities.

Table (4.1) Rice Policies in Myanmar (1973-2010)

Period	Paddy Cultivation	Domestic Rice Marketing			Rice Exporting
		Purchasing	Distribution	Price Setting	
1973-1987	1973 Special Paddy Producing Regions 1978 Set up agricultural plan 1978 State-owned farmlands	1973-74 Law of obligatory sale of paddy to the State	State control	Fixed price of purchasing and distributing	Rice exceeding the domestic consumption was exported by the State
1988-2002	1992 Introduce summer paddy cultivation	Reduce obligatory sale amount	Priority to targeted groups	Fixed price for targeted groups	Rice exceeding the domestic consumption was exported by the State
2003-2010	Domestic consumption and export	2003 New rice liberalization policy	Private	2006 Commodity stabilization committee	Private Export license Export quota Export banned

Source: Hnin Yu Lwin, et al., MOALI, and Ministry of Commerce

Special zones for the production of rice were established in 1973 with regard to the growing of rice in Myanmar. Furthermore, in 1978, the Ministry of Agriculture and Forests established an agricultural plan that required farmers to cultivate the specified crops. Furthermore, since land reform was put into effect in 1978, the state has been the ultimate owner of all farmland. It was quite clear that those times heavily enforced the production control strategy. Since 1973, the mandatory selling of rice has been a part of domestic rice marketing. The State also handles domestic distribution at a set price. The State exported the extra rice that was not consumed domestically. As a result, it was clearly clear that the State controlled the export and domestic markets.

A policy of liberalization of the rice market was put into place in 2003 with the goal of strengthening the market-oriented economy by allowing the market's supply and demand to freely affect the rice market. But in order to preserve the steady domestic market, the rice export plan was retracted again in January 2004 due to concerns about the national rice surplus and the erratic volume of illicit rice export to nearby nations. New restrictions on the rice trade were also implemented. Since then, the agricultural plan has been implemented inadvertently at the regional government level even though it has not been coordinated by the Ministry of Agriculture and Irrigation. In addition to the privatization of domestic marketing after market liberalization, a committee was created in 2006 to stabilize the price of commodities. Following liberalization, export licenses, export quotas, export taxes, and export bans were implemented. The Myanmar rice market might serve as an example of how the export control, price control, and production control policies have been implemented.

A pilot project for the regional rice surplus export strategy was launched, based on the survey conducted by Lwin et al. (2008). The ability to export excess rice was granted to the four areas having the highest surplus. Merely 26 trade businesses were granted access to the rice export license. As part of the implementation of the export quota policy, the quantity of milled rice that may be exported was likewise restricted to 465 (‘000 metric tons) between December 2007 and March 2008. As an extension of the price ceiling policy, the ceiling price for the domestic market was established to ensure the stability of the price of food in the country.

In summary, there was a significant implementation of production control, price control, and export control policies from 1973 to 2002. Nonetheless, from 2003 to 2008, the production control strategy was only partly enforced. 2003. Export control laws and pricing control procedures did not exist. Once again, export restriction and price control

measures have been in place since 2004. It is evident, therefore, that the rice market in 2003 had the most liberalized conditions in its history.

4.2.2 Rice Policies in Myanmar (2010 -2016)

The State continues to be the ultimate landowner, just as in earlier eras. The State gave the private sector land rights for leasing and cultivation. The Virgin Land Management Law, Vacant, Fallow, and Farm Land Law were passed in 2012. The new regulations provide farmers the ability to legally transfer and mortgage their property, as well as to challenge land seizure in court. The purpose of these new legislation is to lessen the amount of control that the State has over land use and user rights, including crop choice. By the end of 2013, all agricultural land must be registered under these rules, which also establish a land usage certificate and registration system. It establishes a land market with private land use property rights, such as the ability to purchase, trade, inherit, lease, and access land-based credit. If compensation is needed, it has to be given. Additionally, these rules provide a way for individuals, businesses, government agencies, and non-governmental groups to rent state-owned fallow, virgin, and unoccupied land for mining, farming, and other uses. The issuance of leases and the usage of these lands are supervised by a central committee; they cannot be mortgaged, sold, subleased, partitioned, or otherwise transferred without state authority. Additionally, private and foreign direct investment in land was permitted by the government. A 30-year lease may be obtained for these properties. Up to 2,000 hectares (ha) may be allocated by the central committee at once, for a total of no more than 2,000 ha. The new legislation also provide agricultural families the right to apply to utilize virgin, fallow, and unoccupied land, up to a maximum of 20 hectares, provided they can show they are capable of developing and managing such properties.

Trade restrictions have been put in place to prevent agricultural commodities from rising too much and to guarantee that there are enough supply for local markets, as was the case with rice during the 2007–2008 crisis. A license to export rice may be applied for by any registered merchant with certified facilities and stock levels as of 2011. Companies who specialize in rice lose preferential access to export licenses and see their export tax cut from 10% to 2%. The Foreign Exchange Management Law was passed in 2012, doing away with all limitations on exchange rates and multicurrency transactions. removing the need for export/import licenses while exempting 166 import products and 152 export items that were reported in 2013.

The Exports and Imports Law was passed in 2012 with the intention of promoting commerce by bringing import and export-related regulations and procedures into compliance with international trade standards. Requirements for export licenses were removed in 2013.The Microfinance Law, which was approved in 2011, made it possible for both domestic and international investors to create entirely private microfinance institutions, including those that had previously functioned illegally. Furthermore, Myanmar Microfinance Bank is a private bank that was founded in 2013 with the goal of serving low-income clients by providing interest rates that are lower than those of commercial banks.

4.2.3 Rice Policies in Myanmar (2016 - Up to Now)

"To establish an economic framework that supports national reconciliation, based on the just balancing of sustainable natural resource mobilization and allocation across the States and Regions," is the stated goal of the 2016 National Economic Policy. Twelve policies are included in it, covering the following topics: (i) increasing financial resources; (ii) effective public and private enterprises; (iii) developing human capital; (iv) quickly building essential economic infrastructures; (v) creating jobs; (vi) balancing sectorial growth while enhancing food security; (vii) economic rights; (viii) financial stability; (ix) environmental sustainability; (x) equitable and effective taxation; (xi) protecting intellectual property rights; and (xii) fluid business environment. The Agricultural Development Strategy's (ADS) suggested activities closely align with these policy goals.

The goal of the October 2016 approval of the Myanmar Investment Law (MIL) is to encourage international investment. A new set of investment tax advantages is included in the MIL, which unifies the 2013 Citizens' Investment Law and the 2012 Foreign Investment Law. The MIL states that foreign direct investors would get the same advantageous treatment as nationals and investors of Myanmar. Investment in agriculture will be in line with the MIL's protections for small holdings thanks to the ADS. The first integrated water policy covering groundwater aquifers, rivers, lakes, reservoirs, watersheds, and coastal and marine waters was included in Myanmar's 2014 National Water Policy (NWP). Other plans and strategies pertaining to agriculture that have been developed recently include the following: I The Five-Year Plan, 2016–17–2020–21: Myanmar's National Action Plan for Food and Nutrition Security (MNAPFNS), Climate Smart Agricultural Strategy, Rice Sector Development Strategy, White Papers from Rice Bowl to Food Basket, Vegetables, Food Value Chain Road Map, and Agricultural Sector

Policies and Thrusts for Second Five Year Short Term Plan of MOALI (October 2016) are among the documents that can be found. The Ministry of Agriculture, Livestock, and Irrigation released a new agricultural sector policy at the beginning of 2017 with an emphasis on raising famer incomes and boosting competitiveness. In 2018, the minimum reference farm gate price of paddy was established in order to control price volatility throughout the harvest season.

4.3 Rice Cultivation and Production in Myanmar

Myanmar is an agricultural country where rice sector is the most predominant segment in agriculture and agribusiness area. Rice sector, in addition to its crucial aspect of national food security, has been connected culturally, traditionally and socioeconomically with majority of the population in Myanmar. In rural Myanmar, rice is being cultivated during monsoon season with the annual cultivation of about 15 million acres and in summer season, about 2 million acres. On average, the annual production is about 13-14 million metric tons of milled rice, out of which domestic consumption amounts to 10-11 million metric tons and annual surplus of about 3 million metric tons. Myanmar's export contribution to international rice market is about 2 million metric tons annually.

4.3.1 Net Sown Area of Rice/Paddy

According to land utilization in Myanmar, total net sown area hovers 33 million acres, among the total land area of 167,186 thousand acres.

Table (4.2) Net Sown Area of Paddy ('000 Acres)

Year	Total Net Area Sown	Paddy	% in Net Area Sown
2010-2011	33,971	15,997	47.09
2015-2016	33,017	15,658	47.42
2017-2018	33,097	15,673	47.36
2018-2019	33,036	15,602	47.23
2019-2020	33,027	15,597	47.23
2020-2021	33,101	15,586	47.09
2021-2022	33,274	15,623	46.95
2022-2023	33,172	15,620	47.09

Source: CSO, 2023

As can be shown in Table (4.2), paddy cultivation is more than 15 million acres which is about nearly 50% of total net sown area.

4.3.2 Rice Cultivation Area (2010/11- 2022/23)

Total cultivated area, irrigated area and harvested area of rice are shown in Table (4.3). As can be seen in the table, total cultivated area of rice was19.9 million acres in 2010-11 and it decreased year by year. During 2010-11 and 2022-23, it decreased 11.8% and reached about 17.5 million acres in 2022-23. It may be caused by increase in area of other major crops such as maize and groundnut, higher cost of cultivation such as prices of inputs including fertilizer, pesticides and labor wages.

Table (4.3) Sown Area, Irrigated Area, and Harvested Area of Rice

(Thousand Acres)

Year	Sown Area	Irrigated Area	Harvested Area
2010-2011	19885	5402.00	19796
2011-2012	18762	4927.12	18698
2012-2013	17893	4618.81	17270
2013-2014	17999	4805.25	17181
2014-2015	17722	4632.88	16975
2015-2016	17821	4640.13	16728
2016-2017	17695	4636.13	16615
2017-2018	17930	4939.33	16668
2018-2019	17867	5027.12	17666
2019-2020	17306	4596.24	17101
2020-2021	17203	4510.32	16877
2021-2022	17429	4591.99	17404
2022-2023	17532	4798.51	17520

Source: Statistical Year Book (2005, 2010, 2015 and 2020)

About 25% of the total cultivated area was under the irrigation. In 2010-11, the irrigated area is maximum with 5402 thousand acres.

4.3.3 Sown Acreage of Rice by State and Region

Among the major crops, rice cultivation is nearly 50% of total land area. Rice is cultivated in all states and regions in Myanmar. Of the 15 states and regions including Nay Pyi Taw council region, some are rain-fed area and some depends on irrigation. According to distribution of rice cultivation area in states and regions, Ayeyarwady region, Bago Region, and Sagaing region are top rice growing regions in Myanmar (Table 4.4).

Table (4.4) Sown Acreage of Rice/Paddy by State and Region (Acre)

State/Region	2010-11	2015-16	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	Changed of 2010-23
NayPyiTaw	175390	177071	200081	203414	191797	186175	199354	198638	+23248
Kachin	660093	449678	446807	460914	477017	503741	504840	506838	-153255
Kayah	112332	94282	87938	87866	85884	83912	72527	727708	+615376
Karin	679169	644399	549282	546303	544960	544080	543270	539266	-139903
Chin	138940	89152	79140	78947	77310	68641	59832	45405	-93535
Sagaing	2292460	216415	2203052	2179330	1851463	1880931	2051051	2016992	-275468
Thanintharyi	371751	262577	245316	241998	238395	231470	231345	231736	-140015
Bago	3434396	2980201	3020205	3044794	2987791	2967360	3020108	3079966	-354430
Magway	1053510	861449	720661	707860	661458	615512	639338	654682	-398828
Mandalay	789189	543031	739531	672493	608110	589548	597565	602320	-186869
Mon	1007164	720265	730695	733957	722892	728266	731400	741238	-265926
Rakhine	1237495	1116660	1104057	1023943	1005811	980152	998880	1002405	-235090
Yangon	1393260	1384341	1364821	1379243	1372848	1339183	1350810	1350640	-42620
Shan	1541807	1344234	1309968	1313759	1306230	1299971	1292426	1286941	-254866
Ayeyarwady	4997884	5026831	5128740	5186234	5174716	5183999	5136094	5201780	+203896
Union	19884840	17820586	17930294	17861055	17306682	17202941	17428840	17531555	-2353285

Source: Ministry of Agriculture, Livestock and Irrigation

In 2022-23, among total area of 17.5 million acres, Ayeyarwady region was the most rice growing region in Myanmar with 5.2 million acres (29.7%), the second largest area was in Bago region with 3.1 million acres (17.6%), and the third was Sagaing region with 2.0 million acres (11.5%) respectively. Chin state and Kayah state are at the minimum states in Myanmar.

Rice cultivation area increased Nay Pyi Taw Council region and Ayeyarwady region, although total sown area of rice decreased during the period. There was no significant change in Yangon region and dramatically decreased in Chin state.

4.3.4 Yield and Production of Rice in Myanmar

During 2010-11 and 2022-23, yield and production of rice is shown in Table (4.4). It can be seen that production per acre (yield) did not dramatically increase during the period which is about 74 to 76 baskets, except in 2010 (77 baskets).

Table (4.5) Yield and Production of Rice (2010-11 – 2022-23)

Year	Yield (46 lb) (Basket)	Production ('000 Tons)
2010-11	77	32065.1
2011-12	74	28552.1
2012-13	74	26216.6
2013-14	75	26372.1
2014-15	76	26423.3
2015-16	76	26210.3
2016-17	75	25672.8
2017-18	75	25624.5
2018-19	76	27573.6
2019-20	75	26268.8
2020-21	74	25982.7
2021-22	74	27004.9
2022-23	75	27541.1

Source: CSO, Statistical Year Book, (2005, 2010, 2015, 2020 and 2023)

According to Table (4.5), rice production was highest in 2010-11 with 32.1 million tons because of sown area and yield of that year which were highest. However, it decreased gradually up to 25.6 million tons in 2017-18 due to decline in sown area and it increased again in 2019-20, 2021-21, and 2022-23. It is found that rice production fluctuated due to change in cultivated area during this period.

4.4 Rice Export in Myanmar

In this section, export of rice and rice products is presented by value of export, volume of export and direction of export.

4.4.1 Value of Rice Export in Myanmar

As Myanmar is ago-based economy, export of agricultural products is more than 10% in total export. Importance of rice export is shown in Table (4.6).

Table (4.6) Value of Rice Export (In Million US$)

Year	Export	Agricultural Products	Rice and Rice Products			
			US$	% in Total Export	% in Agricultural Products	M.T ('000)
2010-2011	8,861.0	1,228	198	2.24	16.12	536
2015-2016	11,136.9	1,224	102	0.92	8.33	319
2017-2018	14,850.7	1,324	514	3.46	38.82	1,722
2018-2019	17,060.7	1,535	518	3.04	33.75	1,708
2019-2020	17,681.1	1,878	653	3.69	34.77	2,132
2020-2021	15,363.3	1,887	464	3.02	24.59	1,230
2021-2022	8,308.4	1,968	432	5.20	21.95	1,342
2022-2023	16,621.3	2,700	653	3.93	24.19	1,662

Source: CSO, Statistical Year Book, 2023

As can be shown in Table (4.6), export of rice and rice products increased during 2010-11 and 2022-23 period. In 2019-20, the export was the highest. However, it declined in 2020-21 and 2021-22 and again it increased to 1662 metric tons in 2022-23. The export earnings of rice and rice products were the same as volume. As importance of export, it contributed 2% to 5% of total export value, except in 2015-16. Among agricultural products, rice and rice products were the range of 20% to 40%, except in the year 2010-11 and 2011-122. Thus, the export of rice and rice products are significant share in agricultural products of Myanmar.

4.3.2 Direction Rice Export by Region (Metric Ton) (Rice and Broken Rice)

Table (4.7) shows direction of rice export of Myanmar by region during the study period. In 2010-11, main exporting regions of rice were Africa, Rest of Asia, and Europe. In Rest of Asia, Bangladesh was a top import of rice with 161 metric tons. The destination of rice export changed in 2015-16.

Table (4.7) Direction of Rice Export by County (Metric Ton)

Country	2010-11	2015-16	2019-20	2022-23
South East Asia	17	53	456	227
Rest of Asia	175	55	361	531
Middle East	1	5	4	4
America	-	2	2	-
Europe	107	199	586	750
Africa	236	5	704	147
Oceania	-	-	19	3
Total	**536**	**319**	**2132**	**1662**

Source: CSO, 2023

As can be seen in the table, Europe was the top importer, and the Rest of Asia was the second and South East Asia was the third respectively. In Asia, China and Singapore were main importers of rice. In 2019-2020, Africa was main region, the others were Europe, South East Asia, and Rest of Asia. In Asian region, China positioned the first with 352 metric tons, and then Malaysia (144 metric tons), Philippines (140 metric tons) and Indonesia (116 metric tons) respectively. The direction of rice export moved to Europe with 750 metric tons, the maximum amount in total export, and the second was Rest of Asia with 531 metric tons, the next were South Asia and Africa. In Asia, China was the top importer with 392 metric tons, Philippines was the second with 194 metric tons and Bangladesh was the third with 130 metric tons, respectively. Therefore, Myanmar rice export destination seem to be in Asia, Africa and Europe. By country position, China, Philippines and Bangladesh are main importer of rice from Myanmar.

4.5 Perception on Rice Production, Marketing and Export

In this section, key informant interview is conducted to evaluate the current situation of rice production, marketing, exports, future prospects and suggestion to rice sector development based on the view of rice exporters and companies, and MRF members.

4.5.1 Exporters of Rice

Currently, their companies export to China, Bangladesh, Africa, Indonesia and Malaysia. Main varieties of rice are long-grain, short-grain, Emata, Ngasein and broken rice. They collect those rice mainly from Ayeyarwady, Yangon, and Bago regions. Concerning the rice production in terms of quality, quantity and yield, they satisfy the current situation and they want to continue to more export. They have optimistic view on registration to wear housing and setting fair price.

Regarding export policy and income policy, they said that policy should not be changed very frequently and policy should be update with current situation. To promote rice export in the future, they encourage expansion of rice production with high quality.

They think high in input prices, quality seed, labor force and weather conditions are main challenges for increasing rice production. They also said Myanmar has self-sufficiency in rice production.

4.5.2 Traders in Local Market

According to traders, the varieties of rice include not only emata and ngasein, but Pawsan and Ngakywe in domestic market. They collect rice from Ayeyarwady including Myaungmya, Bogalay, and Laputta, Shwebo and Monywa. Main distribution of rice is to Yangon region. They said current rice production is good in volume, quality and yield although rice price is high.

Concerning the policies on rice marketing and export, they assume that it is generally good, but it is better to discuss and cooperate with regional traders and grass root levels such as retailers. They realize it is better to set rice prices (fair prices) which are closed to market prices and it is necessary to control when prices are high. They suggest that some requirement for rice production are technology, machines, secured price, and knowledge.

Main challenges for rice sector development are transparency, coordination and cooperation, and secured price of rice. Some traders said that it is needed to support and

encourage production of high quality and varieties for future production and export of rice. They also suggest that secured price, stability of input prices and reducing transportation costs which are important for self-sufficiency and stable price. Moreover, secured market is important and information on world market should always be collected for export promotion.

They recommended MRF activities in the rice market. However, in some cases, there are weak in information dissemination and a gap between market prices and fair price by MRF, although MRF's idea and objectives are fairly good.

4.5.3 MRF Members

Some members of MRF view that rice production is currently sufficient for domestic consumption and continues to increase in future, so rice export will be promoted.

For increasing rice production, quality seeds, labor, inputs, technology, machines and knowledge are important should be provided systematically by participation and cooperation of all stakeholders.

For activities of MRF, cooperation with transparency among stakeholders in the rice market should be undertaken.

For self-sufficiency and price stability, they suggested that information and knowledge sharing schemes should be conducted and it is better to implement reserve system by the government.

For export promotion, G to G contract agreements, stable export income policy, and searching direct markets with private companies from rice importing countries.

They propose stable policy on export income and they think setting fair price sometimes leads to decrease quality of rice. It is needed to setting a fixed ratio to reserve and the rest should be freely trading and exporting.

For rice sector development, their suggestions are: providing seeds, inputs and credit for farmers; modernizing rice mills, supervising input quality and price stability; providing farm machineries; and stable policy in marketing.

4.5.4 Evaluation on KII Result

According to rice trading companies and exporters, they accepted the current rice production is fairly good condition and self-sufficient, they are willing to promote rice export. Secured market, rice quality and stable policy is important for rice export promotion, they said.

For farmers, quality seeds and inputs, stable input prices, reasonable rice prices are essential and incentives for getting quality rice, and expansion in cultivation and increase in yield. Moreover, sharing and disseminating information and knowledge on production techniques, utilizing modern technology, storage, marketing, prices, regulations.

In marketing and setting regulations, transparency, coordination and cooperation among stakeholders in every level of participants including retailers and farmers should be emphasized and promoted.

They criticized the frequent policy changes in rice market and export by regulating prices and export income policy.

CHAPTER V
CONCLUSION

This chapter presents the findings of changes and development of rice sector including sown area rice, production and export of rice, policy changes in rice sector, and stakeholders' views on current rice policy, rice production and export, future prospects, and their recommendations. It also presents recommendation and suggestions based on the findings.

5.1 Findings

In addition to being essential for Myanmar's population's consumption, rice exports are a significant source of foreign revenue. Myanmar has places that get rain and an irrigation system, making it an ideal place to grow rice. Although rice growing was subsistence farming before to British control, commercialization of rice production began during the colonial period. The British government adopted a laissez-faire policy at this time, allowing private property rights on land and promoting free commerce. With 3 million metric tons of exports, rice production and exports had a sharp upsurge, earning the title "rice bowl of the world.

"Following independence, the administration upheld the export promotion philosophy while promoting food security and sufficiency. Additionally, some domestic retail marketing intervention was made to provide the impoverished with subsidized rice. The output level of the previous colonial era did not surpass 7 million metric tons, despite the fact that the seeded lands remained unchanged.

During the Socialist period, in according to the state control in the economy and nationalization system, State was ultimate owner of land. Except in 1970s, production and export of rice decreased gradually. As Green Revolution effects, utilization of high yield varieties and launching special high yield paddy project increased rice production during 1970s and first half of 1980s. Adoption of market-oriented system with liberalization in rice sector after 1988, rice cultivation was increased. Summer paddy programme,

expansion in irrigation system, opening border trade and allowing private sector participation in rice marketing led to increase in rice cultivation, production and export.

After first and second liberalization of rice sector, especially in marketing in 2003 and 2008, rice production and export increased to some extent. Implementation in contract farming programme, promotion of private involvement such as allowance the establishment of Rice Specialized Companies (RSCs), rice export companies, and reducing rice export tax were significant improvement in rice sector of Myanmar. Nonetheless, there are still issues with rice farmers' low yields and income levels because of issues with unreliable seed quality, incorrect market analysis, unstandardized inputs, a lack of advanced technology and capital investment, and inadequate infrastructure development.

According to views of exporters of rice in Yangon, it can be said that current situation of rice production is sufficient and Myanmar has favorable condition for increasing rice production in coming years. They hope, as a result, export can be promoted as well. They prefer policy changes should be relevant in line with the current situation.

As traders, they view there is a good condition in current volume, quality and yield of rice. According to the situation, setting fair prices is acceptable, but it should be closed to market prices. Changes in policies like export income policy and export policy, should be based on some discussions and cooperation among all traders including retail traders. They think that transparency, coordination and cooperation, and secured price of rice are main challenges, and technology, knowledge and mechanization are essential for increase in rice production and export, and rice sector development. They recommended that MRF activities should be more transparent in future.

It is found that the views of members of MRF that rice production is currently sufficient for domestic consumption and continues to increase in future, so rice export will be promoted. For increasing rice production, quality seeds, labor, inputs, technology, machines and knowledge are important should be provided systematically by participation and cooperation of all stakeholders.

They said that cooperation with transparency among stakeholders in the rice market should be undertaken by MRF. For self-sufficiency and price stability, they suggested that information and knowledge sharing schemes should be conducted and it is better to implement reserve system by the government.

G to G contract agreements, stable export income policy, and searching direct markets with private companies from rice importing countries are important for export promotion. They propose stable policy on export income and they think setting fair price sometimes leads to decrease quality of rice. It is needed to setting a fixed ratio to reserve and the rest should be freely trading and exporting.

Their suggestions for rice sector development are: providing seeds, inputs and credit for farmers; modernizing rice mills, supervising input quality and price stability; providing farm machineries; and stable policy in marketing.

5.2 Suggestions

Based on finding of the study, all successive governments of Myanmar have special attention to food security and self-sufficiency as a rice main staple food. Myanmar has still potential for increasing rice production and export with its favorable climate condition, supporting facilities such as irrigation, strategic geographic location, and potential export market. However, there are some limitations in proper and systematic use of inputs such as fertilizer and pesticides, availability of quality seeds, advanced technologies, utilization of modern farm implements, secured market and competitiveness, and policy changes.

For the future development of rice sector with rice production and export, and improvement in farmers' income and livelihood, disseminating knowledge and education for farmers, selection of variety seeds and quality seeds, supporting technologies and modern machines, providing sufficient farming credits, accessing market information, and regular or stable international market are important and needed to provide by the government. Stable and transparent rules, and regulations, encouraging private sector involvement, promoting public-private partnership will support to increase rice production and export.

Based on KII interview result, in marketing and setting regulations, transparency, coordination and cooperation among stakeholders in every level of participants including retailers and farmers should be emphasized and promoted. Sharing and disseminating information and knowledge on production techniques, utilizing modern technology, storage, marketing, prices, and regulations are to be encouraged. Activities and performance of MRF need to be promoted with transparency and involvement of all stakeholders.

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