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THE PADDY AND RICE INDUSTRY IN MALAYSIA REPORT 2024

PUBLIC SUMMARY

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KEMENTERIAN PERDAGANGAN DALAM NEGERI DAN KOS SARA HIDUP

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THE PADDY AND RICE INDUSTRY IN MALAYSIA

Public Summary 2024

EXECUTIVE **SUMMARY**

The Malaysia Competition Commission (MyCC) is an independent statutory body and is Malaysia's national competition authority (NCA). The MyCC derives its powers, functions, and responsibilities from the Competition Commission Act 2010 [Act 713] to enforce the Competition Act 2010 [Act 712]. Consistent with the functions provided under section 16 of Act 713, the MyCC is mandated to study the paddy and rice industry in Malaysia and assess if there are any competition issues inherent in the industry for possible investigation and enforcement actions.

This Industry Study examines and analyzes the paddy and rice industry in Malaysia by looking at the paddy and rice industry value chain to understand the market structure and identify key players in the markets; government measures including policies, laws, and regulations applicable to the industry; lessons from other countries in how they develop their paddy and rice industries; and potential competition issues inherent and/or arising from the market structure, conduct, and performance of players in the industry.

Rice is a staple food in Malaysia, vital for food security and rural livelihoods. In 2023, Malaysians consumed an average of 76.7 kg of rice per person. The country's 230,119 paddy farmers produced 1.44mn mt of rice from 614,061 ha of land, requiring an additional 1.28mn mt in imports. Malaysia's rice self-sufficiency level declined from 70% in 2017 to 56.2% in 2023.

The paddy and rice industry in Malaysia is shaped by government policies aimed at food security, sustainable production, and farmer welfare. The National Agrofood Policy 2021–2030 (NAP2.0) and National Food Security Policy (DSMN Action Plan) 2021–2025 guide the agricultural sector's development through initiatives focused on productivity, farmer support, innovation, and environmental sustainability.

1.44mn mt
of rice produced from 614,061 ha of land

1.28mn mt
of rice is required in imports

70% to 56.2%
Malaysia's rice self-sufficiency level decline from 2017 to 2023

EXECUTIVE SUMMARY

Malaysia's paddy and rice industry has varying levels of competition and concentration across its value chain. The market structures range from oligopolies in seed production to perfect competition in farming and retail, with market dynamics influenced by player count, market power, and regulations-especially in rice imports and distribution. The market segments are detailed below:

Value Chain	Market Segment	Market Concentration	Market Structure
Input	Seed production	Medium	Oligopoly
Input	Seed supply	Low	Competitive
Input	Fertilizer production	High	Monopoly
Input	Pesticides production	Medium	Competitive
Input	Pesticides distribution	High	Monopoly
Production	Paddy planting	Low	Competitive
Production	Harvesting services	Medium	Oligopoly
Processing	Milling	Medium	Oligopoly
Distribution	Importing	High	Monopoly
Distribution	Wholesaling	High	Oligopoly
Consumption	Retailing	Low	Competitive

Adding to the complexity is the industry supply chain's cost structure, which is interlinked closely across the different levels of the supply chain. Industry costs include operational expenses (seeds, fertilizers, pesticides, transport, machinery, land, labor) and business risks (exchange rates, storage). Government subsidies and incentives throughout the supply chain affect production costs for paddy and rice. These interventions, while sometimes contradictory, aim to maintain rice supply and farmer income.

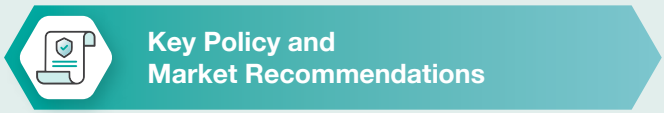
EXECUTIVE SUMMARY

Companies in Malaysia's paddy and rice industry have various ownership structures-from individual and corporate to cooperative. These include private companies and those with common ownership through vertical integration or shared management. While vertical integration can improve efficiency through better coordination and risk sharing, it may raise competition concerns like market foreclosure and price control issues. Similarly, shared management between companies can lead to conflicts of interest and potentially anti-competitive information sharing.

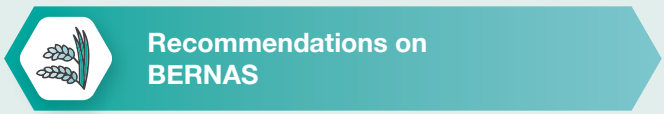
The Industry Study examines how Australia, Indonesia, the Philippines and Vietnam manage their paddy and rice industries. These countries include net exporters (Australia and Vietnam) and net importers (Indonesia and Philippines), with the latter being major rice producers. All four countries implemented policy reforms through strong government action. Like Malaysia, Australia, Indonesia, and the Philippines had monopoly arrangements for rice exports/imports. However, they have since liberalized these systems, either removing monopolies completely or restricting them to emergency reserve management.

The Industry Study identified key challenges in Malaysia's paddy and rice industry including declining yields, seed shortages, unregulated services, price disparities between local and imported rice, rice blending issues, and inconsistent data collection methods that impact policymaking.

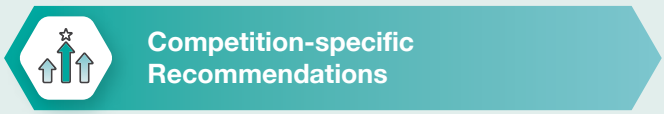
Finally, the Industry Study provided three sets of actionable recommendations:



addressing industry challenges to ensure sector sustainability and efficiency through improved market structures, policy coordination, supply chain optimization and resource allocation.



as the sole importer of rice with significant social obligations, BERNAS plays a crucial role in ensuring national food security. Recommendations address its core duties of maintaining rice reserves and price stability, while managing competition concerns around its market position.



aimed at promoting and strengthening competition within the industry, thus maximizing consumer welfare.

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1. BACKGROUND AND STUDY OBJECTIVES

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Consistent with the functions provided under section 16 of Act 713, the MyCC is mandated to study the paddy and rice industry in Malaysia and assess if there are any competition issues inherent in the industry for possible investigation and enforcement actions.

This document is the Public Report of the Industry Study, which examines and analyzes the paddy and rice industry in Malaysia by looking at the paddy and rice industry value chain to understand the market structure and identify key players in the markets; government measures including policies, laws and regulations applicable to the industry; lessons from other countries in how they develop their paddy and rice industries; and potential competition issues inherent and/or arising from the market structure, conduct and performance of players in the industry. This report also provides recommendations and conclusions aimed at improving industry efficiency and sustainability.

Analyzes paddy and rice industry value chain

Examines lessons from other countries' development of their paddy and rice industries

Aims to understand market structure and identify key players

Identifies potential competition issues related to market structure, conduct, and performance

Reviews government measures: policies, laws, and regulations

Provides recommendations and conclusions for improving industry efficiency and sustainability

2. METHODOLOGY AND LITERATURE REVIEW 09

2. METHODOLOGY AND LITERATURE REVIEW

2.1. Methodology

This Industry Study aimed to understand the current situation of the industry, highlight key challenges, and assess how effective current policies and regulations are. To do this, we used a mix of interviews, field observations, and data analysis. This approach provides a detailed look at market trends and competition issues, combining hard data with practical insights – see Table 1.

Table 1: Research methodology for the Industry Study

Key Activities	Details
Data Collection	
Primary data	• **Interviews** • **Field Observations** • **Company Data**
Secondary data	• **Industry Studies and Reports** • **Statistical Data** • **Academic literature**
Data analysis	
Quantitative analysis	• Examined market share, concentration (using tools like the Herfindahl-Hirschman Index and concentration ratios), and pricing to assess company profitability and industry performance.
Qualitative analysis	• Identified common themes from interviews and observations, focusing on challenges and stakeholder views on competition.
Calibration	• Cross-checked data from different sources and consulted experts for feedback to ensure accurate results and solid recommendations.

Source: MyCC

2.1.1. Primary and secondary data collection

The activities to collect primary data and information were conducted in Johor, Kedah, Penang, Perlis, Selangor, Kuala Lumpur and Putrajaya. For this study, MyCC focused on Kedah and Perlis as the main regions for competition analysis, as these states form the

largest rice-producing area in Malaysia. In 2023, Kedah and Perlis together accounted for 272,725 ha of planted paddy fields, which makes up 44.4% of the country's total paddy area. These two states produced 991,343mt of paddy, or 45.6% of Malaysia's total paddy production for that year. Kedah remains the top rice producer in the country, although its production has been gradually decreasing over recent years—from 914,200 mt in 2020 to 834,901 mt in 2022, and down further to 747,193 mt in 2023[1]. Figure 1 shows the paddy fields in Kedah and Selangor.

44.4%
of Malaysia's total paddy area is made up by Kedah and Perlis in 2023

45.6%
of Malaysia's total paddy production is made up by Kedah and Perlis in 2023

Figure 1: Paddy fields in Kedah (left) and Selangor (right)

Source: MyCC

[1] Table 2.1.2 in MAFS (2024), Malaysia Agrofood in Figures 2023.

The MyCC team also visited Sekinchan, Selangor, to observe and learn from successful practices in paddy and rice production. Sekinchan is known for achieving the highest rice yields in Malaysia, producing between 9,000 to 12,000kg/ha, far above the national average of 3,542kg/ha in 2023.[2]

9,000-12,000kg/ha

Sekinchan achieves the highest rice yields in Malaysia

Besides, MyCC analysis also involves the followings:

- The structure-conduct-performance (S-C-P) framework
- Value chain analysis
- Market concentration analysis

2.2. Literature Review

This Industry Study builds on previous research on the paddy and rice industry in Malaysia, using these findings as a basis for analysing current economic and governance challenges.

While these previous studies cover many of the issues in the paddy and rice industry, some have also raised specific competition concerns that need attention (see Table 2):

[2] Table 2.1.1 in MAFS (2024), Malaysia Agrofood in Figures 2023. The figure for Sekinchan varies from 9,000kg/ha to 12,000kg/ha. Murray Hunter in MySinchew (2024), "It's time for real rice reform". Also, Business Today (2023), "Sekinchan, Highest Rice Yield Producing Area in The Country".

Table 2: Summary of research on the paddy and rice industry (non-exhaustive)

Study	Highlights
2019 IDEAS Report	All of the reports highlight concerns over the impact of BERNAS being a designated import monopoly on competition across the industry value chain. The 2019 IDEAS Report observes that underlying intention for BERNAS establishment was developmental rather than predatory, their import monopoly and procurement strengthening strategies (JVs with traders and millers) have reduced competition.[3]
2019 KRI Report	The 2019 KRI Report recommends for the MyCC to undertake a market review on the industry to determine if the dominant players (with BERNAS being highlighted as an example) in the market are abusing their dominant positions.[4]
2021 IDEAS Report	The 2021 IDEAS Report recommends that the MyCC, together with other agencies, regulates, and monitors the market in terms of market practices, behaviour, and competition to create a fair and healthy competition and equal market opportunities at all market levels.[5]
2024 ISEAS-Yusof Ishak Institute	The 2024 ISEAS-Yusof Ishak Institute book chapter observes that protective policies have led to limited deregulation, causing market distortions that affect competition. It highlighted that paddy production, which has low returns and a fragmented market, is quite different from the more concentrated rice processing and distribution sectors. These sectors benefit from extensive partnerships between importers, millers, and wholesalers, creating barriers for new players who are discouraged from entering both the production and distribution markets.

Source: MyCC analysis

Reports on competition issues are also prepared at regional and international levels. While few focus specifically on competition in the paddy and rice markets, many explore competition issues across the wider agriculture and food sectors (see Table 3):

[3] Pages 38 to 40, Fatimah Mohamed Arshad, Bustanul Arifin and Yeong Sheng Tey (2019), *Effectiveness of State Trading Enterprises in Achieving Food Security: Case Studies from BERNAS in Malaysia and BULOG in Indonesia.*
[4] Page 163, Sarena Che Omar, Ashraf Shaharudin and Siti Aiysyah Tumin (2019), *The Status of the Paddy and Rice Industry in Malaysia.*
[5] Page 44, Fatimah Mohamed Arshad, Kusairi Mohd. Noh and Emmy Farha Alias (2021), *Paddy and Rice Sector Policy Roadmap: Towards Equity and Sustainability.*

Table 3: Summary of key research on competition in the agriculture and food sectors

Study	Highlights
2011 OECD Report	The OECD report notes that primary goods like rice often face price swings. While high prices alone do not prove a lack of competition, they may prompt governments to investigate. The OECD advises against heavy subsidies or price controls, which can distort competition, and instead suggests that governments monitor prices and study market dynamics.[6]
2018 ICC Market Study	In 2018, the Indonesia Competition Commission analyzed competition in six food markets, including rice. They found that while farmers face fragmented markets, later stages like milling, wholesaling, and retail are dominated by a few players. This long supply chain increases consumer prices. The study recommends improving transparency in market pricing to reduce costs.[7]
2019 PCC Report	This 2019 report by the Philippine Competition Commission (PCC) examines the rice industry's value chain, noting that laws and regulations impact competition. While no single entity dominates the market, control over rice imports by the National Food Authority (NFA) creates higher prices and limits competition. The report calls for more monitoring of potential anti-competitive practices in milling and wholesale.[8]
2020 Asia Foundation Report	This report details the Philippines' rice sector reform in 2019, which opened the market to imports and lowered consumer but challenged rice farmers. The reform revealed competition issues from monopolies and regulations, highlighting needs for transparency and farmer support.[9]
2021 CIPS Policy Paper	This paper examines BULOG's role in Indonesia's rice supply. BULOG competes with private companies but controls medium-quality rice imports. BULOG also focus on food security and that the government introduce more competition in rice imports to improve quality and pricing.[10]

Source: MyCC analysis

[6] OECD (2011), *Competition and Commodity Price Volatility, DAF/COMP/GF(2012)11.*
[7] Indonesia Competition Commission (ICC) (2018), *Market Study on Food Sector in Indonesia.*
[8] Roehlano M Briones (2019), *Competition in the Rice Industry: An Issues Paper,* Philippine Institute for Development Studies and Philippine Competition Commission.
[9] V. Bruce J. Tolentino and Beulah Maria de la Pena (2020), *Deregulation and Tariffication at Last: The Saga of Rice Sector Reform in the Philippines,* The Asia Foundation.
[10] Galuh Octania (2021), *The Government's Role in the Indonesian Rice Supply Chain,* Center for Indonesian Policy Studies.

3. THE MALAYSIAN PADDY AND RICE INDUSTRY IN BRIEF 15

3. THE MALAYSIAN PADDY AND RICE INDUSTRY IN BRIEF

This section gives a snapshot of key economic indicators including production, market size, and employment data, along with relevant government policies like subsidies and price controls. The analysis also examines global trends, trade flows, and external factors affecting Malaysia's position in the international rice market to understand industry dynamics.

3.1. Rice is a staple food in Malaysia

In Malaysia, rice is a critical staple food and plays a significant role in the country's food security and rural economy, serving as both a dietary staple and source of rural livelihoods. In 2023, the average Malaysian consumed approximately 76.7 kg of rice.[11] That year, 230,119 paddy farmers cultivated 614,061ha of land, producing 2.18mn mt of paddy, which yielded 1.44mn mt of rice.[12]

In 2023, Malaysia imported 1.28mn mt of rice to meet national demand.[13] This placed Malaysia's rice self-sufficiency level (SSL) at 56.2%—a decline from 68% in 2018[14] and below the 2023 target of 74.2% set by the National Agrofood Policy, 2021 – 2030 (NAP2.0)[15]. See Table 4 for the 2018 – 2023 statistics.

Table 4: Statistics for the paddy and rice sub-sector, 2018 – 2023

Indicators	2018	2019	2020	2021	2022	2023E
Paddy parcel area (ha)	284,047	282,201	281,623	283,730	280,208	278,454
Paddy planted area (ha)	699,980	672,084	644,908	647,936	637,955	614,061
Paddy production (mn mt)	2.64	2.35	2.36	2.44	2.28	2.18
Paddy production value (RMmn)	2.95	2.64	2.67	2.79	2.60	2.53
Rice production (mn mt)	1.65	1.47	1.57	1.64	1.51	1.44
Paddy average yield (kg/ha)	3,770	3,501	3,654	3,768	3,577	3,542

[11] Table 2.1.1 in MAFS (2024), Malaysia Agrofood in Figures 2023.
[12] Table 2.1.1 in MAFS (2024), Malaysia Agrofood in Figures 2023.
[13] Table 2.1.1 in MAFS (2024), Malaysia Agrofood in Figures 2023.
[14] Table 5.2 in MAFS (2024), Malaysia Agrofood in Figures 2023.
[15] Figure 5-31 in MAFS (2020), NAP2.0.

Indicators	2018	2019	2020	2021	2022	2023E
Number of paddy farmers	348,266	300,641	262,319	243,376	232,744	230,119
SSL (%)	68.0	62.4	62.1	60.9	57.9	56.2
Rice consumption per capita (kg/person)	74.9	72.7	78.0	82.5	80.0	76.7
Rice import (mn mt)	0.78	0.89	1.11	1.06	1.11	1.28

Source: MAFS

Table 4 highlights a steady declining trend in the domestic paddy and rice production from 2018 onwards.

3.2. Current paddy and rice industry-related policies

Government policies play a major role in Malaysia's paddy and rice industry, focusing on food security, sustainable farming, and supporting farmers' livelihoods. The National Agrofood Policy 2021 – 2030 (NAP2.0) and the National Food Security Policy (DSMN Action Plan) 2021 – 2025 set out a strategy for agriculture, including paddy and rice production.

3.2.1. National Agrofood Policy, 2021 – 2030 (NAP2.0)

The NAP2.0, which came into effect in September 2022, continues the work done in the National Agro-Food Policy, 2011 – 2020 (NAP4). This policy aims to safeguard food security through the transformation of the national food system. The main transformation interventions concern the following:

- Modernization and development of the agri-food sector to be more sustainable, resilient, and highly technology driven.
- Improving the wellbeing of the people through the attention paid to food security and nutrition.
- Ensuring environmental sustainability.

The NAP 2.0 targets the paddy and rice sub-sector as one of the main sub-sectors for strategic development. The policy document provides the key outlook and projected statistics for the sub-sector for the period 2021 to 2030 – see Table 5. It aims to boost Malaysia's SSL for rice by reducing the gap between local production and consumption.

Table 5: Projected statistics for the paddy and rice sub-sector, 2021 – 2030

Indicators	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
GDP contribution (RMbn)	2.47	2.53	2.56	2.62	2.67	2.71	2.76	2.81	2.86	2.91
Number of farmers ('000)	189	188	187	185	184	183	181	180	178	177
Paddy production (mn mt)	2.98	3.04	3.10	3.15	3.21	3.29	3.37	3.45	3.53	3.62
Rice production (mn mt)	1.92	1.96	1.99	2.03	2.07	2.12	2.17	2.22	2.28	2.33
Rice consumption (mn mt)	2.62	2.65	2.69	2.72	2.76	2.79	2.82	2.85	2.88	2.91
Rice SSL (%)	73.4	73.8	74.2	74.6	75.0	76.0	77.0	78.0	79.0	80.0
Rice imports (RMbn)	1.51	1.49	1.48	1.42	1.35	1.39	1.36	1.31	1.28	1.25

Source: NAP 2.0 and MAFS

3.2.2. National Food Security Policy (DSMN Action Plan) 2021 – 2025

MAFS also developed the DSMN Action Plan 2021–2025, which strengthens national food security by addressing issues and challenges along the food supply chain, ranging from agricultural inputs to food waste. It covers 5 core strategies, 15 strategies, and 96 initiatives will ensure the sustainability of the country's food supply at all times, especially in the face of unexpected situations.

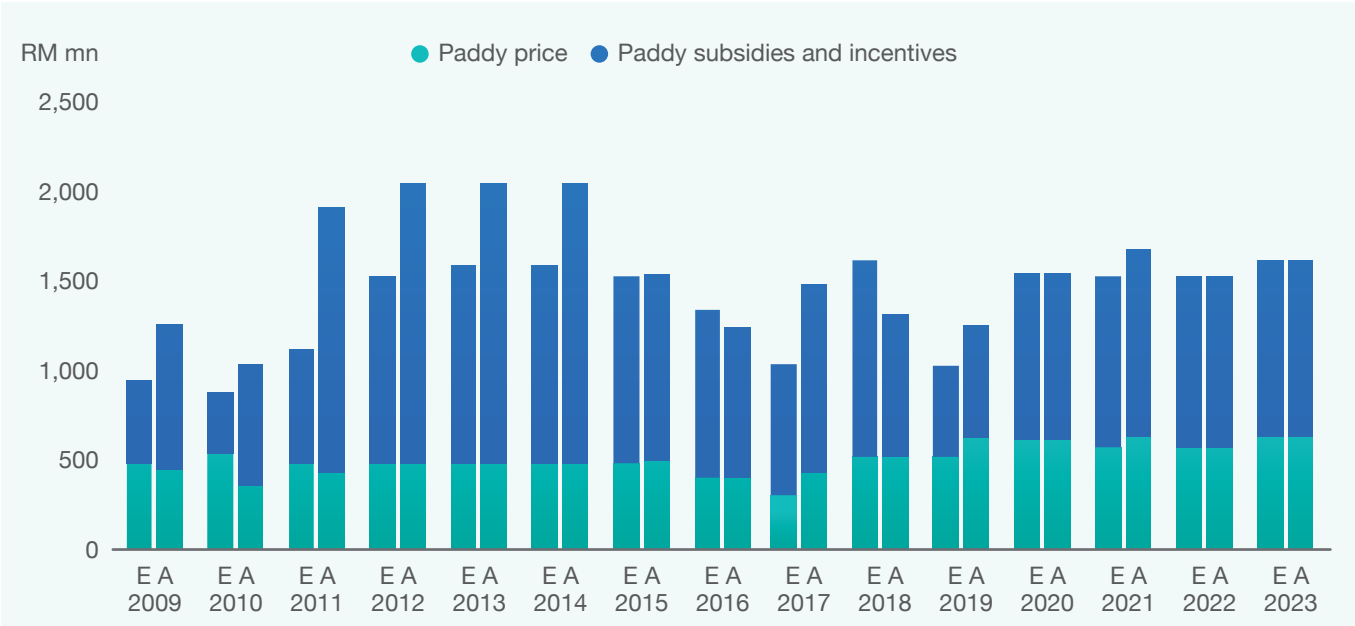
Under Strategy 2: Strengthening the food system infrastructure, the Action Plan includes these paddy and rice industry activities:

- Develop a post-harvest activity centre.
- Increase the paddy production area.

3.3. The paddy and rice industry in Malaysia is highly subsidized

The paddy and rice industry in Malaysia is one of the most heavily subsidized industries in the country, reflecting its critical importance to the national food security and rural livelihoods – see Figure 2. However, the extensive government intervention has also shaped the structure and dynamics of the market, making it one of the most protected industries in Malaysia.

Figure 2: Paddy price subsidy and paddy subsidies and incentives – estimated (E) and actual (A), 2009 – 2023



Source: MOF and MyCC' analysis

Over the years, the government has implemented a wide range of subsidies and support programmes, which are designed to ensure stable rice production, maintain affordable prices for consumers and safeguard the incomes of smallholder farmers. These include, among others:

- Paddy price subsidy
- Fertilizer subsidy
- Paddy production incentive
- Certified paddy seeds (BPS) subsidy
- Hill rice fertilizer subsidy
- Rice price subsidy

The details of the incentives and subsidies given to farmers are highlighted in Table 6.

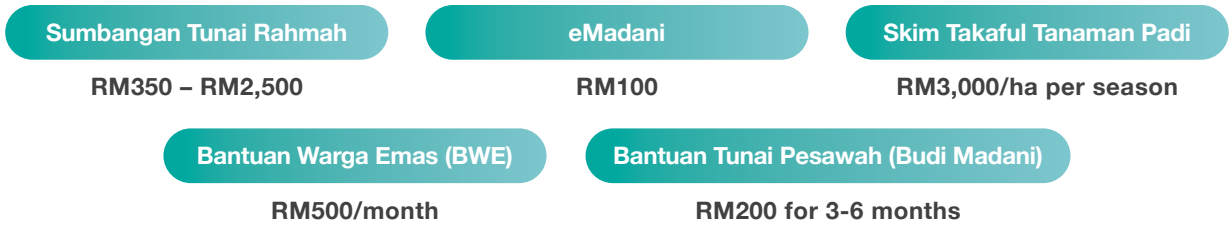
Table 6: Incentives and subsidies to farmers, 2023 – 2024

Scheme	Type	Amount	Government allocation (2024)	Details
Certified paddy seeds incentive (IBPS)	Incentive	RM148/ha	RM90.6mn	Incentive payment to seed producers to lower the cost of seeds for farmers. RM20.60/20kg at the selling price of RM54/20kg.
Federal government paddy fertilizer scheme (SBPKP)	Subsidy	RM938/ha	RM576.2mn	Subsidy received by farmers to lower their costs of production. The farmers will get the subsidy in the form of fertilizers.
Paddy production incentive (SIPP)	Incentive	RM954/ha	RM585.8mn	Incentive payments to farmers to lower their costs of production - land ploughing (RM160/ha), harvesting (RM50/ha), fertilizers (RM126/ha), additional fertilizers (NP)K (RM348/ha), pesticides (RM200/ha), lime (kapur) RM970/ha (every three years).
Paddy price subsidy scheme (SSHP)	Subsidy	RM500/mt	RM875.0mn	Subsidy payment to paddy farmers for paddy sold to licensed millers and paddy buyers.
Total for Peninsular Malaysia		**RM3,465/ha[16]**	**RM2,128bn**	**Equivalent to 1.503mt/ha**
Hill paddy fertilizer and pesticide scheme (SBRPB) - Sabah and Sarawak only	Subsidy	RM232/mt[17]	RM59.4mn	Subsidy received by farmers to lower their costs of production.
Total including Sabah and Sarawak		**RM4,081/ha**	**RM2,187bn**	**Equivalent to 1.544mt/ha**

Source: MAFS and MyCC analysis

[16] Estimation based on 2024 budget allocation and 2023 paddy production figures and land areas.
[17] Estimation based on 2024 budget allocation and 2023 paddy production figures and land areas.

In addition to these direct incentives and subsidies, farmers are also eligible to receive indirect cash transfers, which include, among others:



3.4. International rice market affects Malaysia's domestic market

Malaysia imports rice to supplement its domestic production. Malaysia's reliance on rice imports makes it vulnerable to disruptions in international rice markets.

The June 2024 Food Outlook, a biannual report by the UN FAO, observed that the international rice prices remain high as key exporting countries had imposed export curbs and large importing countries in Asia continued their aggressive purchases to replenish their stockpiles. Rice production is forecast to hit a record high in 2024/2025 to reach 534.9mn mt (milled basis) – see Table 7.

Production growth is driven by expanded farming areas and better yields, supported by high paddy prices and reduced El Nino effects. Global rice trade, representing 10% of production, is projected at 52.9mn mt (2022/2023), dropping to 51.4mn mt (2023/2024), then rising to 53.4mn mt (2024/2025). Weak currencies, high prices, and increased transport costs push the 2023/2024 trade to a four-year low.

Table 7: World Rice Statistics

Indicators		2020/21	2021/22	2022/23	2023/24F	2024/25F
Paddy production	mn mt	778.72	791.34	790.45	797.39	804.56
Rice production	mn mt	518.12	526.28	525.55	530.14	534.91
Domestic utilization	mn mt	510.21	524.17	525.34	525.00	531.36
Food use	mn mt	415.86	420.27	422.79	426.55	432.49
Imports	mn mt	52.05	56.41	52.94	51.43	53.36

Indicators		2020/21	2021/22	2022/23	2023/24F	2024/25F
Exports	mn mt	52.12	56.36	52.93	51.45	53.36
Per capita consumption	kg/yr	53.00	53.10	53.00	53.00	53.30
Area harvested	mn ha	166.10	166.84	167.75	169.27	170.07
Yield	t/ha	4.69	4.74	4.71	4.71	4.73

Source: UN FAO-AMIS

3.5. Association of Southeast Asian Nations (ASEAN) countries are leading global rice producers and traders

ASEAN countries are leading rice producers and traders in the global rice market – see Table 8 and Table 9:

- **Top producers:** ASEAN countries dominate global rice production, with six nations (Indonesia, Vietnam, Thailand, Myanmar, Philippines, Cambodia) producing about 23% of the world's rice.
- **Import needs:** While these ASEAN countries produce large amounts of rice, they do not all export more than they import. For instance, similar to Malaysia (the 11th largest rice importer globally), the Philippines and Indonesia rely on imports to meet their rice reserve needs, as domestic production is not enough to meet their consumption demands. In 2023/2024, Indonesia, Vietnam, the Philippines, Thailand, and Myanmar ranked fourth to eighth in global rice consumption.
- **Net exporters:** Thailand, Vietnam, Cambodia, and Myanmar maintain export surpluses. Thailand leads as the second-largest global exporter, with high demand for its fragrant rice. Vietnam, the third-largest exporter, faces challenges due to lower domestic yields, reduced demand from China and rising competition from other exporters. Cambodia's exports remain strong due to demand from Vietnam for both domestic use and re-export. Myanmar, however, exports less than its potential of 2.1mn mt, mainly due to rules requiring the conversion of export earnings into foreign currency.

Table 8: World Rice Production by Leading Producers (in mn mt), 2022 – 2025

Rank	Country	2020/2023	2023/2024	2024/2025F
1	China (mainland)	142.8	141.5	142.3
2	India	135.8	135.3	136.7
3	Bangladesh	38.5	39.0	39.5
4	Indonesia	35.1	34.6	33.7
5	Vietnam	27.7	28.2	27.8
6	Thailand	22.3	21.6	21.8
7	Myanmar	16.8	17.1	16.7
8	Philippines	13.1	13.0	13.3
9	Pakistan	7.3	9.9	10.1
10	Brazil	7.3	6.8	7.0
11	Japan	7.3	7.2	7.2
12	Cambodia	7.0	7.7	7.9
13	The US	5.1	6.9	7.0
14	Nigeria	5.2	5.3	5.3
15	Egypt	3.6	4.0	4.0
	World	**525.6**	**530.1**	**534.9**
	ASEAN-6	**122.0**	**122.2**	**121.2**

Source: UN FAO

Table 9: Rice Export, Import and Consumption by Countries in 2023/2024 (in '000 mt)

Rank	Export	2023/2024	Import	2023/2024	Consumption	2023/2024
1	India	16,500	**Philippines**	**3,800**	China	149,920
2	**Thailand**	**8,200**	China	2,800	India	118,000
3	**Vietnam**	**7,600**	**Indonesia**	**2,500**	Bangladesh	37,600
4	Pakistan	5,000	Nigeria	2,100	**Indonesia**	**35,800**
5	The US	2,675	Iraq	2,000	**Vietnam**	**21,200**
6	China	2,200	Cote d'Ivoire	1,400	**Philippines**	**16,400**
7	**Cambodia**	**1,950**	Senegal	1,400	**Thailand**	**12,500**
8	**Myanmar**	**1,800**	**Vietnam**	**1,400**	**Myanmar**	**10,250**
9	Brazil	1,300	Saudi Arabia	1,400	Japan	8,060
10	Uruguay	950	The US	1,325	Nigeria	7,700

Source: UN FAO and US Department of Agriculture (US DOA)

3.6. Medium-term outlook for international rice markets

According to the OECD-FAO Agricultural Outlook 2024 – 2033, global rice production is expected to increase by 60mn mt, reaching 587mn mt by 2033[18], mainly driven by yield improvements from Asian producers, particularly India, Vietnam, the Philippines, and Thailand. India is projected to become the largest producer by then.

Rice exports are expected to grow 2.3% annually, reaching 66mn mt by 2033[19], with increased exports from Pakistan, Vietnam, Thailand, Cambodia, and Myanmar, while India is likely to continue its export restrictions.

While nominal rice prices are projected to rise slightly, inflation-adjusted prices are expected to decline by 2033[20]. Rising demand, particularly in Africa, is also expected to influence prices. Global per capita rice consumption will likely increase to 52kg annually, with Asia leading this growth.[21]

[18] Page 135, OECD and FAO (2024), *OECD-FAO Agricultural Outlook 2024 – 2033.*
[19] Page 138, OECD and FAO (2024), *OECD-FAO Agricultural Outlook 2024 – 2033.*
[20] Page 140, OECD and FAO (2024), *OECD-FAO Agricultural Outlook 2024 – 2033.*
[21] Page 133, OECD and FAO (2024), *OECD-FAO Agricultural Outlook 2024 – 2033.*

3.7. Latest international rice prices' trend

Global rice prices have recently dropped to their lowest levels since the 2008 supply shock. This decline follows India's decision to resume exports of non-basmati white rice due to rising national stocks and the upcoming harvest. The Food Corporation of India's rice reserves have increased significantly, reaching 32.3mn mt, up 38.6%YoY.[22] India has set a minimum export price of USD490/mt for non-basmati white rice and removed the export tax. As of October 2024, Thai white rice (5% broken) is priced at USD 509/mt (see Figure 3 for historical trends).[23]

Figure 3: Pricing trend of Thai 5% broken milled white rice (USD/mt, not seasonally adjusted)

Source: IMF and Thai Rice Exporters Association

[22] Mayank Bhardwaj, Sethuraman N R and Rajendra Jadhav (2024), "India allows non-basmati white rice exports in boost for global supplies", Reuters.
[23] Thai Rice Exporters Association (2024), http://www.thairiceexporters.or.th/price_eng.html.

3.8. Ongoing risks in the global rice market

The international rice market faces ongoing volatility despite October 2024's price drop. Export bans, climate impacts, and geopolitical tensions trigger price spikes and shortages, while major exporters India and Thailand frequently adjust their policies. Rising temperatures and extreme weather reduce yields across Asia, trade restrictions disrupt supplies, changing consumer preferences shift demand patterns, stagnating productivity strains major producers, and weak infrastructure coupled with potential disruptions like COVID-19 challenge supply chains.

3.9. Competition issues in the international rice markets

Long-term risks in global rice markets affect competition, especially market structure, pricing, and access to resources in several ways:

India, Pakistan, Thailand, Vietnam, and China control global rice markets. Climate events and trade restrictions strengthen their market power.

Speculative trading creates price volatility, disadvantaging smaller producers and importers.

Large firms dominate imports in dependent countries, while state procurement limits market competition.

Large farms outpace smaller ones through better access to farming technology.

Digital platforms reshape distribution but risk creating monopolies that hurt smaller traders.

4. VALUE CHAIN AND MARKET STRUCTURE 28

4. VALUE CHAIN AND MARKET STRUCTURE

Table 10 provides a summary of the paddy and rice industry's value chain, including its segments, key activities, statistics, and relevant industry stakeholders. It also outlines the key legislations regulating the industry.

Table 10: Summary of the paddy and rice industry value chain in Malaysia

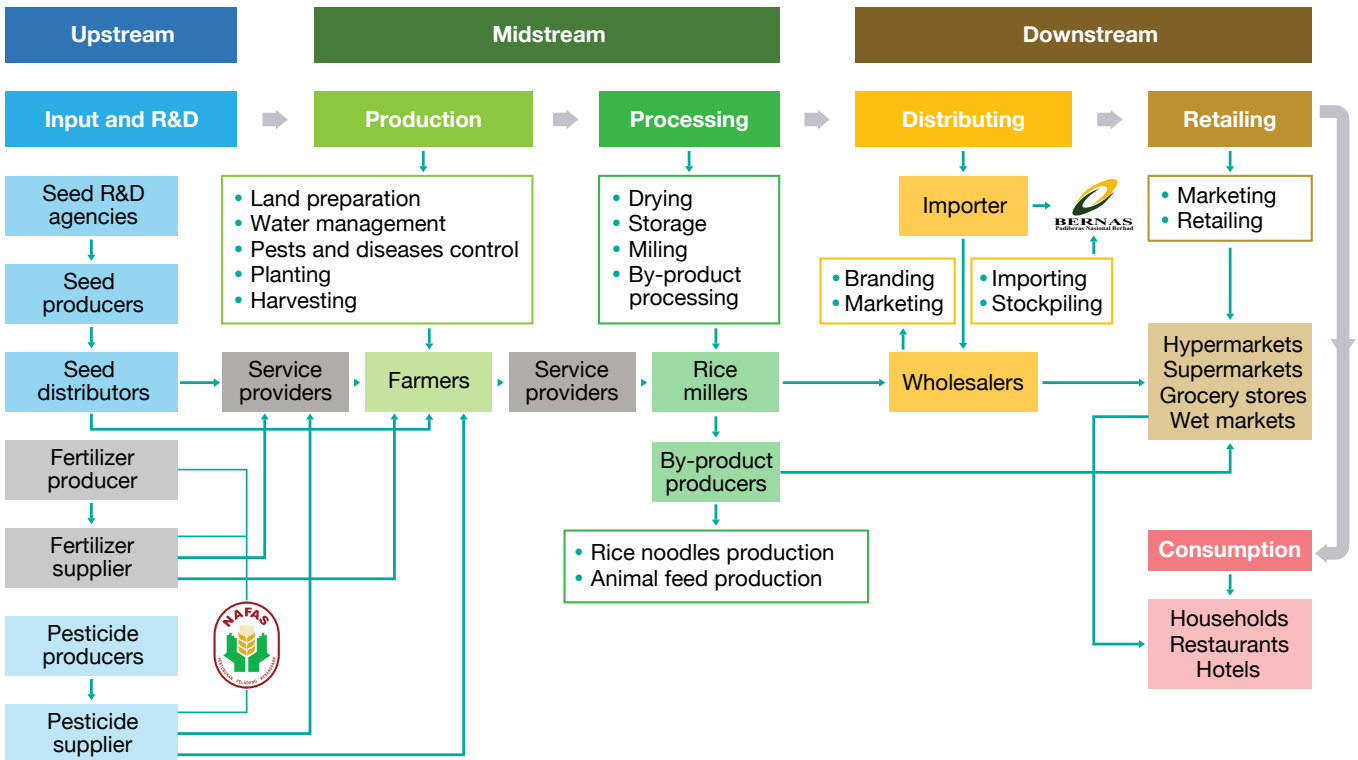
Industry	Paddy			Rice	
Value chain	Upstream	Midstream		Downstream	
Segment	Input and R&D	Production	Processing	Distribution	Consumption
Activities	Rice varieties Seed quality Land preparation Water management Soil fertility Weed management Pests and diseases control Machinery and equipment	Planting Harvesting	Drying Storage Milling and processing	Importing Stockpiling Wholesaling	Marketing Retailing
Actors	Seed producers Seed distributors Fertilizer suppliers Pesticide suppliers	Farmers	Millers Service providers	Importer Service providers Wholesalers	Retailers Consumers
Number of actors	Seed producers: 12 Seed distributors: 517	Farmers: 232,744	Licensed millers: 176 Licensed paddy buyers: 185	Importer: 1 Wholesalers: 1,455	Retailers: 37,861 Consumers: 34mn

Industry	Paddy		Rice		
Value chain	**Upstream**	**Midstream**		**Downstream**	
Segment	**Input and R&D**	**Production**	**Processing**	**Distribution**	**Consumption**
Key statistics		Planted area: 637,955 ha Production: 2.28mn mt Production value: RM2,597.93mn	Rice production: 1.58mn mt SSL: 62.6%	Imported rice: 1.28mn mt	Consumption: 77.0kg/year
Key ministries (non-exhaustive)	MAFS, PETRA, MNRES, MOF, MITI	MAFS, MOF, MOH, MOT, PETRA	MAFS, MOF	KPDN, MITI, MOT, MOF	KPDN, MOH
Other key stakeholders	DOA, JPS, MARDI, LPP, NAFAS, PPN, PPK, MADA, KADA, IADA	MARDI, NAFAS	PPK, Service providers		
Legislation	Plant Quarantine Act 1976 [Act 167] Protection of New Plant Varieties Act 2004 [Act 634]	Irrigation Areas Act 1953 [Act 386] Padi Cultivators (Control of Rent and Security of Tenure) Act 1967 [Act 528] Road Transport Act 1987 [Act 333]	Factories and Machinery Act 1967 (Revised 1974) [Act 139]	Lembaga Padi dan Beras Negara (Successor Company) Act 1994 [Act 523]	Consumer Protection Act 1999 [Act 599]
	Pesticides Act 1974 [Act 149]				
	Control of Padi and Rice Act 1994 [Act 522]				
	Environmental Quality Act 1974 [Act 127]				
	Competition Act 2010 [Act 712] **Competition Commission Act 2010 [Act 713]**				

Source: MyCC – adapted from the KRI Report (2019) and the Malaysia Agrofood in Figures 2023 and MAFS (2024).

Earlier, Table 10 highlights that the market structure across the paddy and rice industry value chain in Malaysia is characterized by different levels of competition and concentration at various stages of production and distribution. Figure 4 highlights the flow of the paddy and rice industry value chain.

Figure 4: The paddy and rice industry value chain



Source: MAFS, BERNAS, NAFAS, and MyCC' analysis

This section outlines the market structures at each stage of the value chain, from seed production and distribution to consumer demand. It highlights key trends, market dynamics, and the role of service providers, who, despite being unregulated, are crucial to the supply chain.

4.1. Governance structure of the paddy and rice industry in Malaysia

Good governance is essential for the stability and sustainability of Malaysia's paddy and rice industry. It includes the rules, institutions, and regulations that manage the entire value chain, from production to distribution, to ensure the industry runs efficiently and supports national food policies. Governance covers the role of government and key laws that balance market forces with public interests, aiming to meet local demand, protect farmers' incomes, and address economic, as well as environmental challenges.

4.1.1. Relevant government Ministries and agencies

The Paddy Industry Development Division (PIDD) in MAFS is responsible for the development of the paddy and rice industry in Malaysia, setting policies related to the industry, monitoring and enforcing regulations under the Control of Padi and Rice Act 1994 [Act 522], managing subsidies and incentives for farmers (including SSHP, SBPKP, SIPP, IBPS, and SBRPB), coordinating programmes and initiatives to increase national yields, and establishing regional cooperation to ensure food supply security. Additionally, MAFS's other departments and agencies also play important roles in the industry, as shown in Table 11.

Table 11: Government Ministries and agencies and their roles and functions

Ministries or agencies	Roles and Functions
Ministries	
Ministry of Agriculture and Food Security (MAFS)	Planning and formulating policies, strategies, and laws to regulate the paddy and rice industry.
Ministry of Domestic Trade and Costs of Living (KPDN)	Planning and formulating policies, strategies, and reviewing matters related to the development of domestic trade. The Ministry is responsible for monitoring the prices and supply of rice in the market.
Ministry of Energy Transition and Water Transformation (PETRA)	Ensuring water sustainability and security through policies and governance strengthening via JPS.

Ministries or agencies	Roles and Functions
Ministry of Investment, Trade and Industry (MITI)	Planning and formulating policies and strategies for investment, industrial development, and international trade. The Ministry is responsible for controlling rice importation into the country.
Agencies	
Department of Agriculture (DOA)	Providing extension services and technology transfer based on good agricultural practices to boost production, increase income, and ensure the sufficient production of high-quality crops.
Department of Irrigation and Drainage (JPS)	Managing and maintaining irrigation infrastructure and drainage systems to ensure consistent and reliable water supply for paddy fields.
Paddy Industry Development Division (PIDD)	Setting the national SSL target at 80% by 2030, in line with the goals outlined in the NAP2.0. PIDD also regulates the paddy and rice industry through its Paddy Industry Section (SIP) and the Paddy and Rice Regulatory Section (SKPB).
Paddy and Rice Regulatory Section (SKPB)	Regulating the paddy and rice industry and responsible for issuing licences to industry players.
Malaysian Agricultural Research and Development Institute (MARDI)	Conducting scientific and technical research to improve paddy yields and rice quality through developing new varieties, production systems, pest management, and post-harvest technologies.
Muda Agricultural Development Authority (MADA), Kemubu Agricultural Development Authority (KADA), Integrated Agricultural Development Area (IADA)	MADA operates and maintains the Muda Irrigation Scheme, implementing agricultural development programmes to improve the livelihoods of farming facilities in the Muda region. KADA and IADA promote agricultural and socioeconomic development. KADA only covers Kemubu area of Kelantan while IADA covers certain areas in Penang, Perak, Selangor, Pahang, Terengganu, Kelantan, Sabah, and Sarawak.
Farmers' Organization Authority (LPP)	Organizing and supporting farmers by coordinating resources like seeds, fertilizers and machinery through NAFAS and PPK.
National Farmers' Association (NAFAS)	Building a farmers' organization movement based on the effective participation of farmers as a business and investment entity, particularly in the agricultural sector.
Area Farmers' Organization (PPK)	Assisting farmers by overseeing the distribution of government aid, such as paddy seeds and pesticides. Purchasing paddy from farmers and distributing rice to wholesalers. Providing services in paddy fields, particularly by offering financial loan assistance to farmers.

Source: various government Ministries and agencies' websites

4.1.2. Relevant government Ministries and agencies

The Control of Padi and Rice Act 1994 [Act 522] replaced the Lembaga Padi dan Beras Negara Act 1971 [Act 47]. Act 522 governs the paddy and rice industry in Malaysia, regulating production, processing, distribution, and trade to support national food security and stabilize rice supply and prices. This law also covers:

4.1.3. Lembaga Padi dan Beras Negara (Successor Company) Act 1994 [Act 523]

On 7 July 1994, the Lembaga Padi dan Beras Negara (LPN) was corporatised to become Syarikat Padiberas Nasional Berhad, later renamed Padiberas Nasional Berhad on 30 March 1995. While regulatory functions remained with the government (under PIDD in MAFS), LPN's commercial and social roles, including assets and liabilities, were transferred to BERNAS through a Vesting Order 1994 under the Lembaga Padi dan Beras Negara (Successor Company) Act 1994 [Act 523]. BERNAS was then privatized through an agreement with Budaya Generasi (M) Sdn Bhd (BGSB) and continued managing LPN's prior obligations (see Figure 5).[24] The government granted BERNAS the right to continue importing rice into Malaysia for 15 years from 12 January 1996, a right renewed through concession agreements.

[24] BERNAS (2000), Annual Report 1999.

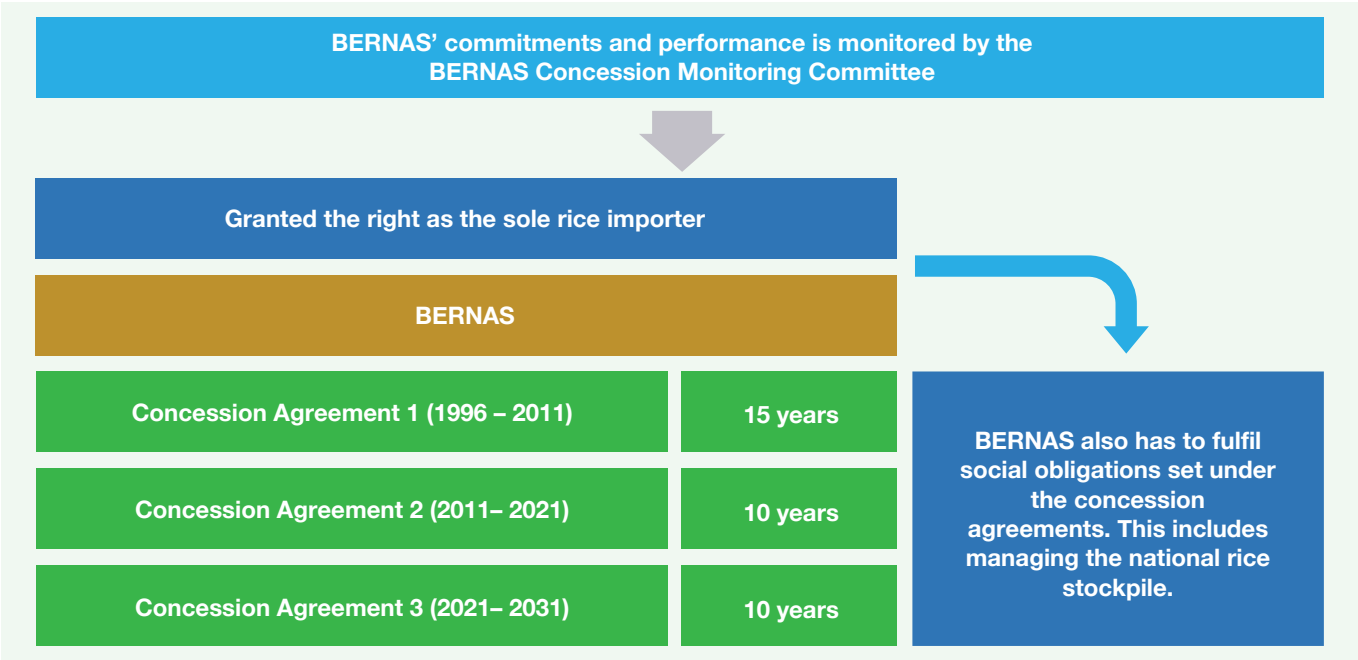
Figure 5: Transformation from LPN to BERNAS, 1971 – 1996

Source: BERNAS

4.1.4. Concession agreements between BERNAS and the government

The government granted the privatised BERNAS the right to continue importing rice into Malaysia for a period of 15 years effective 12 January 1996. Between 1996 and 2021, the government signed three concession agreements with BERNAS. These concession agreements impose social obligations on BERNAS that the company must fulfil. BERNAS' commitments and performance as incorporated into the concession agreement is monitored by the BERNAS Concession Monitoring Committee (see Figure 6).

Figure 6: Concession agreements between BERNAS and the government, 1976 – 2031



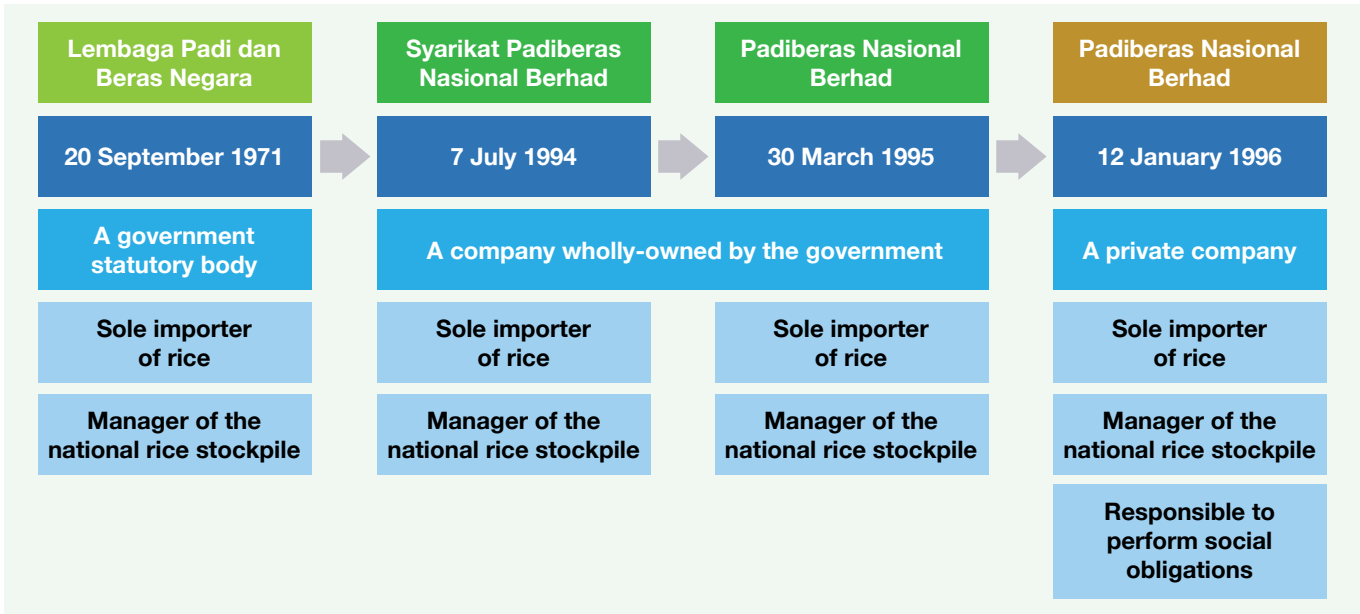
Source: MAFS

4.1.5. National stockpile management[25]

The government initiated the Rice Stockpile Scheme in 1949. LPN managed the Rice Stockpile Scheme from 1971 until transferring it to BERNAS in 1994 (see Figure 7). BERNAS now manages 29 rice stockpile warehouses nationwide (see Figure 8) and it also bears the operating expenses for managing the stockpile. These serve as an emergency food supply, as well as a mechanism to stabilise supply and rice prices in the country.

[25] MAFS (2024) and BERNAS (2024), https://bernas.com.my/commitment/midstream/national-stockpile-management.

Figure 7: Concession agreements between BERNAS and the government, 1976 – 2031



Source: MAFS

Rice stockpiling management plays a critical role in ensuring national food security, particularly in the face of fluctuating production levels, market volatility, and global supply disruptions. Box 1 discusses stockpiling management in general, its objectives, and issues and challenges.

Figure 8: National rice stockpile in a warehouse in Klang, Selangor

Source: MyCC

Box 1: Stockpiling management[26]

A stockpile is a reserve of essential items like food, fuel, or medical supplies, stored by governments or organizations for use in emergencies or supply shortages. In ASEAN, stockpiling often focuses on staple grains, especially rice, to ensure food security during crises or market instability. Most ASEAN countries, whether they export or import rice, manage stockpiles as part of their food security policies

Countries maintain stockpiles to achieve specific objectives and reduce risks, including:

However, there are issues and challenges in maintaining stockpiles, which include:

1. Fiscal burden
2. Long-term dependency
3. Market distortion
4. Political use of stockpiling
5. Spoilage and inefficiencies
6. Limited food security guarantees

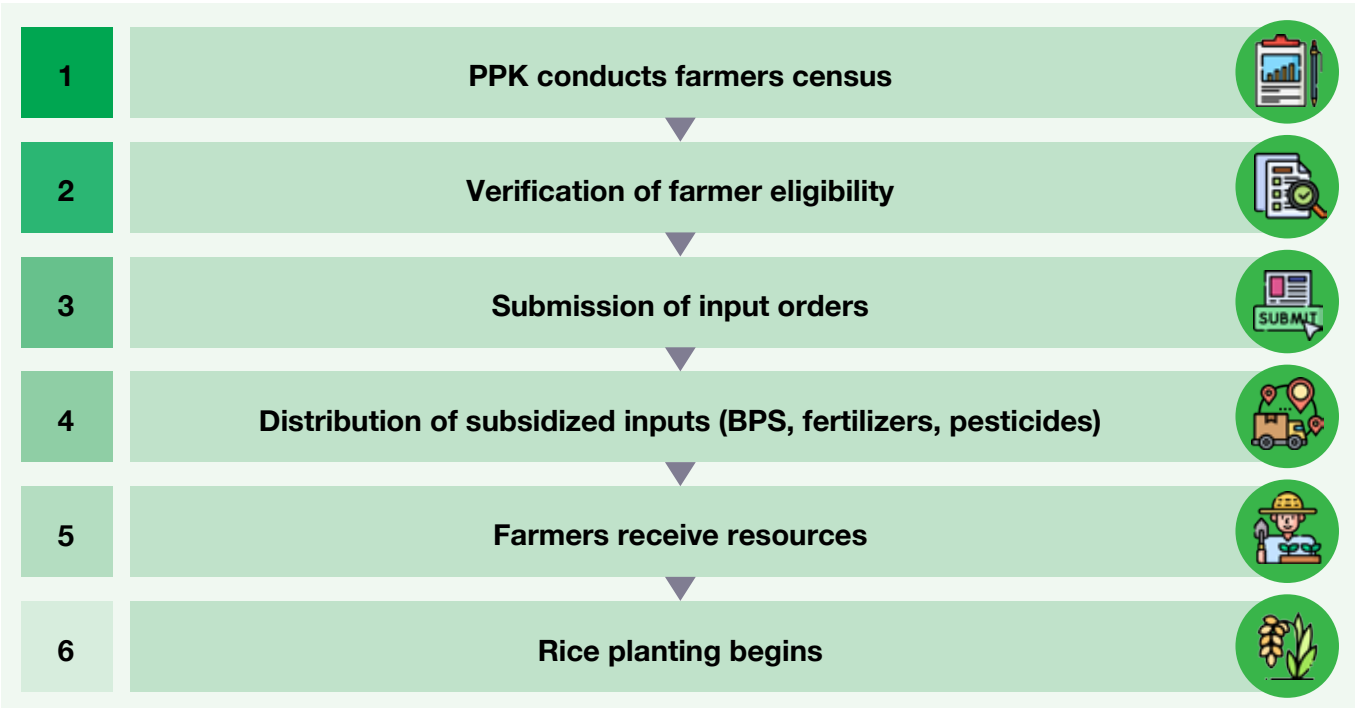
[26] For more details, see: Roehlano M. Briones (2011), Regional Cooperation for Food Security: The Case of Emergency Rice Reserves in the ASEAN Plus Three, ADB; Mely Caballero-Anthony, Jonatan Lassa, Tamara Nair, and Maxim Shrestha (2016), Public Stockpiling of Rice in Asia Pacific, RSiS; and Paul S. Teng, Bernice Anne C. Darvin, Suzette C. Simondac (2017), Food Reserves: A Comparative Study on Food Reserve Management and Policies in Southeast Asia, SEARCA.

[27] Declaration of a State of Emergency under Directive No. 20 by the National Security Council.

4.2. Upstream segment: input supply of certified paddy seeds (BPS), fertilizers, pesticides, and irrigation and drainage

Before the rice planting season starts, the supply of key inputs like BPS, fertilizers, and pesticides is tightly regulated to ensure only eligible, active paddy farmers receive these resources (see Figure 9). Pertubuhan Peladang Kawasan (PPK) verifies farmers' eligibility through a census before ordering inputs. This step is crucial as these inputs are part of the government's subsidy program, and proper screening prevents misallocation. Each input type has its own supply chain and market structure, significantly influencing their distribution to farmers and impacting the broader rice industry.

Figure 9: Pre-planting season: preparation phase



Source: PPK, MyCC, and MyCC' analysis

While PPK collects, verifies, and supplies seeds, fertilizers, and pesticides to farmers, they also coordinate planting schedules with authorities like MADA and IADA. These schedules are based on weather patterns and water availability through irrigation and drainage systems (see Figure 10). Proper maintenance of these systems is essential for ensuring a consistent and adequate water supply to paddy fields, crucial for uninterrupted farming operations.

The supply process is a vital part of the upstream segment in the paddy and rice value chain, kickstarting production with essential inputs. The availability and distribution of BPS, fertilizers, and pesticides directly shape the productivity and sustainability of paddy farming operations. Inefficiencies or constraints here can create bottlenecks that ripple through the entire value chain, affecting midstream and downstream processes and overall market performance.

Figure 10: Water irrigation and drainage at paddy fields in Selangor (left) and Kedah (right)

Source: MyCC

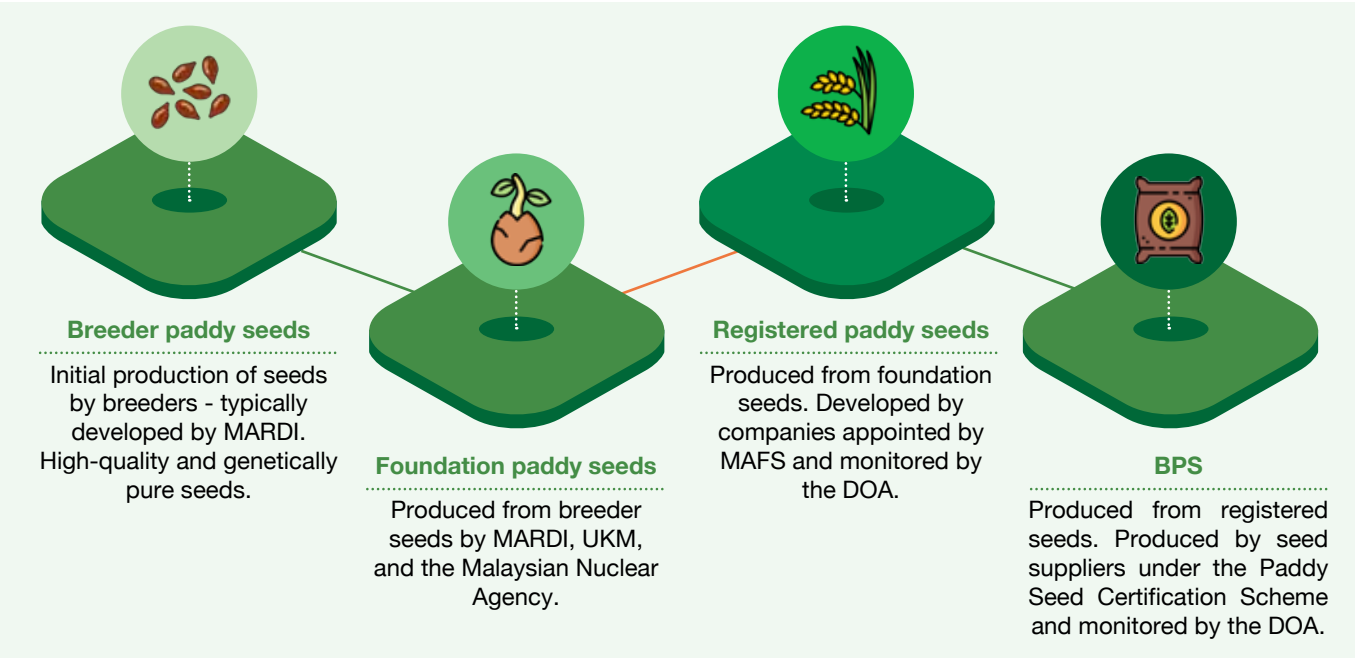
4.3. Market structure for the production and supply of paddy seeds

The production and supply of paddy seeds in Malaysia is a heavily regulated and critical aspect of the rice industry, ensuring that farmers have access to high-quality, certified seeds to maintain and improve crop yields. The process begins with research and development conducted by institutions such as Malaysian Agricultural Research and Development (MARDI), Universiti Kebangsaan Malaysia (UKM), Universiti Putra Malaysia (UPM), and the Malaysian Nuclear Agency, which develop new, high-yield and disease-resistant varieties of paddy seeds suited to local growing conditions.

4.3.1. Production of breeder, foundation, registered, and certified paddy seeds

According to MARDI, there are four phases of seed production as highlighted in Figure 11.

Figure 11: Four phases of seed production



Source: MARDI

Currently, there are 57 varieties of paddy seeds, with 24 varieties as shown in Table 12. The most popular varieties, used by 77.6% of farmers in Malaysia, are MR297, MR219, and MR220CL2.[28]

[28] DOA. (2022). Rice Check Padi.

Table 12: Examples of paddy seed varieties produced

No.	Seed variety	Year introduced	Seed type	Maturity (days)	Yield (mt/ha)
1	MR297	2016	White rice	110 – 115	8.6
2	MR219	2001	White rice	105 – 111	6.5 – 10.7
3	MR220CL2	2010	White rice	97 – 100	5.9 – 6.2
4	MR269	2012	White rice	104 – 109	9.2
5	Sempadan 303	2018	White rice	104 – 106	10.0
6	Sebernas 307	2018	White rice	107 – 110	10.0
7	MR220	2003	White rice	105 – 113	5.0 – 9.6
8	UKMRC-8	2019	White rice	115 – 118	13.9
9	MR219	2001	White rice	105 – 111	6.5 -10.7
10	Malinja	1964	White rice	110 – 120	2.5 – 4.0

Source: MARDI and DOA

The paddy seed varieties are regularly evaluated for their resilience to changing environmental conditions and disease outbreaks. Varieties that lose their resistance to pests and diseases are discontinued, while new, more resistant varieties are developed. Farmers select seed varieties based on their field conditions, local climate, and previous planting season's yield performance. Figure 12 shows examples of BPS.

Figure 12: MR220CL2 seeds

Source: Berita Harian

Given that the number of suppliers and maximum production volume are determined by MAFS, the market concentration is not caused by market forces. In terms of production quota, the seed supplier market is moderately concentrated with a HHI value of between 1,125.7 and 1,466.0 from 2021 to 2024 (see Table 13). The CR3 of the market ranges from 43.1% – 58.0% and the CR10 ranges from 65.3% – 77.0%.

Table 13: Seed producers' market concentration based on production quota, 2021 – 2024

No.	Market concentration indicator	Value			
		2021	2022	2023	2024
1	HHI	1,125.7	1,466.0	1,240.7	1,125.7
2	CR3 (%)	43.1	58.0	46.7	43.1
3	CR5 (%)	65.3	77.0	72.0	65.3

Note:
1. *HHI below 1,500 indicates a competitive market; HHI between 1,500 and 2,500 indicates a moderately concentrated market; HHI above 2,500 indicates a highly concentrated market (potential monopoly and oligopoly).*
2. *CR below 40% suggests a competitive market; CR between 40% and 60% suggests a moderately concentrated market; CR above 60% suggests a highly concentrated market (potential monopoly and oligopoly).*

Source: DOA and MyCC analysis

Typically, BPS producers are appointed for a period of three years. During each three-year cycle, the quota for each producer is reviewed and based on the evaluation by the SKPB, some producers may be removed from the list, while new producers may be appointed.

Although MAFS had set production quotas for each seed producer, not all of them were able to meet the quota. Some of the underlying reasons highlighted by seed producers and the DOA are as follows:

Production Inefficiency

Although the seed producers were selected based on their production capacity and capability, some seed producers were not able to operate efficiently to produce BPS at their assigned quota.

Last-Minute Sales

There were also situations where farmers changed their mind at the last minute and sold their paddy (to be processed becoming BPS) to other seed producers. This is usually due to the higher price offered by other producers.

Quality Certification Failures

Some producers faced situations where the paddy that they purchased were of lower quality and did not pass DOA's certification process.

Environmental Risks

Paddy crops are sometimes damaged by adverse weather conditions and pest infestations.

4.3.2. BPS distribution

On 15 April 2024, MAFS increased the ceiling price for the BPS sale to RM54 per 20 kg (wholesale price) and RM58 per 20 kg (retail price). Previously, the BPS ceiling price, enforced on 20 October 2023, was RM40 per 20 kg (wholesale price) and RM45 per 20 kg (retail price) (see Table 14). At the same time, MAFS also sets that retailers are not allowed to purchase and store more than 500 bags (each weighing 20 kg) at any given time. Any purchase and storage exceeding this limit must be approved by the SKPB.

Table 14: Ceiling price for BPS

Price for BPS	Before 20 October 2023	Effective 20 October 2023	Effective 15 April 2024
Wholesale price (RM/20kg)	31.00	40.00	54.00
Retail price (RM/20kg)	35.00	45.00	58.00

Source: MAFS

The BPS producers will sell their BPS to licensed retailers and PPK. Licensed retailers and PPK will then sell BPS to the farmers. According to MAFS, there are 511 companies (including PPK) registered with MAFS as BPS distributors.

4.3.3. Governance structure for production and supply of paddy seeds

Seed production is being regulated by various government agencies and authorities (MARDI, UKM, UPM, Malaysian Nuclear Agency), as well as the 12 BPS producers. This is to ensure the BPS' quality in the market. Since 2009, the government has mandated that only DOA-certified[29] BPS can be used by farmers to qualify for government subsidies. Also, the BPS produced by the appointed producers are eligible for the paddy seed subsidy under the Certified Paddy Seed Incentive (IBPS), which amounts to RM20.60 per 20 kg. The subsidy provided to the BPS producers serves as an incentive for them to continue producing BPS (ensuring that BPS is always available in the market) and to guarantee quality (reducing the risk of weedy rice or diseased paddy).

To ensure the production of high-quality BPS, DOA, as the approving agency, has been tasked with overseeing several critical elements in the BPS production process under its Seeds Accreditation Scheme (SAP).

4.4. Market structure for paddy fertilizer

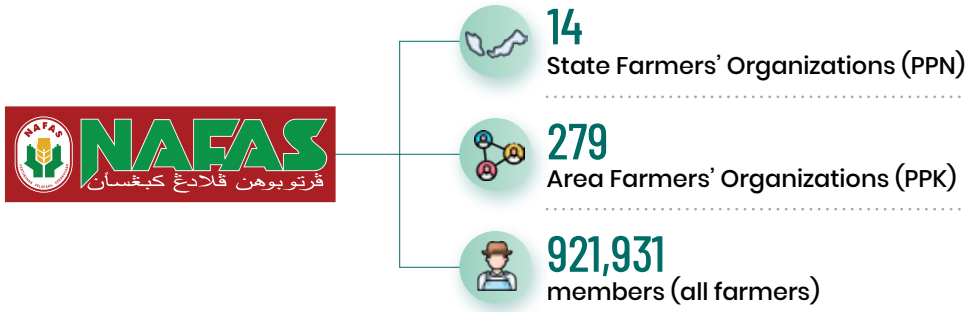
In Malaysia, the paddy fertilizer market plays a crucial role in supporting the productivity and sustainability of the rice industry. Fertilizer is a key input for paddy cultivation to enhance crop yields and maintain soil fertility. However, issues such as supply shortages, delayed distribution, and rising global fertilizer prices have at times impacted the effectiveness of the system, creating challenges for both farmers and the broader paddy supply chain.

4.4.1. NAFAS is the sole producer and supplier in the paddy fertilizer market

The fertilizer market for the paddy and rice industry in Malaysia is fully regulated by the government. The National Farmers' Association (NAFAS)—established on 31 March 1972—manages the production and distribution of fertilizers. NAFAS operates pursuant to the Farmers' Associations Act 1967 [Act 27] (which was later repealed and replaced by

[29] If paddy seeds do not meet the standards for physical purity and moisture tests, the DOA will recommend for seeds to be reprocessed or redried. However, failure in the germination test will result in the paddy seeds disposal.

the Farmers' Organization Act 1973 [Act 109]). NAFAS is the umbrella organization for 14 State Farmers' Organizations (PPN), 279 Area Farmers' Organizations (PPK) and 921,931 members (all farmers). NAFAS is effectively the designated monopoly by the government in the paddy fertilizer market.



NAFAS is appointed by MAFS based on a contract that is renewed every two to three years since 1999. NAFAS is responsible for procuring raw materials to produce fertilizers such as compound fertilizers, urea, and bio-fertilizers. The production of fertilizers for the paddy industry is funded by the government through several subsidy schemes, such as SBPKP, SIPP and SBRPB.

NAFAS is responsible for distributing these fertilizers to farmers through the PPK. The supply of fertilizers to farmers depends on the size of their cultivated areas (see Table 15).

Table 15: Supplying and distribution of fertilizer by NAFAS

Government fertilizer scheme	Type of fertilizer	Quantity/ha	Weight of l/bag or bottle
SBPKP	• Paddy fertilizer 1 (compound) • Paddy fertilizer 2 (compound) • Urea fertilizer	• 12 bags • 4 bags	• 20kg/bag • 20kg/bag
SIPP	• Additional NPK fertilizer	• 6 bags	• 25kg/bag
SBRPB	• Compound fertilizer • Liquid urea fertilizer	• 8 bags • 5 bottles	• 25kg/bag • 3 l/bottle

Source: NAFAS and LPP

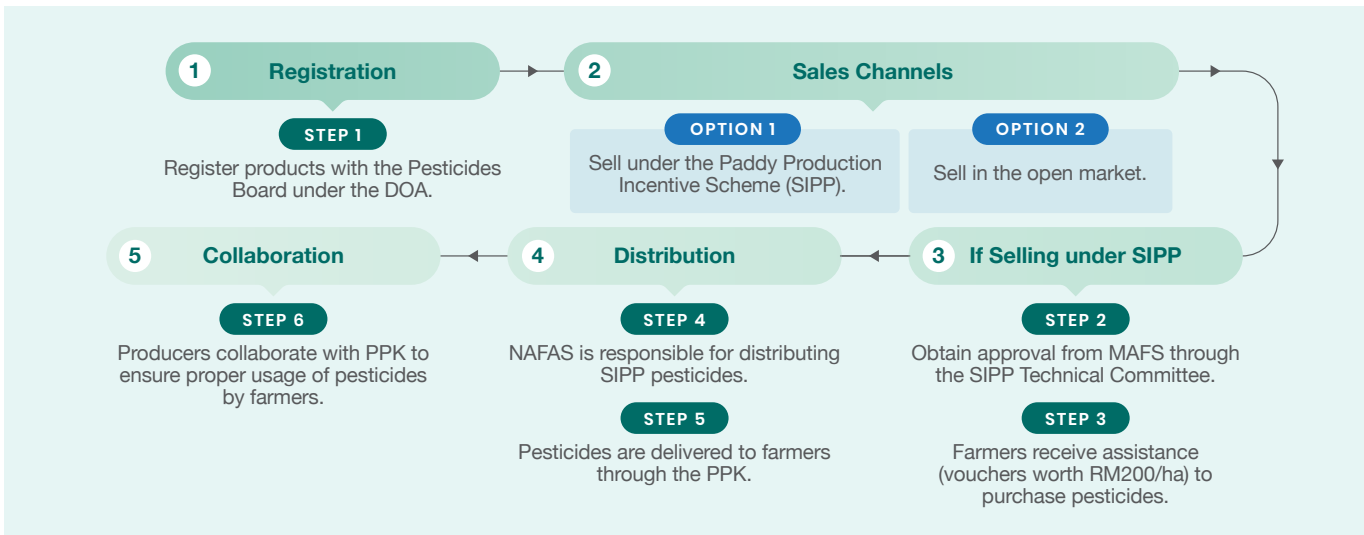
4.5. Market structure for pesticides

The use of pesticides in Malaysia's paddy and rice industry is a critical component of crop management, helping farmers protect their yields from pests and diseases. Pesticides, including herbicides, insecticides, and fungicides, are essential in preventing infestations and maintain crop yields. The balance between affordability, effectiveness, and environmental sustainability remains a challenge, as over-reliance on chemical pesticides can lead to environmental degradation and pest resistance.

4.5.1. Pesticides sales regulated by the Pesticides Board and the DOA

In general, pesticide producers must register their products with the Pesticides Board under the DOA. These producers can sell their pesticides either under the Paddy Production Incentive Scheme (SIPP) or in the open market. For sales under the SIPP, pesticide producers must obtain approval from MAFS through the SIPP Technical Committee. Under SIPP, farmers receive assistance in the form of vouchers worth RM200/ha of paddy field to purchase pesticides.

Apart from producing and supplying paddy fertilizer, NAFAS is also responsible for distributing and delivering the SIPP pesticides to farmers through the PPK. Pesticide producers collaborate with PPK to ensure that farmers use these pesticides correctly.



Farmers often need to purchase pesticides from the open market in addition to SIPP pesticides due to limited SIPP supply, lack of specific pest control options, and lower concentration levels of SIPP products.

According to the DOA, there are currently 51 pesticide companies registered with the Pesticides Board that provide pesticides for paddy farming. Table 16 highlights that there are limited types of pesticides produced but the paddy farmers can still choose from the diverse range of brands for each type of pesticides.

Table 16: Examples of pesticides, number of brands and companies

Types of crops	Types of pesticide	No. brands	No. firms
Paddy field ridges	• Herbicides	• 3	• 3
Paddy seeds	• Insecticides and fungicides	• 1	• 1
Paddy	• Fungicides • Herbicides • Insecticides • Insecticides and fungicide • Molluscicides • Rodenticides	• 57 • 86 • 77 • 2 • 12 • 22	• 25 • 25 • 32 • 1 • 7 • 18
Paddy fields	• Rodenticides	• 2	• 2
Pre-planted paddy	• Herbicides	• 1	• 1

Source: DOA

Figure 13 and 14 shows some examples of pests at the paddy fields. Despite this, the lack of a highly effective solution for the golden apple snails remains a significant issue.

Figure 13: Burung upeh or milky stork and kutu beruang or scotinophora coarctata

Source: MyCC

Farmers in Kedah report that SIPP pesticides are ineffective against golden apple snails, with no specific products available to target these pests. This ongoing issue continues to affect their yields. Meanwhile, Selangor farmers have adopted a more effective and sustainable approach through gotong-royong (community effort), manually removing snails from their fields, resulting in better pest control and reduced pesticide dependence.

Figure 14: Siput Gondang or Golden apple snail and its eggs

Source: Malaysiakini[30], MyCC

4.6. Midstream segment: production and processing

The midstream segment of the paddy and rice value chain encompasses the crucial stages of cultivation, harvesting, and processing. This phase transforms raw paddy into consumable rice, forming the core of the production cycle. The efficiency and effectiveness of the midstream activities directly impact the

[30] Malaysiakini https://www.malaysiakini.com/news/696360.

quality, volume, and cost of rice that reaches the market. The market structures within this segment are not only shaped by the interactions between the farmers and millers, but also by the involvement of service providers, who facilitate transactions, provide financing, and help manage logistics.

4.7. Market structures for paddy planting and harvesting services

Paddy planting and harvesting are crucial stages in the rice production cycle, typically carried out by the farmers themselves or with the help of local labour in the area and machinery (see Figure 15), including by service providers. Farmers prepare the land by ploughing the fields and managing water levels through irrigation systems to ensure optimal conditions for planting. Depending on the region, farmers use either direct seeding (scattering seeds directly into the field) or transplanting (growing seedlings in a nursery and then planting them into the field).

Figure 15: Machineries used to harvest paddy

Source: MyCC

The planting process is largely mechanized in larger paddy-growing areas, but smaller farms often rely on traditional methods. Once the crop matures, usually after about three to four months, the harvesting phase begins, where farmers cut and collect the mature paddy stalks. In larger farms, mechanized harvesters are commonly used to streamline the process, while smaller-scale farmers may still use labour-intensive methods. After harvesting, the paddy is transported to millers for further processing. While many farmers manage planting and harvesting independently, some seek assistance from service providers or cooperatives (such as PPK), particularly when access to modern machinery is limited. This hands-on approach by farmers aims to ensure better control over crop quality and timing, challenges like weather conditions and pest management remain significant factors affecting yields.

4.7.1. Large number of farmers but on a declining trend

The paddy and rice industry in Malaysia has been characterized by a large number of smallholder farmers, each managing relatively small plots of land, which typically means more farmers are gowing paddy on part-time basis. However, there has been a noticeable decline in the number of farmers throughout the years – see Table 17.

Table 17: Number of paddy farmers in Malaysia

Number of farmers	2015	2016	2017	2018	2019	2020	2021	2022	2023
Agrofood Malaysia 2022[31]	n.a.	n.a.	347,401	348,266	300,641	262,319	243,376	232,744	230,119[p]
Agrofood Malaysia 2021 and 2020	197,189	194,931	193,679	193,378	192,663	189,500	190,093	n.a.	n.a.

Source: MAFS

This could be due to a number of factors. Ageing farmer population is one of the most significant challenges, as many farmers are over the age of 60 (see Table 18). While there are younger farmers in the industry, their number is limited as the younger populations are increasingly drawn to urban areas and non-agricultural sectors for employment. Low profitability and low income in rice farming, exacerbated by rising production costs and stagnant prices for paddy, has further discouraged new entrants into the sector.[32] Additionally, fragmentation of land holdings over generations has resulted in smaller, less economically viable farms, making it difficult for farmers to achieve economies of scale, creating a vicious cycle that sees many exiting the industry.

[31] The number of farmers is based on the Federal Government Paddy Fertilizer Scheme (SBPKP 2A), Farmers' Organization Authority. Table 2.1.1 in Ministry of Agriculture and Food Security (2023), Malaysia Agrofood in Figures 2022.

[32] Shathana Kasinathan (2023), "National audit report shows nearly quarter of Malaysian paddy farmers earn below RM600 monthly, as rice cultivation programme fails to reach target", The MalayMail.

Table 18: Farmers' age in areas under MADA's supervision, 2021

Age	Percentage breakdown (%)
Below 30	1.0
31 – 40	6.4
41 – 50	18.7
51 – 60	26.4
61 – 70	25.6
Above 70	21.8
Total	**100.0**

Source: MADA

4.7.2. Apart from LPP and PPK, the market for paddy planting and harvesting is not regulated

PPN and PPK provide services in the paddy fields with their machinery but cannot meet the demand of all farmers. This gap creates opportunities for other service providers—typically current or former farmers—to enter the market. These providers operate without licenses and are not monitored by MAFS.

Independent service providers often build stronger relationships with farmers compared to PPN and PPK. They offer more flexible financial support that extends beyond farming needs and operate with fewer regulatory constraints. The service providers' role as facilitators contributes to the reason why farmers tend to prefer service providers' services over PPN and PPK.

4.8. Market structures for paddy processing and rice production

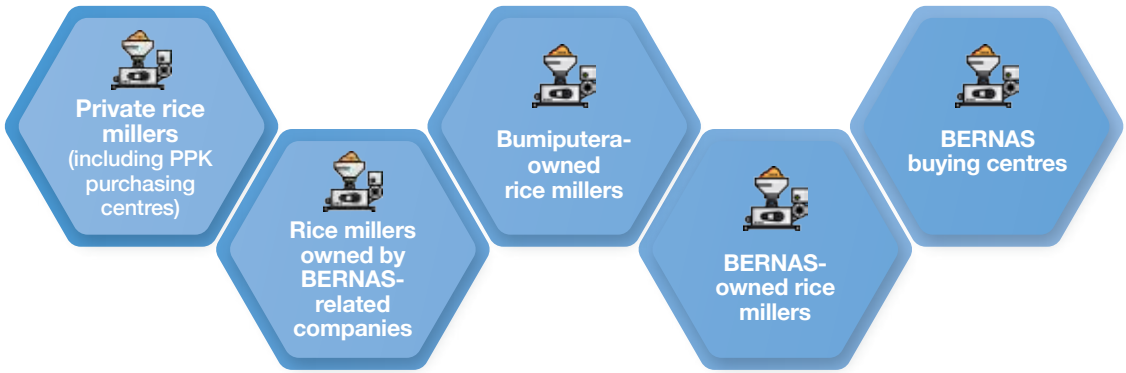
4.8.1. Harvested paddy can only be sold to licensed millers for rice production

After the paddy is harvested, the next steps in the rice production process are crucial to ensuring the quality of the final product. First, the harvested paddy is typically transported to paddy buyers or milling facilities where it undergoes the threshing process to separate the grain from the straw (see Figure 16). The paddy is then dried to reduce its moisture content, which is essential for preventing spoilage and maintaining the grain's quality during storage and milling. Once dried, the paddy enters the milling process, where the outer husk is removed to produce brown rice and further processing can polish the rice to produce white rice.

Figure 16: Paddy in milling facilities

Source: MyCC

Farmers can only sell their paddy to licensed paddy buyers[33] such as:



Typically, farmers sell their paddy to the paddy buyers or millers located near their fields or the nearest PPK. This is confirmed by the findings from the MyCC's engagement sessions with farmers in Kedah. Distance is a crucial factor as the transportation cost of paddy depends on the delivery distance, which is deducted from the payment to farmers by service providers. At the same time, some service providers do not have valid transportation or business documents, so they prefer to send their paddy to the nearest paddy buyers or millers to avoid police roadblocks or the Road Transport Department (JPJ). These are the factors that service providers will consider if a farther paddy buyers or millers offers a higher price.

4.8.2. Large number of millers in the market

Based on the data from KPB, as of 5 August 2024, it has issued 152 milling licenses and 185 paddy buying licenses. According to data shared by BERNAS, there are 176 paddy buyers and rice millers across Malaysia including PPK and BERNAS purchasing centres (see Table 19).[34] In this market structure analysis, paddy buyers and millers are categorized as millers. Based on BERNAS' data, Kedah has the highest number of millers, with 81 millers and recorded the highest paddy purchases at 833,100 mt in 2023. This is followed by paddy purchases in Perak (132,200 mt) and Selangor (117,800 mt). This indicates that the sale of paddy is distributed across various paddy and rice millers, rather than being dominated by a few.

[33] Licensed paddy buyers are authorized to purchase paddy from farmers. If they wish to process the paddy into rice, they must obtain a separate milling license. Both licenses are issued by KPB.

[34] The discrepancy between KPB's data as of 5 August 2024 and BERNAS' data as of 31 December 2023 could be due to the expiration of licenses by the licensees.

Table 19: Millers in Malaysia, 2019 – 2023

State	Total millers	Total paddy purchase ('000 mt)				
		2019	2020	2021	2022	2023
Kedah	81	913.0	1,019.8	1,001.8	929.6	833.1
Perak	20	143.0	144.5	140.1	132.8	132.2
Selangor	12	176.1	154.7	129.1	123.5	117.8
Pulau Pinang	11	129.8	135.8	141.6	118.4	102.0
Kelantan	15	100.1	128.3	119.5	73.4	80.6
Perlis	14	108.5	113.4	102.0	91.3	74.8
Terengganu	14	49.6	47.1	58.6	38.6	39.9
Pahang	3	11.7	15.3	24.7	24.4	21.9
Johor	6	22.6	28.6	18.2	12.5	13.8
Total	**176**	**1,654.4**	**1,787.5**	**1,735.8**	**1,544.5**	**1,416.1**

Source: BERNAS

Based on the data on total paddy purchases by millers from 2019 to 2023, it was found that no single miller held a dominant position in the market.

4.8.3. BERNAS is involved in rice processing and production

Currently, BERNAS is often the last resort as it purchases paddy at the floor price set by the government (see Table 20). BERNAS buys paddy at the floor price in line with its social obligation as the buyer of last resort and as the appointed manager of the SSHP. Under this scheme, farmers earn a pre-determined amount for each tonne of paddy they harvested as incentive for them to cultivate more paddy. In 2023, the government increased the paddy price subsidy from RM360/mt to RM500/mt.[35]

[35] Perak State Government (2023), "Kerajaan Umum Naikkan Kadar Subsidi Harga Padi".

Table 20: Paddy floor price, 2014 – 2024

	2014	2016	2018	2023	2024
Paddy floor price (RM/mt)	1,200	1,200	1,200	1,300	1,300
SSHP (RM/mt)	300	300	360	500	500

Source: MAFS

4.9. Downstream segment: distribution and consumption

The downstream segment of the paddy and rice value chain includes the critical stages of rice distribution, wholesaling, and retailing, where rice reaches consumers through various channels. The downstream market structures are influenced by a wide range of players, including wholesalers who manage bulk transactions, retailers who connect rice to consumers and service providers, who, similar to their midstream role, facilitate transactions, and manage distribution logistics.

4.10. Market structure for rice distribution

After paddy processing and rice production, the next crucial stage is the distribution of rice to ensure it reaches wholesalers, retailers, and consumers. In Malaysia, rice distribution typically follows a structured path, with wholesalers and distributors playing a key role (see Figure 17). First, the processed rice is sold to licensed wholesalers, who act as intermediaries between the rice millers and retailers, managing the supply chain to ensure a steady flow of rice from processing facilities to consumers. This stage of the supply chain involves managing logistics, storage, and quality control to prevent spoilage and maintain the quality of rice as it moves through the market. The combination of local production and imported rice ensures that consumers have consistent access to rice, while maintaining a balance between supporting domestic agriculture and meeting the country's demand.

Figure 17: Wholesalers' warehouse and processing facilities

Source: MyCC

4.10.1. Rice wholesale market

Wholesalers market structure in the supply of BPT and BPI

The Industry Study started by looking into the 29 largest wholesalers and their purchasing data (there are a total of 1,455 wholesalers in the market). The 29 largest wholesalers control 72.6% of total rice available in the market in 2023, which is higher than 70.2% reported in 2022. Currently, the study only has access into information from the 29 largest wholesalers. Table 21 shows that the CR4 and CR10 of the market are 41.9% - 46.2% and 60.0% - 62.6%, respectively. Although there are 1,455 registered wholesalers, the data shows that the wholesalers' market is moderately concentrated.

Table 21: Estimated market concentration of wholesalers' market based on total rice purchased, 2022 – 2023

No.	Market concentration indicator	Value	
		2022	2023
1	CR4	41.9	46.2
2	CR10	60.0	62.6

Note:
CR below 40% suggests a competitive market; CR between 40% and 60% suggests a moderately concentrated market; CR above 60% suggests a highly concentrated market (potential monopoly and oligopoly).

Source: Wholesalers and MyCC' analysis

Wholesalers market structure in the supply of BPT

Out of the 29 largest wholesalers mentioned earlier, six of them do not purchase BPT from millers (they only purchase BPI from BERNAS).[36] The 23 wholesalers hold 66.0% share of the BPT supplies (2022: 67.4%). These companies procure the BPT across 100 millers around the country.

Although the market for BPT supplies is moderately concentrated based on the CR4 and CR10 of 41.8% - 45.9% and 61.7% and 63.2%, respectively (see Table 22). The market concentration for the BPT supplies market had increased between 2022 and 2023.

[36] MyCC analysis.

Table 22: Estimated market concentration of wholesalers' market based on BPT purchased, 2022 – 2023

No.	Market concentration indicator	Value	
		2022	2023
1	CR4	41.8	45.9
2	CR10	63.2	61.7

Note:
CR below 40% suggests a competitive market; CR between 40% and 60% suggests a moderately concentrated market; CR above 60% suggests a highly concentrated market (potential monopoly and oligopoly).

Source: Wholesalers and MyCC' analysis

Wholesalers market structure in the supply of BPI

In the supply of BPI, the 26 largest wholesalers hold 73.4% and 77.7% of the supply of BPI in the market in 2022 and 2023, respectively. BERNAS is the sole importer of rice in the country. Relatively speaking, the BPT market is less concentrated than the BPI market. In terms of CR4 and CR10, the concentration ratios are 49.7% - 52.1% and 65.7% - 68.7%, respectively (see Table 23).

Table 23: Market concentration of wholesalers' market based on BPI purchased, 2022 – 2023

No.	Market concentration indicator	Value	
		2022	2023
1	CR4	49.7	52.1
2	CR10	65.7	68.7

Note:
CR below 40% suggests a competitive market; CR between 40% and 60% suggests a moderately concentrated market; CR above 60% suggests a highly concentrated market (potential monopoly and oligopoly).

Source: Wholesalers and MyCC' analysis

4.10.2. BERNAS is the sole rice importer in Malaysia

Rice importing is a crucial component of the distribution process in the rice industry, as it complements the domestic production to meet the national demand. As Malaysia does not produce enough rice to be fully self-sufficient, rice imports play a key role in ensuring a stable supply, particularly for premium varieties like fragrant rice and other specialty types that are in high demand but not widely grown locally.

As highlighted earlier, BERNAS is the sole rice importer in Malaysia. BERNAS was established following the government's policy in 1994 to privatize LPN.[37] It is a government-designated monopoly as per the conditions and obligations incorporated into the concession agreement, which formalizes the relationship between BERNAS and the government. BERNAS is also Malaysia's only state-trading enterprise (STE) within the meaning of Article XVII:4(a) of the General Agreement on Tariffs and Trade (GATT) under the World Trade Organization (WTO). Being the import monopoly, BERNAS controls the quantity and timing of imported rice to prevent market disruptions and ensure steady supply.

4.11. Market structure for rice retailing

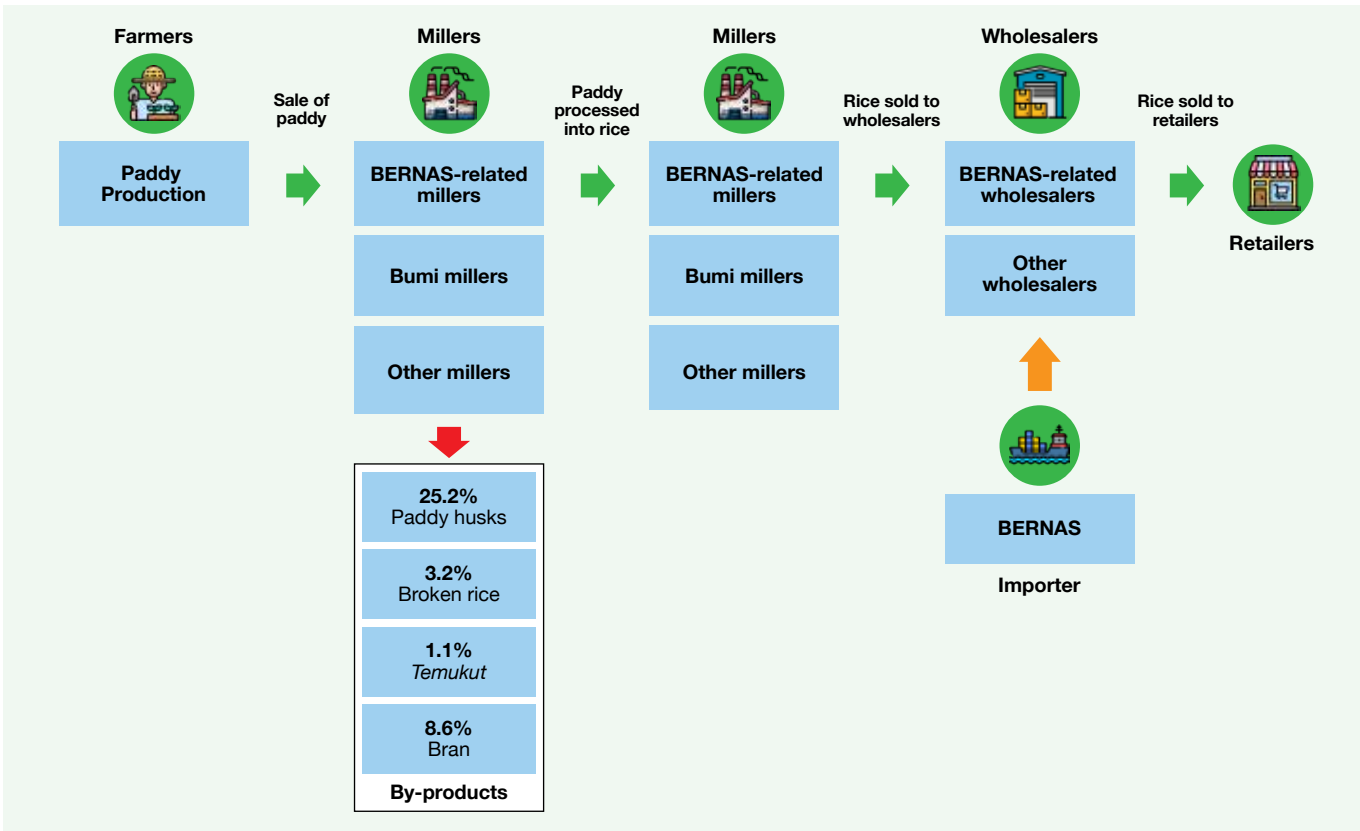
Rice retailing forms the final link in the rice supply chain, bringing rice from wholesalers and distributors to consumers. As highlighted earlier, there are about 37,861 retailers, which range from large supermarket chains and hypermarkets to smaller grocery stores and neighbourhood shops. The retail market is diverse, offering various types of rice, including the BPT and BPI such as the fragrant rice and premium rice such as basmati and jasmine. The BPT prices are controlled by the government at RM2.60/kg, ensuring affordability, while the BPI are sold at market prices, which are influenced by global supply and demand. In March 2024, NACCOL had adjusted downward the price of imported rice sold by BERNAS from RM3,200/mt to RM3,000/mt. Following this measure, the price of BPI sold by retailers should also reduce to RM3.50 – 3.70/kg from RM3.80 – 4.00/kg, previously.

[37] For details on the history of BERNAS, please see: https://www.bernas.com.my/index.php. Also, Sarena Che Omar, Ashraf Shaharudin and Siti Aiysyah Tumin (2019), *The Status of the Paddy and Rice Industry in Malaysia* and Fatimah Mohamed Arshad, Bustanul Arifin and Yeong Sheng Tey (2019), *Effectiveness of State Trading Enterprises in Achieving Food Security: Case Studies from BERNAS in Malaysia and BULOG in Indonesia.*

4.12. Production flow of the paddy and rice industry

Figure 18 illustrates the production flow of the paddy and rice industry. As highlighted earlier, the process begins with paddy farmers who sold the paddy to millers. The paddy is then processed into rice, where only 64.5% of the paddy will be turned into rice. About 35.5% of the paddy turned into by-products such as paddy husks, broken rice, temukut rice and bran. Wholesalers buy the processed rice from the millers and imported rice from BERNAS. These wholesalers then distribute the rice to retailers.

Figure 18: Production flow of the paddy and rice, 2023



Source: MAFS, BERNAS, Wholesalers, and MyCC' analysis

4.13. Key observations on the value chain and market structure analysis

The section highlights that the market structure and value chain of the paddy and rice industry in Malaysia is complex and characterized by varying levels of competition and concentration at different stages (see Table 24).

Table 24: Summary of value chain's market structure

Value Chain	Market segment	Market concentration	Market structure
Input	Seed production	Medium	Oligopoly
Input	Seed supply	Low	Competitive
Input	Fertilizer production	High	Monopoly
Input	Pesticides production	Medium	Competitive
Input	Pesticides distribution	High	Monopoly
Production	Paddy planting	Low	Competitive
Production	Harvesting services	Medium	Oligopoly
Processing	Milling	Medium	Oligopoly
Distribution	Importing	High	Designated monopoly
Distribution	Wholesaling	High	Oligopoly
Consumption	Retailing	Low	Competitive

Source: MyCC analysis

4.13.1. Market structures of the value chain segment

INPUT

Seed Producers and Distributors

Oligopolistic Market

The 12 seed producers in Malaysia represent an oligopolistic market structure. Although there is some competition among suppliers, their limited number suggests that they may have the market power to influence the pricing and access to certified seeds. However, the presence of 511 seed distributors reflects a more competitive market structure at the distribution level and this could mitigate the concentration in seed production by creating more options for farmers to source seeds.

PRODUCTION

Paddy and Rice Farmers

Perfect Competition Market

The paddy and rice industry comprises 232,744 farmers operating in a perfectly competitive market. Individual farmers have minimal market power due to small production quantities, with prices influenced by market forces and government interventions through subsidies and guaranteed prices. This fragmented production structure can impact sector efficiency and productivity.

PROCESSING

Rice Millers

Competitive Market

The rice milling segment consists of 152 licensed millers and 185 paddy buyers, creating a moderately competitive structure. However, the concentration of processing among relatively few millers compared to farmers gives them significant bargaining power, potentially influencing paddy prices and supply chain efficiency. The dominance of several large millers can particularly impact market pricing and rice supply control.

DISTRIBUTION

Rice Importer

Monopoly Market

In Malaysia, rice imports are controlled by a single government-designated importer, BERNAS, which operates as a monopoly. BERNAS has exclusive rights to import rice and acts as the primary gatekeeper for rice imports into the country. The monopoly held by BERNAS allows the entity to control the supply of imported rice, potentially influencing rice prices in the domestic market. While BERNAS also plays a significant role in ensuring food security and price stability, its monopoly status raises concerns about the lack of competition in the import segment.

DISTRIBUTION AND MARKETING

Wholesalers

Monopolistic Competition Market

With 1,455 wholesalers operating in a monopolistic competition market. Although there are many wholesalers, each may offer slightly differentiated products or services (e.g., packaging, branding, or quality), allowing them some control over pricing. The competitive nature of the wholesale market allows for a range of pricing and distribution options for retailers and consumers, but competition can vary regionally, with some areas having fewer wholesalers, which can limit options and affect pricing dynamics in those areas.

Retailers

Perfect Competition Market

The 37,861 retailers selling rice operate in a highly competitive market and they range from small, local shops to large supermarkets, each offering rice at different price points. The large number of retailers ensures that they are price-takers as prices are largely driven by market demand and supply conditions. The fragmented nature of the retail market also means that price differentiation can occur based on location, quality, and branding.

CONSUMPTION

CONSUMERS

Monopsony at National Level

With 34mn consumers in Malaysia, the demand for rice represents a monopsony at the national level. While individual consumers do not have direct market power, collectively, they drive the demand for rice, and influencing prices and production levels. Government intervention, such as price controls and subsidies, ensures affordability for consumers, especially in the context of rising production and import costs.

It must be noted that the number of service providers in the industry cannot be determined as they are unregulated and so, not registered with any of the government Ministries and agencies. Despite this, service providers play a crucial role in the markets.

SERVICE PROVIDERS

Service providers operate along the paddy and rice value chain, specifically in the upstream and midstream stages, from the input stage to the rice production stage. Generally, there are two types of service providers in the market. They assist farmers by supplying machinery and labour to sow seeds, fertilize land, apply pesticides, harvest paddy, and transport it to millers. Additionally, service providers distribute seeds, fertilizers, and pesticides and act as agents to facilitate the sale of paddy between farmers and millers.

5. INDUSTRY SUPPLY CHAIN'S COST STRUCTURE 64

5. INDUSTRY SUPPLY CHAIN'S COST STRUCTURE

Pricing for paddy and rice is a key focus, with stakeholders divided between market-driven pricing and price controls. The main concern is ensuring fair compensation throughout the supply chain - from farmers needing sustainable incomes to millers and wholesalers requiring adequate returns. The final price of rice reflects costs across the supply chain: paddy production (seeds, fertilizers, pesticides, labor, machinery), milling (processing, equipment, transportation), wholesaling (distribution, packaging), retailing (labor, marketing), and importation by BERNAS (exchange rates, storage, transport costs).

The paddy and rice supply chain involves various players, starting with essential input providers (seeds, fertilizers, pesticides) and moving through processing (harvesting, milling) to distribution (wholesaling, retailing). However, the supply chain cost analysis typically begins with the importer (see Figure 19).[38]

Figure 19: Flow of price along the paddy and rice industry supply chain

Source: Subject matter expert and MyCC analysis

[38] Fatimah Mohamed Arshad, Kusairi Mohd. Noh and Emmy Farha Alias (2021), *Paddy and Rice Sector Policy Roadmap: Towards Equity and Sustainability.*

5.1. Importer's cost structure

There are two main sources of rice sold in the market—BPT and BPI. Local farmers cultivate the paddy that produces BPT, while BERNAS imports rice categorized as BPI. Since imported rice is typically transacted in USD, fluctuations in the exchange rate (RM/USD) significantly affect the price of BPI in the market. The pricing for BPI begins with BERNAS (see Table 25). In September 2023, the average global export price of white rice for September 2023 was USD620/mt and the average RM/USD for the same month was RM4.68/USD. After including cost of logistics and transportation, cost of goods sold, and margin, the BPI selling price to wholesalers is calculated to be RM3,082/mt.

However, MAFS allowed BERNAS to increase the price of BPI from RM2,350/mt to RM3,200/mt effective from 1 September 2023. Therefore, BERNAS could potentially be getting a higher margin of RM218/mt or 7.3% compared to the current estimation of RM100/mt or 3.4%.

Table 25: Import and wholesale prices of BPI

Importer's Perspective	Unit	Amount		Remarks
White rice 5%	USD/mt	620	**A**	The average global export price of white rice for September 2023
Exchange rate	RM/USD	4.68	**B**	Average RM/USD exchange rate for September 2023
Cost of rice	RM/mt	2,902	**C = A × B**	
Cost of logistics and transportation	RM/mt	80	**D**	Estimation of port charges on RM30/MT and RM50/mt for transportation
Rice cost	RM/mt	2,982	**D = C + D**	Estimation of BERNAS' cost of goods sold
BERNAS' margin	RM/mt	100	**E**	Estimation of 3.4% margin
Selling price to wholesaler	RM/mt	3,082	**F = D + E**	MAFS intervenes by approving the price of BPI

Source: Thai Rice Exporters Association website, subject matter expert, and MyCC' analysis

5.2. Wholesalers' cost structure

A wholesaler purchases BPI from BERNAS and BPT from the millers. The selling price of BPI from wholesalers to retailers is straightforward, as it reflects all costs incurred from procuring the rice from BERNAS plus the wholesaler's margin (see Table 26). Similarly, the price at which wholesalers sell BPT to retailers largely depends on the price they paid to the millers. Theoretically, the price that wholesalers would offer to buy local rice from millers cannot exceed the price of imported rice from BERNAS.

Assuming that a wholesaler buys imported rice from BERNAS at RM3,082/mt, it will sell BPI to retailers at RM3,632/mt. At the same time, the wholesaler will cap the price it will offer to buy local rice from millers at RM3,082/mt.

Table 26: Wholesalers' selling price to a retailer

Wholesalers' perspective	Unit	Amount		Remarks
Selling price of BPI from BERNAS	RM/mt	3,082	**A**	Price that a wholesaler pays to purchase BPI from BERNAS
Cost of production	RM/mt	500	**B**	Estimation of RM100/mt for transportation, RM50/mt for packaging, RM350/mt for processing
Wholesalers' margin	RM/mt	50	**C**	Estimation of 1.4% margin
Selling price of BPI to retailers	RM/mt	3,632	**D = A + B + C**	
Maximum offer price to a miller	RM/mt	3,082	**E**	

Source: subject matter expert and MyCC analysis

5.3. Millers' cost structure

Based on the previous calculation of wholesalers' cost structure, millers use the selling price of RM3,082/mt for imported rice from BERNAS to wholesalers as a reference point to determine the maximum price they can offer farmers for paddy. Millers must also account for the costs of drying and milling the paddy, as well as the paddy-to-rice conversion ratio (milling rate). Additionally, they can generate some income from the sale of by-products (paddy husks, broken rice, and bran). For this calculation, the assumption is that farmers bear the cost of paddy agents. Taking these factors into consideration, a miller can offer farmers up to RM1,749/mt for their paddy (see Table 27). Engagements with both farmers and millers during the Industry Study revealed that millers have been offering farmers between RM1,700/mt and RM2,000/mt.

Table 27: Millers' determination of paddy prices

Miller's perspective	Unit	Amount		Remarks
Selling price of BPT to wholesaler	RM/mt	3,082	**A**	Assumed to be the same as the price of BPI sold by BERNAS to wholesalers
Millers' margin	RM/mt	67	**B**	Estimation of 2.2% margin
Cost of production	RM/mt	100	**C**	Estimation of drying and milling cost of RM300/mt and an estimation of income from the sale of by-product of RM200/mt. This results in net cost of production of RM100/mt
Cost of rice	RM/mt	2,915	**D = A - B - C**	
Milling rate	%	60	**E**	Estimation of conversion rate from paddy to rice
Maximum paddy price offer to farmers	RM/mt	1,749	**F = D × E**	Purchase price of paddy from farmers. In reality, some farmers indicated that they were offered as much as RM2,000/mt.

Source: Subject matter expert and MyCC' analysis

5.4. Farmers' cost structure

Paddy farmers sell their harvests to millers either directly or through agents. They factor the costs of sales, such as harvesting and transportation, into their overall production costs. These production costs also include inputs like seeds, land fertilization, and pesticides, among others.

When farmers sell their paddy, they are eligible to receive RM500/mt through the SSHP. Assuming a paddy selling price of RM1,749/mt, farmers can generate a net revenue of approximately RM1,099/mt or RM4,996/ha (see Table 28). Since a typical growing season lasts about six months, this results in an average monthly income of RM733/ha for farmers.

Table 28: Farmers' net revenue from the sale of paddy to millers

Farmers' perspective	Unit	Amount		Remarks
Selling price of paddy to millers	RM/mt	1,749	**A**	In reality, there are also farmers indicated that they were offered as much as RM2,000/mt.
Output subsidy	RM/mt	500	**B**	Subsidy received under the SSHP
Revenue to farmers	RM/mt	2,249	**C = A + B**	
Cost of production	RM/ha	4,000	**D**	Farm cost estimation of RM6,300/ha, as well as RM2,300/ha estimation of input subsidy received. The cost estimation includes the fee paid to agents to sell their paddy to millers.
Yield	mt/ha	4.0	**E**	
Cost of production	RM/mt	1,000	**F = D ÷ E**	
Net revenue	RM/mt	1,249	**G = C - F**	
Net revenue	RM/ha	4,996	**H = G × E**	

Source: MADA, subject matter expert and MyCC analysis

5.5. Retailers' cost structure

Retailers primarily set their selling price based on the price they pay to wholesalers. In this example, the wholesalers' price is RM3,632/mt. Retailers determine their selling price to consumers by factoring in distribution costs, marketing expenses, other overheads and their profit margin. (see Table 29). According to this calculation, retailers sell rice at a price of RM37.82/10 kg.

Table 29: Retailers' selling price to consumers

Retailers' perspective	Unit	Amount		Remarks
Cost of rice from wholesaler	RM/mt	3,632	**A**	Wholesalers' selling price to retailers
Retailers' cost	RM/mt	100	**B**	Estimation of distribution and marketing expenses, as well as other overheads
Retailers' margin	RM/mt	50	**C**	Estimation of 1.3% margin
Selling price to consumers	RM/mt	3,782	**D = A + B + C**	
Selling price to consumers	RM/10kg	37.82	**E = D ÷ 100**	

Source: MADA, subject matter expert, and MyCC' analysis

In reality, on 1 September 2023, MAFS approved BERNAS to sell imported rice to wholesalers at RM3,200/mt. Based on this price, the calculated retail price of rice is RM38.99 per 10 kg. This is in line with the retail price of BPI observed by MAFS at the time, which ranged between RM38 and RM40 for a 10 kg bag. However, the retail price of BPT can only reach up to RM26.00 per 10 kg, as this is the price ceiling set by MAFS for BPT.

5.6. Imported rice price changes affect pricing of paddy, local rice, and income to farmers

As mentioned earlier, MAFS approves the price at which BERNAS sells BPI to wholesalers. MAFS also enforces price controls on BPT and paddy. Specifically, the government guarantees a minimum price of RM1,300/mt for paddy that millers pay farmers and sets a maximum retail price of RM26 per 10 kg for BPT. The prices at various levels of the supply chain are closely interconnected, influencing each other.

Between 2023 and 2024, the price of imported rice approved by MAFS was revised twice. The first revision took place on 1 September 2023, when the price of BPI increased from RM2,350/mt to RM3,200/mt. A second revision occurred on 20 March 2024, reducing the price of BPI to RM3,000/mt. These price changes had a cascading effect across the supply chain, causing price adjustments for millers, farmers, and retailers. When the price of BPI increased, farmers benefitted from higher prices, but consumers faced higher retail prices. Conversely, when BPI prices decreased, all players along the supply chain were required to lower their prices.

For instance, before September 2023, when the BPI price was RM2,350/mt, millers purchased paddy from farmers at RM1,310/mt and consumers paid RM30.50 per 10 kg of rice (see Table 30). After the price revision in September 2023, BPI rose to RM3,200/mt, allowing farmers to sell their paddy at RM1,820/mt, while the retail price of rice increased to RM38.99 per 10 kg. In March 2024, when the government reduced BPI prices to RM3,000/mt, the price of paddy dropped to RM1,700/mt and the retail price of rice decreased to RM37 per 10 kg.

As of 25 September 2024, global rice prices stood at USD570/mt, which could translate to an imported rice price of approximately RM2,540/mt. At this level, farmers would likely receive around RM1,424/mt for their paddy, while the retail price of BPI would drop to approximately RM32.40 per 10 kg.

Table 30: Changes in BPI price and its impact along the supply chain, 2023 – 2024

Price	Prior to Sep-23 RM/mt	Sep-23 RM/mt	% change	Mar-24 RM/mt	% change	Sep-24 RM/mt	% change
BERNAS to wholesalers	2,350	3,200	36.2	3,000	-6.3	2,540	-15.3
Wholesalers to millers	2,350	3,200	36.2	3,000	-6.3	2,540	-15.3
Millers to farmers	1,310	1,820	38.9	1,700	-6.6	1,424	-16.2
Wholesalers to retailers	2,900	3,749	29.3	3,550	-5.3	3,090	-13.0
Retailers to consumers	3,050	3,899	27.8	3,700	-5.1	3,240	-12.4

Source: MADA, subject matter expert, and MyCC' analysis

6. OWNERSHIP STRUCTURES AND ISSUES IN THE INDUSTRY 72

6. OWNERSHIP STRUCTURES AND ISSUES IN THE INDUSTRY

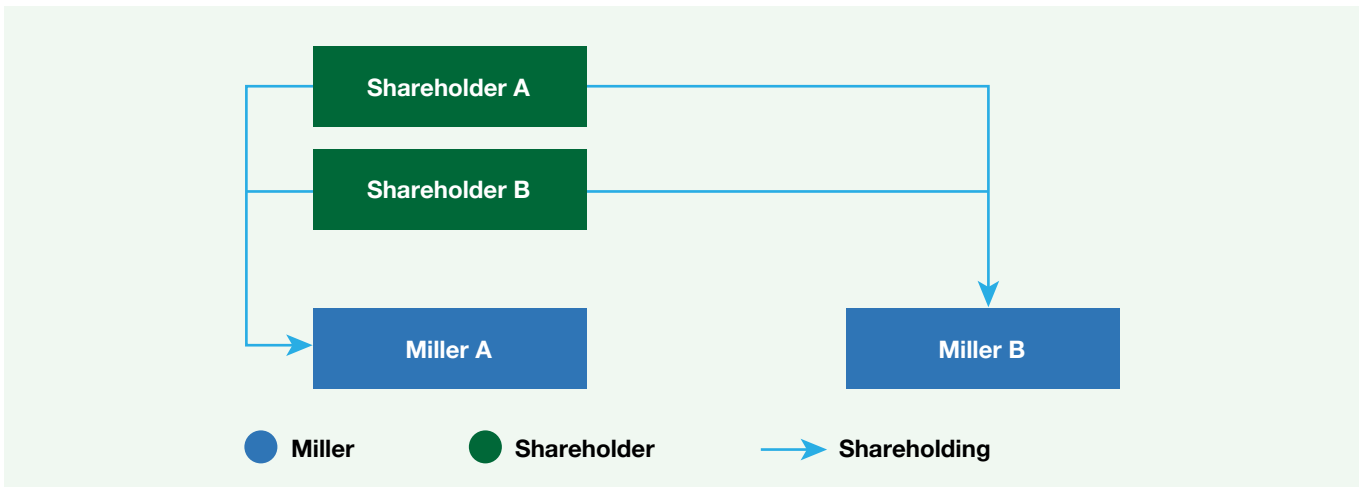
This section examines ownership structures in the paddy and rice industry, from independent operators to companies with cross-segment shareholdings. These structures influence how firms exercise control, interact, and compete across the supply chain. Whether individual, corporate, or cooperative ownership, these arrangements significantly impact market dynamics, pricing practices, and industry competition. We will analyze these ownership patterns and their effects on market behavior.

6.1. Common ownership

Common ownership refers to a situation where multiple companies are owned, wholly or partially, by the same shareholders or investment entities. The paddy and rice industry are characterized by a high degree of consolidation and interconnected ownership driven by the presence of common shareholders or shared ownership:

- Companies operating in the same level of the industry value chain, or common horizontal ownership (see Figure 20).

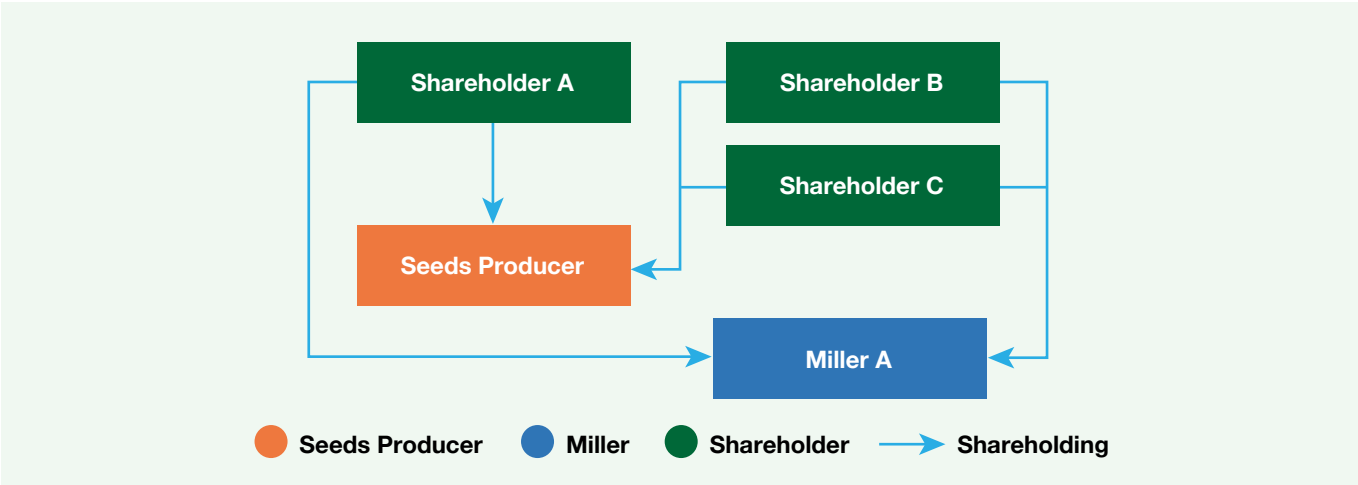
Figure 20: An example of a common horizontal ownership



Source: MyCC' analysis

- Companies in various segments of the industry value chain, or common vertical ownership (see Figure 21).

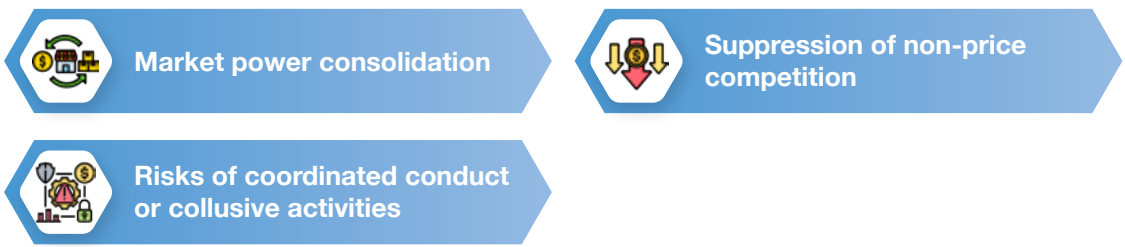
Figure 21: An example of a common vertical ownership



Source: MyCC' analysis

6.1.1. Competition concerns with common ownership

Common horizontal ownership generally presents more direct competition concerns than common vertical ownership as the former involves companies that are supposedly direct competitors. Some of the competition concerns arising from common horizontal ownership include:

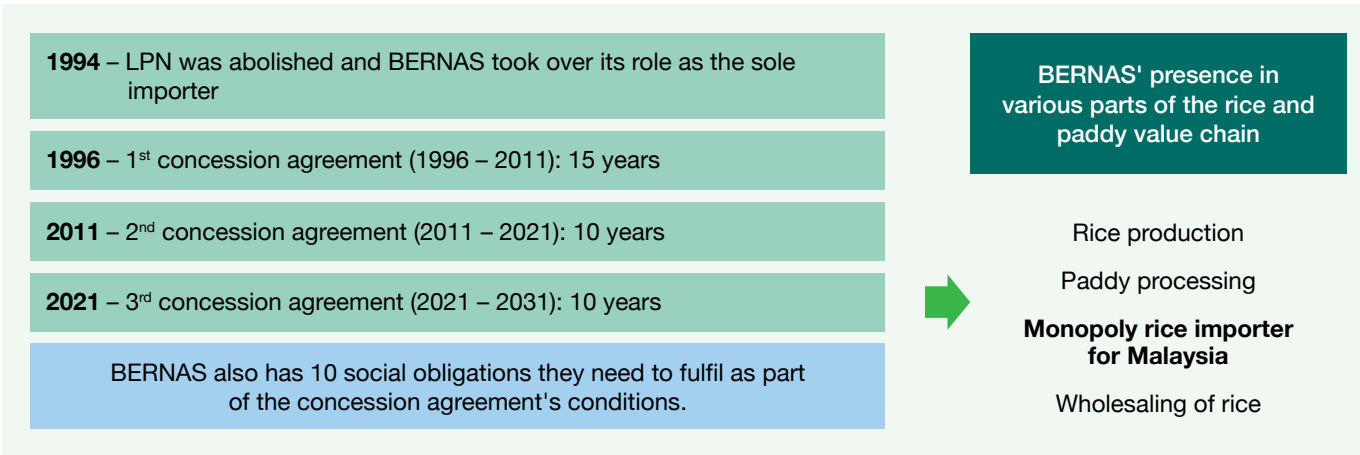


While common horizontal ownership generally presents more direct competition concerns than common vertical ownership, the latter are also not without its competition challenges:

6.2. BERNAS' vertical integration activities

As the sole rice importer, BERNAS has a monopoly power in the rice import market for Malaysia. However, as highlighted earlier, BERNAS is also actively operating, via its wholly owned subsidiaries and associate companies, in other segments of the industry value chain such as the paddy processing and rice production in the midstream segment and rice distribution in the downstream segment – see Figure 22.

Figure 22: Bernas in the paddy and rice industry in Malaysia



Source: BERNAS

These vertical arrangements or integration activities are often considered benign, or less harmful under competition law, as compared to horizontal arrangements or agreements (between players at the same level of the supply chain). Vertical arrangements are generally considered less concerning as they can often result in efficiencies that benefit consumers and the economy:

Efficient supply chain coordination

Vertical arrangements streamline operations between producers, distributors, and retailers, ensuring better alignment of brand image and quality standards.

Reduction in transaction costs

Long-term vertical relationships reduce contract negotiation costs and supply chain disruptions, improving overall efficiency.

Facilitation of investment and innovation

Vertical arrangements encourage investment in new technologies and processes through guaranteed long-term business relationships.

Better pricing strategy

Vertical integration can reduce double marginalization, potentially leading to lower consumer prices through unified pricing approaches.

Risk sharing and long-term stability

Vertical agreements distribute risks across the supply chain, improving supply-demand predictability and stability.

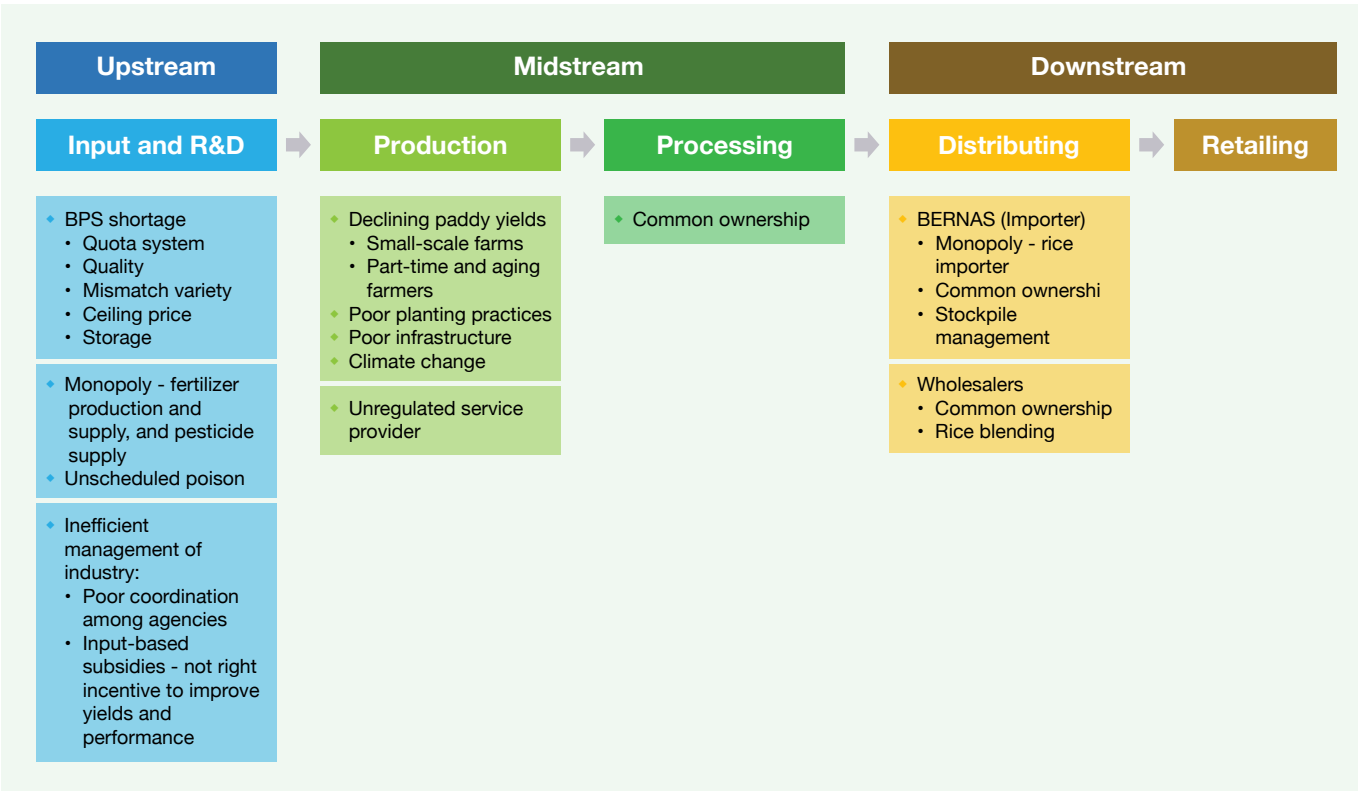
While vertical arrangements in the rice industry can offer benefits, there are potential concerns when implemented by a monopoly like BERNAS in a price-controlled market. These include reduced incentives for innovation due to limited competition, challenges for regulators in monitoring activities across multiple supply chain levels, market inflexibility due to varying regulations between local and imported rice, and the possibility of indirect price increases through additional service fees despite price controls.

7. POLICY AND MARKET ISSUES 77

7. POLICY AND MARKET ISSUES

Malaysia's paddy and rice industry faces both global and local challenges. High seed prices, rising production costs, and policy misalignments affect industry efficiency and productivity, creating supply chain bottlenecks. Recent global events, including India's export restrictions and geopolitical tensions, further strain Malaysia's rice market, which depends significantly on imports to supplement domestic production. Figure 23 highlights some of the market and policy issues across the value chain.

Figure 23: Police and market issues across the value chain



Source: MyCC' analysis

7.1. BPS shortage

Several agencies, including the DOA and MARDI, are involved in BPS production to ensure farmers have enough certified seeds. However, stakeholders across the industry have reported ongoing shortages, pointing to various challenges. Key issues related to BPS shortages are discussed below.

7.1.1. Lengthy BPS certification process

The DOA certifies BPS production, which involves multiple inspections and lab tests to ensure seed quality. This process can take a long time due to the large volume of samples, the need for retesting, and limited DOA manpower. These factors lead to backlogs, delaying certification and distribution to farmers.

7.1.2. Shortage of certain seed varieties

A common issue in the BPS market is a mismatch between the seed varieties farmers prefer and those provided by producers. Farmers often request high-yield varieties like MR297, but producers may supply less popular ones like MR215 and MR269. This mismatch results from last-minute changes in demand that are difficult to accommodate, as seed production is planned well in advance. The shortage of high-demand seeds and oversupply of less popular varieties complicates the supply chain and can lead to lower yields and income for farmers.

7.1.3. BPS sold above ceiling price

Another problem is the sale of BPS above the government-set ceiling price. Although the official price is RM54 per 20 kg bag at the mill gate (RM58 at retail), there are reports of BPS being sold for RM60 to RM70 per bag. Additional fees, often disguised as service charges for transport, storage, or handling, increase the price. This overpricing puts extra financial strain on farmers, who already face high costs for fertilizers, pesticides, and machinery. The practice is difficult to regulate because the extra charges are listed as vague service fees, making it hard for authorities to enforce pricing rules and keep seed prices affordable.

7.1.4. Improper BPS storage by farmers

While DOA-certified BPS is initially of high quality, improper storage by farmers can reduce its viability. BPS needs to be stored in a dry, cool area, away from direct sunlight and chemicals like pesticides. Improper storage, such as keeping seeds near harmful chemicals, can lead to contamination and reduced germination. Seeds stored poorly may produce weaker plants, leading to lower yields and increased need for fertilizers and pesticides, which drive up costs and reduce profitability.

7.1.5. Inconsistent quality of BPS

Farmers report that some BPS lacks resistance to common diseases and pests, which impacts crop yields and reduces productivity. Although the DOA enforces strict protocols for seed quality under the Seed Certification Scheme, recurring issues with non-compliance have been reported (see Figure 24).

Figure 24: Strict protocols by DOA to certify seed quality

Source: MyCC

7.1.6. Use of uncertified seeds

Due to dissatisfaction with certified BPS, some farmers turn to cheaper, unofficial seeds from informal sources or saved from previous harvests. However, uncertified seeds often lack disease and pest resistance, which can lead to lower yields and spread risks of infestation. This practice undermines government efforts to maintain a standardized, high-quality seed supply, posing risks to the wider paddy industry.

7.1.7. Issues with the quota system

The current quota system, managed by MAFS and involving 12 suppliers, fails to meet demand due to capacity and financial limitations among producers. Lack of transparency and incentive in the quota allocation process also discourages long-term investment and innovation in seed quality. Consequently, some farmers save seeds from previous harvests, resulting in lower-quality inputs and reduced productivity.

7.1.8. High demand for BPS due to inefficient sowing practices

Inefficient sowing methods lead farmers to use more BPS than necessary, straining the limited supply. Over-sowing to compensate for poor seed quality further drives demand. Improved training and efficient planting methods, like mechanized sowing, could help reduce BPS demand and enhance productivity.

7.1.9. Exploitation of price differences

Vertically integrated companies with licenses across BPS production, milling, and wholesaling exploit price gaps by blending lower-cost imported rice with higher-quality local rice to boost profit margins. This practice distorts market prices, creates shortages, and limits fair income for farmers, affecting the integrity of the rice supply chain.

7.2. Declining paddy yields

In general, as highlighted in Section 4, Malaysia's paddy yields have experienced a steady decline throughout the years (see Table 31).

Table 31: National paddy production, 2017 – 2023

('000 mt)	2017	2018	2019	2020	2021	2022	2023
Paddy production – MAFS[39]	2,570.0	2,639.2	2,352.9	2,356.4	2,441.6	2,281.7	2,175.1
Average paddy yield (mt/ha)	3.7	3.8	3.5	3.7	3.8	3.6	3.5

Source: MAFS

7.2.1. Land fragmentation and ageing farmers

The decline in Malaysia's paddy yields is partly due to the structure of the market, dominated by small-scale farmers who manage fields of less than 2 ha (see Table 32). These smallholders, more often are part-time farmers, often lack resources like modern technology and quality inputs, limiting their productivity (see Figure 25). The fragmented nature of paddy farming in Malaysia creates inefficiencies, leading to higher costs and lower output, making it difficult for local farmers to compete with large-scale producers in countries like Vietnam and Thailand.

The absence of large-scale and mechanized farming systems also hinders modernization, complicating the coordination of harvesting and processing of paddy. This fragmented setup contributes to a cycle of low productivity and income for farmers.

[39] Data on national paddy production is derived from MAFS Agro-food Statistics, with the most recent data available only up until 2022.

Table 32: Number of registered farmers for Season 2/2023 and Season 1/2024

		Number of registered farmers		Number as percentage to total	
	Size	Season 2/2023	Season 1/2024	Season 2/2023	Season 1/2024
1	<0.1 ha	6,543	5,886	2.0%	2.2%
2	0.1 - 0.3 ha	36,136	34,000	10.9%	12.8%
3	0.3 - 0.5 ha	91,092	41,360	27.6%	15.5%
4	0.5 - 0.99 ha	85,539	80,176	25.9%	30.1%
5	1 - 1.9999 ha	76,711	71,299	23.2%	26.8%
6	2 - 2.9999 ha	22,128	21,322	6.7%	8.0%
7	3 - 3.9999 ha	4,858	4,811	1.5%	1.8%
8	4 - 4.9999 ha	2,628	2,607	0.8%	1.0%
9	5 - 5.9999 ha	1,558	1,554	0.5%	0.6%
10	6 - 6.9999 ha	1,181	1,289	0.4%	0.5%
11	7 - 7.9999 ha	719	718	0.2%	0.3%
12	8 - 8.9999 ha	530	530	0.2%	0.2%
13	9 - 9.9999 ha	470	460	0.1%	0.2%
14	> 10 ha	377	378	0.1%	0.1%
Total		**330,470**	**266,390**	**100.0%**	**100.0%**

Source: MAFS

Figure 25: Traditional method of fertilizing paddy fields without using any equipment

Source: MAFS

Additionally, a large proportion of paddy farmers in Malaysia are over 60 years old, with limited interest from younger generations in entering the field. The number of trainees in paddy production courses has been declining, indicating low youth engagement (see Table 33). Many farmers continue to use traditional farming methods, which are less productive than modern techniques. The combination of an ageing workforce and small, fragmented landholdings contributes to lower productivity and reinforces the decline in national paddy yields.

Table 33: Number of trainees in paddy production course for SKM and DKM (PLKPK)[40]

Year	Intake	Enrolled	Graduated	Total
2016	84	166	47	297
2017	61	161	53	275
2018	68	176	100	344

[40] SKM = Sijil Kemahiran Malaysia; DKM = Diploma Kemahiran Malaysia; PLKPK = Program Latihan Kemahiran Pertanian Kebangsaan, Table 9.5 in MAFS (2024), Malaysia Agrofood in Figures 2023.

Year	Intake	Enrolled	Graduated	Total
2019	40	165	50	255
2020	24	85	13	122
2021	22	54	24	100
2022	28	87	15	130
2023	11	58	22	91

Source: MAFS

7.2.2. Threat by pests and poor soil quality

Paddy yields are impacted by pests like golden apple snails and scotinophora, with farmers reporting that government-supplied pesticides under the SIPP program are ineffective. Some farmers resort to unregistered pesticides, which, while cheaper, contain harmful chemicals that degrade soil quality by killing beneficial microorganisms and reducing soil fertility.

7.2.3. Inefficient irrigation system and water supply

Aging and poorly maintained irrigation systems lead to inefficient water distribution, affecting paddy yields. Inadequate funding for repairs and upgrades causes water shortages in some areas and waterlogging in others, resulting in planting and harvesting delays that reduce productivity.

7.2.4. Climate change impacts paddy production

Paddy production is highly sensitive to environmental changes, with erratic weather patterns, rising temperatures, and events like El Niño and La Niña reducing yields. Organizations like IADA have started adjusting planting schedules to better align with optimal weather conditions.

7.3. Unregulated service providers in the industry

In Malaysia's highly regulated paddy and rice industry, a significant gap exists in the regulation of service providers (also known as brokers or agents), or intermediaries, who play essential roles in the supply chain. These service providers operate without government oversight, impacting costs and efficiencies in the industry.

7.3.1 Roles of service providers

Service providers assist farmers by managing fields, supplying seeds and machinery, providing loans, and coordinating distribution. They also act as intermediaries for inputs like fertilizers and pesticides, connecting farmers and millers and offering financial support within the community.

7.3.2 Uncontrolled seed prices

Although BPS prices are government-controlled, service providers often add extra fees, raising costs for farmers. This lack of price regulation undermines the intended affordability of seeds for small farmers.

7.3.3. Fees and commissions by service providers add to the cost of paddy production

Service providers charge RM150 to RM250 per mt for essential services like transportation and labour. These fees, unregulated, inflate production costs, reducing farmers' income and eventually leading to higher prices for consumers.

7.4. Addressing price disparities and managing BPI shortages.

Import quota has increased gradually between 2018 and 2023 (see Table 34). Generally, rice imports met market demand. However, in 2022, actual imports fell short of the government-set quota. A global rice shortage, worsened by India's export ban on non-basmati rice in July 2022, led to decreased supply and rising prices.

Table 34: Import quota, 2018 – 2023

('000 mt)	2018	2019	2020	2021	2022	2023
Import quota ('000 mt)	800.0	900.0	1,160.0	1,108.0	1,200.0	1,300.0

Source: BERNAS

7.4.1. Impact of higher rice prices on consumption trends

The global rise in rice prices led BERNAS to increase the BPI price by 36% to RM3,200/mt as of 1 September 2023. This widened the price gap between BPI (now RM30–RM70 for a 10 kg bag) and the price-controlled BPT (RM26–RM28 per 10 kg), pushing many lower-income consumers to switch to the more affordable BPT. However, Malaysia's domestic production meets only 56.2% of BPT demand, creating shortages. To address this, the government has instructed BERNAS to import additional rice from countries like Thailand, Vietnam, Pakistan, and India.

7.4.2. Impact of higher rice prices on millers and traders

The increased BPI prices have shifted the focus of millers and traders towards selling more imported rice to maximize profits. This profit-driven strategy has led to widespread blending of BPI with BPT, further reducing the availability of locally produced BPT and distorting the market.

7.4.3. Market distortions from large price differentials

The significant price gap between BPT (RM26 per 10 kg) and BPI (RM39 per 10 kg) is causing market distortions. This policy, which has been in place since 2018, initially intended to make rice affordable but now has led to imbalances and consumer dissatisfaction. The price gap, without significant differences in quality between BPT and BPI, raises concerns about market efficiency, and the blending of rice types complicates quality assurance for consumers.

7.5. Rampant rice blending practices in the markets

Rice blending by wholesalers, once aimed at enhancing taste, is now increasingly profit-driven. Following the rise in BPI prices, wholesalers repackage BPT as BPI to sell at higher prices. This practice has reduced the supply of *Super Spesial Tempatan* (SST) rice, and as wholesalers pay more for local rice, millers and farmers also see price increases.

7.5.1. Laws on the practice of rice blending

Rice blending practices violate the Trade Descriptions Act 2011 [Act730] and the Control of Padi and Rice Act 1994 [Act 522], as they mislead consumers. Despite these laws, gaps in enforcement allow the continued sale of blended rice, as shown in Table 35.

Table 35: Laws and regulations on rice blending/blended rice

Laws and regulations	Details
Control of Padi and Rice Act 1994 [Act 522]	The Control of Padi and Rice Act 1994 allows the Minister to mandate labels indicating rice quality, grade, or price on containers. Since blending BPT and BPI can alter these characteristics, approval from the Director General is required to modify labels whenever blending occurs.
Rice Order (Grade and Price Control) 1992 P.U. (A) 547/1992	Blending BPT and BPI changes the grade, weight, price, and percentage of broken rice in "super" grade rice. Retailers, however, are not required to display labels with weight, price, or broken rice percentage when selling from open containers. This exemption may incentivize retailers to blend BPT and BPI.
Rice Order (Grade and Price Control) (Amendment) P.U. (A) 183/2001	Retailers are permitted to sell blended rice with any percentage of imported rice under the definition of *Super Tempatan* (ST).

Source: MAFS

In addition, the government also imposed price controls on the sale of local rice (ST and SST. The relevant legislations that govern price control and rice grading, as well as blending, are highlighted in Table 36. Between 2001 and 2008, the laws clearly defined categories of rice and grading in terms of broker rice content. Since 2008, the categories of rice, their definitions and price ceiling have never been revised by the government.

Table 36: Relevant legislations on price control and rice blending, 2001 – 2008

Date	Legislation	Remarks
		Peninsular Malaysia
June 2001	P.U. (A) 183/2001	Categorization of rice into three types, as follows: • Special Tempatan (ST) – Rice obtained from paddy planted in Malaysia and may contain any percentage of SI rice • *Super Import* (SI) – Rice obtained from outside Malaysia • *Super Spesial Tempatan* (SST) – Rice obtained from paddy planted in Malaysia but does not contain any percentage of imported rice
June 2008	P.U. (A) 173/2008	Categorization of SST into two, based on broken rice content, as follows: • SST5[41] – SST rice containing not more than 5% of broken rice • SST10[42] – SST rice containing not more than 10% of broken rice
November 2008	P.U. (A) 421/2008	Introduction of selling price cap for retailers, as follows: • SST5 – RM2.60/kg • SST10 – RM2.40/kg • ST – Ranged between RM1.65/kg and RM1.80/kg according to states and areas • SI – No price control
		Sabah, Sarawak and Labuan
June 2008	P.U. (A) 174/2008	Categorization of SI, as follows: • SI – rice obtained from outside Malaysia • Super 15 – SI containing not more than 15% of broken rice • *Super Spesial 5* – SI containing not more than 5% of broken rice • *Super Spesial 10* – SI containing not more than 10% of broken rice
November 2008	P.U. (A) 422/2008	Introduction of selling price cap for retailers, as follows: • SST5 – RM2.60/kg • SST10 – RM2.40/kg • Super 15 – RM1.80/kg • *Super Spesial 5* – RM2.60/kg • *Super Spesial 10* – RM2.40/kg • SI – No price control

Source: MAFS

[41] Do not contain any percentage of SI rice.
[42] Do not contain any percentage of SI rice.

7.5.2. Evidence of rice blending activities

The trends of BPT purchased and sold, and BPI purchased and sold between January 2023 and May 2024 were analyzed. The data showed that there is a mismatch between the share of BPT and BPI purchased and share of BPT and BPI sold. Between January 2023 and May 2024, the percentage of BPT purchased is consistently higher than the percentage of BPT sold. At the same time, the percentage of BPI purchased is consistently lower than the percentage of BPI sold. This indicates that the BPT inventory were blended with BPI and sold as BPI products (see Table 37).

Table 37: BPT and BPI purchased and sold trend, 2023 – 2024

Rice Type	Transaction	Jan 2023 (%)	May 2024 (%)	Change (pp)
BPT	Purchased	48.5	15.5	-33.0
	Sold	47.8	15.3	-32.1
BPI	Purchased	51.5	84.5	33.0
	Sold	52.5	84.7	32.1

Source: MAFS

7.6. Inefficient management of the industry

The paddy and rice industry in Malaysia faces regulatory and operational challenges, with multiple authorities involved. Limited resources, overlapping jurisdictions, and enforcement difficulties hinder the industry's sustainability and productivity.

7.6.1 Lack of resources in KPB, DOA and other agencies

Kedah, with the largest paddy fields, has only 13 KPB officers, insufficient for effective enforcement. DOA's limited resources require support from other states, causing delays in seed verification and distribution, which impacts planting schedules and yields.

7.6.2 Too many authorities regulating industry

Multiple agencies (e.g., KPB, KPDN, MADA) independently oversee various aspects of the industry, leading to bureaucratic inefficiencies, duplications, and delays due to lack of coordination and conflicting priorities.

7.6.3. Enforcement challenges by KPB

KPB struggles to enforce regulations effectively due to challenges in gathering evidence for violations, such as detecting blended rice or unapproved pesticides, and lacks practical tools to monitor service providers' behaviour.

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8. RECOMMENDATIONS AND CONCLUSION

This section outlines key conclusions and actionable recommendations for Malaysia's paddy and rice industry, grouped into three categories:

1 General recommendations

Targeting broad industry challenges to enhance sustainability, efficiency, and resilience, focusing on market structures, policy coordination, supply chain efficiency, and resource allocation.

2 Recommendations on BERNAS

Addressing BERNAS's role in ensuring food security and price stability, with both general and competition-related recommendations, particularly around its market position and vertical integration.

3 Competition-specific recommendations

Aimed at promoting competition and maximizing consumer welfare within the industry.

These recommendations are intended to guide government Ministries, agencies, and the MyCC in improving the industry's market and regulatory landscape to enhance market efficiency, food security, and competitive benefits.

8.1. Key policy and market recommendations

The challenges in Malaysia's paddy and rice industry, such as declining yields, price disparities, and data gaps, go beyond competition issues and require broader industry reforms to improve productivity and address regulatory gaps.

8.1.1. Liberalize the price of BPT

Issue Price controls on BPT create market inefficiencies and price disparities with BPI, impacting low-income consumers' affordability.

Recommendations

Phased liberalization of BPT prices Gradually remove price caps, possibly using a flexible price band system to align prices with production costs, inflation, and global trends. This would allow supply-demand dynamics to guide prices more effectively and encourage competition.

Targeted price controls Focus subsidies or price caps on vulnerable consumers through direct cash transfers or food vouchers, ensuring affordability while allowing freer market price adjustments.

Coordinate price control and subsidy reforms Integrate price control reforms with input subsidy programs for a more efficient, productive market.

Suggested stakeholders

- **Lead** – MAFS
- **Support** – MOF, MOE, MITI

8.1.2. Legalize rice blending activities

Issue Unregulated rice blending practices lead to BPT shortages.

Recommendations

Remove blending restrictions Lift existing blending prohibitions and eliminate rice categories (e.g., SST, ST, SI) to allow wholesalers to innovate and create new rice formulations for consumers.

Amend laws for blending and labelling Require labels to specify the exact ratio of BPT to BPI in blended rice, with stricter penalties for misrepresentation.

Strengthen monitoring and enforcement Enhance KPB's inspection capacity and create a task force with KPDN to oversee compliance with blending and labelling regulations.

Implement a traceability and certification system Use digital tracking technologies, like blockchain and QR codes, to ensure transparency from production to retail, allowing consumers to verify the quality and authenticity of blended rice.

Suggested stakeholders

- **Lead** – MAFS
- **Support** – KPDN, Attorney General's Chambers (AGC), SKPB

8.1.3. Undertake reform on the subsidy system

Issue The highly subsidized paddy and rice industry places a fiscal burden on the government.

Recommendations

Transition to targeted subsidies Shift to a subsidy model that prioritizes small-scale farmers based on income, farm size, and productivity. Digital platforms could help identify eligible recipients, and a tiered subsidy structure would support small farmers while encouraging larger farms to increase efficiency.

Link subsidies to performance Adjust subsidies to reward higher yields through output-based incentives, refining programmes like SIPP to motivate sustainable practices and improved productivity.

Rationalize input subsidies Tailor subsidies for inputs like fertilizers and pesticides based on soil and crop health data to minimize overuse, environmental damage, and inefficiency. Link subsidies to soil testing, providing support based on actual nutrient needs.

Support modern, sustainable farming Provide grants or subsidies for farmers adopting precision agriculture, modern techniques, and sustainable practices to boost efficiency and long-term resilience.

Enhance monitoring and transparency Use digital tracking, mobile apps, and blockchain to monitor subsidy distribution and conduct periodic audits to reduce leakage and improve subsidy effectiveness.

Suggested stakeholders

- **Lead** – MOF
- **Support** – MAFS, NAFAS, BERNAS

8.1.4. Consolidate industry regulation under a single agency

Issue Multiple authorities regulating the paddy and rice industry cause inefficiencies and hamper effective oversight.

Recommendations

Consolidate agency functions Merge existing authorities (e.g., KPB, IADA, KADA, MADA) into a single regulatory body to streamline responsibilities, which would enhance operational capacity with over 3,000 staff and eliminate jurisdictional overlaps.

Improve cost-efficiency and execution Consolidation could reduce bureaucratic delays, save government costs, and ensure better infrastructure support for expanding paddy farming, increasing industry efficiency.

Suggested stakeholders

- **Lead** – KPB
- **Support** – MAFS, AGC

8.1.5. Formalize and regulate the role of service providers

Issue Service providers in the industry operate unregulated, leading to potential exploitation.

Recommendations

Introduce regulations for service providers Officially recognize and regulate service providers to ensure transparency and ethical practices. This includes setting limits on service charges to reduce financial strain on farmers and millers.

Implement a licensing system Require service providers to obtain licenses, ensuring only qualified individuals/entities operate in the industry, preventing exploitative practices.

Monitor service provider activities Conduct regular audits and inspections to track fees, service quality, and supply chain impacts, allowing the government to address irregularities.

Amend the Padi Cultivators (Control of Rent and Security of Tenure) Act 1967 Update the Act to reflect modern commercial arrangements and regulate excessive charges or commissions, managed by the JKPTG.

Suggested stakeholders

- **Lead** – MAFS
- **Support** – KPDN, AGC, PPK

8.1.6. Introduce competition in seed production

Issue Limiting seed production to 12 producers with fixed quotas restricts innovation and investment.

Recommendations

Liberalize the BPS quota system Open up the seed production market to encourage competition, allowing more players to enter and offer high-quality seeds. Transition the subsidy from input-based to output-based, directly benefiting farmers.

Promote long-term investment Encourage investments in seed farms, processing, storage, and distribution, along with additional services like farmer training and monitoring.

Suggested stakeholders

- **Lead** – MAFS
- **Support** – MOF

8.1.7. Revise the rice stockpile policy

Issue BERNAS, as the sole importer and stockpile manager, faces criticism over rice quality and market influence, raising concerns about over-reliance on a single entity for food security.

Recommendations

Reduce reliance on BERNAS Begin a gradual transition away from BERNAS managing the national rice stockpile, with a complete shift by the end of BERNAS's concession in 2030, to enhance market resilience.

Open rice importation to other players Allow millers and wholesalers to participate in rice imports and contribute to the national stockpile, with the government handling only storage and security costs. This would increase competition and reduce food security risks.

Recommendations

Mandate shared stockpiling responsibilities Require industry players to contribute to the stockpile, creating a more resilient supply chain to support long-term food security.

Suggested stakeholders

- **Lead** – MAFS
- **Support** – MOF, MITI, KPB

8.1.8. Incentivise large-scale farming or cooperative models

Issue Small-scale farming contributes to declining national paddy yields.

Recommendations

Promote cooperative models and resource pooling Encourage farmers to form cooperatives or pool resources through associations like the PPK to achieve economies of scale. Cooperatives can enhance efficiency by sharing resources (e.g., machinery, infrastructure) and leveraging collective bargaining for inputs and sales.

Provide targeted incentives Offer easier credit access, support voluntary land-pooling, and provide technical assistance to facilitate cooperative formation. Larger-scale farming models also enable more sustainable practices, improving productivity and resource management.

Suggested stakeholders

- **Lead** – MAFS
- **Support** – Ministry of Entrepreneur and Cooperatives Development (KUSKOP), MOF, PPK

8.1.9. Enhance coordination among relevant stakeholders

Issue Market inefficiencies arise from poor coordination, affecting production and industry performance.

Recommendations

Strengthen Federal and State policy alignment Streamline land use and water management approvals with clear guidelines and timelines, ensuring paddy farmers access necessary resources efficiently.

Improve collaboration between farmers, seed producers, and agencies Align seed production schedules with demand forecasts and enforce certification protocols to ensure high-quality seeds and restore farmer confidence.

Increase infrastructure funding Federal and State governments should allocate additional funds for maintenance and repairs to support agricultural productivity.

Adopt a whole-nation approach Coordinate efforts across agencies (e.g., DOA, Pesticides Board, MCMC, KPDN) to tackle issues like the sale of unscheduled pesticides on online platforms.

Suggested stakeholders

- **Lead** – MAFS
- **Support** – DOA, JPS, MARDI

8.1.10. Promote greater mechanization and adoption of technology

Issue Labour shortages and declining paddy yields contribute to BPS shortages.

Recommendations

Increase mechanization Mitigate labour shortages by automating tasks like planting and harvesting. Offer financial support (e.g., subsidies, low-interest loans) for mechanized equipment and provide training for farmers on its use and maintenance to boost efficiency and yields.

Recommendations

Enhance sowing techniques Train farmers in efficient, technology-driven planting methods (e.g., mechanized sowing, seed drills) to optimize seed use, reduce BPS demand, and improve overall yield.

Suggested stakeholders

- **Lead** – MAFS
- **Support** – MOF, DOA, PPK

8.1.11. Enhance agricultural extension services

Issue Increasing national paddy yields and improving productivity require better farmer support.

Recommendations

Strengthen agricultural extension services Offer farmers ongoing education on best practices, pest control, and sustainable farming. Use digital tools (e.g., mobile apps, online resources) to provide real-time support, including pest identification, weather updates, and market prices.

Promote collaboration for innovation Partner with private companies and universities to integrate research and innovation into extension services, supporting the adoption of good agricultural practices (GAP) that boost productivity, reduce input waste, and promote sustainability.

Suggested stakeholders

- **Lead** – MAFS
- **Support** – DOA, PPK

8.1.12. Proactive measures to strengthen governance in NAFAS

Issue Preventing potential issues from NAFAS' monopoly in the fertilizer segment to ensure transparency and support for farmers.

Recommendations

Liberalize fertilizer supply Allow unsubsidized fertilizer producers to enter the market via competitive tendering, starting with the RM100mn allocation in the 2024 Budget.43 This reduces reliance on NAFAS and promotes competition.

Control prices during transition Maintain price ceilings initially to protect farmers, then gradually allow market-driven pricing as competition strengthens, encouraging supplier efficiency.

Diversify supply chain Encourage multiple producers and distributors under the subsidy program to avoid dependency on a single source.

Enhance NAFAS oversight Increase transparency in NAFAS' financial management and subsidy compliance, ensuring efficiency and accountability.

Promote sustainable practices Have NAFAS lead in promoting organic and eco-friendly fertilizers for environmentally conscious farming.

Suggested stakeholders

- **Lead** – MAFS
- **Support** – LPP, NAFAS

8.1.13. Amend the Control of Padi and Rice Act 1994 [Act 522]

Issue Ensure the Act is modernized to address current industry challenges, such as unregulated service providers, digitalization, and inadequate penalties.

Recommendations

Expand licensing Include service providers and intermediaries to ensure compliance with regulations on pricing, quality, distribution, promoting transparency, and fair pricing.

Introduce digital tracking tools Use online licensing, real-time stock monitoring, and digital databases to track compliance and enhance market oversight.

Adjust subsidy and price controls Allow flexible price ceilings and subsidies that adapt to market changes, balancing protection for consumers and farmers with minimal market distortion.

Regulate rice blending and labelling Mandate clear labelling on blended rice, indicating the ratio of local to imported rice, with penalties for mislabelling.

Require data sharing Compel industry players to supply data for better policymaking and industry planning.

Strengthen penalties Update penalties to effectively deter non-compliance and reduce repeat offences.

Suggested stakeholders

- **Lead** – MAFS
- **Support** – KPDN, AGC

8.2. Recommendations for BERNAS

The Industry Study underscores BERNAS' dual role as a key commercial entity and a provider of social obligations, influencing the entire supply chain. Recommendations address both BERNAS' general responsibilities in ensuring food security and specific competition measures to foster a fair market environment.

8.2.1. Policy and market recommendations

Review BERNAS' participation along the industry's supply chain

Assess whether BERNAS' operations across the paddy and rice supply chain align with its original mandate, which included rice importation, stockpile maintenance, and acting as a buyer of last resort.

Improve transparency

Require BERNAS to disclose its operational and financial performance annually on MAFS' website, making it a condition in its concession agreement to allow public access and scrutiny.

Develop a liberalization policy, plan, and action items

Develop a phased liberalization policy and action plan to transition from BERNAS' monopoly on rice imports, drawing from international models to support a more competitive market.

8.3. Competition-specific recommendations

The Industry Study highlights competition issues related to market concentration, ownership structures, vertical integration, and possible collusion within Malaysia's paddy and rice industry. These recommendations aim to support the MyCC in enforcing fair competition.

8.3.1. Policy advice to the government Ministries and agencies

Issue Ministries and agencies may unintentionally support anti-competitive practices due to limited understanding of competition law.

Recommendations

The MyCC will provide training and advocacy for government officials, especially in rural areas, to clarify competition concepts and prevent anti-competitive actions. It will also conduct Competition Impact Assessments (CIA) on industry policies to align them with Act 712.

8.3.2. Training and advocacy for companies with common ownership and vertical integration

Issue Common ownership and vertical integration can lead to anti-competitive practices.

Recommendations

The MyCC will hold training sessions to raise awareness among companies about competition law compliance and the risks of anti-competitive behaviours tied to ownership structures.

8.3.3. Capacity building for service providers

Issue Unregulated service providers may engage in collusive behaviours, impacting competition.

Recommendations

The MyCC will expand its #bebaskartel program to educate service providers on cartel risks and promote compliant practices.

8.3.4. Investigate anti-competitive conduct

Issue The Industry Study has revealed potential competition concerns inherent in the paddy and rice industry in Malaysia, which if not addressed and eliminated, could affect efficiency and productivity, increase entry barriers, limit new competition and reduces consumer welfare.

Recommendations

The MyCC reserves the right to investigate any anti-competitive object and effect arising from common ownership and directors in many companies operating in the industry, as well as vertical integration activities.

8.4. Lessons from Australia, Indonesia, the Philippines, and Vietnam

In examining the paddy and rice industry in Malaysia and providing recommendations for next steps, it is essential to draw lessons from other countries that have navigated similar challenges in balancing market regulation, competition, and food security. The Industry Study looks at the experiences of Australia, Indonesia, the Philippines, and Vietnam in developing, supporting, and sustaining their paddy and rice industries. These countries share common attributes and experiences with Malaysia as regards the development of the paddy and rice industry.

Geographical proximity and regional dynamics

Indonesia, the Philippines, Vietnam, and Malaysia share climate-related challenges such as monsoon patterns and water management affecting rice production. Australia, though geographically distant, offers advanced water management techniques to address issues of water scarcity, similar to those faced by Southeast Asian countries.

Socio-economic importance of rice

Rice cultivation in Indonesia, the Philippines, Vietnam, and Malaysia supports rural livelihoods with many smallholder farmers. Shared challenges include enhancing farmer productivity, providing fair market access, and addressing rural poverty, further compounded by an ageing farmer population.

Food security considerations

Rice is a staple in Indonesia, the Philippines, Vietnam, and Malaysia, making food security vital for these economies, which rely heavily on stable rice production and pricing.

Government policies and market regulations

These countries exhibit strong state intervention through price controls, subsidies, and resource access for smallholder farmers, reflecting agricultural policy frameworks similar to Malaysia's.

Existence of monopolies in the industry value chain

Monopolies in Malaysia, Indonesia, the Philippines, and previously in Australia, provide price stabilization and supply security. Malaysia can draw from Australia, Indonesia, and the Philippines' experiences with liberalization to explore ways of increasing private sector competition within its rice market.