AGRO-FOOD PRODUCTIVITY NEXUS

CHALLENGES AND PROPOSED PROGRAMME ITEMS 2021

MALAYSIA PRODUCTIVITY CORPORATION (MPC)

15th December 2020

Overview :
Agro-food Subsector

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STRATEGIC THRUST

5 Key Strategic Thrusts under the Malaysia Productivity Blueprint

1 **Building Workforce of the Future**

Restructuring workforce by raising the number of high-skilled workers, tightening entry of low-skilled workers, and meeting demands of the future economy.

2 **Driving Digitalisation and Innovation**

Strengthening the readiness of enterprises to effectively adopt and exploit the technology and digital advantage (such as 4th Industrial Revolution).

3 **Making Industry Accountable for Productivity**

Reducing reliance on non-critical subsidies, linking financial assistance and liberalisation efforts to productivity outcomes, and strengthening industry positioning in higher value and segments of the value chain.

4 **Forging a Robust Ecosystem**

Addressing regulatory constraints and developing a robust accountability system to ensure effective implementation of regulatory reviews.

5 **Securing a Strong Implementation Mechanism**

Institutionalise a strong coordination and governance model to secure implementation certainty across government, sector, and enterprise levels.

Source: Malaysia Productivity Blueprint (MPB)

5 Key Strategic Thrusts were identified in the 2020 Malaysia Productivity Blueprint to drive the core components of **productivity growth** :

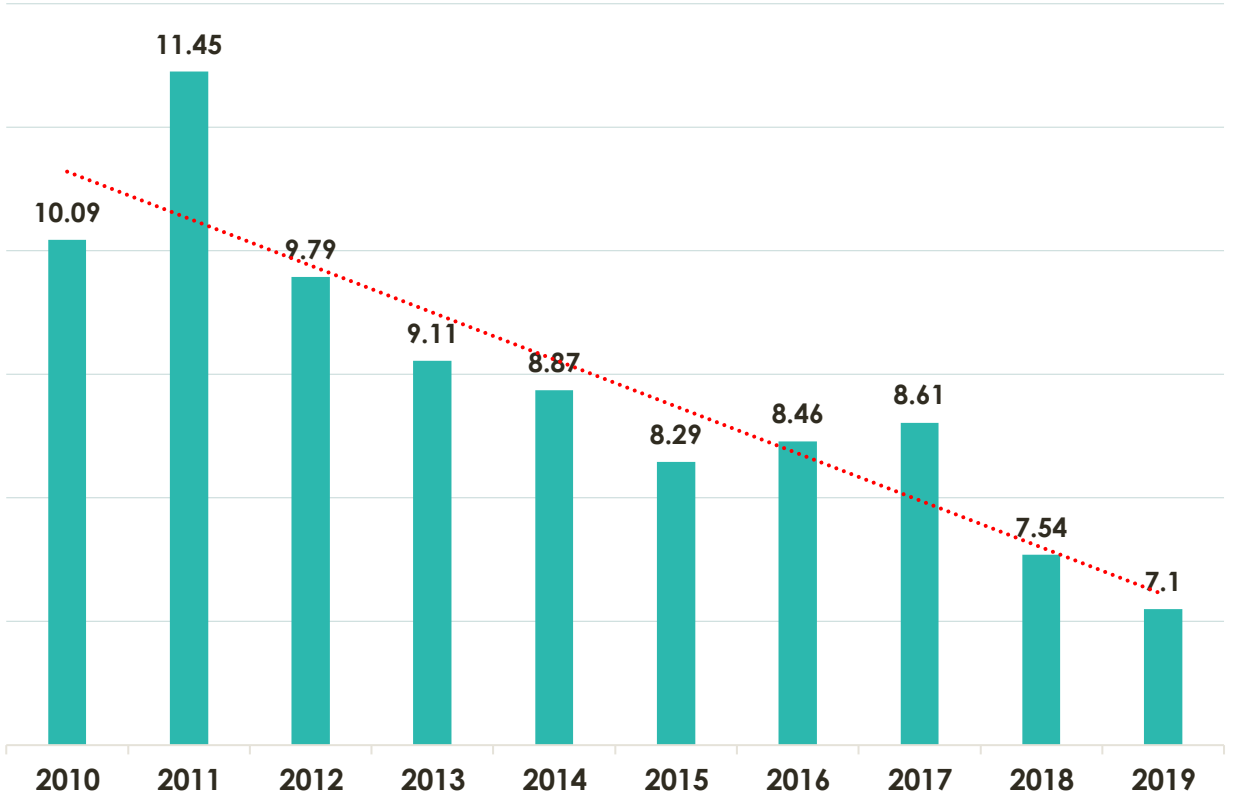
- BUILDING WORKFORCE
- DIGITALISATION
- INDUSTRY ACCOUNTABILITY
- ROBUST ECOSYSTEM
- STRONG IMPLEMENTATION

AGRICULTURE SECTOR: ECONOMIC CONTRIBUTION

The agro-food subsector is positioned under the country's Agriculture sector. In a nutshell, the Agriculture sector contributed 7.1 per cent (RM101.5 billion) to the Gross Domestic Product (GDP) in 2019. The agriculture, fisheries and forestry sectors employ roughly 10 percent of the Malaysian labor force and account for about eight percent of the country's GDP. Palm oil, rubber, cocoa, and wood products account for around half of the output while other significant contributors include tropical fruits and rice.

Since 2011, there is has been a significant decrease in the percentage of GDP contribution of agricultural activities to the economy, marking a decline by almost 4% from 11.45% in 2011 to 7.1% in 2019.

Malaysia – GDP Share of Agriculture



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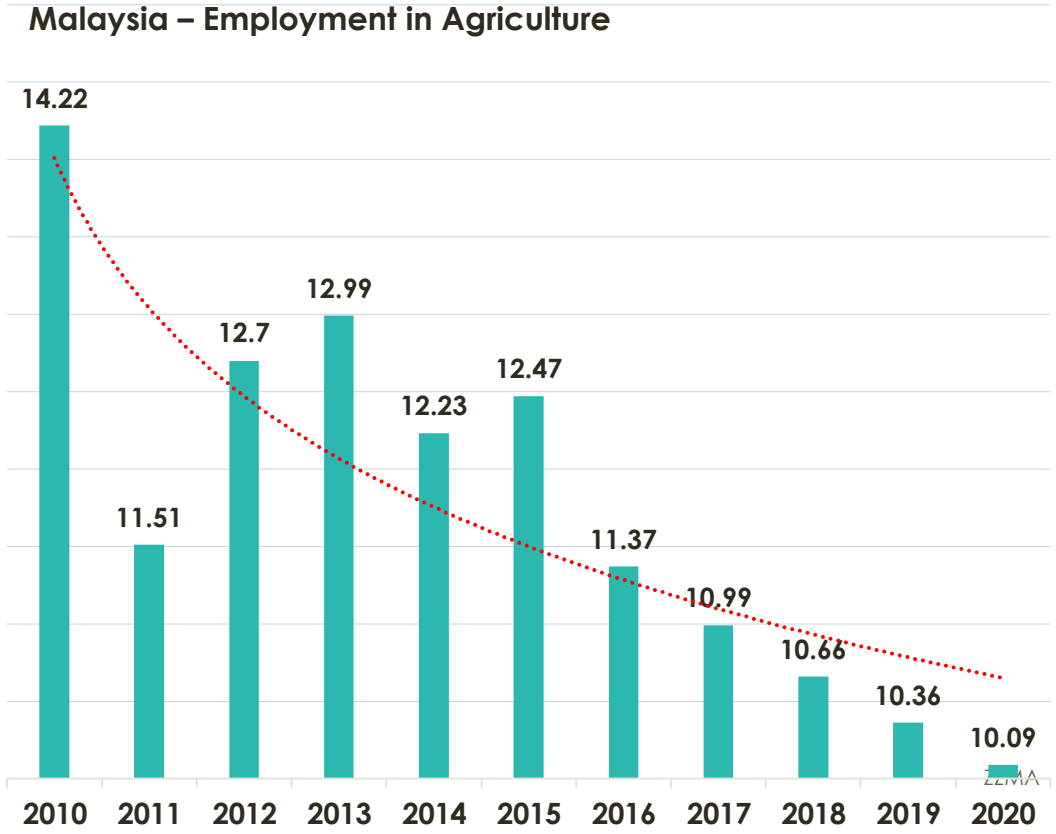
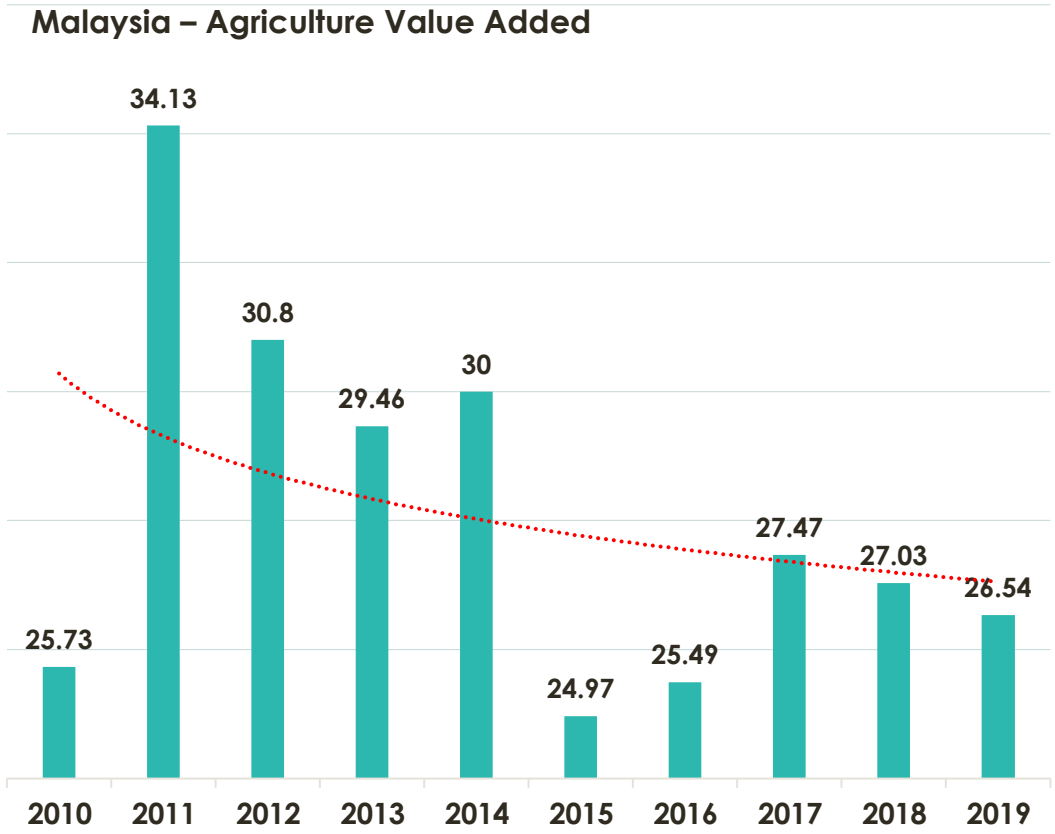
AGRICULTURE SECTOR: ECONOMIC CONTRIBUTION

The same trend can also be observed in employment share as 2020 marks the expected lowest percentage of Agricultural workforce at 10.09%.



The value added Agriculture activities is also on a downward trend since 2017 from RM 27.47 billion to RM 26.54 billion in 2019.



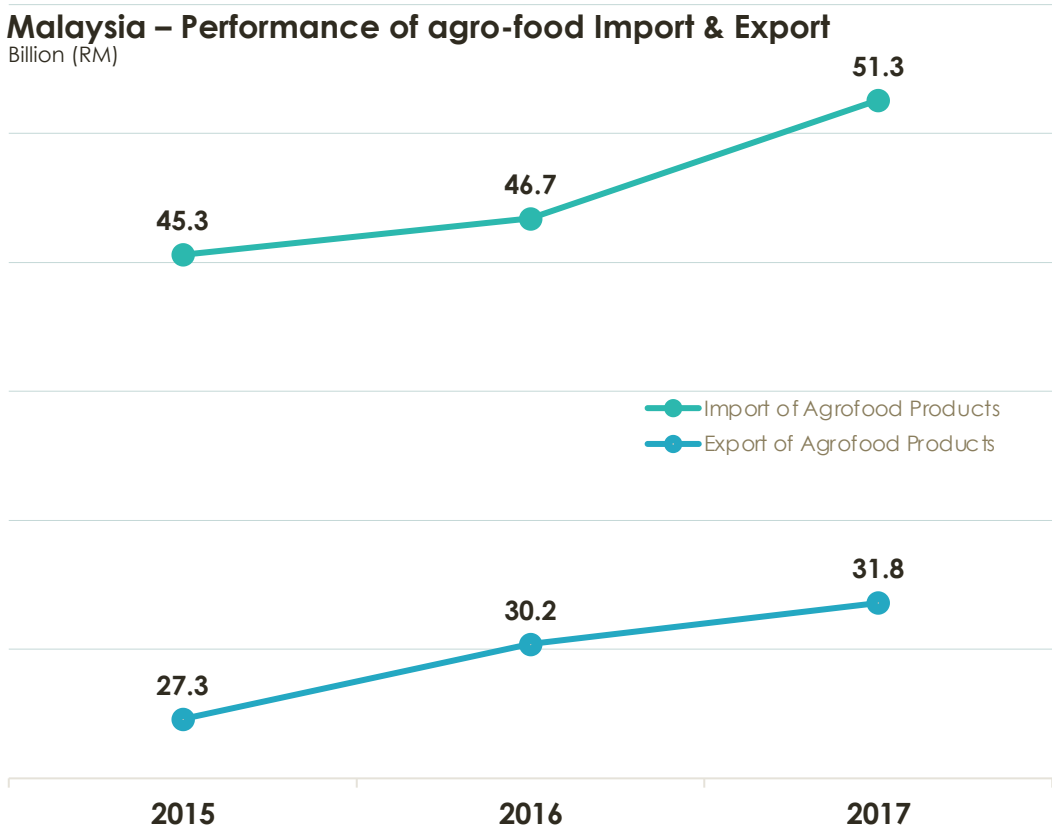
AGRO-FOOD SUBSECTOR : SITUATIONAL ANALYSIS

The agriculture sector can be broken down into two subsectors, namely industrial commodities and agro-food. While industrial commodities has seen a high advancement, the agro-food remains an area that requires further attention.

Agro-food is an important activity for food security and sustainable economic development in Malaysia. The rich biodiversity and natural resources has not enable Malaysia to produce agro-food commodities sufficiently.

Graph on the right shows the agro-food subsector has registered a steady growth of imports against exports, making Malaysia the net importer of food products.

The value of import has increased continuously from around RM45.3 billion in 2015 to more than RM51.3 billion in 2017. The increasing trend of trade imbalance due to higher demand for local consumptions and lack of supply by local producers.



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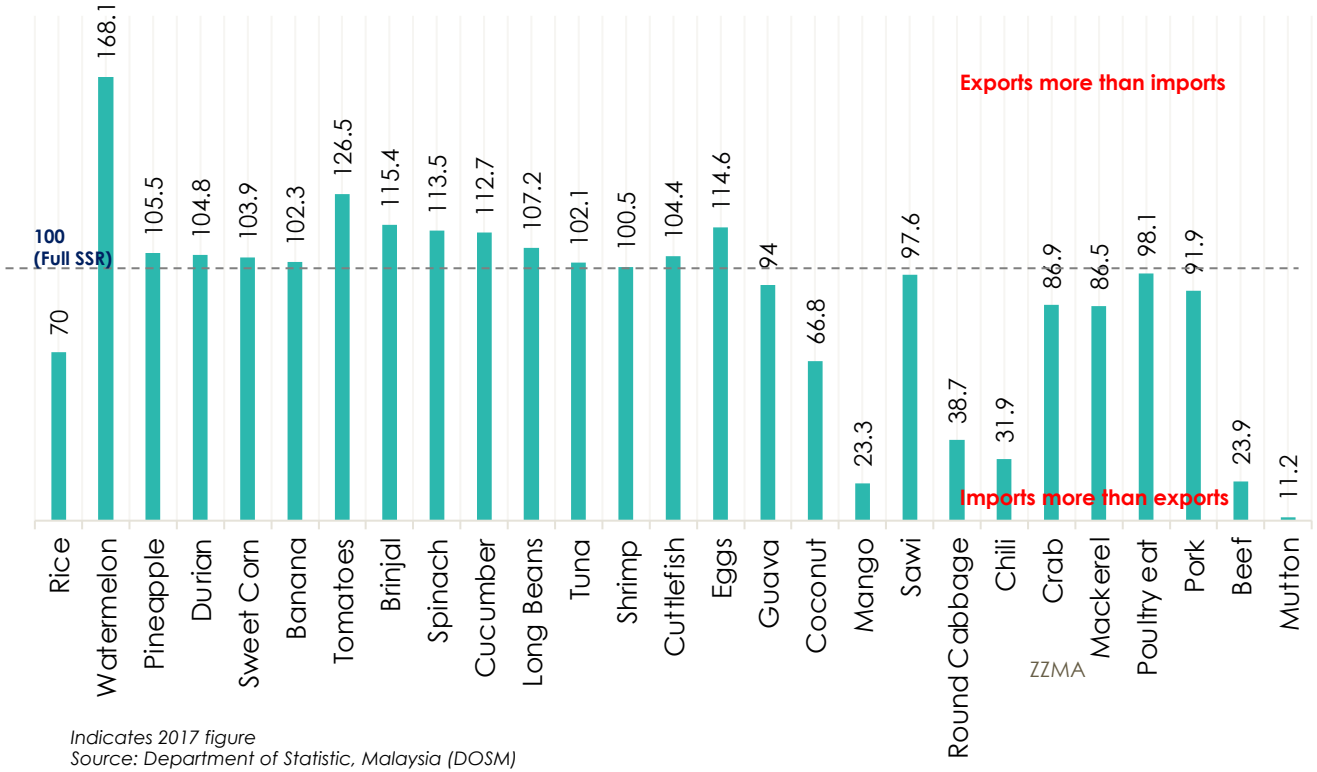
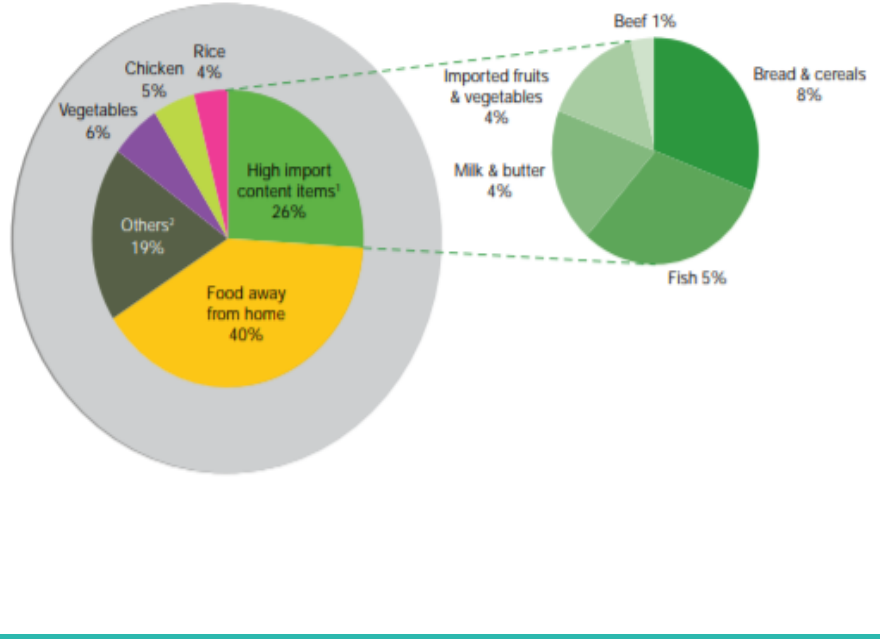
AGRO-FOOD SUBSECTOR : SITUATIONAL ANALYSIS

Self-Sufficiency Ratio (SSR) is one of the measures for food security. It is defined as the ability of a nation to produce a certain percentage of food commodities and imports other portions from other countries. Data shown below was registered in 2017. Based on chart, some staple diet of Malaysians such as Rice, Chilies and Beef relies heavily on imports.

Malaysia's Self Sufficiency Ratio (SSR) for Selected Food Items, 2018



Indicates 2017 figure
Source: Department of Statistic, Malaysia (DOSM)



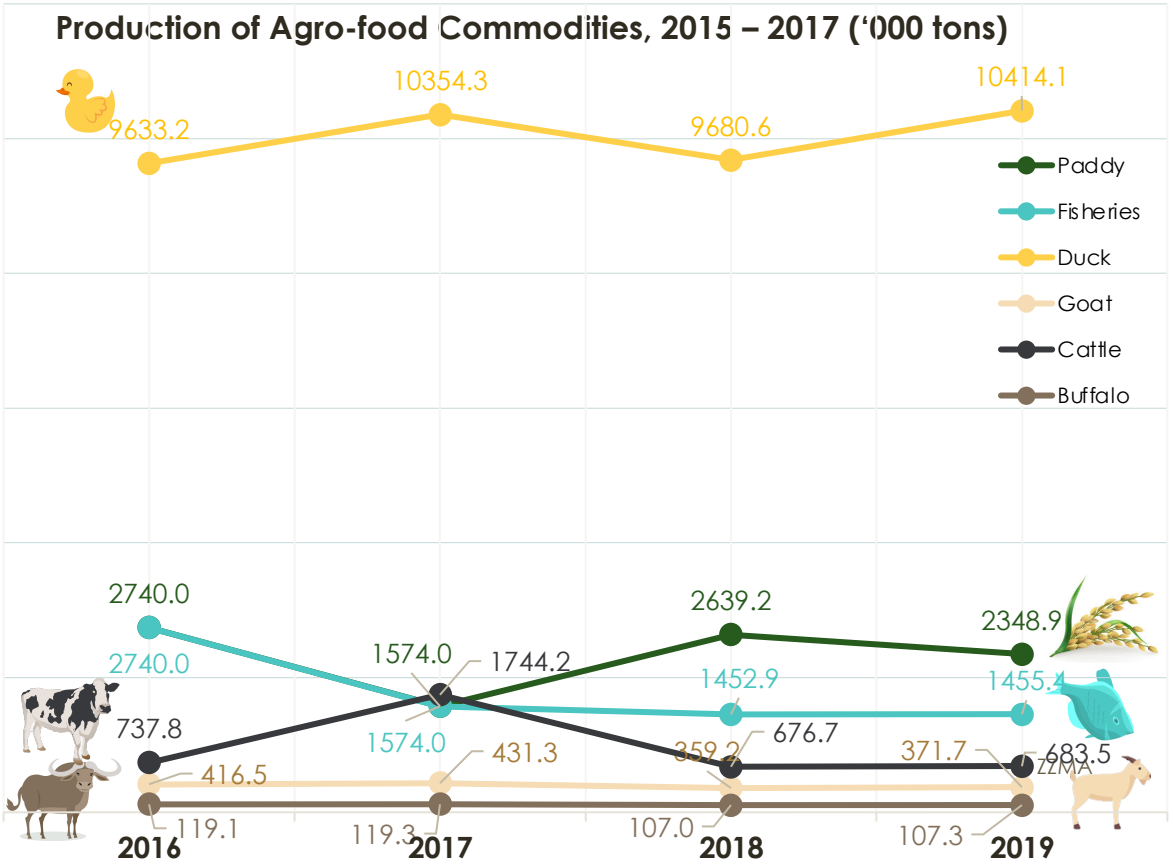
Source: Dept. of Statistics, BNM estimates

On average, items with high import constitutes 26% of household's food consumption basket (Household Food Consumption in the CPI (%))

AGRO-FOOD SUBSECTOR : SITUATIONAL ANALYSIS

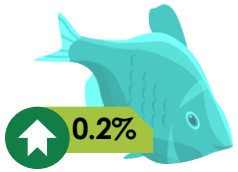
The country has improved its production especially for Ducks, Goats, Cattle and Buffalo, as shown in the infographic on the right. However, Malaysia remains heavily reliant on imports of these products as the supply does not cater to local demands.

Another troubling trend is the downward production of Paddy recorded from 2016 to 2019 which will heavily impact paddy imports into the country, as rice remains the staple food of Malaysians.



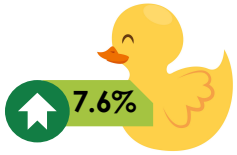
Paddy

2019: 2,348.9
2018: 2,639.2



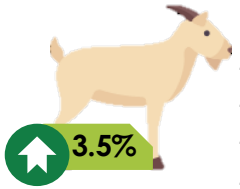
Marine Fish

2019: 1,455.4[p]
2018: 1,452.9



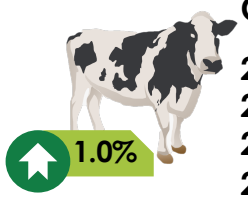
Duck

2019: 10,414,098[e]
2018: 9,680,573
2017[e]: 10,354,254
2016: 9,633,185



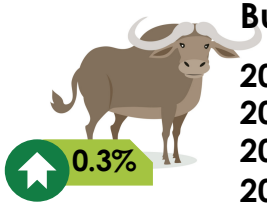
Goat

2019: 371,747[e]
2018: 359,200
2017[e]: 431,258
2016: 416,529



Cattle

2019: 683,501[e]
2018: 676,686
2017[e]: 1744,174
2016: 737,827



Buffalo

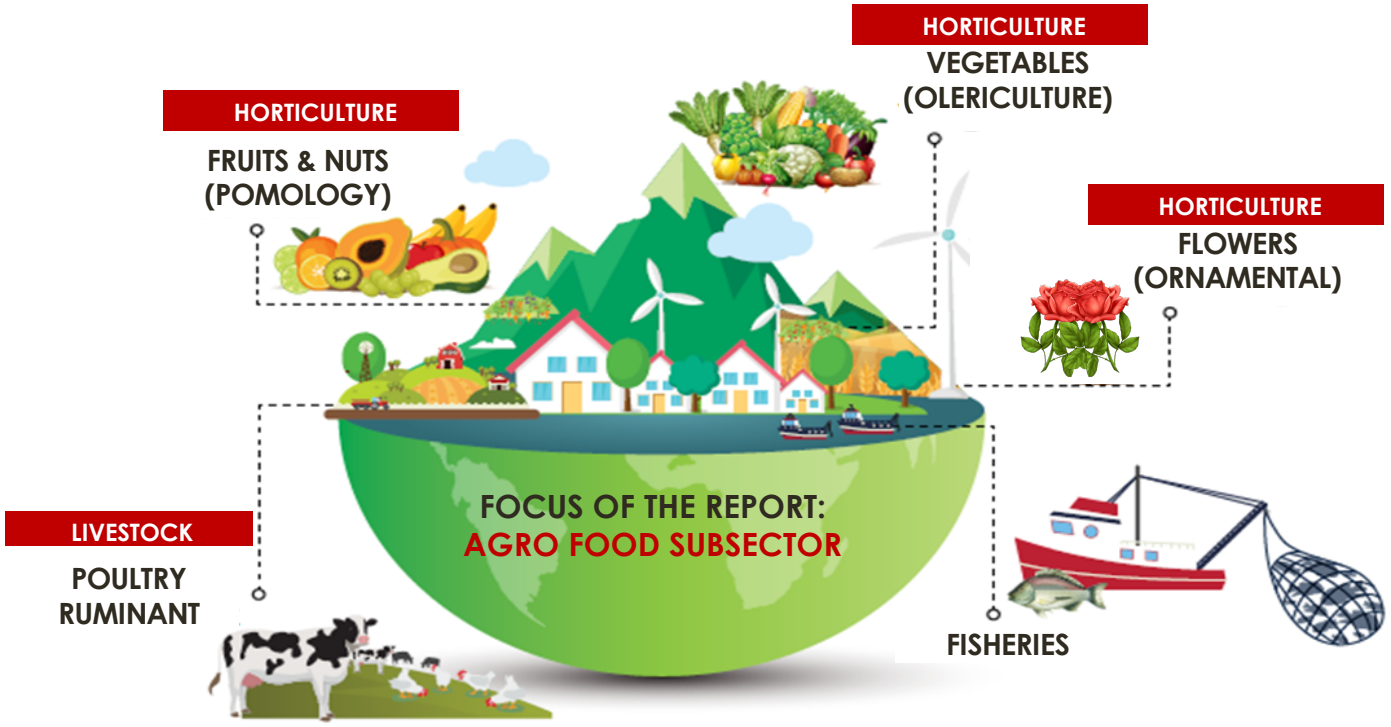
2019: 107,347[e]
2018: 106,988
2017[e]: 119,264
2016: 119,133

AGRO-FOOD SUBSECTOR : SITUATIONAL ANALYSIS

The agro-food sector is often characterized by substantial volatility in productivity, with fluctuations in climatic situation, such as droughts and floods that occur in the same year. The weather condition also affected the productivity and the quality of the products. To address the sustainability of the country's food security, the Ministry of Agriculture and Agro-based Industry (MAFI) is committed to develop this sector to be a dynamic and progressive sector, as stated in the National Agro-food Policy (NAP 2011-2020).

The Malaysia Productivity Corporation (MPC) is set to support MAFI's initiative as stated in the Malaysia Productivity Blueprint. In response to the challenges faced by the agro-food industry and the development of the Twelfth Malaysia Plan, MPC under the agro-food Productivity Nexus (AFPN) has initiated a development of programme items to be carried out for 2021.

This paper highlights the challenges and proposed programme plans for the agro-food industry in Malaysia with the emphasis on the Horticulture, Poultry and Fishery and Ruminant, moving forward.



AGROFOOD PRODUCTIVITY INITIATIVES IN 2020

Initiative : A1. Facilitate better matching along the supply chain by linking downstream demand to upstream supply

Business Challenges	• Absence of a consolidated information platform to connect producer, seller and buyers • The need for industry players to learn from the experience of successful counterparts • Fragmented small business operations has led to low productivity • Middlemen primarily focused on transporting and moving goods with minimal focus on processing or converting raw produce into high value add products • Wholesale and retail markets rely on imported goods to fill gaps in product offering in spite of local substitutes
Impact to Agrofood	• Ensures that agro-producers are up-to-date on the demand for produce and are able to cater to those demands. • Agro-manufacturers will be able to identify potential local producers who can provide them with raw product, hence reducing the reliance on imports.

Initiative : A2. Embed robust contract-farming model across the subsector

Business Challenges	• Lack of an integrated information sharing of the whole supply chain between down stream demand to upstream supply • Government interventions and programmes are production centric and not well linked or integrated wit post production value chain
Impact to Agrofood	• Improves market access for small farmers and simultaneously build small farmers capabilities through transfer of knowledge from larger players. • Increases market access, secure demand from established agro-food players. • Increases transfer of knowledge and better access to input and product support. • Large players benefit from increased security of supply in terms of quality, quantity and timing.

AGRO-FOOD PRODUCTIVITY INITIATIVES IN 2020 : A1 – A2

AGROFOOD PRODUCTIVITY INITIATIVES IN 2020

Initiative : A3. Push for enforcement and adoption of relevant standards (e.g MyGAP, GMP,HACCP) and practices to strengthen end-to-end value chain

Business Challenges	• Core regulations governing key sectors must be aligned to liberalization policies in order to boost productivity and competitiveness • Regulatory hurdles need to be reduced, regulations interpreted and applied with greater consistency, to improve ease and reduce cost of doing business for enterprises • Issues with quality
Impact to Agrofood	• Increases the proportion of players who are able to adopt the right measures to qualify for, achieve and maintain certification. • Ensures certifying authorities are empowered and have the capacity to enforce the standards. • Educate consumers to value high quality produce so that producers will be more incentivised to push for better standards.

Initiative : A4. Boost awareness and adoption of technological upgrades and modern farming techniques

Business Challenges	• Low awareness and adoption of ICT and Modern Farming Technique especially among small farmers impacting productivity and competitiveness • Lack of understanding of ICT tools
Impact to Agrofood	• Improves the awareness of technology applications in the agro-food subsector. • Provides support in technological upgrades and modern farming techniques, particularly among SMEs.

AGRO-FOOD PRODUCTIVITY INITIATIVES IN 2020 : A3 – A4

AGROFOOD PRODUCTIVITY INITIATIVES IN 2020

Initiative : A3. Push for enforcement and adoption of relevant standards (e.g MyGAP, GMP,HACCP) and practices to strengthen end-to-end value chain

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Initiative : A6. Encourage agro-food players to move into high value add products and markets

Business Challenges	• Incentives and other financial support need to be directly linked to productivity to incentivize enterprises to improve efficiency and performance
Impact to Agrofood	• Supports and empowers agro-food producers to take advantage of consumer trends shifting toward higher-end products and trade liberalisation .

AGRO-FOOD PRODUCTIVITY INITIATIVES IN 2020 : A5 – A6

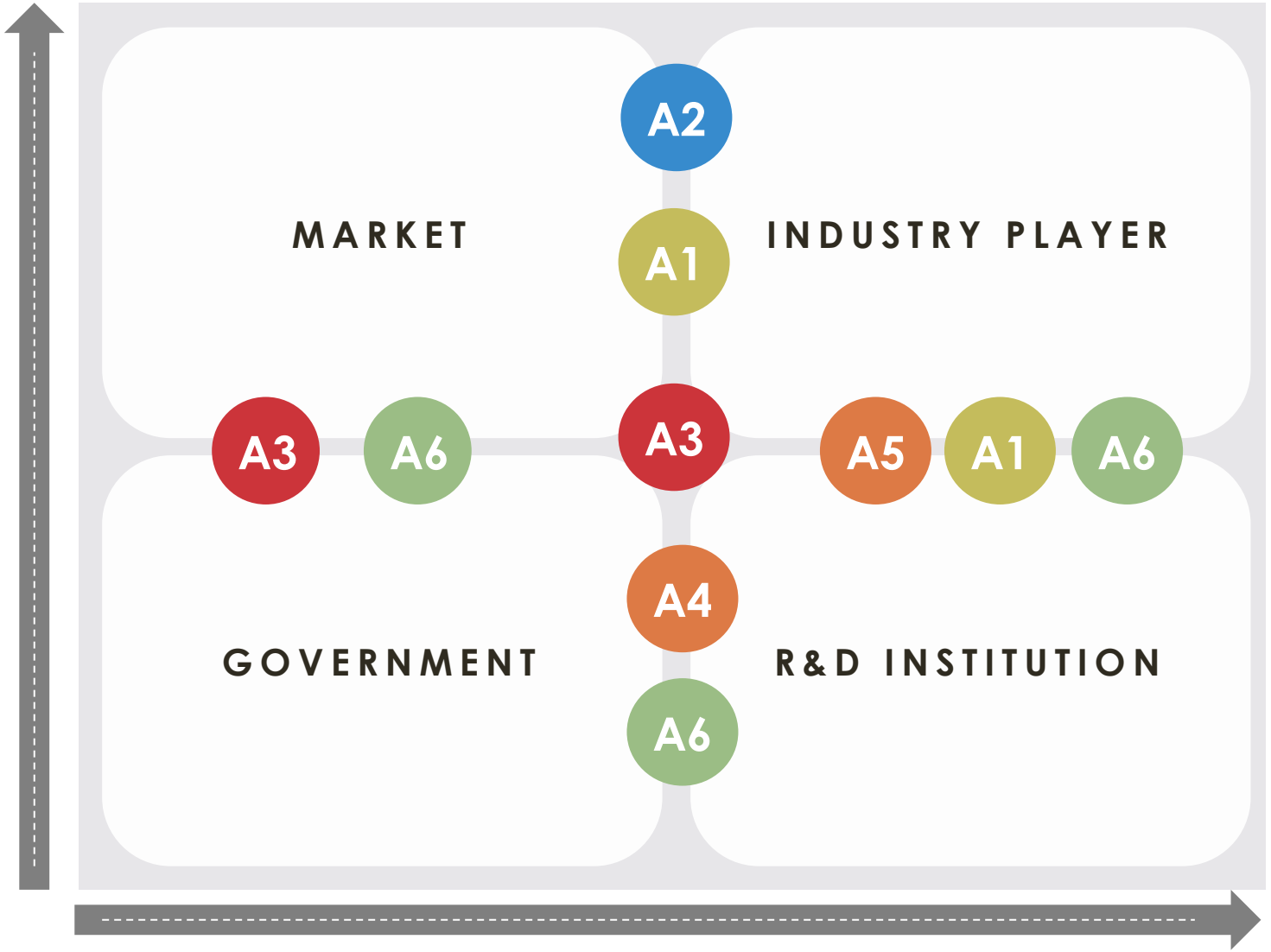
AGRO-FOOD PRODUCTIVITY : INITIATIVES SIGNIFICANCE

AGRICULTURE

Agro-food

SECTOR-LEVEL INITIATIVES

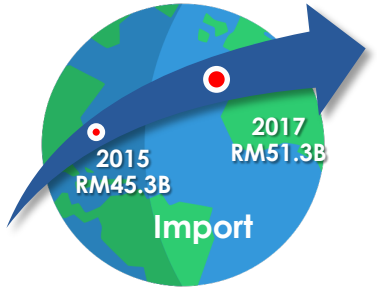
Facilitate better matching along the supply chain by linking downstream demand To upstream supply	A1
Embed robust contract-farming model across the subsector	A2
Push for enforcement and adoption of relevant standards and practices to strengthen end-to-end value chain	A3
Boost awareness and adoption of technological upgrades and modern farming techniques	A4
Establish industry-led collaboration with educational institutions	A5
Encourage Agro-food players to move into high value add products and markets	A6



AGRO-FOOD PRODUCTIVITY : OBSERVATION

In general, GDP, Employment and Value-Added contribution of the **Agriculture Sector** shows a signification **downtrend** over the period **2011 to 2020**. As at 2020, the GDP contribution of Agriculture Sector was 7.3% with **agro-food subsector representing a contribution of 3.3% to the GDP.**

The value of **agro-food import has increased continuously from around RM45.3 billion in 2015 to more than RM51.3 billion in 2017**, posing a threat to the sustainability of Malaysia's local food sources.



Initiatives have been implemented to improve Agro-food productivity but there are still gaps in the outcomes intended.

Stakeholders involved have to re-examine the impacts of the initiatives implemented in 2020 and propose improvement ideas to the existing initiatives as well as new programme plans for 2021.

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How to Improve Agro-food Subsector : Programmes Carried out in 2020

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HOW TO IMPROVE AGRO-FOOD SUBSECTOR – PROGRAMMES CARRIED OUT IN 2020

The study looks into 3 components of agro-food subsector

FOCUS OF THE REPORT:
AGRO FOOD SUBSECTOR

HORTICULTURE

- **FLOWERS (ORNAMENTAL)**
- **FRUITS & NUTS (POMOLOGY)**
- **VEGETABLES (OLERICULTURE)**

LIVESTOCK

- **RUMINANT**
- **POULTRY**

FISHERIES

- **FISHERIES**

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HOW TO IMPROVE AGRO-FOOD SUBSECTOR – PROGRAMMES CARRIED OUT IN 2020

An Overview of the agro-food Value Chain

Food security continues to be a concern as Malaysia ranks 28th on the 2019 Global Food Security (GFS) Index, while neighboring Singapore, which hardly produces its own food, has topped the index two years in a row, in 2018 and 2019.

As an overview, productivity and efficiency issues discussed in the value chain of Agro-food is attributable to 3 key issues. These issues are highlighted in the Khazanah Research Report 2020 as the main issues impacting food security in Malaysia.

DISPARITY IN UTILISATION OF RESOURCES

Despite the growth in export for industrial crops mainly palm oil, food production under the agro-food subsector - comprising crops, livestock and fishery - is still lagging, **with a net import of around RM18 billion yearly, yielding a disparity in resource utilisation. Average farms are small: -: 2/3 of paddy field = 1 hectare, 33% fruit farms =<1 hectare, 80% of vegetable farms = <2 hectare.**

2019 Global Food Security Index

The Index considered the core issues of affordability, availability and quality across a set of 113 countries. Malaysia was ranked 28th while its neighbor Singapore was ranked first despite minimum agri-food production.

RANK	COUNTRY
1	Singapore
2	Ireland
3	US
4	Switzerland
5	Finland
6	Norway
7	Sweden
8	Canada
9	Netherlands
10	Austria
28	Malaysia

THE ECONOMIST GROUP

HOW TO IMPROVE AGRO-FOOD SUBSECTOR – PROGRAMMES CARRIED OUT IN 2020

SHORTAGE OF DOMESTIC SKILLED LABOUR

Khazanah Research Institute research associate Ashraf Shaharudin says the agriculture sector has the largest share of foreign workers in a sector, at more than 30% — and this does not include undocumented workers. That provide little push for the agriculture sector to innovate and adopt new technology.

Agriculture offers the lowest wages compared with other sectors. The median wage of workers in **agriculture (RM1,392) is lower than that of workers with primary education (RM1,518) and around a third of that of workers with tertiary education (RM3,648).**

Workers in agriculture **(RM1,392)**

Workers with primary education **(RM1,518)**

Workers with tertiary education **(RM3,648)**

The lack of interest from youths explains why there is no impetus to improve the livelihood of farmers, most ageing and trapped in the bottom 40% (B40) of the income spectrum.

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LOW UTILISATION OF TECHOLOGY

Farming is still fairly labour-intensive, and exactly how much of farm work in Malaysia has been mechanised is not known. Automation should be increased to spur productivity and not reduce labour input as automation will increase need for local skilled labour, whilst high productivity will affect wages rate, making the sector attractive to graduates.

The analysis into the agro-food Value Chain by the components of Horticulture, Livestock and Fishery provides more information on the challenges and what was done in 2020 to mitigate the structure issue faced across the subsector.

HOW TO IMPROVE AGRO-FOOD SUBSECTOR – PROGRAMMES CARRIED OUT IN 2020

An analysis of the Challenges that exist along the value chain of HORTICULTURE

	PRODUCTION	HAVESTING AND TRANSPORT	PRIMARY PROCESSING AND STORAGE	DISTRIBUTION, PACKAGING AND HANDLING	WHOLESALE AND RETAIL MARKETS
ACTIVITY	1. Research & Development 2. Land & Real Estate 3. Energy & Water 4. Seeds, Embryos, Seed etc. 5. Fertilisers	1. Harvesting 2. Threshing 3. Drying Transport and Distribution	1. Harvesting 2. Treshing 3. Drying Transport and Distribution 4. Storing 5. Primary Processing 6. Secondary Processing 7. Product Evaluation (quality control of standard recipes	1. Packaging (weighing, labelling, sealing 2. Marketing (publicity, selling, distribution) 3. Consumer preference (product evaluation, customer education)	1. Assembly of goods from various sources 2. Strategise the flow of display to create product visibility 3. Assess demand and may incentivize farmers to meet supply requirements 4. Sell to end users and commercial users

CHALLENGES

CHALLENGES ACROSS THE SUBSECTOR

- Absence of a consolidated information platform to connect producer, seller and buyers
- Incentives Structure : requires direct link incentivize enterprises to improve efficiency and performance
- Small players with low productivity
- Workforce : Shortages / mismatch of skilled workforce and high dependency on foreign labour
- Insufficient focus on value-adding activities & disconnections along value chain
- Small players with low productivity

HOW TO IMPROVE AGRO-FOOD SUBSECTOR – PROGRAMMES CARRIED OUT IN 2020

An analysis of the Challenges that exist along the value chain of HORTICULTURE

NO	CHALLENGES	WHERE IN VC	WHAT WAS DONE IN 2020	ACHIEVEMENTS / OUTCOME
1.	Workforce : Shortages / mismatch of skilled workforce and high dependency on foreign labour	• Production • Harvesting • Processing	1. **Collaboration with Universities** to sponsor students' projects and promote adoption in real sectoral environment 2. **Industrial Playground** : Matching students with companies	The project was terminated and was advised for review A5
2.	Insufficient focus on value-adding activities and disconnections along the value chain	• Production • Processing	1. Malaysia-NEST(Nexus Export Strategic Team) • Pilot project to develop and market snakehead (ikan Haruan) to be **exported as snakehead broth** ZZMA	*Production system blueprint have been developed with stakeholders i.e., Carbon Exchange Sdn Bhd, Tetra Pak Malaysia, MADA, UPM, TARUC and AFPN A1 A4 A5 A6

*No information on measurement

A1: Facilitate better matching along the supply chain by linking downstream demand To upstream supply

A2: Embed robust contract-farming model across the subsector

A3: Push for enforcement and adoption of relevant standards and practices to strengthen end-to-end value chain

A4: Boost awareness and adoption of technological upgrades and modern farming techniques

A5: Establish industry-led collaboration with educational institutions

A6: Encourage Agro-food players to move into high value add products and markets

HOW TO IMPROVE AGRO-FOOD SUBSECTOR – PROGRAMMES CARRIED OUT IN 2020

An analysis of the Challenges that exist along the value chain of HORTICULTURE

NO	CHALLENGES	WHERE IN VC	WHAT WAS DONE IN 2020	ACHIEVEMENTS / OUTCOME
3.	Small players with low productivity Malaysia is among high-cost producers due to lack of economy of scale and low adoption of technology e.g., the average cost of production in the granary (paddy) is nearly RM3024 per hectare in 2017	• Production • Harvesting	1. Started a **Cluster Farming** Project to collaborate small players and promote market access as part of the contract farming enabler 2. Develop Youth Cluster Contract Farming to enable younger generation to deploy new technology and proper business model to sustain the business. 3. Develop Demand/ Supply/ Input model needed by Agroprenuer/Anchor to better assist government/NGO /agencies on giving assistant/gran to right farmers/anchor.	• Developed guideline for contract farming • Penetrated into Negeri Sembilan, Selangor in Pulau Indah, Pahang in Felda Jengka and Sertik, Melaka, Johor A1 A2 A4 A5
4.	Incentives Structure : requires direct link to incentivize enterprises to improve efficiency and performance	• Production • Harvesting • Processing • Distribution	1. Encouraging the **adoption of standard** : Ongoing project of increasing users' purchase and awareness of MyGAP via a Behavioural Insight (BI) initiative 2. Awareness program for producers ZZMA	1. Ongoing 2. *Produced interactive online playbook for DOA to guide industry players on how to get accredited. A1 A3

*No information on measurement

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HOW TO IMPROVE AGRO-FOOD SUBSECTOR – PROGRAMMES CARRIED OUT IN 2020

An analysis of the Challenges that exist along the value chain of HORTICULTURE

NO	CHALLENGES	WHERE IN VC	WHAT WAS DONE IN 2020	ACHIEVEMENTS / OUTCOME
5.	Low adoption of technology and modern farming technique	• Production • Harvesting • Processing • Distribution	1. Establish a **compendium of technology** in Agro Link system: This is a programme framework for mentoring the industry on technology advancement and adoption 2. Sharing of technology in cluster farming to reduce cost of IoT and Automation for small farmers.	1. *Developed chatbot and incorporated into Agrolink web portal. 2. Small farmers enjoys savings in technology investment by sharing resources with anchor partners. A4 A5
6.	Absence of a consolidated information platform to connect producer, seller and buyers	• Production • Harvesting • Processing • Distribution • Wholesale & Retail	1. Develop **AgroLink** : A system that provides information on research papers and experience of successful industry players ZZMA	• Phase 1 : Develop portal, 90% completed. • Over 1000 contents have been uploaded into the portal. • Estimated around 3000 users. A1

*No information on measurement

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HOW TO IMPROVE AGRO-FOOD SUBSECTOR – PROGRAMMES CARRIED OUT IN 2020

An analysis of the Challenges that exist along the value chain of LIVESTOCK

PRODUCTION

DISTRIBUTION, PACKAGING AND HANDLING

WHOLESALE AND RETAIL MARKETS

CONSUMERS & END PRODUCT

ACTIVITY

1. Research & Development
2. Land & Real Estate
3. Energy & Water
4. Feed Production & Harvest
5. Import Feed & Stock
6. Feed Processing & Storage
7. Chicken & Livestock Production
8. Grading (Eggs and Livestock)
9. Farm & Hatchery operations

1. Transportation & exportation of Live Chicken & eggs
2. Slaughterhouse & Abattoirs
3. Processing & Cooking
4. Packaging (weighing, labelling, sealing)
5. Selling to local markets

1. Distribution & exportation
2. Storage (Cold rooms & Freezers)
3. Consumer preference (product evaluation, customer education)
4. Marketing (publicity & selling to end users)

1. Food services
2. Product Disposal

CHALLENGES

CHALLENGES ACROSS POULTRY VALUE CHAIN

High reliance on foreign labour for cheap workforce

- High cost of farm and processing plant modernization
- Lack of compliance to standard and accredited bodies

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- High cost of MAQIS inspection charges
- Small and medium companies/farm without economies of scale

A group of wholesalers dominates the supply chain could lead Oligopoly

HOW TO IMPROVE AGRO-FOOD SUBSECTOR – PROGRAMMES CARRIED OUT IN 2020

An analysis of the Challenges that exist along the value chain of LIVESTOCK

NO	CHALLENGES	WHERE IN VC	WHAT WAS DONE IN 2020	ACHIEVEMENTS / OUTCOME
1.	Lack of compliance to standard and accredited bodies such as MyGAP, HACCP, GMP, ISO 22000 & Halal	• Production • Processing	1. Encouraging the **adoption of standard** • Halal, health and safety, GMP 2. Awareness program for process center	*No information on measurement A3
2.	High cost of farm and processing plant modernization e.g. Regulatory burden to acquire CCC for livestock farmhouse	• Production • Processing	1. RURB was conducted to help ease the process of acquiring CCC for livestock farmhouse to reduce regulatory cost and business risk.	*No information on measurement A3
3.	• High cost of MAQIS inspection charges on imported feed grains • Small and medium companies/farm without economies of scale	• Production	1. Enhancement of Integrated farming to reduce cost of production through savings in animal feed expenditure. 2. MyCC recommended for the government to develop an integrated national animal feed policy to reduce production cost. ZZMA A2 A4 A3	1. Through integrated farming, the cost of feed was reduced from 60% to 10% of livestock production cost. 2. *No real measurement of outcome

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A4: Boost awareness and adoption of technological upgrades and modern farming techniques

A5: Establish industry-led collaboration with educational institutions

A6: Encourage Agro-food players to move into high value add products and markets

HOW TO IMPROVE AGRO-FOOD SUBSECTOR – PROGRAMMES CARRIED OUT IN 2020

An analysis of the Challenges that exist along the value chain of LIVESTOCK

NO	CHALLENGES	WHERE IN VC	WHAT WAS DONE IN 2020	ACHIEVEMENTS / OUTCOME
4.	High reliance on foreign labour for cheap workforce	• Production • Processing • Wholesale	1. Professional - TBD 2. Low skill labour – A case study in Selayang Wholesale Market. Local labours started to take employment replacing foreign workers who were deported due to Covid 19 pandemic. This is not a planned initiative by the authority, but the market adjusting itself to the situational change thus reducing reliance to foreign labour. Al Jazeera reported approx. of 500 application in a day by local workforce.	*No information on measurement A5
5.	A group of wholesalers dominates the supply chain could lead Oligopoly which can limit competition, efficiency and cause detriment of SMEs and consumers.	• Wholesale	No information was available ZZMA	*No information on measurement

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HOW TO IMPROVE AGRO-FOOD SUBSECTOR – PROGRAMMES CARRIED OUT IN 2020

An analysis of the Challenges that exist along the value chain of FISHERIES

ACTIVITY

FISHING, PRODUCTION & FARMING ACTIVITIES

FISHING

1. Exploration
2. Marine & inland fishing

Aquaculture

1. Research & Development
2. Feed Production & processing
3. Sorting & Grading
4. Aquaculture Production
5. Harvesting

POST-HARVEST, PROCESSING & DISTRIBUTION

1. Processing & Treating (Cleaning, Drying, Freezing etc)
2. Packaging (weighing, labelling, sealing)
3. Transportation & exportation

MIDDLE TRADERS, WHOLESALERS

1. Middleman selling
2. Selling to local/farmer markets direct to consumers
3. Weighing and
4. Distribution & Storage (Cold room & Chiller)
5. Importing fisheries

RETAILERS & RESTAURANTS

1. Food Services
2. Storage and distribution
3. Marketing & Selling
4. Consumer study

CONSUMER

CHALLENGES

CHALLENGES ACROSS FISHERIES VALUE CHAIN

- Coastal fishery resources have been fully exploited
- Poor interaction between producers and consumers due to the dominance of middle traders
- Land scarcity for Aquaculture
- Dependance on certain species
- Need for Skills upgrade of aquaculture farmers
- Non-compliance towards Halal aquaculture standards
- Lack of creation on value added products from aquaculture products

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HOW TO IMPROVE AGRO-FOOD SUBSECTOR – PROGRAMMES CARRIED OUT IN 2020

An analysis of the Challenges that exist along the value chain of FISHERIES

NO	CHALLENGES	WHERE IN VC	WHAT WAS DONE IN 2020	ACHIEVEMENTS / OUTCOME
1.	Coastal fishery resources have been fully exploited, or over-exploited threatening supply availability and threatening the ecosystem.	• Production • Processing • Wholesaler • Retailers • Consumer	1. The involvement of the corporate sector in integrated aquaculture ventures has been implemented to establish large-scale aquaculture zone. 2. Encourage caged Farm Fishing in Sabah and Sarawak –marine caged aquaculture	*No information on measurement A2 A1 A4 A6
2.	Poor interaction between producers and consumers due to the dominance of middle traders.	• Production • Processing • Wholesaler • Retailers • Consumer	1. Develop **AgroLink** : A system that provides information on industry players and relevant inputs. ZZMA	• *Phase 1 : Develop portal, 90% completed. • Over 1000 contents have been uploaded into the portal. • Estimated around 3000 users. A1

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*No information on measurement

HOW TO IMPROVE AGRO-FOOD SUBSECTOR – PROGRAMMES CARRIED OUT IN 2020

An analysis of the Challenges that exist along the value chain of FISHERIES

NO	CHALLENGES	WHERE IN VC	WHAT WAS DONE IN 2020	ACHIEVEMENTS / OUTCOME
3.	Need for Skills upgrade of aquaculture farmers	• Production	1. Aquaculture training by the DoF (Department of Fishery), Aquaculture training and Research Centres etc all aspects of aquaculture management, technology and operations have been held. ZZMA	Farmers certified in Freshwater Fish Farming includes: • Freshwater Fish Farming In Tank, Cages and Enclosure • Freshwater Shrimp Farming In Pond and Saltwater Prawn Farming in Pond • Saltwater Fish Farming In Pond, cage and Enclosure • Fish Breeding • Saltwater Prawn Breeding • Freshwater prawn Breeding • Freshwater Fish Breeding • Aquarium Fish Farming • Cockle Farming A6 A3 A4 A5

*No information on measurement

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HOW TO IMPROVE AGRO-FOOD SUBSECTOR – PROGRAMMES CARRIED OUT IN 2020

An analysis of the Challenges that exist along the value chain of FISHERIES

NO	CHALLENGES	WHERE IN VC	WHAT WAS DONE IN 2020	ACHIEVEMENTS / OUTCOME
4.	Non-compliance towards Halal aquaculture standards especially on halal feed for Aquaculture and Safety of produce that are often linked with diseases. Several DOF unregistered Malaysian aquaculture fish were found fed with a resource from animal protein and animal by-products (blood, tissue or bone) that may be originated from 31 32 33 pig and waste haram for consumption. The feed also It is contributing pollution towards ecosystems .	• Production	1. Encouraging the **adoption of standard:** Halal, health and safety, GMP and registration with DoF for enhanced enforcement. 2. Awareness program for process center on the use of halal feed • Malaysian Aquaculture Farm Certification Scheme (SPLAM), a voluntary Scheme promotes good aquaculture practices and greater accountability at the farm level, emphasises on the implementation of Hazard Analysis Critical Control Point (HACCP)	*No information on measurement A3 A4
5.	Lack of creation on value added products from aquaculture products	• Middle Traders	1. Culturing activity and processing of value added seaweed-based products. 2. Identify new areas as seaweed culturing area. 3. Induce the production of quality seaweed seedlings (parental stocks) by providing nursery and seaweed seedling banks 4. Increase the production of seaweed through the provision of support and incentives from the government in forms of infrastructure, tax incentives, easy financing scheme and R&D support.	*No information on measurement A1 A4 A5 A6

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HOW TO IMPROVE AGRO-FOOD SUBSECTOR – PROGRAMMES CARRIED OUT IN 2020

An analysis of the Challenges that exist along the value chain of FISHERIES

NO	CHALLENGES	WHERE IN VC	WHAT WAS DONE IN 2020	ACHIEVEMENTS / OUTCOME
6.	Land scarcity for Aquaculture due to competition with other agriculture activities and food security production. E.g., Shrimp farming, over the years, has acquired the reputation of being destructive (being linked to mangrove clearing) and unsustainable.	• Production • Harvesting	1. Increased marine caged aquaculture such as in Sarawak	*No information on measurement A2 A5
7.	Dependance on certain species	• Production • Harvesting	1. Research Project (TEMU) to increase the production of marine farming especially for small scale keepers and improve quality of outputs. 2. Multiple Fish Species Farming Trial projects to increase fish species an eliminate dependencies on certain species. ZZMA	• No information on measurement A1 A4 A5

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How to Improve agro-food Subsector : Proposed Programmes for 2021

HOW TO IMPROVE AGRO-FOOD SUBSECTOR – PROGRAMMES TO BE CARRIED FORWARD TO 2021

NO	LIST OF PROGRAMMES CARRIED OUT IN 2020
1.	Malaysia-NEST : Snakehead Broth
2.	Cluster Farming across subsector
3.	Youth Cluster Contract
4.	Develop Demand & Supply model for cluster farming
5.	Adoption of standard across subsector
6.	Establish a compendium of technology
7.	Enhancement of AgroLink System
8.	RURB to ease the process of acquiring CCC
9.	Enhancement of Integrated farming & aquaculture
10.	Develop an Integrated National Animal Feed Policy
11.	Enhancement of farming technique : across the subsector practice
12.	Enhancement of industry player's skills and knowledge
13.	Create value added products across the subsector
14.	Research Project to increase production of agro-food

14 programmes carried out in 2020 are proposed to be continued in 2021. These programmes will be enhanced to create high impact. Performance indicators will be put in placed to ensure a clear measurement of programmes performance. These indicators shall reflect achievements in terms of efficiency and the effectiveness of outcomes that will drive productivity of the Agro-food subsector.

HOW TO IMPROVE AGRO-FOOD SUBSECTOR – PROPOSED PROGRAMMES FOR 2021

NO	CHALLENGES	NEW PROGRAMMES PROPOSED FOR 2021	PROPOSED MEASUREMENT	INPUT
1.	**BUSINESS STRUCTURE** • Fragmented and low productivity • Middlemen primarily focused on transporting and moving goods with minimal focus on processing or converting raw produce into high value add products • Wholesale and retail markets rely on imported goods to fill gaps in product offering in spite of local substitutes	**NEW** 1. Promotion to create demand for cut flowers: • Potential collaboration with Institute of Landscape Architects Malaysia (ILAM) • Promoting home landscaping and urban garden concept • Training on floral design (value added skill) 2. Enhancement of Frameworks for AFPN initiative. Focus areas: • Economics social standards • Changes of consumer behavior • Changes in capacity of producers to compete • Changes of supply chain connectivity (values) and market linkages • Rapid and dramatic advancement in logistics compliances and processes • Focusing on market and value chain across subsectors 3. Set up a cooperative to increase collective responsibilities of farming within the same community and maintain community like efficiency, productivity and quality with profit from block sales shared in term of dividends. Cooperative also will stimulate entrepreneurship exacerbate with bargaining power to gain economy of scale 4. Cluster Farming across subsector. Extension of pilot project with a Cluster Farm on the approach of Contract Farming that focus on matching supply and demand 5. Youth Cluster Contract. To increase participation by a targeted number 6. Enhancement of Integrated / cluster farming & aquaculture. To reduce reliance on imported animal feed by a targeted percentage	• Create new circular economy within home gardening • Promoting new lifestyle of horticulture enjoyment unhealing post COVID-19 recovering • Productivity growth in agro-food	1. NEW proposed programme should look into developing blueprint of activities to increase productivity of the whole ornamental horticulture rather than look at micro activity at this stage 2. Measurement should be quantifiable with clear matrix. 3. To identify stakeholders as leaders and members the initiative

Legend - Blue font – Programmes carried forward to 2021

HOW TO IMPROVE AGRO-FOOD SUBSECTOR – PROPOSED PROGRAMMES FOR 2021

NO	CHALLENGES	NEW PROGRAMMES PROPOSED FOR 2021	PROPOSED MEASUREMENT	INPUT
2.	**VALUE CHAIN** • Lack of an integrated information sharing of the whole supply chain between down stream demand to upstream supply • Government interventions and programmes are production centric and not well linked or integrated with post production value chain	**NEW** 1. Building National agro-food Database for Farm ID, Pest and diseases information, Farm Weather information, etc. 2. Enhancement of Agrolink. Establish an Agrolink framework to set the direction including content, function, stakeholders, users, business architecture, etc. To include experience sharing, regulation, technology, workforce supply and demand. Agrolink framework is the key principle of the agrolink system to ensure that the system would meet the objective set under Initiative A1 of the Malaysia Productivity Blueprint. 3. Enhancement of Agrolink. To establish a command centre consisting of database – related to agro-food supply chain. Enable SSO for easy access. 4. Develop Demand & Supply model for cluster farming. Enhancement to match the supply and demand for contract farming. 5. Research Project to increase production of agro-food. (TEMU) to increase the production of marine farming especially for small scale keepers and improve quality of outputs	• Achieving an example of Cluster Farm that are business innovative and financially sustainable	1. Measurement should be quantifiable with clear matrix 2. New suggestion could be part of smart farming 3. To identify stakeholders as leaders and members the initiative

Legend - Blue font – Programmes carried forward to 2021

HOW TO IMPROVE AGRO-FOOD SUBSECTOR – PROPOSED PROGRAMMES FOR 2021

NO	CHALLENGES	NEW PROGRAMMES PROPOSED FOR 2021	PROPOSED MEASUREMENT	INPUT
3.	**REGULATIONS AND STANDARDS** • Core regulations governing key sectors must be aligned to liberalization policies in order to boost productivity and competitiveness • Regulatory hurdles need to be reduced, regulations interpreted and applied with greater consistency, to improve ease and reduce cost of doing business for enterprises • Issues with quality	**NEW** 1. Push discussion with JTK and local government to discuss on regulation to support agro-food industry • RURB to ease the process of acquiring CCC. Particularly for farmhouse. To reduce regulatory cost and business risk with regards to CCC. • RURB on other regulations to support agro-food industry 2. Develop a traceability system template – that allows consumer to regulate the efficacy and transparency of the system (Transparency) 3. Investigate and proposed the framework for third party certification with the intention of developing third party certification mechanism (has been implemented by MOA) 4. Adoption of standard. Developing a modality of farmers' perspective of the market. Backed up by behavioural insight approach, coaching and training. 5. Develop an Integrated National Animal Feed Policy. • Inline with MyCC recommendation to reduce cost of animal feed within the production value chain • Promote a good aquaculture practice such as adoption of Halal standard for animal feed, registration with DOF, Malaysian Aquaculture Farm Certification scheme (SPLAM).	• Agro-food producers will be working with a digital accounting and recording traceability system that will improve their business efficiency and profitability. • Greater efficiency and transparency in the management of MyGAP certification scheme	1. Measurement should be quantifiable with clear matrix. 2. To identify stakeholders as leaders and members the initiative

Legend - Blue font – Programmes carried forward to 2021

HOW TO IMPROVE AGRO-FOOD SUBSECTOR – PROPOSED PROGRAMMES FOR 2021

NO	CHALLENGES	NEW PROGRAMMES PROPOSED FOR 2021	PROPOSED MEASUREMENT	INPUT
4.	**TECHNOLOGY** • Low awareness and adoption of ICT and Modern Farming Technique especially among small farmers impacting productivity and competitiveness • • Lack of understanding of ICT tools	1. Enhancement of Agrolink system. To secure budget for further development of AI simulated Chatbot for Compendium of Technology in collaboration with Technology Provider and Research Institution. 2. Enhancement of farming technique : across the subsector practice. Modern Farming Technique • Smart IOT device and training for farmers • Marine-cage aquaculture • Big Data Analytics to manage supply based on predictive demand • Implementation of smart farming	• Increase smart farming experience, enhancing farming knowledge, reduce labor, increase productivity.	1. Measurement should be quantifiable with clear matrix. 2. There are many technology based ideas proposed by the stakeholders. These needs to be consolidated via a **new Agrolink Framework** 3. To identify stakeholders as leaders and members the initiative

Legend - Blue font – Programmes carried forward to 2021

HOW TO IMPROVE AGRO-FOOD SUBSECTOR – PROPOSED PROGRAMMES FOR 2021

NO	CHALLENGES	NEW PROGRAMMES PROPOSED FOR 2021	PROPOSED MEASUREMENT	INPUT
5.	**WORKFORCE** • Shortage of skilled workforce • Mismatch between skills and agro subsector requirements • Supply of skilled labour	**NEW** 1. Collaborate with High Institution to develop new agriculture syllabuses that are industry driven through extended collaboration with Agricultural Training Institute under MAFI 2. Establish and engage with University to do field data sample, provide on site coaching to farmer, collect data digitally to build a National agro-food Database 3. Enhancement of industry player's skills and knowledge. • Reenact apprenticeship program as suggested in Initiative A5 of AFPN Phase 1 • Aquaculture training by DOF on all aspect on aquaculture management, technology and operations • Professional training and certification of industry players in all aspects of agro-food farming	• Increase employment of young graduates by 2,000 over 3 years • Number of trained agro-food expert with certification	1. To identify stakeholders as leaders and members the initiative
6.	**INCENTIVES STRUCTURE** • Incentives and other financial support need to be directly linked to productivity to incentivize enterprises to improve efficiency and performance	**NEW** 1. Recycling chicken waste project 2. To expedite action on the banana protocol export to China **3. Create value added products across the subsector under Malaysia-NEST.** • To expedite production and marketing of Snakehead broth • Increase Seaweed production • Identifying and promoting other agro-food products that have the distinct competitive advantage • Identifying and promote other Malaysia Value added products for the export market. (e.g. Jackfruits variety, starfruit, herbs) 4. Integrated National Animal Feed Policy.	• Increase employment by 100 young people in 2 years in each in each project • Increased Value addition of RMxxxx in the supply chain • 5 new Value added exportable products in 3 years	1. To identify stakeholders as leaders and members the initiative

Legend - Blue font – Programmes carried forward to 2021

HOW TO IMPROVE AGRO-FOOD SUBSECTOR – PROPOSED PROGRAMMES FOR 2021

CHALLENGES	PROGRAMMES				
1 Business Structure	1 Enhancement of Frameworks	2 Set up a cooperative	3 Enhancement of integrated / cluster farming & aquaculture		
2 Value Chain	4 National agro-food Database	5 Establish an Agrolink Framework	6 Demand & Supply model for cluster farming	7 R&D Project to increase production of agro-food	
3 Regulations And Standards	8 RURB to ease the process of agro-food industry	9 Certification for standards	10 Research Project to increase production of agro-food		
4 Technology	11 Enhancement of Agrolink system	12 Enhancement of farming technique : across the subsector			
5 Workforce	13 Develop agro-food industry-relevance syllabuses with Institution	14 Training and certification in all aspects of agro-food farming			
6 Incentives Structure	15 Create value added products across the subsector under Malaysia-NEST				

HOW TO IMPROVE AGRO-FOOD SUBSECTOR – PROPOSED PROGRAMMES FOR 2021

Summary of Proposed fifteen (15) new programmes in support of Six (6) initiatives across subsector:

CHALLENGES	PROGRAMMES				
1 Business Structure	1 Enhancement of Frameworks	2 Set up a cooperative	3 Enhancement of integrated / cluster farming & aquaculture		
2 Value Chain	4 National Agrofood Database	5 Establish an Agrolink Framework	6 Demand & Supply model for cluster farming	7 R&D Project to increase production of Agrofood	
3 Regulations And Standards	8 RURB to ease the process of Agrofood industry	9 Certification for standards	10 Research Project to increase production of Agrofood		
4 Technology	11 Enhancement of Agrolink system	12 Enhancement of farming technique : across the subsector			
5 Workforce	13 Develop Agrofood industry-relevance syllabuses with Institution	14 Training and certification in all aspects of Agrofood farming			
6 Incentives Structure	15 Create value added products across the subsector under Malaysia-NEST				

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HOW TO IMPROVE AGRO-FOOD SUBSECTOR – PROPOSED PROGRAMMES FOR 2021 : SUMMARY

The challenges across the agro-food subsector is considered structural. To ensure a sustainable supply of quality and safe food at affordable prices, investment in food production should not only be evaluated in terms of private benefits but also social returns and the country's security. This requires an ecosystem and a mix between food policy, smart technology and entrepreneurship. To boost investment in food production, the private sector must be incentivised — the return on investment in food production should be at least comparable to that of industrial crops and other sectors of the economy.

Government needs to implement a more effective land-use policy to enhance food security through the setting aside of agricultural land and aquatic and other natural resources for food production and other sources of nutrition. Incentives structure should be enhanced to encourage investment, research and adoption of system technology application in farm practices. Examples of this technology are mechanisation, soil and water sensors, weather tracking, satellite imaging, automation, vertical agriculture, artificial intelligence, nanotechnology, agricultural GPS technology, robotics and precision agriculture.

In addition to producing basic food items, Malaysia should consider high-value farming to produce roselle, figs, pineapple, papaya, banana, jackfruit and vegetables, among others. The success of exporting jackfruit chops and banana crackers to China should be extended to other potential markets around the world. This farming must be complemented by supportive policies and smart farming technology and, more importantly, must be carried out by entrepreneurs with the drive to increase performance and productivity, create economic growth for the nation and pays emphasis on the quality, sustainability and safety of food supply.

The government has announced an allocation of RM1 billion to a Food Security Fund to ensure that there is sufficient supply of food in the country amid the Covid-19 pandemic. In the larger scheme of things, the agro-food industry has to re-examine the socioeconomic environment including factors that drive demand and how the investment in agro-food productivity enhancement could lead to the desired outcome.

Source: https://www.theedgemarkets.com/article/special-report-state-nation-bridging-gap-between-agriculture-and-food-security (July 2020)

End of Report : Thank You

ZZMA