



MINISTRY OF AGRICULTURE AND
FOOD INDUSTRIES



EXECUTIVE SUMMARY NATIONAL AGROFOOD POLICY 2021-2030 (NAP 2.0)

Agrofood Modernisation:
Safeguarding the Future of National Food Security



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FOREWORD BY

THE PRIME MINISTER OF MALAYSIA

“ This policy supports the aspirations and future direction of the national agrofood sector to be more sustainable, resilient and highly technology driven. It aspires to drive economic growth and improves the well-being of the people while prioritising the national food security and nutrition. ”



DATO' SRI ISMAIL SABRI BIN YAAKOB



***Bismillahirrahmanirrahim,
Assalamualaikum Warahmatullahi Wabarakatuh,
Salam Keluarga Malaysia,***

Alhamdulillah, thanks to the Almighty Allah SWT for His mercy and guidance for the successful publication of the National Agrofood Policy 2021-2030 (NAP 2.0) document. The national agrofood sector has been recording impressive growth for the previous decade.

Despite facing various challenges, the contribution of this sector to the Gross Domestic Product (GDP) has increased by an annual average of 6.8% during the implementation of the National Agrofood Policy 2011-2020.

However, the COVID-19 pandemic affecting the whole world has prompted governments to re-evaluate current policies adjusting to the global scenario and domestic needs. Therefore, to further develop the agrofood sector, NAP 2.0 is formulated as the government's effort to safeguard food security through the transformation of the national food system.

This policy supports the aspirations and future direction of the national agrofood sector to be more sustainable, resilient and highly technology driven. It aspires to drive economic growth and improves the well-being of the people while prioritising the national food security and nutrition.

NAP 2.0 also supports the national development agenda and current policies including Shared Prosperity Vision 2030 (SPV 2030), Malaysia Five-Year Development Plan, National Fourth Industrial Revolution (4IR) Policy and Malaysia Digital Economy Blueprint as well as other sectoral policies.

I am confident that through collaboration between federal government agencies, state governments as well as the support of industry players, the NAP 2.0 objectives can be achieved by 2030. NAP 2.0 will also enable the agrofood sector to remain competitive henceforth contributing to the national economic development, improving the well-being of the people as well as ensuring environmental sustainability. These goals are in line with the principles of the Sustainable Development Agenda 2030 (SDG 2030).

Finally, I call upon all stakeholders to work together in strengthening food security and advancing the modernisation agenda of the national agrofood sector.

#KeluargaMalaysia

#BekerjaBersamaRakyat

PREFACE BY

THE MINISTER OF AGRICULTURE AND FOOD INDUSTRIES



“ An efficient and resilient future food system has the potential to increase income of food producers along the food chain as well as be able to provide nutritious and affordable food in line with the core thrust of the national framework for food security. ”

A handwritten signature in black ink that reads "R / Kiandee". The signature is stylized and written in a cursive-like font.

DATUK SERI DR. RONALD
KIANDEE

The National Agrofood Policy 2021-2030 (NAP 2.0) is holistically formulated to continue the first National Agrofood Policy (NAP) with a focus on the modernisation and development of the agrofood sector as well as enhancing national food security.

NAP 2.0 is formulated from various engagement sessions with multiple stakeholders such as Government agencies, academicians, industry representatives, non-governmental organisations (NGOs) and the general public.

Current issues and challenges have been considered in the process of formulation including the need for food system transformation to ensure the agrofood sector remains significant and relevant in the national socio-economic development. An efficient and resilient future food system has the potential to increase income of food producers along the food chain as well as be able to provide nutritious and affordable food in line with the core thrust of the national framework for food security.

To support the aspirations of NAP 2.0, a policy framework has been established by incorporating economic, social and environmental elements as key principles. In summary, five (5) policy thrusts have been formulated with emphasis on modernisation and smart agriculture; strengthening market and product access; human capital development; food system sustainability; as well as creating conducive business ecosystems and governance.

Food security will continue to be given emphasis through strengthening of four (4) key sub-industries of the agrofood sector. The main goals of the strategies under the key sub-industries which include paddy and rice; fruits and vegetables; livestock; as well as fisheries and aquaculture are to increase the self-sufficiency level (SSL) of each commodity and income of the target group.

To achieve the goals, the application of modern technology is required to drive the development of agrofood sector to increase productivity in line with the Industrial Revolution 4.0 (IR4.0). In addition, the agrofood sector needs participation from competent youths and the Government's commitment to increase private investment in high-impact projects.

In support of the implementation of NAP 2.0, dedicated action plan has been formulated for each strategy outlined, setting specific outcomes and targets to bring greater impact on the livelihoods of the rakyat. All the initiatives will be implemented within the stipulated timeframe by optimising the efficient use of resources. Therefore, I urge all stakeholders to support the Government's efforts in the implementation of NAP 2.0.

Finally, I would like to express my utmost appreciation to all stakeholders involved in the formulation of NAP 2.0 and hope that the cooperation and networking established can be pursued further in the implementation of this policy to drive the modernisation of the national agrofood sector.

#KeluargaMalaysia

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INTRODUCTION BY

THE SECRETARY GENERAL OF THE MINISTRY OF AGRICULTURE AND FOOD INDUSTRIES

“ This policy will be an inspiration and motivating factor to the private sectors and industry players to collaborate with the Government in spearheading the development of the agrofood sector towards a competitive and modern sector and subsequently ensuring the success of NAP 2.0. ”



**DATO' HASLINA BINTI ABDUL
HAMID**



National Agrofood Policy, 2021-2030 (NAP 2.0) is formulated with a vision to develop a sustainable, resilient and technology-based agrofood sector in driving economic growth, improving the well-being of the people as well as prioritising food security and nutrition.

This vision has been translated into the policy statement based on three main principles of sustainable development, namely economic, social and environment. This resolution is in line with the national development agenda and global goals as aspired in the Shared Prosperity Vision 2030 (SPV 2030) and Sustainable Development Goals 2030 (SDG 2030) respectively.

The implementation of NAP 2.0 is driven by 6 policy objectives, supported by 5 policy thrusts, 21 strategies and 77 action plans that will be realised through various departments and agencies over a period of 10 years up to 2030. The policy thrusts include embracing modernisation through smart agriculture and intensification of research, development, commercialisation and innovation (R&D&C&I) activities, strengthening the agrofood product value chain for domestic and international markets, developing talent and skilled manpower, advancing towards sustainable agricultural practices and creating conducive business ecosystem including land use, finance, infrastructure, investment and governance.

At the same time, NAP 2.0 also focuses specifically on 4 sub-industries including paddy and rice, fruits and vegetables, livestock as well as fisheries and aquaculture through the implementation of 18 strategies and 58 action plans. The strategies will focus on high value activities along the food value chain that would be able to generate higher income to the target groups and improve the socioeconomic status of farmers, breeders, fishermen and agropreneurs.

Hence, the aspiration of NAP 2.0 will be achieved with the support of all stakeholders involved. I hope that this policy will be an inspiration and motivating factor to the private sectors and industry players to collaborate with the Government in spearheading the development of the agrofood sector towards a competitive and modern sector and subsequently ensuring the success of NAP 2.0.

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NAP 2.0 sets the policy direction from 2021-2030, for the Agrofood Sector

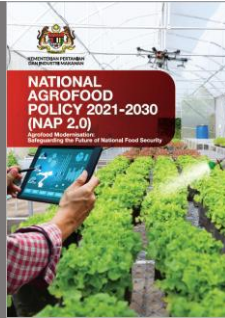
The continual betterment of the Agrofood Sector supports the interest across all three primary nation building elements, which are governance, economic, and the society. The food system continuously play a crucial role in any functioning human society as it caters to the demand of daily nutritional intakes and basic physiology for human survival is met. Similar to any other nations, Malaysia's food system operates upon the foundation of the Agrofood Sector, of which is characteristically intricate with a complex web of interaction between multiple players, each with varying profiles, responsibility, interest, and expertise. Its function as an industry of food production, has its impacts cascaded down from the apex level towards the grassroots of all society. The economic and social impact of the industry is evident where in 2019 the industry employs approximately 500,000 people (~4.00% of total workforce), contributes ~3.50% to the national GDP, and has a total land use of 5.63 million Ha accounting for approximately 17% of total land area of Malaysia.

With the world economy transitioning into an ever dynamic and competitive landscape, whilst experiencing the stresses of a global pandemic which had and will further disrupt economic activities as well as individual livelihood, the state of food security is now one of the centerpiece that will strongly influence a nation's long term development.

To chart the way forward for Malaysia agrofood sector in the next decade (2021-2030), amidst the newly emerged trends and challenges, National Agrofood Policy 2.0 (NAP 2.0) will succeed National Agrofood Policy 1.0 (NAP 1.0) as the overarching policy document for the entire agrofood sector. NAP 2.0 was developed with extensive consultation and engagement with key stakeholders across the public sector, private players, and industry experts for increasing buy-ins leading to high impact results.

Executive Summary

AND 2.0 was formulated through extensive consultation and engagement sessions with key stakeholders across the public sector, private players and industry experts to increase buy in and to achieve high impact.



Main Policy Document

This document entails:

1. 2030 goals for agrofood sector
2. Achievement of agrofood sector during the period of NAP 1.0 (2011-2020)
3. Issues and challenges of agrofood sector
4. Key differences of NAP 2.0 vs NAP 1.0
5. The relationship between NAP 2.0 and other relevant policies
6. NAP 2.0 framework
7. Background, description, strategy and action plan titles of the 5 policy thrusts and 4 sub-industries

Action Plan Document

This document describes the details of all action plans contained within Main Policy Document, which covers the following:

1. Rationale
2. Description
3. Timeline
4. Target Group
5. Division/Lead Agencies
6. Implementing Agencies
7. Key Outcome
8. KPI

For completeness, readers are recommended to read both the Policy Document and the Action Plan together.

Executive Summary

Agrofood sector goals which comprises elements of economic, social, and environment, will be the primary targets set to be achieved by 2030

NAP 2.0 will look to increase the agrofood sector's economic contribution towards the nation, which will be gauged by parameters including the contribution of agrofood sector to national GDP, average annual value-added growth, food trade balance CAGR, and food loss.



Contribution of Agrofood Sector to National GDP

2019	2025	2030
3.5%	3.6%	4.3%



Average Annual Value-Added Growth

2019	2025	2030
3.1%	4.5%	5.0%



Food Trade Balance CAGR

2019	2025	2030
-6.7%	2.8%	2.9%



Food Loss

Establish systems for the precise measurement and reduction of food loss along the value chain

NAP 2.0 also aspires to improve the social wellbeing of the people, from the standpoint of socio-economic uplifting, greater inclusivity, and enhancing food availability.



Income Level of Agrofood Sector

Higher monthly net income of food producers, whom the majority fall under B40 income group



Food Waste and Food Nutritional Quality

Malaysia is committed towards reducing food waste and increase food nutritional quality for end consumers



Local Participation in Agrofood

Provide more employment, recreation, education, and communal farming opportunities to the local population

Executive Summary



Self Sufficiency Level (SSL)

Major Food Commodities	2019	2025	2030
Rice	63.0%	75.0%	80.0%
Fruits	78.2%	80.0%	83.0%
Vegetables	44.6%	70.0%	79.0%
Food Fish	93.0%	95.0%	98.0%
Beef	22.3%	50.0%	50.0%
Poultry Meat	104.1%	120.0%	140.0%
Poultry Egg	119.1%	114.0%	123.0%
Fresh Milk	63.0%	100.0%	100.0%

Environmental sustainability will also be one of the emphasis in NAP 2.0, which will be gauged by parameters of: agrofood GHG, fish stock management, and biodiversity.



Agrofood GHG

Agrofood industry aims to reduce greenhouse gas (GHG) emission



Biodiversity

Continual development of agrofood industry whilst keeping maintaining and strengthening conservation of forestry and biodiversity



Fish Stock Management

By 2030

Protecting a total of 10.00% of local maritime areas

Setting up Zone B towards trawl free zone

Ratio of captured fisheries landing to aquaculture landing to achieve 60:40

Executive Summary

The performance of Agrofood Sector from 2011 until 2020 is assessed to understand the current landscape

Malaysia GDP Contribution Breakdown by Sector

The contribution of agrofood sector to the value added agriculture sector increased from 41.78% in 2010 to 48.02% in 2020, which indicates the potential of the agrofood sector to achieve a higher GDP contribution.

However, the GDP contribution of the agriculture sector has declined in 2020 as compared to 2010, indicating the possibility that there is a diminishing reliance on this sector in the Malaysian economy.

Sector/ Item	2010		2020 ^f		Compound Annual Growth Rate (CAGR) - (%)
	RM Million	%	RM Million	%	2010 – 2020 ^f
Agriculture	83,756	9.26	107,313	7.18	2.51
<i>Industrial Crops</i>	48,764	5.39	55,782	3.73	1.35
<i>Agrofood</i>	34,991	3.87	51,531	3.45	3.95
Mining and Quarrying	96,892	10.71	104,062	6.97	0.72
Manufacturing	207,245	22.91	329,995	22.09	4.76
Construction	33,444	3.70	69,862	4.68	7.64
Services	474,984	52.51	869,984	58.24	6.24
Import Duties	8167	0.90	12,598	0.84	4.43
Total Value Add (RM Million)	904,489	100.00	1,493,814	100.00	5.15

^f – forecast

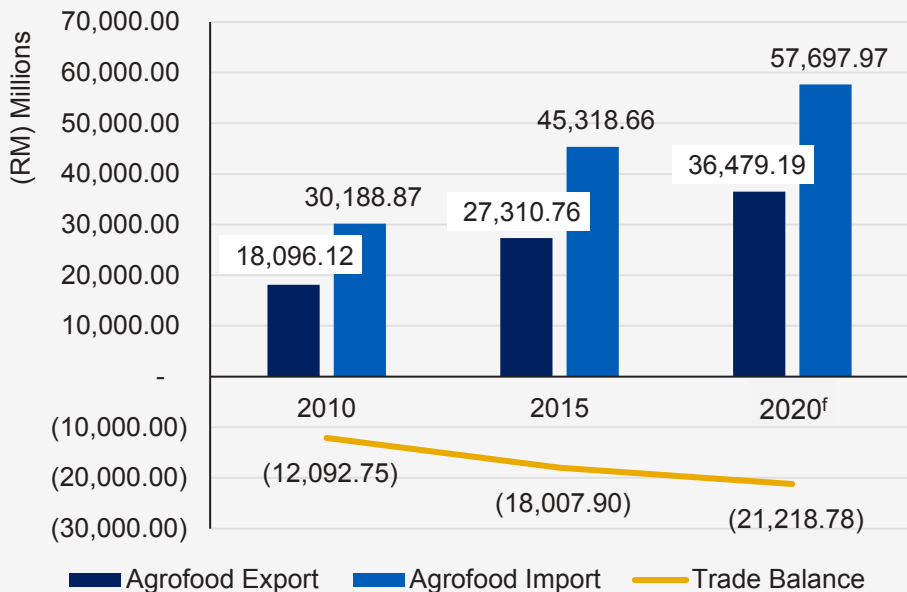
Executive Summary

Malaysia Trade Balance of Agrofood

Main contributor to agrofood imports include coffee, cocoa, tea, spices and manufactures, animal feed, miscellaneous edible products and preparations, and cereal and cereal preparations.

The increase in trade deficit for food stuff potentially indicates Malaysia's increasing reliance on the global value chain to support the domestic needs of the agrofood sector.

Trade Balance of Agrofood (2010 - 2020)



Sources: MAFI (2020)

^f – forecast

Executive Summary

Employment and Productivity in Agrofood Sector

The total employment rate in the agrofood sector was reduced largely due to the decrease of participation among paddy farmers, aqua culturist and fishermen. Meanwhile, the employment rate in the livestock subsector saw an overall increase.

Despite the decrease in employment, the overall agrofood employee productivity increased from 2010 to 2020, potentially a result of the increased use of labour saving technologies and techniques through mechanisation and automation for food production activities.

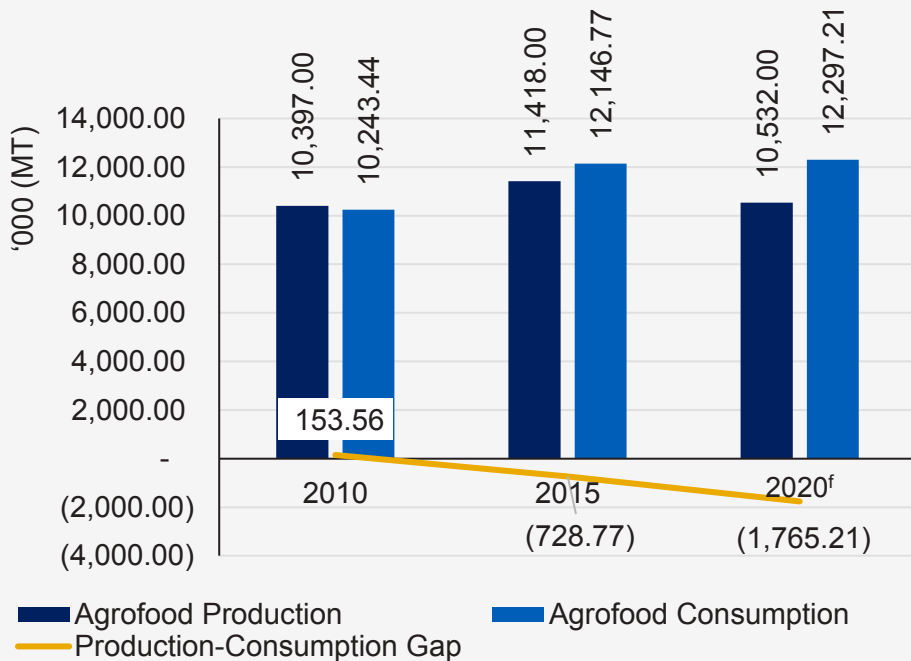
Year	Employment in '000		Compound Annual Growth Rate (CAGR) - (%)
	2010	2020 ^f	2010 – 2020 ^f
Employment in Agrofood	535.70	484.52	(1.00)
<i>% of Total Employment</i>	4.50	3.21	(3.32)
<i>% of Agriculture Employment</i>	33.17	29.50	(1.17)
<i>Productivity per Employee (RM in 2015 prices)</i>	65,318.28	106,354.74	5.00
Employment in Agriculture	1,614.90	1,644.15	0.18
<i>% of Agriculture Employment</i>	13.57	10.90	(2.17)
<i>Productivity per Employee (RM in 2015 prices)</i>	51,864.51	65,269.59	2.33
Employment (all Sectors)	11,899.50	15,083.90	2.40
<i>Productivity per Employee (RM in 2015 prices)</i>	76,010.67	99,033.67	2.68

Executive Summary

Agrofood Production and Consumption

The consumption for most major agrofood commodities with the exception of rice is at a higher rate than the CAGR of the production, and potentially indicate that the consumption will supersede domestic production if the trend persist. The dietary trend for the past decade has played a crucial role in the food consumption trend. The increasing global trend in reducing carbohydrate intake and reducing energy supply from rice has affected the total rice consumption in Malaysia.

Agrofood Production and Consumption (2010 – 2020)



Sources: Agrofood Statistics Malaysia

^f – forecast

Executive Summary

Self-Sufficiency Level of Major Crops

From 2010 to 2020, rice, vegetables and poultry egg had an increase in SSL, while the other major agrofood commodities saw a decrease. Among all the agrofood commodities, only poultry meat and poultry egg managed to stay above the 100.00% SSL from 2010 to 2020. It is noted that the SSL of milk fell drastically by 37.35% from 2010 to 2020 due to an increase in consumption.

Sector/ Item	2010	2020 ^f	Compound Annual Growth Rate (CAGR) - (%)
	%	%	2010 – 2020 ^f
Rice	62.95	63.00	0.01
Fruits	83.73	79.50	(0.52)
Vegetables	49.61	51.50	0.37
Beef	30.12	21.72	(3.22)
Mutton	11.89	10.72	(1.03)
Pork	95.25	91.62	(0.39)
Poultry Meat	105.55	104.51	(0.10)
Poultry Egg	114.63	116.60	0.17
Milk	99.60	62.40	(4.57)
Fisheries	94.89	93.51	(0.15)

^f – forecast

Executive Summary

Per capita Consumption of Major Food Comodity

Among the consumption of major agrofood commodities from 2010 to 2020, only the consumption of rice, fruits and pork has decreased. Meanwhile, the agrofood commodities with highest consumption growth rate is milk, followed by mutton and poultry meat.

This is due to changes in consumer's dietary preference that can be affected by various factors including price, health concerns, personal needs of nutritional benefits, increase in food options and discovery of new or alternative food products.

Sector/ Item	2010	2020 ^f	Compound Annual Growth Rate (CAGR) - (%)
	KG/ year	KG/ year	2010 – 2020 ^f
Rice	79.6	76.5	(0.40)
Fruits	93.0	78.0	(1.74)
Vegetables	54.7	65.1	1.76
Beef	5.6	6.1	0.86
Mutton	0.8	1.2	4.14
Pork	19.9	18.5	(0.73)
Poultry Meat	35.0	46.8	2.95
Poultry Egg*	295.0	361.5	2.05
Milk**	0.7	2.1	11.61
Fisheries	45.5	51.5	1.25

^f – forecast

*Number of eggs

**Litres

Executive Summary

The Agrofood sector faces unique issues and challenges both globally and in Malaysia

The agrofood sector and agriculture at large play a vital role in economic and social development globally. However, the sector has various challenges that needs to be addressed.

GLOBAL ISSUES

Scarcity of Natural Resources

Land available for agriculture becomes scarce as cultivation through deforestation is no longer sustainable due to severe damage to the environment, causing soil erosion reducing the quality of drinking water. Agriculture also accounts for about 71% of freshwater usage globally, and is one of the major contributor to water pollution from the use of pesticides and other contaminants.



Agricultural Productivity and Innovation

The source of food supply in developing countries is highly dependent on production by smallholder food producers, but productivity remains low. Global Total Factor Productivity (TFP) between 2006 and 2015 declined as food producers continues to convert forests and grasslands into farms to cope with increasing demand of food and feed.



Executive Summary

Demographic Changes and Shifting Dietary Trends



Per capita food demand is expected to increase and transition from staple cereal consumption to other diets such as protein based or vegan based diets. Higher urban incomes tend to lead to the increased consumption of fast food or store-bought convenience foods. Consumers are also conscious towards price, taste, convenience, nutritional values and production methods of food.

Food Waste and Loss

Food loss is the process of food being discarded or incinerated along the supply chain due to inefficient management during production, post-harvest handling/storage, and processing. Food waste refers to the decrease in food resulting from decisions and actions by retailers, food service providers and consumers. Among the United Nation's Sustainable Development Goals (SDG) objectives includes to halve per capita global food waste and food loss by 2030.



Climate Change



Global warming can threaten agriculture practices through rising sea level leading to reduction of land size and salinity intrusion, stress on water supply, fluctuations in peak temperature which could reduce crop yield, change to rainfall concentration which could cause droughts or floods, and increased frequency and severity of natural disasters.

Executive Summary

Challenges faced by the global Agriculture sector are a concern to the Malaysia's agrofood sector. The issues and challenges identified will then provide a basis and facilitate the development of the NAP 2.0.



Low Production Efficiency and High Production Cost, Affecting Farmer's Income

Automation in the industry remains low as smallholder farmers are skewed towards traditional farming methods due to the lack of financial support and knowledge transfer. In addition, reliance of imported farming inputs and dependence on middleman further reduce income levels of smallholder farmers.

Limited High Value-Added Produce and Products

There is a mismatch in demand and supply within the food production value chain as the demand from the midstream and downstream players are not accurately translated to the upstream players. There are also limited and narrow interest in investing to develop high value-added produce and products in the agrofood sector, possibly due to perception of low profitability and high risk by investors.



Unconducive Business Environment

Food producers face issues such as short duration of a temporary Occupation License(TOL), limited extension services due to insufficient on-the-ground officers and inadequate facilities such as cold storage rooms. Some existing acts and regulations may have fallen behind the time and are no longer suitable for the industry at present.

Executive Summary



Threat from natural disasters, diseases, as well as unsustainable farming practices

Natural disasters such as flash floods and outbreak of pests and diseases are challenges faced by food producers. In addition, improper waste management and unrestricted use of pesticides can impact the biodiversity of the environment. Fishery supplies are also depleting due to overfishing both by local fisherman and foreign illegals.

Low Involvement of Youth in the Agrofood Industry

Youths have a poor perception of the agrofood sector being labour intensive and have low returns compared to white collar jobs. Young agropreneurs also faced challenges such as land availability and loan application without collateral. Additionally, labour cost competition from foreign workers further drive down farmer's income.



Limited Financial Assistance for Farmers

Financial institutions are reluctant to provide financing to industry players due to the high risk nature of the agrofood sector. There is also insufficient risk management solutions such as insurance plans to protect the individual, smallholders and agropreneurs against financial ruin through losses caused by an adverse event.

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Issues Related to Coordination and Collaboration

Agrofood related statistics published by DPS on behalf of MAFI lack of single standard data collection method or an integrated database that can be used as a single reference point throughout the industry. There are various coordination between various stakeholders, such as overlap in roles between MAFI agencies, stakeholders beyond MAFI often working in silo, and a disconnect between federal and state especially regarding land matters. Additionally, there is a lack of a one-stop information center to provide information and services for investors.



Issues in High Value Commodities (HVC)

HVC have been identified for further growth includes edible birds nest, ornamental fish, seaweed, herb and spices, floriculture, mushroom, guarana, kelulut honey, durian, coconut and pineapple. However, HVC have low financial investment from investors due to low visibility. Investing in HVC is high risk as demand can be volatile compared to staple commodities, and production tends to be in relatively small volume which leads to difficulty in adopting automation. In addition, HVC also face strong competition from neighboring countries and require strong marketing and market access in order to grow. Finally, many HVC are still not properly regulated and may cause pollution or health hazards to the environment.



Lack of Readiness in Managing Crisis

The various restrictions imposed by the government on the Movement Control Order(MCO) as a result of the Covid-19 pandemic has caused disruption to the supply chain, agriculture labour shortage and reduced productivity among businesses. In the long term, food producers may have lower purchasing capacity for farming inputs in the following crop cycle due to limited cashflow, while effective demand for food may decline and have detrimental effects across the entire value chain.



Executive Summary

The overall NAP 2.0 policy framework encompasses several elements including a policy statement, policy principles, policy objectives and policy thrusts as it aims to serve as a inclusive and extensive guide for the implementation period from 2021 to 2030.

Policy Statement:

A sustainable, resilient and technology driven agrofood sector that prioritises food security and nutrition while driving economic growth and enhancing the wellbeing of the rakyat

Principles

Economic	Social	Environment
Highly Competitive and Innovative Agrofood Sector	Wellbeing of Food Producers and Inclusivity in Sector Development	Paradigm Shift towards a Sustainable Food System, Adapted to Climate Change

Policy Objectives

Drive income growth and facilitate better quality of life for food producers
Raise production output with quality harvest by increasing productivity
Establish more agile and resilient value chains with high value-added activities
Improve food safety and nutritional well-being of Malaysians
Embrace greater economic, social and spatial inclusiveness
Encourage greater adoption of sustainable consumption and production

Policy Thrusts

Embrace Modernisation and Smart Agriculture	Strengthen Domestic Market and Produce Demand Driven and Export-oriented Products	Build Talent that Meets Demand of the Industry	Advance towards Sustainable Agricultural Practices and Food Systems	Create Conducive Business Ecosystem and Robust Institutional Framework
STRATEGIES	STRATEGIES	STRATEGIES	STRATEGIES	STRATEGIES

STRATEGIES FOR PADDY & RICE, FRUITS & VEGETABLES, LIVESTOCK AND FISHERIES

Executive Summary

The 3 key policy principles of the NAP 2.0 include:

- i. **Highly competitive and innovative agrofood sector*** through various initiatives which includes business facilitation, technological advancement and value chain optimization
- ii. **Wellbeing of food producers and inclusivity in sector development*** which will directly affect the overall development of the agrofood sector, looking into improving livelihood, quality of life, as well as the overall attractiveness of the agrofood sector, and balancing wealth distribution across all regions in the country
- iii. **Paradigm shift towards a sustainable food system, adapted to climate change*** towards a sustainable farming and food system so that the agrofood sector is not being developed at the expense of the environment

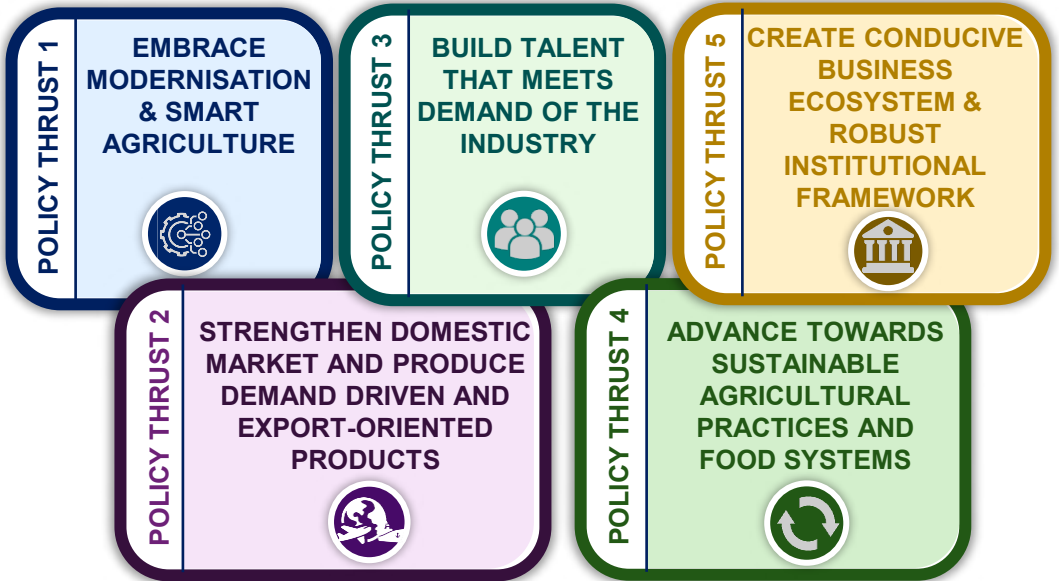
The policy framework covers a total of 6 key objectives including:



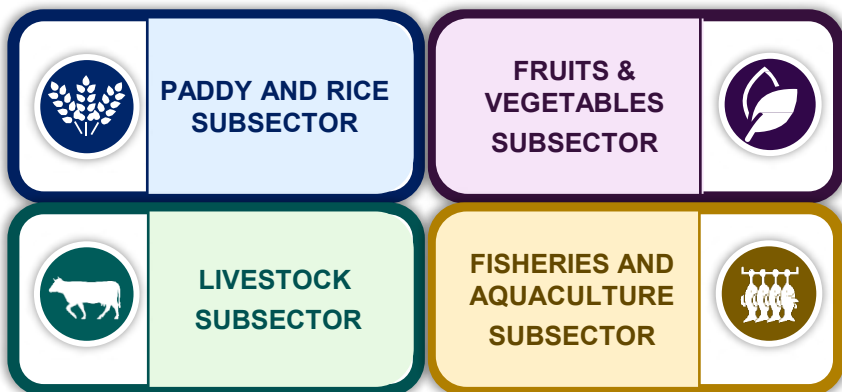
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A total of 5 policy thrust and 4 key sub industries which are key to food security has been identified to support the overall policy framework and agrofood sector development for the next 10 years:

5 Key Policy Thrust



4 Key Subsector



Executive Summary

EMBRACE MODERNISATION AND SMART AGRICULTURE

The use of technology can contribute to an increase in quality and quantity of crop yield, thus, increasing productivity. Through various smart agriculture technology and offerings available at present, food producers are able to gain better control over pests and disease issues, making the process of production such as raising livestock and growing crops more predictable and efficient.

Driving modernisation is also in tandem with national aspiration and in the RMKe-12 to embark the nation's value-producing industries towards Industry 4.0 with the agrofood sector being among those highlighted.

Strategies under Policy Thrust 1:

- **Intensifying R&D&C&I in catalysing modernisation of agrofood sector** by increasing both fiscal and non-fiscal resources for R&D&C&I of the industry, reduce time taken for intellectual property certification processes, and intensify international knowledge exchanges
- **Increase adoption of technology and automation in agrofood sector** through provision of assistance on improving the feasibility and ease of technology adoption, and enhancing the capacity of food producers
- **Create conducive ecosystem for R&D&C&I** by strengthening the working relationship among all entities
- **Intensify innovation programmes and activities to support advancement of agrotech** by strengthening the link between basic research output with industrial application, to increase the rate of contribution by R&D&C&I towards modernisation of the agrofood sector

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STRENGTHEN DOMESTIC MARKET AND PRODUCE DEMAND DRIVEN AND EXPORT-ORIENTED PRODUCTS

The importance of strengthening and diversifying exports in the agrofood sector is pivotal as this not is beneficial not only to the sector but also to the national economy through the creation of spillover effect to other various sectors.

Moving forward, the focus on intensifying high value-added activities and investment in targeted areas with high growth potential could be amongst the key drivers of growth in the agrofood sector.

This will boost competitiveness and the growth of income for the food producers in this sector.

Strategies under Policy Thrust 2:

- **Enhance development and commercialisation of high value products through greater collaboration and partnership with private sector** with the aim to strengthen the domestic market and close the trade balance deficit
- **Increase export of targeted products and produce** to drive the growth of national economy in terms of income creation and positive spillover effect to other various sectors
- **Provide support to local food industries by strengthening domestically produced products** to increase facilitation for local food producers throughout the value chain
- **Strengthen the role of MAFI in championing agriculture related investment** with the focus on providing a more seamless investment experience for both existing and potential investors

Executive Summary

BUILD TALENT THAT MEETS DEMAND OF THE INDUSTRY

The betterment of human capital in the agrofood sector plays a critical role in its long term development as human capital has the ability to improve productivity and efficiency, drive higher revenue and income as well as steer innovation and ability of players to move up the value chain.

Building strong talents in the agrofood sector as a strong foundation towards a stronger agrofood sector that is able to adapt faster to modern technology and produce food in greater quantity and quality to meet food security and safety goals in Malaysia.

Strategies under Policy Thrust 3:

- **Attract and retain young talent** in order to have greater youth participation who are technologically savvy to innovate and modernise the industry
- **Forecast demand and develop better skilled workforce for agrofood sector** to enable long term planning and execute of initiatives related to human capital development in the industry
- **Enhance inclusivity of agrofood sector** in order for the benefits reaped from the growth of the industry to be shared with the larger population
- **Increase efficiency and technical services of extension officers** to improve the ability of technology transfer to food producers to increase technology adoption and automation

Executive Summary

ADVANCE TOWARDS SUSTAINABLE AGRICULTURAL PRACTICES AND FOOD SYSTEMS

In the process of achieving the food security goal, the agrofood sector need to adopt sustainable practices to preserve the delicate balance of the environment and ecosystem by taking due care that growth of the industry is not at the expense of polluting and degrading the environment.

To meet increasing food demand in the next decade and beyond, the agrofood sector would need to move towards more sustainable food production methods to minimise waste and pollution, and help to develop a more sustainable sector.

Strategies under Policy Thrust 4:

- **Reduce food loss and food wastage along the value chain** by enhancing efficiency of resource utilisation
- **Drive greater adoption of sustainable farming practices with utilisation of bioresources** across the food production value chain, particularly on farmlands, for the purpose of improving food safety and reducing environmental pollution
- **Promote conservation and preservation of biodiversity and natural resources for sustainable agriculture** which would maintain the benefits of biodiversity provided to humanity, including food security, nutrition and livelihood
- **Develop healthy and sustainable food systems** which takes into account nutrition security where the population of Malaysia have access to a healthy and balanced diet

Executive Summary

CREATE CONDUCTIVE BUSINESS ECOSYSTEM & ROBUST INSTITUTIONAL FRAMEWORK

To attract and maintain the interest of food producers, investors and private sector to continuously participate in the agrofood sector, the business ecosystem needs to be conducive for these different players to operate and conduct businesses in the sector.

Some of the key areas of the ecosystem are land tenure and property rights; regulatory matters such as norms, rules and regulations; financial services; physical infrastructure and digital connectivity, as well as end-to-end value chain linkages, especially between the upstream and downstream segments.

POLICY THRUST 5

Strategies under Policy Thrust 5:

- ***Bolster facilitation and support on land matters for agrofood sector*** to enhance the use efficiency of land resources as well as to provide greater land security to food producers
- ***Redesign funding support and enhance financial services for food producers*** through the introduction of insurance or financing schemes to provide a form of financial safety net
- ***Drive end-to-end digitalisation of value chain*** by converting information and products into digital information
- ***Streamline and strengthen governance of agrofood sector*** to ensure that the country's food value chain operates efficiently and effectively in a safe, secure and robust environment
- ***Enhance investment in agrofood targeted infrastructure*** to further facilitate and improve business environment for food producers and agrofood stakeholders

Executive Summary

PADDY & RICE SUBSECTOR

The paddy and rice subsector, being one of the crucial industry that produces a key staple food for Malaysians, has seen an increase in SSL from 60.3% to 63.0% from 2010 to 2019.

To improve the performance of the subsector, key issues such as the low income of paddy farmers, challenges such as high production cost, lack of mechanisation and automation, unconducive business environment, and post harvest loss needs to be mitigated.

The paddy and rice strategies looks into boosting production volume, improving self-sufficiency levels, enhance efficiency of natural resource use, and improving the livelihood and income levels of the paddy farmers for the next 10 years.

Subsector Strategies:

- **Boost productivity via better management of land and water use** by placing emphasis on increasing the efficiency of land and water usage for higher productivity
- **Capitalise on the potential of local specialty rice varieties** by developing the local specialty rice segment, to solidify the options for variety diversification
- **Restructure existing financial supports, to contribute towards empowering producers in making their own business decision** by refining current input and output supports for farmers to encourage the optimisation of farming operations based on own knowledge and experience
- **“Crowd In” more diversified private sector along the evolving value chain** by promoting the participation of private players of all scales across the value chain
- **Promote, encourage, teach and nurture young generations for future participation in paddy and rice subsector** by enhancing existing opportunities that serve to provide exposure about the subsector towards the younger generation

Executive Summary

FRUITS & VEGETABLES SUBSECTOR

Between 2010 to 2019, the fruits and vegetables subsector has recorded SSL hovering between 76.3% and 81.9% for fruits, 44.6% and 58.4% for vegetables. Several key issues were identified to be of hinderance for the development of the industry, including the low income of fruits and vegetables producers, limited high-value added produce, stiff land competition, high production cost, and limited technology adoption.

The fruits and vegetables strategies in this policy looks into boosting production volume, improving self-sufficiency levels, higher export value, enhance efficiency of land use, and improving the livelihood and income levels of the fruits and vegetables producers for the next 10 years.

Subsector Strategies:

- **Intensify gene editing research** by developing one of the tools of genetic engineering - genome editing, to further leverage upon the potential benefits of biotechnology, on the development of the subsector
- **Efficient long-term land management involving all industry players across the value chain** in order to mitigate challenges that revolves around land resources while also integrate and accommodate players within and across different segment of value chain
- **Promote sustainable development of food production** to increase integration of sustainability elements, primarily via adoption of good agricultural practices and strengthening linkages between food production and food consumers
- **Support the growth of high value fruits and vegetables** to facilitate its long-term development as one of the key contributor

Executive Summary

LIVESTOCK SUBSECTOR

In the livestock sub sector, poultry is relatively self sufficient with a SSL of 104% and 119% for poultry meat and eggs respectively, while the ruminant industry has lower SSL of 22.3% for beef and 63% for milk in 2019.

Key issues such as financial barriers to build or upgrade facilities, health and food safety concerns, declining number of cattle and reliance on imported feed needs to be addressed in order to drive the subsector forward.

The livestock strategies aims to increase hygiene levels, prevent diseases, improve good husbandry practices, boost productivity and production, reduce trade deficit, and ultimately to further grow the livestock subsector.

Subsector Strategies:

- **Increasing growth and sustainability in the poultry industry** by addressing the environmental sustainability and future opportunities for growth in the international market for the poultry industry
- **Ease market accessibility especially in the ruminant industry for new entrepreneur** by easing the challenges faced by new entrepreneurs coming in to the ruminant industry
- **Grow number of ruminant livestock** with specific strategies to ramp up the number of ruminant livestock in the country
- **Mitigate and control loss of livestock to diseases** to ensure that food safety of meat, eggs and dairy products for local consumption and to be viable for export
- **Reduce dependency on imported feed** for intensive farming, which is vulnerable to global price fluctuations

Executive Summary

FISHERIES & AQUACULTURE SUBSECTOR

The fisheries and aquaculture subsector is relatively self sufficient subsector with an SSL of more than 90% for the past 10 years.

Several key issues which were identified includes the depletion and increasing pressure on coastal resources, increasing production cost for marine and aquaculture fisheries, biosecurity and compliance issues relating to aquaculture farms, and the relatively lower income levels of fishermen.

The fisheries and aquaculture strategies looks into maintaining self-sufficiency levels, balancing fish landing ratios, enhancing monitoring, control and surveillance (MCS) efforts surrounding the marine areas, encouraging use of safe and sustainable fish sources along the value chain, and improving the livelihood and income levels of the fishing communities for the next 10 years.

Subsector Strategies:

- **Ensure sufficient, affordable and safe fisheries produce** by balancing fish sources in the market, with the aim to shift the fish consumption pattern from a majority of marine fisheries to a more balanced proportion of marine fisheries, inland fisheries and aquaculture
- **Enhance fisheries resource sustainability** in order to maintain and increase existing fish stock, and promote consumption of fish products that are safe and sustainable
- **Increase national economic contribution of fisheries sector** to improve the income of the food producer and overall economic contribution of the fisheries and aquaculture subsector by assisting the food producers in diversifying income sources and increasing the market accessibility of Malaysian fishery produce to the global market
- **Prioritise good governance across the fisheries and aquaculture subsector** to improve cooperation and communication with stakeholders such as state governments, enforcement agencies, fishermen and fish farmer communities and civil societies for positive outcomes

Executive Summary

The NAP 2.0 framework summary involves the following elements:



To ensure a successful execution of NAP 2.0, the governance structure is crafted in relation to the themes of the 5 policy thrusts, involving all agencies and divisions of MAFI as well as major stakeholders of agrofood sector

POLICY ADVISORY COMMITTEE (MPPN): YB MINISTER MAFI



Internal MAFI



Key Ministries and Agencies



Private Sectors

POLICY MONITORING COMMITTEE: KSU MAFI (USING EXISTING POLICY COMMITTEE PLATFORM)



Internal MAFI

Modernisation and Smart Agriculture	Domestic Market and Export Product	Talent Building	Sustainability and Food System	Business Ecosystem and Institutional Framework
Chair: SUB BPP	Chair: SUB BDI	Chair: Pengarah BPKLP	Chair: SUB DPS	Chair: SUB DPS
Key members: IPB, DPS, MARDI, DOA, DVS, DOF, LPNM, MADA, KADA, IADA, LPP, LKIM	Key members: IPB, BDI, FAMA, MARDI, DOA, DVS, DOF, LKIM, AGROBANK, LPP, MAQIS, LPNM	Key members: DPS, BIMAT, IPB, DOA, DVS, DOF, MARDI, LPP, MOHR, MOHE, MOE, MOF	Key members: IPB, MAQIS, BDI, DOA, DVS, DOF, FAMA, LPP, KADA, MADA, LPNM, LKIM, BIOECONOMY, IADA	Key members: ITTP, IPB, BDI, DOA, DOF, DVS, AGROBANK, LPP, PUU, LPNM, MADA, KADA, IADA, LKIM
Secretariat: BPP	Secretariat: BDI	Secretariat: BPKLP	Secretariat: DPS	Secretariat: DPS

Executive Summary

On top of that, detailed implementation framework for all NAP 2.0 action plans was developed to provide a high-level guideline comprising of operational details including timeline, division/lead agencies and implementing agencies of the proposed action plans. The implementation framework is presented in the following format:

Strategies	Short Term (1-2 years)	Medium Term (3-5 years)	Long Term (6-10 years)	Division/Lead Agencies	Implementing Agencies
Strategy Title	<i>Action Plan title</i>			Agencies under MAFI	Agencies under MAFI and other relevant ministries

The key observations (gathered from stakeholder engagement) with regards to the execution and implementation of the NAP 2.0 are as follows:

Project Management and Monitoring	Clear and precise project management and monitoring will need to be emphasised , by employing mechanisms that can provide a clear reporting hierarchy and guidelines for stakeholders involved in the execution and implementation of the policy.
Database Management	Database management is one of the essential key supporting function for project execution and monitoring. Management of database need to be strengthened via platform integration, consistent collaborative effort from all stakeholders involved in the execution and implementation of the policy.
Uniform Understanding of Roles	Roles and responsibility of each stakeholder in NAP 2.0 has to be well cascaded across all levels of structure. This is will assist in reducing repetition and overlapping of work as well as to create a common understanding on the goals and key aspiration of the policy to stakeholder of all stages.

Executive Summary

Communication between Stakeholders

Clear communication between stakeholders involved is crucial as it facilitate and ease the overall implementation and monitoring of projects and the policy. It can also reduce potential silos and redundancy, overlapping and repetition of work, and cost optimization.

Conclusion

Amidst the ever-shifting global and regional landscapes that have significant impacts on the state of food security, as well as the changing perception on what agrofood industry entails as a economic sector in the process of nation development, NAP 2.0 serves as the framework to unite all stakeholders to navigate across the identified trends and enables a more cohesive collaboration and contribution for the betterment of agrofood industry. NAP 2.0 was formulated with reference to relevant policies, particularly Shared Prosperity Vision 2030, the 12th Malaysia Plan, and Sustainable Development Goals. The result is a policy document that will contribute strongly towards the global agenda and the aspiration of the nation.

With effective implementation, the agrofood industry as well as Malaysia will be on the course to a quantum leap in its global food security standing in the future, with its people as part of this growth alongside the nation's Shared Prosperity Vision and to achieve the vision of:

“A sustainable, resilient and technology driven agrofood sector that prioritises food security and nutrition while driving economic growth and enhancing the wellbeing of the rakyat”.



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