International Online Seminar
“Food Security & Agriculture Resilience in the Perspective of Water-Use Efficiency”

Management of Food Availability & Supply Chain/Distribution

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Fakulti Biosumber & Industri Makanan
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1. Keywords Terminology
2. FAO’s Views on Food Security & Availability
3. Malaysia Paddy & Rice Sector at a Glance
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Terminology

• **Food Security** – is ensuring that **everyone** in a population has **access to sufficient food** to meet their dietary needs.

• **Food Availability** – is refers to **sufficient quantities** of food of appropriate quality, supplied through **domestic production or imports**, including food aid.

• **Food Distribution/Food Supply Chain** – is refers to the processes that describe how food from a farm ends up on our tables. The processes include **production, processing, distribution, consumption and disposal**.
FAO’s Views on Food Security & Availability
Goal 2 – Zero Hunger – pledges to end hunger, achieve food security, improve nutrition and promote sustainable agriculture.
Food Insecurity Severity levels

SOURCE: FAO.


2 The other three dimensions of food security are food availability, utilization and stability.
The concentration and distribution of food insecurity by severity differs greatly across the regions of the world.
As the country level of income falls, the prevalence of food insecurity increases and so does the proportion of severity food security over the total.
POTENTIAL NEGATIVE IMPACTS OF INTERNATIONAL COMMODITY PRICE REDUCTIONS ON FOOD SECURITY AND NUTRITION IN COMMODITY-DEPENDENT ECONOMIES: TRANSMISSION CHANNELS

SOURCE: Based on diagram from UNCTAD and FAO. 2017. Commodities and Development Report 2017. Commodity markets, economic growth and development. New York, USA, UNCTAD, but modified for this report to focus on the specific transmission channels that affect food security and nutrition.
Malaysia Paddy & Rice Sector at a Glance
GDP 2018 – PERCENTAGE SHARE BY KIND OF ECONOMIC ACTIVITY (CONSTANT 2015 PRICES)

GDP 2018^p: RM1,361.5 billion

<table>
<thead>
<tr>
<th>Kind of Economic Activity</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Agriculture</td>
<td>25.1%</td>
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<tr>
<td>Forestry &amp; Logging</td>
<td>6.9%</td>
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<td>Fishing</td>
<td>12.5%</td>
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<td>Livestock</td>
<td>14.9%</td>
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<td>Oil Palm</td>
<td>37.9%</td>
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<td>Other Agriculture</td>
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</tbody>
</table>

Source: Annual Gross Domestic Product 2015-2018
EXTERNAL TRADE IN AGRICULTURE SECTOR

Exports
- 114,451 2018
- 126,492 2017
Imports
- 93,313
- 95,222
(RM million)

Source: Ministry of Agriculture and Agro-based Industry

PRODUCTION OF SELECTED CROPS

Fresh fruit bunches (oil palm)
- 2018: 98,419.4
- 2017: 101,740.9

Paddy
- 2018*: 2,639.9
- 2017*: 2,570.5

Cocoa beans
- 2018*: 0.8
- 2017: 1.0

Natural rubber
- 2018: 603.3
- 2017: 740.1

Pepper
- 2018: 31.1
- 2017: 30.4

Kenaf (dried stem)
- 2018: 10.0
- 2017: 3.3

Source: Department of Agriculture Malaysia, Malaysian Palm Oil Board, Malaysian Cocoa Board, Malaysian Pepper Board and National Kenaf and Tobacco Board

*p = preliminary  e = estimates  r = revised

Source: Selected Agricultural Indicators, Malaysia, 2019
Department of Statistics Malaysia
Paddy at a Glance

• Paddy is the third most widely planted crop.

• Main season - paddy is grown without depending wholly on any irrigation system. 1st August to 28/29 February

• Off Season - is the dry period and depends on an irrigation system. Between 1st Mac to 31st July of the year.

• Granary Areas refer to major irrigation schemes (areas greater than 4,000 hectares) and recognised by the Government in the National Agricultural Policy.

• There are 8 granary areas in Malaysia: MADA, KADA, IADA KERIAN, IADA Barat Laut Selangor, IADA P. Pinang, IADA Seberang Perak, IADA KETARA and IADA Kemasin Semerak.
Paddy production by granary area, 2016 (MT and percentage of total domestic production)
Malaysia performed fairly well in terms of paddy yield, in terms of paddy yield in 2016 at 3.2 million tonnes per hectare vs Thailand's 2.9 million tonnes per hectare.

Malaysia's rice consumption increased faster than its production. Compared to neighboring countries, its rice consumption and production remain relatively small.

<table>
<thead>
<tr>
<th>Country</th>
<th>Population (million)</th>
<th>Production 2016 (million tonnes)</th>
<th>Annual growth rate</th>
<th>Production 2019 (million tonnes)</th>
<th>Annual growth rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>World</td>
<td>7,466.9</td>
<td>501.5</td>
<td>1.5%</td>
<td>497.5</td>
<td>1.4%</td>
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<tr>
<td>Asia</td>
<td>4,462.7</td>
<td>453.2</td>
<td>1.4%</td>
<td>434.4</td>
<td>1.2%</td>
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<td>Indonesia</td>
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<td>2.1%</td>
<td>45.7</td>
<td>1.5%</td>
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<tr>
<td>Malaysia</td>
<td>31.2</td>
<td>1.8</td>
<td>1.6%</td>
<td>2.7</td>
<td>1.8%</td>
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<tr>
<td>Philippines</td>
<td>103.3</td>
<td>12.1</td>
<td>2.6%</td>
<td>13.5</td>
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<td>Thailand</td>
<td>68.9</td>
<td>21.6</td>
<td>1.8%</td>
<td>13.6</td>
<td>2.0%</td>
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<tr>
<td>Vietnam</td>
<td>94.6</td>
<td>28.1</td>
<td>1.8%</td>
<td>22.1</td>
<td>1.2%</td>
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</tbody>
</table>

Notes: Statistics based on year 2016  
Source: KRI

South-East Asia plays a central role in the global rice economy, accounting for 16 million tonnes, or 40%, of the world's rice exports, with Thailand and Vietnam being the region's top exporters. Malaysia, Indonesia, and the Philippines are net importers.

Albeit the declining trend, the paddy and rice industry continue to receive more budgetary assistance than any other crops. Paddy subsidies and incentives vs percentage of Ministry of Agriculture's expenditure.

Of the 14 million employed persons in Malaysia, 1.6 million workers, or 11.4%, belonged to the agriculture, forestry and fishing industry. Within this category, around 200,000 were paddy farmers, mostly aged 50 years and above. The monthly household income for paddy farmers stood at RM2,527, putting them in the Bottom-40 income category.
World Main Paddy Producers, 2014

Rice production, consumption, area harvested and yield for the Southeast Asia region, 2000 – 2016

Source: Perangkaan Padi Malaysia, 2014
Import of Rice by Country, MALAYSIA 2014

Source: Perangkaan Padi Malaysia, 2014

Hectareage of Paddy Varieties for Overall Granary Area, Peninsular Malaysia, 2014
**Main information of Paddy & Rice (2013-2018)**

<table>
<thead>
<tr>
<th>PERKARA</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
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<th>2017</th>
<th>2018</th>
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<td>Keluasan Pasel Padi (Ha)</td>
<td>289,882</td>
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<td>291,086</td>
<td>286,579</td>
<td>284,162</td>
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<td>Keluasan Bertasam Padi (Ha)</td>
<td>671,679</td>
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<td>681,559</td>
<td>688,770</td>
<td>685,548</td>
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<tr>
<td>Pengeluaran Padi (000 Tan Metrik)</td>
<td>2.604</td>
<td>2.845</td>
<td>2.741</td>
<td>2.740</td>
<td>2.571</td>
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<td>Nilai Pengeluaran Padi (RM 000)</td>
<td>1.915,758</td>
<td>3,209,212</td>
<td>3,050,641</td>
<td>3,088,400</td>
<td>2,868,133</td>
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<td>Purata Hasil Padi (Kg/Ha)</td>
<td>3.876</td>
<td>4.194</td>
<td>4.022</td>
<td>3.578</td>
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<tr>
<td>Jumlah Import Beras (000 Tan Metrik)</td>
<td>853</td>
<td>863</td>
<td>961</td>
<td>748</td>
<td>726</td>
<td>776</td>
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</table>

*Source: Jabatan Pertanian, Bahagian Industri Padi dan Beras, Department of Agriculture, Paddy and Rice Industry Division*
# Paddy Calendar - Planting And Harvesting Period Of Wetland Paddy

## Negeri Sabah

<table>
<thead>
<tr>
<th>Bulan</th>
<th>Jan 2015</th>
<th>Feb</th>
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## Jelapang Padu

### Game Area

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**Nalini Arumugam**

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**2016 Paddy and Rice Supply Chain**

**Input**
- 9 seed suppliers\(^a\)
- 68,000 MT of seeds\(^b\)
- 194,931 farmers\(^c\)
- 2.7m MT paddy\(^d\)
- 688,770 Ha of planted area\(^d\)

**Production**
- 157 licensed millers\(^a\)
- 1.8m MT rice\(^d\)

**Milling**
- 1,660 wholesalers\(^a\)
- 56,746 retailers\(^a\)

**Trade & Stockpile**
- 1 importer - BERNAS
- 821,869 MT import\(^e\)
- 45,422 MT export\(^f\)

**Wholesale & Retail**

**Consumption**
- 31 millions consumers\(^g\)
- 2.7m MT of rice consumed\(^g\)

**Sources:**
- \(^a\) Arkip Keputusan Tender Pembekalan Benih Padi Sah Kepada Petani di Balaiaw Program Benih Padi Sah, Kementerian Pertanian Dan Industri Asas Tanah Bagi Tempoh Dua (2) Tahun (2015 - 2016)
- \(^b\) MOA Media Statement – Benih Padi Tidak Sah Ancam Bekalan Beras
- \(^c\) Booklet Statistik Tanaman (Sub-sektor Tanaman Makanan) 2017, DOA
- \(^d\) Agrosfood Statistics 2016, MOA
- \(^e\) As of July 2016. Data from Maklumat Seksiyen Kuantaselia Padi dan Beras
- \(^f\) FAOSTAT
- \(^g\) Malaysia’s population from Special Aggregates Geographical groups: Total population – Both sexes, World Population Prospects 2017, UN Desa Population Division

**Note:**
- \(^a\) Under the Paddy Seed Certification Scheme, the government sets the total quota level for seed production at 80,000MT each year, however, only 85% of the quota set are produced

Illustration by KRI

NALINI ARUMUGAM 20
National Agro-Food Policy 2011-2020

**General**

a) To address food security and safety to ensure availability, affordability and accessibility;

b) To ensure the competitiveness and sustainability of the agro-food industry; and

c) To increase the income level of agropreneurs.

**Paddy Industry**

a) An increase in productivity and rice quality;

b) An increase in automation and mechanisation;

c) An intensification of the use of rice by-products;

d) An improvement in the management of the national rice stockpile;

e) Restructuring of the rice subsidies and incentives; and

f) Strengthening of the institutional management of paddy and rice.
Impact of Pandemic Covid-19

Health Crisis
- Economy
- Environment
- Social
Agriculture/Food Supply Chain

• Globalization and trade liberalization creates more interconnected supply chain (SC).

• Goods and services have to pass through more stages before reaching the end consumers.

• National lockdown and Movement Control Order (MCO) disturb the functions and operations of SC.

• Staple crops, such as wheat and maize; and high-value crops such as fishery products, fruit and vegetables.

• Capital intensive and labour intensive

• Transportation, logistic and Labour – SC sustainability
Malaysia Food Supply Chain Disruption

- Complex network consists of production, processing, distribution, retailing and consumption.
- Early stage of MCO, media reported about panic buying and shortage (masks, sanitizers & groceries).
- Till to date, no report regarding food shortage.
- Heavily dependent on foreign/migrant labors.
- Affects crops, livestock and fishery sub-sectors production.
- Impact on Food availability and market price.
- Changing of Consumer Behaviour
- Some countries stop exporting to avoid domestic shortage
- Malaysia imports most of its food from China, India, Thailand, Indonesia and New Zealand.
Impact on Rice Production

• Paddy planting and harvesting activities are being carried out smoothly

• Government has allocated **RM11.2 million** under the Economic Stimulus Package (PRE 1)

• **RM5.4 million** under the Prihatin Economic Stimulus Package (PRE Prihatin) to MADA to assist the agency post-COVID-19.

• Under PRE Prihatin, an allocation of RM200,000 was distributed to each District Farmers’ Organisation to develop short-term agrofood projects which benefited 1,810 MADA farmers
Beras kita masih cukup

Hanya 30% beras diimport, tidak jejas bekalan dalam negara
Corrective Measurements – Better Future

• Labour shortages need to be rectified
• New variety need to be introduced
• Stimulus package for small farmers.
• Upgrade the irrigation system
• Digitalize the agriculture marketing.
• Well designed and integrated supply chain
• Output-based subsidy
• Farmer cooperatives need to be strengthen.
• Public-private partnership can complement each other by providing fruitful information.
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