WELCOME to MUDA AGRICULTURAL DEVELOPMENT AUTHOURITY ALOR SETAR, KEDAH DARUL AMAN.

NADMA DELEGATION
10TH JULY 2019
Presentation Outline

1. Brief Introduction of MADA
2. Irrigation & Drainage Management
3. Flood Mitigation
4. Tidal Barrage Operation at Sg. Kedah
5. Impact Of Muda Irrigation Scheme
BRIEF INTRODUCTION OF MUDA AREA
BRIEF INTRODUCTION OF MUDA AREA

LOCATION MAP
Paddy has for centuries been cultivated in coastal plains of Kedah and Perlis states.

Paddy cultivation then was carried out using local tradition implements and was planted once a year.

In general about 72% of farmers lived under poverty level.
Following the fall in tin and rubber prices in the 1920s, the Colonial British Government started to take steps to increase rice production to meet local demand.

From 1955 to the immediate post–independence years, a policy of self-sufficiency in rice was adopted by the government.

In accordance with the policy, under the First Malaysia Plan (1965 – 1970) the Muda Irrigation Project was launched.
MUDA AGRICULTURAL DEVELOPMENT AUTHORITY (MADA)

- A statutory body legislated under the Act of Parliament, Federation of Malaysia. - Act 70, Muda Agricultural Development Authority Act, 1972

MAIN FUNCTION PROVIDED IN ACT:

- To develop, promote, facilitate and execute socio and economic development in the Muda Area.
- To plan and execute in the Muda Area any agriculture development that has been authorized by the State Government of Kedah and Perlis.
BRIEF INTRODUCTION OF MUDA AREA

MUDA IRRIGATION PROJECT

- The 1\textsuperscript{st} and largest integrated agriculture development project
- World Bank loan of USD 245 million
- Infrastructure development \textbf{started in the year 1966}
- \textbf{Completed} for operation in 1974
BRIEF INTRODUCTION OF MUDA AREA

<table>
<thead>
<tr>
<th>STATE</th>
<th>MADA’S PHYSICAL AREA</th>
<th>MADA’S PADDY CULTIVATION AREA</th>
</tr>
</thead>
<tbody>
<tr>
<td>PERLIS: 81,000 Ha</td>
<td>PERLIS: 21,701 Ha (26.8%)</td>
<td>PERLIS: 17,717 Ha (21.9%)</td>
</tr>
<tr>
<td>KEDAH: 942,600 Ha</td>
<td>KEDAH: 108,581 Ha (11.5%)</td>
<td>KEDAH: 82,968 Ha (8.8%)</td>
</tr>
<tr>
<td>1,023,600 Ha</td>
<td>130,282 Ha (12.7%)</td>
<td>100,685 Ha (9.8%)</td>
</tr>
</tbody>
</table>
BRIEF INTRODUCTION OF MUDA AREA

MUDA IRRIGATION PROJECT

MUDA AREA INFORMATION

PHYSICAL AREA: 130,282 hectare
PADDY CULTIVATED AREA: 100,685 hectare
AVERAGE FARM SIZE: 2.12 hectare
AVERAGE NO. OF FARMERS: 57,635 people
AVERAGE FARMER'S AGE: 60.1 years
NO. OF REGION: 4 nos.
NO. OF ASSOCIATION (PPK): 27 nos.

WATER RESOURCES FOR PADDY CULTIVATION IN MUDA AREA

- RIVER FLOW: 32%
- DAM RELEASE: 10%
- RAINFALL: 52%
- RECYCLE DRAINAGE WATER: 5%
TRANSITION OF PADDY FARMING IN MUDA AREA

Pre Muda
- Individual Farming
- Single Cropping
- Transplanting Culture
- Paddy Yield at 3.2 ton/ha
- No infrastructure

1970s
- Individual Farming
- Labor Intensive
- Transplanting Culture
- Paddy Yield at 3.2 ton/ha
- Secondary Infra 11m/ha

1980s
- Group Farming
- Labor Crisis
- Mechanization
- Direct Seeded Culture
- Coordination of activities
- Paddy Yield at 4.67 ton/ha
- Paddy Fertilizer Subsidy Scheme
- Tertiary Infra 30m/ha

1986
- Semi-Estate launched
- Credit Facilities
- Marketing
- Yield 4.7 ton/ha

2000s
- Paddy Estate launched
- Centralized management
- 10-ton Technology package
- Rice Check
- Yield target at 6 ton/ha
- All tertiary @30m/ha by 2020

2011
- NKEA (PPP) Project launched
- Government Support
- Commercial Entity
- Will involve entire value chain

Recycle of drainage water
IRRIGATION AND DRAINAGE MANAGEMENT
## Existing Irrigation and Drainage Infrastructure

### 3 Dams

<table>
<thead>
<tr>
<th>DAM</th>
<th>Storage million m³</th>
<th>Catchment sq. km</th>
<th>Reservoir sq. km</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUDA</td>
<td>160 (130,000 ac-ft)</td>
<td>984</td>
<td>16</td>
</tr>
<tr>
<td>PEDU</td>
<td>1,080 (870,000 ac-ft)</td>
<td>171</td>
<td>52</td>
</tr>
<tr>
<td>AHNING</td>
<td>275 (223,000 ac-ft)</td>
<td>122</td>
<td>12</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,515 (1,223,000 ac-ft)</strong></td>
<td><strong>1,277</strong></td>
<td><strong>80</strong></td>
</tr>
</tbody>
</table>

### Reticulation System

- **Canal**: 1,840 km
  - 146 km Main Canal
  - 930 km Secondary Canal
  - 764 km Tertiary Canal
- **DRAIN**: 1,830 km
  - 240 km Saliran Utama
  - 883 km Saliran Sekunder
  - 707 km Parit Tersier
- **Farmroad**: 1,670 km
  - 802 km Secondary Farmroad
  - 868 km Tertiary Farmroad
- **Other Infrastructure**
  - Coastal Bund 100 km
  - Tidal Gates 25 nos.
## IRRIGATION & DRAINAGE MANAGEMENT

### MAIN CANAL AND LOCATION OF BI-FURCATION/REGULATORS

<table>
<thead>
<tr>
<th>Canal Type</th>
<th>Length</th>
<th>Drain Type</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main Canal</td>
<td>146 km</td>
<td>Main Drain</td>
<td>240 km</td>
</tr>
<tr>
<td>Secondary Canal</td>
<td>930 km</td>
<td>Secondary Drain</td>
<td>883 km</td>
</tr>
<tr>
<td>Tertiary Canal</td>
<td>815 km</td>
<td>Tertiary Drain</td>
<td>676 km</td>
</tr>
</tbody>
</table>

- Bi-furcation: 2 nos.
- Regulators: 9 nos.
TELEMETRY SYSTEM CONFIGURATION

- Solar Panel
- Maintenance Free battery
- Radio Repeater Station
- Web Server
- Broadband
- Email
- Internet
- Remote Terminal Unit (RTU)
- VHF Radio
- Front End Processor
- TeleScada
- Graphical User Interface (GUI)
- Data Processing Server
- GSM MODEM
- Mobile Users
- GSM Network

Microsoft Access / SQL Database
Generate Water Level / Rainfall Graph
Telemetry Station

- Rainfall: 75
- Rainfall+Water Level: 18
- Rainfall+Water Level+Gate Opening: 7
- Water Level+Gate Opening: 7
- Gate Opening: 33
- Total Station: 140
## IRRIGATION SYSTEM

<table>
<thead>
<tr>
<th>Irrigation System</th>
<th>Area (Ha)</th>
<th>No. of Blocks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tertiary</td>
<td>34,989 (36%)</td>
<td>44</td>
</tr>
<tr>
<td>Secondary</td>
<td>61,569 (64%)</td>
<td>128</td>
</tr>
<tr>
<td>Total (Keluasan Mada)</td>
<td>96,558 (100%)</td>
<td>172</td>
</tr>
</tbody>
</table>

## State Blocks Without Tertiary System

<table>
<thead>
<tr>
<th>State</th>
<th>Blocks Without Tertiary System</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perlis</td>
<td>16</td>
</tr>
<tr>
<td>Kedah</td>
<td>112</td>
</tr>
<tr>
<td>Total</td>
<td>128</td>
</tr>
</tbody>
</table>

---

**IRRIGATION & DRAINAGE MANAGEMENT**

**PLANNING AND STATUS OF EPP 10 DEVELOPMENT PROJECT**
FLOOD MITIGATION
DAM MANAGEMENT FOR FLOOD CONTROL

DAMS AND RESERVOIR IN THE KEDAH STATE

<table>
<thead>
<tr>
<th>RIVER</th>
<th>CATCHMENT AREA (SQ. KM)</th>
<th>LENGTH (KM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pedu River</td>
<td>171</td>
<td>18</td>
</tr>
<tr>
<td>Ahning River</td>
<td>122</td>
<td>7</td>
</tr>
<tr>
<td>Bata River</td>
<td>76</td>
<td>10</td>
</tr>
<tr>
<td>Padang Terap River</td>
<td>220</td>
<td>42</td>
</tr>
<tr>
<td>Pendang River</td>
<td>237</td>
<td>53</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>826</strong></td>
<td><strong>130</strong></td>
</tr>
</tbody>
</table>

- **Ahning River** (122 sq. km)
- **Bata River** (76 sq. km)
- **Pedu River** (171 sq. km)
- **Muda River** (984 sq. km – u/s of Muda Dam)
- **Pendang River** (237 sq. km)
- **Proposed Jeniang Transfer Development**

**Maps and Diagrams:**
- Ahning Dam
- Pedu Dam
- Muda Dam
- Beris Dam
FLOOD MITIGATION

HOW MADA MITIGATE FLOOD IN MUDA AREA?

Schematic Diagram of Flood Routing In Muda Area

- Ahning Dam
- Pedu Dam
- Muda Dam
- Saiong Tunnel

- SG. PDG. SANAI
- SG. PEDU
- SG. NAKA

- KUALA NERANG
- SG. PDG. TERAP
- Central canal

- Northern Canal
- SG. ARAU
- SG. BATA
- CHANGLUN

- SG. ANAK BUKIT
- SG. PENDANG

- Jitra
- Kepala Batas
- TERUSAN ALOR CHANGILEH

- KANGAR
- Arau Canal
- Lana Bulu Canal

- Alor Setar
- Southern Diversion

Tidal Control Gate

- 2,000cusec
- 2,000cusec
- 3,000cusec
- 26,000cusec
Pedu and Muda Dam were constructed in 1966 and completed in 1969 - The main reservoir for the Muda Area Irrigation Project.

Pedu and Muda Dam – Also function as Domestic and Industrial Water Supply in North Kedah, Langkawi & Southern Perlis.

Pedu Reservoir is the major storage reservoir in the Muda Irrigation Project. It stores water from its own limited catchment and receives inflow from the Muda Reservoir through the connecting Saiiong Tunnel (6.8km).

All releases of irrigation water are made from Pedu Reservoir and will flow through the Pedu River / Padang Terap River to to Pelubang Headworks some 50 km downstream. From here the water is distributed to the Muda Area through a network of canals.

### PEDU DAM

- **Reservoir**: 875,000 acre-feet (1,080 MCM)
- **Usage Level Range**: 320’ to 220’ MSL
- **Reservoir Area**: 20 sq. miles (52 sq. km)
- **Catchment Area**: 66 sq miles (171 sq. km)
- **Type of Dam**: Rockfill with upstream asphaltic concrete membrane (61m height, 220 m length)
- **Age of Dam**: 49 years
- **Factor of Safety at Spill Level 320’ MSL**:
  - Required: 1.5
  - Calculated: 2.17

### MUDA DAM

- **Reservoir**: 125,000 acre-feet (154 MCM)
- **Usage Level Range**: 330’ to 270’ MSL
- **Reservoir Area**: 6 sq. miles (15.5 sq. km)
- **Catchment Area**: 380 sq. miles (984 sq.km)
- **Type of Dam**: Concrete ambursen buttress with overflow spillway (37m height, 250m length)
- **Age of Dam**: 49 years
- **Factor of Safety at Spill Level 330’ MSL**
  - Buttress No. 23: 2.23
  - Buttress No. 16: 1.70
  - Buttress No. 13: 2.20

*Factor of Safety based on Dam Safety Review Report 2007*
The Sg. Ahning Dam project proponent was the Kedah State Public Works Department and the dam is owned by the Kedah State Government.

Ahning Dam was constructed in 1985 and operated in 1989.

Main function - Domestic and Industrial Water Supply.

Water releases from Ahning and Pedu dams flow into Sg. Padang Terap River, the lower reaches are where the Bukit Pinang and Pelubang water treatment plants are situated at.

For better coordination of Ahning and Pedu dam releases to meet the irrigation and domestic water demand, it is best to place the operation and management of both dams under one entity.

Thus the operation and maintenance of Ahning dam was thus officially handed over by Kedah Public Works Department to MADA in 1991.

Additional supply of Sungai Padang Terap for irrigation and domestic purposes

<table>
<thead>
<tr>
<th>AHNING DAM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reservoir</td>
</tr>
<tr>
<td>Usage Level Range</td>
</tr>
<tr>
<td>Reservoir Area</td>
</tr>
<tr>
<td>Catchment Area</td>
</tr>
<tr>
<td>Type of Dam</td>
</tr>
<tr>
<td>Age of Dam</td>
</tr>
<tr>
<td>* Factor Of Safety at Spill Level 113m MSL</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

* Factor of Safety based on Dam Safety Review Report 2007
FLOOD MITIGATION

FLOOD INCIDENT 1988 TO 2018

Area Affected (ha)

Rainfall (mm)

Rainfall
Flood Incident

26
3

25,404
18,246
9,857
9,7295
8,304
474
2,375
2,184
1,090
1,075
129
112
403
96
21
789
819
315
2,416
1,978
1,431
1,115
908
1,017

November Oktober Disember Oktober September Sept./Okt. Disember September Oktober November September November November November Mac Ogos September September Oktober Oktober November Julai September Sepetember November Mel Oktober

OVERVIEW OF TIDAL BARRAGE OPERATION AT SG. KEDAH
Important component in Muda Irrigation Project.

Largest tidal control structures built in Malaysia during 1960s.

Located on the right bank of the Sg. Kedah approximately 1km from City of Alor Setar.

The functions are to control drainage/excessive water for most of Muda Area and to prevent sea water intrusion into paddy fields.

Officiated by the late Y.B. Tan Sri Hj. Mohd Ghazali bin Hj. Jawi, Minister of Agriculture and Land on 19 Sept 1971.
OVERVIEW OF TIDAL BARRAGE OPERATION AT SG. KEDAH

FUNCTION OF TIDAL BARRAGE

- To stop the inland flow of saline water via the Sg. Kedah into low-lying lands within the Muda Irrigation Area.

- To reclaim the inundated low lands adjacent to the Sg. Kedah for paddy cultivation by lowering the water table.

- To improve the drainage of paddy lands which are drained by Sg. Kedah and its tributaries.

- To reduce the occurrences and severity of floods in the agricultural lands upstream of the Barrage.

- To improve the town drainage and sewerage systems of Alor Setar through lowering of water tables.

- To allow recycling pump operation during irrigation period (Sg. Tajar, Tanah Merah, Alor Madi, Alor Gunung and Alor Ganu)
The Barrage is a **reinforced concrete structure** consisting of 7 bays & each bay incorporating a 45' 0" wide (13.7 m) and 20' 0" deep (6.1 m) roller gate.

In addition, there is a boat lock on the left side of the structure with 2 lock-gates each measuring 30' 0" x 20' 0" deep (10m x 6.1m) on the upstream and downstream sides.

The lock gates can be operated to allow passage of boats through the Barrage.

The barrage and lock gates are electrically operated.

Designed to cater for peak flow (100 ARI) estimated about 750 m³/sec.
### TECHNICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>Description</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width of Barrage</td>
<td>400 ft. (122m)</td>
</tr>
<tr>
<td>Length</td>
<td>120 ft. (36.6m)</td>
</tr>
<tr>
<td>No. Of gates</td>
<td>7 Nos. of roller gates</td>
</tr>
<tr>
<td></td>
<td>45 ft. (W) x 20 ft. (H) x 7 Nos.</td>
</tr>
<tr>
<td></td>
<td>13.7m (W) x 6.1m (H) x 7 Nos</td>
</tr>
<tr>
<td>Top of Gates</td>
<td>R.L. +8.00ft (2.44m)</td>
</tr>
<tr>
<td>Road Width</td>
<td>24 ft. (7.30m)</td>
</tr>
<tr>
<td>Cycle Track</td>
<td>2 Nos. x 6 ft. wide</td>
</tr>
<tr>
<td>Lock for boats</td>
<td>1 No. x 30 ft. (W) x 220 ft. (L)</td>
</tr>
<tr>
<td></td>
<td>1 No. x 10 m (W) x 67 m (L)</td>
</tr>
<tr>
<td>CONDITION</td>
<td>UPSTERAM WATER LEVEL</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>-------------------------------</td>
</tr>
<tr>
<td>Non Irrigation Period / Normal</td>
<td>2.70-3.00ft / 0.8-1.0m</td>
</tr>
<tr>
<td>Irrigation Period</td>
<td>3.00-3.30ft / 0.9-1.0m</td>
</tr>
<tr>
<td>Flood</td>
<td>All gates are fully open</td>
</tr>
</tbody>
</table>
OVERVIEW OF TIDAL BARRAGE OPERATION AT SG. KEDAH

TIDAL BARRAGE IMAGES
IMPACT OF MUDA IRRIGATION SCHEME
## IMPACT OF MUDA IRRIGATION SCHEME

### THE IMPACTS OF MADA/ GOVERNMENT POLICY TOWARDS INCREASING PADDY IN MUDA AREA (1965-2017)

<table>
<thead>
<tr>
<th>PHASE</th>
<th>YEAR</th>
<th>MADA’S PROGRAMME/ GOVERNMENT POLICY</th>
<th>AVERAGE GROSS YIELD (TONNE/HEC)</th>
<th>TOTAL PRODUCTION (METRIC TONNE)</th>
<th>% INCREMENT</th>
<th>NOTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>1965</td>
<td>BEFORE RPM</td>
<td>3.370</td>
<td>316,992</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>II</td>
<td>1976</td>
<td>- IMPLEMENTATION OF RPM</td>
<td>4.178</td>
<td>770,815</td>
<td>23.9</td>
<td>143.2 DOUBLE CROPPING ENTIRELY THE WHOLE MUDA AREA</td>
</tr>
<tr>
<td>III</td>
<td>1980</td>
<td>PADDY FERTILIZER SUBSIDY SCHEME</td>
<td>4.674</td>
<td>866,183</td>
<td>11.9</td>
<td>12.4</td>
</tr>
<tr>
<td>IV</td>
<td>2004</td>
<td>IMPLEMENTATION THE 10 TONNE PACKAGE</td>
<td>5.475</td>
<td>1,055,457</td>
<td>17.1</td>
<td>21.8</td>
</tr>
<tr>
<td>V</td>
<td>2008</td>
<td>PADDY PRODUCTION IN SENTIVE SCHEME</td>
<td>5.700</td>
<td>1,100,695</td>
<td>4.1</td>
<td>4.3</td>
</tr>
<tr>
<td>VI</td>
<td>2009</td>
<td>NATIONAL FOOD SECURITY GUARANTEED POLICY</td>
<td>6.150</td>
<td>1,187,663</td>
<td>7.9</td>
<td>7.9</td>
</tr>
<tr>
<td>VII</td>
<td>2011-2020</td>
<td>NATIONAL KEY ECONOMIC AREA (NKEA) EPP10</td>
<td>5.688¹</td>
<td>1,140,440</td>
<td>(8.1)</td>
<td>(4.1)</td>
</tr>
</tbody>
</table>

*Note: ¹ The performance yield for Phase VII is year 2017 (Season 2/2016 & 1/2017)*

(Source : BPTM, MADA)
# IMPACT OF MUDA IRRIGATION SCHEME

## GROSS PADDY YIELD PERFORMANCE IN MUDA AREA (1966-2018)

<table>
<thead>
<tr>
<th>YEAR</th>
<th>AVERAGE YIELD (TONNE / HEC)</th>
<th>YEAR</th>
<th>AVERAGE YIELD (TONNE / HEC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1971 - 1975</td>
<td>3.927</td>
<td>2012</td>
<td>5.729</td>
</tr>
<tr>
<td>1986 - 1990</td>
<td>3.954</td>
<td>2015</td>
<td>5.725</td>
</tr>
<tr>
<td>2001-2005</td>
<td>5.374</td>
<td>2018</td>
<td>5.901</td>
</tr>
<tr>
<td>2006-2010</td>
<td>5.667</td>
<td>2019</td>
<td>NA</td>
</tr>
</tbody>
</table>

(Source: BPTM, MADA)
## IMPACT ON THE TARGET GROUP (FARMERS) SINCE MADA WAS ESTABLISHED

### IMPACT OF MUDA IRRIGATION SCHEME

<table>
<thead>
<tr>
<th>Impact</th>
<th>Before Project</th>
<th>After Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average yield (Ton/hec)</td>
<td>3.4 (1965)</td>
<td>5.661 (2017)</td>
</tr>
<tr>
<td>Total Production (ton)</td>
<td>316,992 (1965)</td>
<td>974,387 (2017)</td>
</tr>
<tr>
<td>Value of production (RM)</td>
<td>8.5 mil</td>
<td>1,169 mil</td>
</tr>
<tr>
<td></td>
<td>(based on GMP RM1,200/tonne)</td>
<td></td>
</tr>
<tr>
<td>Cropping Intensity</td>
<td>100 %</td>
<td>199.9 %</td>
</tr>
<tr>
<td>Labour (man/hours)</td>
<td>615 (1974) Transplanting</td>
<td>199.4 Direct seeding</td>
</tr>
<tr>
<td>Net Household Income (RM/yr)</td>
<td>1,092</td>
<td>29,259</td>
</tr>
<tr>
<td>Net Household Income (RM/mth)</td>
<td>91</td>
<td>2,438</td>
</tr>
<tr>
<td>Monthly Per Capita Income (RM)</td>
<td>18.20</td>
<td>487.60</td>
</tr>
<tr>
<td>% Poverty Level</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poor</td>
<td>72</td>
<td>1.0</td>
</tr>
<tr>
<td>Hard Core Poor</td>
<td>5</td>
<td>0.5</td>
</tr>
</tbody>
</table>

(Source: BPTM, MADA)
<table>
<thead>
<tr>
<th>Granary Area</th>
<th>Parcel Paddy Area (ha)</th>
<th>Parcel Area (%)</th>
<th>Contribution to National Production (ton)</th>
<th>2015</th>
<th>%</th>
<th>2016</th>
<th>%</th>
<th>2017</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>MADA</td>
<td>100,685</td>
<td>35.43</td>
<td></td>
<td>936,955</td>
<td>35.07</td>
<td>1,063,247</td>
<td>39.77</td>
<td>974,387</td>
<td>38.93</td>
</tr>
<tr>
<td>IADA KERIAN</td>
<td>21,108</td>
<td>7.43</td>
<td></td>
<td>189,063</td>
<td>7.08</td>
<td>165,027</td>
<td>6.17</td>
<td>171,237</td>
<td>6.84</td>
</tr>
<tr>
<td>IADA BARAT LAUT SELANGOR</td>
<td>19,057</td>
<td>6.71</td>
<td></td>
<td>240,290</td>
<td>8.99</td>
<td>222,033</td>
<td>8.31</td>
<td>165,571</td>
<td>6.61</td>
</tr>
<tr>
<td>IADA PULAU PINANG</td>
<td>12,782</td>
<td>4.50</td>
<td></td>
<td>149,971</td>
<td>5.61</td>
<td>148,297</td>
<td>5.55</td>
<td>146,660</td>
<td>5.86</td>
</tr>
<tr>
<td>IADA SEBERANG PERAK</td>
<td>14,140</td>
<td>4.98</td>
<td></td>
<td>109,572</td>
<td>4.10</td>
<td>103,388</td>
<td>3.87</td>
<td>88,198</td>
<td>3.52</td>
</tr>
<tr>
<td>IADA KETARA</td>
<td>4,876</td>
<td>1.72</td>
<td></td>
<td>51,921</td>
<td>1.94</td>
<td>54,836</td>
<td>2.05</td>
<td>50,438</td>
<td>2.02</td>
</tr>
<tr>
<td>IADA KEMASIN SEMERAK</td>
<td>5,056</td>
<td>1.79</td>
<td></td>
<td>28,236</td>
<td>1.06</td>
<td>27,456</td>
<td>1.03</td>
<td>26,938</td>
<td>1.08</td>
</tr>
<tr>
<td>IADA PEKAN</td>
<td>5,555</td>
<td>1.95</td>
<td></td>
<td>17,387</td>
<td>0.65</td>
<td>13,425</td>
<td>0.50</td>
<td>10,286</td>
<td>0.41</td>
</tr>
<tr>
<td>IADA ROMPIN</td>
<td>2,920</td>
<td>1.00</td>
<td></td>
<td>20,944</td>
<td>0.78</td>
<td>14,437</td>
<td>0.54</td>
<td>17,028</td>
<td>0.68</td>
</tr>
<tr>
<td>IADA KOTA BELUD</td>
<td>-</td>
<td>-</td>
<td></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>JUMLAH JELAPANG</strong></td>
<td><strong>205,806</strong></td>
<td><strong>72.43</strong></td>
<td></td>
<td><strong>1,973,854</strong></td>
<td><strong>73.88</strong></td>
<td><strong>2,060,318</strong></td>
<td><strong>77.07</strong></td>
<td><strong>1,914,038</strong></td>
<td><strong>76.47</strong></td>
</tr>
<tr>
<td><strong>JUMLAH LUAR JELAPANG</strong></td>
<td><strong>78,356</strong></td>
<td><strong>27.42</strong></td>
<td></td>
<td><strong>697,759</strong></td>
<td><strong>26.12</strong></td>
<td><strong>612,943</strong></td>
<td><strong>22.93</strong></td>
<td><strong>589,071</strong></td>
<td><strong>23.53</strong></td>
</tr>
<tr>
<td><strong>Total Malaysia</strong></td>
<td><strong>284,162</strong></td>
<td><strong>100.00</strong></td>
<td></td>
<td><strong>2,671,613</strong></td>
<td><strong>100.00</strong></td>
<td><strong>2,673,261</strong></td>
<td><strong>100.00</strong></td>
<td><strong>2,503,109</strong></td>
<td><strong>100.00</strong></td>
</tr>
</tbody>
</table>

(Source: BPTM, MADA)
THANK YOU