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# PENANG IN NUMBERS

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## *Green Data*



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## PENANG IN NUMBERS – GREEN DATA

Green Data is a selected compilation of environmental conscious data series of Penang state that accommodates the Sustainable Development Goals that aims to act as a data reference that assisted Penang Green Council in the formulation process of the Penang Green Agenda 2030 and also made accessible for public use. The chosen 8 SDGs would be as below:

- **Goal 2 – Zero Hunger**
- **Goal 6 – Water**
- **Goal 7 – Energy**
- **Goal 11 – Sustainable Cities**

- **Goal 12 – Responsible Consumption and Production**
- **Goal 13 – Climate Action**
- **Goal 14 – Marine**
- **Goal 15 – Biodiversity.**

These data are collected from various sources; they will be updated from time to time for the use and view of general public as well as to serve as a reference for government departments, agencies, students and stakeholders for the development of Penang. We have identified 80 data sets for Penang so far that we think is useful for Penang to be a green and liveable city. Be reminded that, we will not confine the Sustainability Indicators of Penang within this 80 data, we will discover more relevant data in future and it will be updated again. Finally, we would like to convey our gratitude to all agencies that have contributed to this Green Data.

## GOAL 2 – ZERO HUNGER

### Description

This goal ensures that Penangites have access to safe, nutritious and sufficient food all year round. Penang has rice yield of 5.7 tonnes/ha, to increase rice production and for self-sufficiency in the midst of climate change, sustainable food production systems and resilient agricultural practices must be adopted.

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1 Agriculture lands for crops (**Hectares**), Penang 2010 – 2017

| Type               | YEARS            |                  |                  |                  |                  |                  |                  |                  |
|--------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
|                    | 2010             | 2011             | 2012             | 2013             | 2014             | 2015             | 2016             | 2017             |
| <b>Paddy</b>       | 12,782.00        | 12,782.00        | 12,782.00        | 12,782.00        | 12,782.00        | 12,782.00        | 12,782.00        | 12,782.00        |
| <b>Fruits</b>      | 6,926.20         | 6,921.10         | 6,085.10         | 6,706.40         | 5,298.14         | 4,816.10         | 4,715.71         | 5,570.00         |
| <b>Rubber</b>      | 10,837.64        | 10,837.64        | 10,837.64        | 10,837.64        | NA               | NA               | NA               | NA               |
| <b>Oil palm</b>    | 13,595.00        | 13,864.59        | 13,864.59        | 13,480.00        | NA               | NA               | NA               | NA               |
| <b>Coconut</b>     | 1,984.75         | 1,991.80         | 1,991.80         | 1,980.57         | 493.48           | 343.91           | 329.08           | 278.68           |
| <b>Cocoa</b>       | 9.4              | 8.2              | 8.2              | 8.2              | 2                | 2                | 0                | 0                |
| <b>Vegetables</b>  | 477.17           | 477.17           | 600.55           | 601.06           | 690.62           | 712.33           | 715.43           | 869.41           |
| <b>Cash Crops</b>  | 236.51           | 236.81           | 164              | 165.3            | 149.62           | 114.6            | 175.96           | 211.59           |
| <b>Spice Crops</b> | 251.16           | 250.96           | 179.95           | 229.53           | 97.02            | 136.2            | 138.26           | 159.86           |
| <b>Sugar Cane</b>  | 37.3             | 37.3             | 34.5             | 42.15            | 45               | 44.6             | 42.93            | 42.63            |
| <b>Others</b>      | 41.83            | 32.2             | 35.7             | 38.03            | 11.45            | 9                | 1.03             | 4.03             |
| <b>TOTAL (ha)</b>  | <b>47,178.96</b> | <b>47,439.77</b> | <b>46,584.03</b> | <b>46,870.88</b> | <b>19,569.33</b> | <b>18,960.80</b> | <b>18,900.39</b> | <b>19,918.20</b> |

- I. Source: Buku Data Sosio Ekonomi Pulau Pinang 2018
- II. NA - not available
- III. Notes: Slight differences may occur due to round off
- IV. There is a huge difference from 2013 to 2014 because the land area for rubber and oil palm was not available

## 2 Number of farmers, Penang 2010-2017

| Year         | 2010   | 2011   | 2012   | 2013   | 2014   | 2015   | 2016   | 2017   |
|--------------|--------|--------|--------|--------|--------|--------|--------|--------|
| <b>Total</b> | 13,547 | 13,563 | 13,676 | 13,695 | 13,757 | 13,850 | 13,837 | 14,177 |

- I. Source: Buku Data Sosio Ekonomi Pulau Pinang 2018
- II. Notes: Slight differences may occur due to round off

## 3 Agriculture Production ('000 metric tonnes), Penang 2010 – 2017

| Type              | YEARS         |               |               |               |               |               |               |               |
|-------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|                   | 2010          | 2011          | 2012          | 2013          | 2014          | 2015          | 2016          | 2017          |
| <b>Paddy</b>      | 145.58        | 144.62        | 142.76        | 144.44        | 148.17        | 149.8         | 148.29        | 146.66        |
| <b>Fruits</b>     | 77.35         | 80.51         | 92.59         | 67.95         | 85.86         | 91.02         | 98.57         | 87.83         |
| <b>Rubber</b>     | NA            | NA            | NA            | NA            | NA            | NA            | NA            | NA            |
| <b>Oil palm</b>   | NA            | NA            | NA            | NA            | NA            | NA            | NA            | NA            |
| <b>Vegetables</b> | 28.93         | 31.55         | 33.84         | 50.72         | 42.42         | 43.91         | 44            | 44.01         |
| <b>Others</b>     | 4.77          | 5.01          | 5.9           | 5.3           | 5.58          | 2.94          | 6.48          | 4.43          |
| <b>TOTAL</b>      | <b>256.63</b> | <b>261.69</b> | <b>275.09</b> | <b>268.41</b> | <b>282.03</b> | <b>287.67</b> | <b>297.34</b> | <b>282.93</b> |

- I. Source: Buku Data Sosio Ekonomi Pulau Pinang 2018
- II. Notes: Slight differences may occur due to round off
- III. NA – Not Available

## 4 Total number of livestock population by type, Penang 2010 – 2017

| Livestock Type | YEARS             |                   |                   |                   |                   |                   |                   |                   |
|----------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
|                | 2010              | 2011              | 2012              | 2013              | 2014              | 2015              | 2016              | 2017              |
| <b>Cow</b>     | 14,027            | 13,426            | 22,653            | 14,320            | 14,777            | 13,636            | 11,689            | 11,642            |
| <b>Buffalo</b> | 399               | 371               | 325               | 560               | 566               | 601               | 592               | 574               |
| <b>Goat</b>    | 11,838            | 11,098            | 10,561            | 12,413            | 11,005            | 8,854             | 8,779             | 10,215            |
| <b>Sheep</b>   | 818               | 881               | 1,576             | 1,766             | 1,540             | 1,880             | 1,628             | 2,757             |
| <b>Pig</b>     | 324,785           | 324,737           | 319,502           | 330,840           | 311,791           | 294,429           | 285,755           | 317,897           |
| <b>Chicken</b> | 12,608,530        | 12,557,728        | 12,156,485        | 11,989,285        | 12,399,222        | 12,475,540        | 12,539,480        | 10,869,583        |
| <b>Duck</b>    | 480,374           | 494,217           | 2,139,461         | 483,003           | 485,033           | 485,058           | 460,510           | 355,043           |
| <b>Quail</b>   | 86,055            | 98,170            | 134,650           | 166,950           | 137,750           | 153,750           | 154,250           | 147,350           |
| <b>TOTAL</b>   | <b>13,526,826</b> | <b>13,500,628</b> | <b>14,785,213</b> | <b>12,999,137</b> | <b>13,361,684</b> | <b>13,433,748</b> | <b>13,462,683</b> | <b>11,715,061</b> |

I. Source: Buku Data Sosio Ekonomi Pulau Pinang 2018

II. Notes: Slight differences may occur due to round off

## 5 Agriculture GDP by type of economic activity at constant price 2010 (RM million), Penang 2010 – 2017

| Year         | 2010  | 2011  | 2012  | 2013  | 2014  | 2015  | 2016 e | 2017 p |
|--------------|-------|-------|-------|-------|-------|-------|--------|--------|
| <b>Total</b> | 1,280 | 1,357 | 1,425 | 1,463 | 1,521 | 1,551 | 1,507  | 1,540  |

I. Source: Buku Data Sosio Ekonomi Pulau Pinang 2018

II. Notes: Slight differences may occur due to round off

III. e : estimates ; p : preliminary

## 6 Gross Domestic Product By Type of Economic Activity, Penang 2010-2017

| Type of Economic Activity                                   | Gross Domestic Product |        |        |        |        |        |                   |                   |
|---|------------------------|--------|--------|--------|--------|--------|-------------------|-------------------|
|   | 2010                   | 2011   | 2012   | 2013   | 2014   | 2015   | 2016 <sup>e</sup> | 2017 <sup>p</sup> |
| 1) Agriculture  | 1,280                  | 1,357  | 1,425  | 1,463  | 1,521  | 1,551  | 1,507             | 1,540             |
| 2) Mining & Quarrying                                       | 33                     | 35     | 40     | 46     | 52     | 54     | 59                | 63                |
| 3) Manufacturing  | 24,299                 | 25,221 | 25,617 | 26,669 | 29,197 | 31,181 | 32,870            | 34,759            |
| 4) Construction   | 1,486                  | 1,561  | 1,900  | 1,899  | 2,135  | 2,060  | 2,273             | 2,045             |
| 5) Services   | 25,569                 | 27,313 | 28,960 | 30,779 | 32,787 | 34,344 | 36,297            | 38,312            |
| i) Utility, Transport, Storage and Communication            | 5,640                  | 6,058  | 6,520  | 6,891  | 7,386  | 7,844  | 8,602             | 9,242             |
| ii) Retail & Commercial Goods, Accommodation and Restaurant | 7,783                  | 8,186  | 8,533  | 9,106  | 9,905  | 10,533 | 11,134            | 11,854            |
| iii) Finance & Insurance, Property and Business Services    | 6,262                  | 6,640  | 6,962  | 7,161  | 7,392  | 7,555  | 7,775             | 8,038             |
| iv) Other services  | 2,720                  | 2,829  | 2,986  | 3,160  | 3,306  | 3,448  | 3,602             | 3,782             |
| v) Government services                                      | 3,165                  | 3,600  | 3,959  | 4,461  | 4,797  | 4,963  | 5,185             | 5,395             |
| 6) Plus : Import duties                                     | 280                    | 340    | 411    | 477    | 510    | 646    | 732               | 923               |
| GDP At Purchaser's Price                                    | 52,946                 | 55,827 | 58,353 | 61,324 | 66,203 | 69,835 | 73,739            | 77,641            |
| Growth Rate (%)   | 10.4                   | 5.4    | 4.5    | 5.1    | 8      | 5.5    | 5.6               | 5.3               |

## Notes:

- e : estimates
- p : preliminary
- Slight difference might occur in the total due to rounding off
- Source : Buku Data Sosio Ekonomi Pulau Pinang 2018

## 7. Fish Landed by Type, Penang 2010 - 2017

| Year | Metric Tonnes / Value (RM) | Type           |                |               |              | Total          |
|------|----------------------------|----------------|----------------|---------------|--------------|----------------|
|      |                            | Fish           | Prawn          | Trash Fish    | Cockles      |                |
| 2010 | Metric Tonnes              | 23,155.10      | 6,756.80       | 13,715.12     | 0.00         | 43,627.02      |
|      | Value (RM)                 | 168,999,849.00 | 145,667,499.00 | 767,520.00    | 0.00         | 322,342,868.00 |
| 2011 | Metric Tonnes              | 39,581.45      | 10,452.66      | 13,824.73     | 0.00         | 63,858.84      |
|      | Value (RM)                 | 230,608,607.00 | 212,608,909.00 | 8,369,824.00  | 0.00         | 451,587,340.00 |
| 2012 | Metric Tonnes              | 28,180.00      | 9,391.26       | 14,914.17     | 0.00         | 52,485.43      |
|      | Value (RM)                 | 202,437,421.20 | 199,418,779.10 | 6,622,443.07  | 0.00         | 408,478,643.37 |
| 2013 | Metric Tonnes              | 31,288.24      | 10,245.31      | 16,667.16     | 0.00         | 58,200.71      |
|      | Value (RM)                 | 224,439,768.00 | 219,256,295.00 | 6,276,582.00  | 0.00         | 449,972,645.00 |
| 2014 | Metric Tonnes              | 26,002.30      | 10,146.07      | 9,731.94      | 0.00         | 45,880.31      |
|      | Value (RM)                 | 186,083,660.00 | 271,575,017.00 | 5,472,459.00  | 0.00         | 463,131,136.00 |
| 2015 | Metric Tonnes              | 29,296.93      | 9,260.93       | 11,224.85     | 0.00         | 49,782.71      |
|      | Value (RM)                 | 207,571,388.63 | 266,688,474.55 | 7,971,198.19  | 0.00         | 482,231,061.37 |
| 2016 | Metric Tonnes              | 34,977.60      | 9,536.88       | 11,906.26     | 592.10       | 57,012.84      |
|      | Value (RM)                 | 311,597,470.93 | 281,996,838.19 | 10,926,796.40 | 888,153.75   | 605,409,259.27 |
| 2017 | Metric Tonnes              | 24,123.95      | 8,251.11       | 16,494.34     | 2,315.25     | 51,184.65      |
|      | Value (RM)                 | 269,663,663.17 | 260,007,160.69 | 19,410,035.44 | 6,137,657.99 | 555,218,517.29 |

- I. Source: Department of Fisheries Penang
- II. Notes: Slight differences may occur due to round off



## 8. Aquaculture Statistic , Penang 2010 - 2017

| Year                  | 2010   | 2011   | 2012   | 2013  | 2014  | 2015   | 2016   | 2017   |
|-----------------------|--------|--------|--------|-------|-------|--------|--------|--------|
| <b>Freshwater</b>     |        |        |        |       |       |        |        |        |
| <b>No. of Pond</b>    | 470    | 437    | 232    | 329   | 269   | 269    | 269    | 269    |
| <b>Area (ha)</b>      | 61.94  | 62.02  | 47.55  | 30.53 | 46.24 | 46.24  | 46.24  | 46.24  |
| <b>Aquaculturist</b>  | 40     | 109    | 64     | 59    | 59    | 59     | 59     | 59     |
| <b>Brackish Water</b> |        |        |        |       |       |        |        |        |
| <b>No. of Pond</b>    | 563    | 1,039  | 1,163  | 499   | 789   | 788    | 788    | 788    |
| <b>Area (ha)</b>      | 411.91 | 415.94 | 402.61 | 395   | 537   | 536.63 | 536.63 | 536.63 |
| <b>Aquaculturist</b>  | 147    | 147    | 72     | 55    | 127   | 127    | 127    | 127    |

- I. **Source: Department of Fisheries Penang**
- II. **Notes: Slight differences may occur due to round off**

9. Total collected weightage of MBSP food waste for the year 2017 & 2018, kg

| Year         | 2017    | 2018      |
|--------------|---------|-----------|
| <b>Total</b> | 766,905 | 1,347,436 |

I. Source: Jabatan Kemasyarakatan, MBSP

10. Kajian komposisi sisa untuk Laporan Detailed Environmental Impact Assesment (DEIA) 2016

| Jenis Sisa       | Peratus (%)* |
|------------------|--------------|
| Food and Organic | 40.03%       |
| Paper            | 13.97%       |
| Plastic          | 22.79%       |
| Diapers          | 5.67%        |
| Garden Waste     | 5.86%        |
| Other            | 17.54%       |

I. Source : PLB Terang Sdn. Bhd. & Universiti Sains Malaysia (USM)

## 11. Livestock Production and Value, Penang 2010 - 2017

| Commodity            |               | 2010           | 2011           | 2012           | 2013           | 2014           | 2015           | 2016           | 2017           |
|----------------------|---------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>Meat</b>          |               |                |                |                |                |                |                |                |                |
| <b>Cow, Buffalo</b>  | RM Million    | 18.35          | 14.67          | 24.93          | 26.40          | 45.44          | 40.37          | 36.30          | 39.04          |
|                      | Metric Tonnes | 927.05         | 864.42         | 1,662.19       | 1,648.63       | 4,327.96       | 3,218.38       | 2,792.25       | 2,891.60       |
| <b>Goat, Sheep</b>   | RM Million    | 0.65           | 0.57           | 2.71           | 5.12           | 4.63           | 4.90           | 5.13           | 7.55           |
|                      | Metric Tonnes | 21.71          | 18.91          | 108.49         | 196.94         | 257.03         | 222.56         | 205.08         | 249.11         |
| <b>Pig</b>           | RM Million    | 245.62         | 215.82         | 219.06         | 226.49         | 280.80         | 268.41         | 271.23         | 278.21         |
|                      | Metric Tonnes | 15,351.54      | 11,183.67      | 24,339.70      | 31,457.94      | 33,439.58      | 31,577.51      | 30,647.22      | 31,471.80      |
| <b>Chicken, Duck</b> | RM Million    | 342.05         | 345.66         | 402.44         | 394.05         | 394.97         | 415.13         | 427.65         | 438.96         |
|                      | Metric Tonnes | 56,162.40      | 56,724.32      | 79,073.84      | 75,693.24      | 71,166.30      | 69,296.02      | 69,812.31      | 69,086.75      |
| <b>Egg</b>           |               |                |                |                |                |                |                |                |                |
| <b>Chicken, Duck</b> | RM Million    | 152.88         | 123.30         | 119.46         | 95.02          | 113.36         | 95.13          | 98.02          | 78.53          |
|                      | Number        | 427,651.16     | 340,641.98     | 351,336.19     | 310,945,640    | 335,569,300    | 312,296,100    | 309,705,369    | 235,635,244    |
| <b>Milk</b>          |               |                |                |                |                |                |                |                |                |
| <b>Fresh Milk</b>    | RM Million    | 0.34           | 0.25           | 0.91           | 3.62           | 4.90           | 4.02           | 4.22           | 4.14           |
|                      | Litre         | 455,440        | 333,000.00     | 455,440.00     | 723,400.00     | 891,672.00     | 767,721.00     | 689,980.00     | 589,888.00     |
| <b>Total</b>         |               | <b>760.79/</b> | <b>701.03/</b> | <b>770.16/</b> | <b>750.70/</b> | <b>844.10/</b> | <b>827.96/</b> | <b>842.55/</b> | <b>846.43/</b> |

I. Source: Buku Data Sosio Ekonomi Pulau Pinang 2015-2018

II. Notes: Slight differences may occur due to round off