CHAPTER 2
CURRENT PLANNING CONTEXT

Malaysia has gone through several phases of development over the past few decades. The advancement of the digital era and globalisation as well as environmental sustainability issues have presented new challenges, especially in redesigning the country's development strategy. Population growth has also played a role in shaping the country's land use planning. Therefore, the focus of development must extend beyond the dimensions of physical and economic development, in line with the universal planning and development doctrine as the foundation towards sustainability and community well-being.

These and other challenges have driven the country to continuously innovate in creating a more strategic and structured planning. The transformation pattern of spatial planning in physical development needs to be emphasised to ensure that the country is able to achieve the status of a developed and harmonious nation. This must be supported through strengthened land use planning, environmental conservation management, social welfare development and decent standard of living.

National Development and Planning Aspirations

NPP4 continues to support the development aspirations of the previous NPPs by formulating a comprehensive development plan and ensuring that all planning aspects are taken into consideration including national security planning, improving digital infrastructure and smart city, gearing for carbon neutral nation, ensuring food security and achieving liveable and inclusive community.

NPP4 has outlined strategies and actions that require commitments and cooperations from the Federal and State Governments in order to achieve a prosperous, resilient and liveable nation.

The formulation of strategies and actions for every development thrust, which is based on land availability and suitability, acts as a guide for comprehensive design and implementation of sustainable development.

Current Planning Scenario

This section provides the general information on population, economic performance, and land use planning, as well as the country's commitments to national and global development agenda.

Current and Projected Population

Malaysia has recorded an increase in its population with 32.4 million people in 2018 compared to 28.6 million in 2010, with annual population growth rate at (APGR) at 1.6%, which was above the global APGR of 1.1% during the same period (2010 to 2018). Selangor, Sabah, Johor, Sarawak and Perak were the five states with the highest population in 2018 (refer to **Table 2-1**).

The increased in population was attributed to various factors including lower death rates among mothers and newborns as a result of improved healthcare, as well as higher inmigration due to increased economic and other opportunities.

Table 2-1: Current population, population projections and annual population growth rate, 2018 - 2040 ('000) by state

STATE / REGION	2018	2020	2030	2040	APGR (%) 2018-2040
Perlis	253.5	264.7	286.5	298.5	0.7
Kedah	2,163.0	2,267.5	2,560.6	2,773.8	1.1
Pulau Pinang	1,762.8	1,806.5	1,983.2	2,113.9	0.8
Perak	2,503.5	2,611.6	2,802.0	2,917.3	0.7
NORTHERN REGION	**6,682.8**	**6,950.3**	**7632.3**	**8103.5**	**0.9**
Kelantan	1,860.5	1,959.7	2,352.2	2,739.0	1.8
Terengganu	1,228.3	1,294.1	1,528.2	1,712.5	1.5
Pahang	1,664.7	1,750.1	1,964.5	2,113.3	1.1
EASTERN REGION	**4,753.5**	**5,003.9**	**5844.9**	**6564.8**	**1.5**
Selangor	6,475.0	6,715.6	7,620.4	8,406.8	1.2
F.T. Kuala Lumpur	1,790.0	1,910.7	2,034.7	2,122.1	0.8
F.T. Putrajaya	97.2	94.6	105.9	112.1	0.6
Negeri Sembilan	1,122.9	1,162.6	1,250.5	1,300.4	0.7
Melaka	922.4	960.5	1,072.5	1,150.8	1.0
CENTRAL REGION	**10,407.5**	**10,844.0**	**12,084.0**	**13,092.2**	**1.0**
Johor	3,749.4	3,926.5	4,411.8	4,758.0	1.1
SOUTHERN REGION	**3,749.4**	**3,926.5**	**4,411.8**	**4,758.0**	**1.1**
PENINSULAR MALAYSIA	**25,593.2**	**26,724.7**	**29,973.0**	**32,518.5**	**1.1**
F.T. Labuan	99.0	103.1	115.4	124.8	1.1
Sabah	3,898.4	4,047.0	4,688.8	5,270.8	1.4
Sarawak	2,791.7	2,907.5	3,285.0	3,589.1	1.1
MALAYSIA	**32,382.3**	**33,782.4**	**38,062.2**	**41,503.1**	**1.1**

Source: *My Local Stats 2018, & Population Projections (Revised) Malaysia 2010-2040, Department of Statistics Malaysia, 2018*

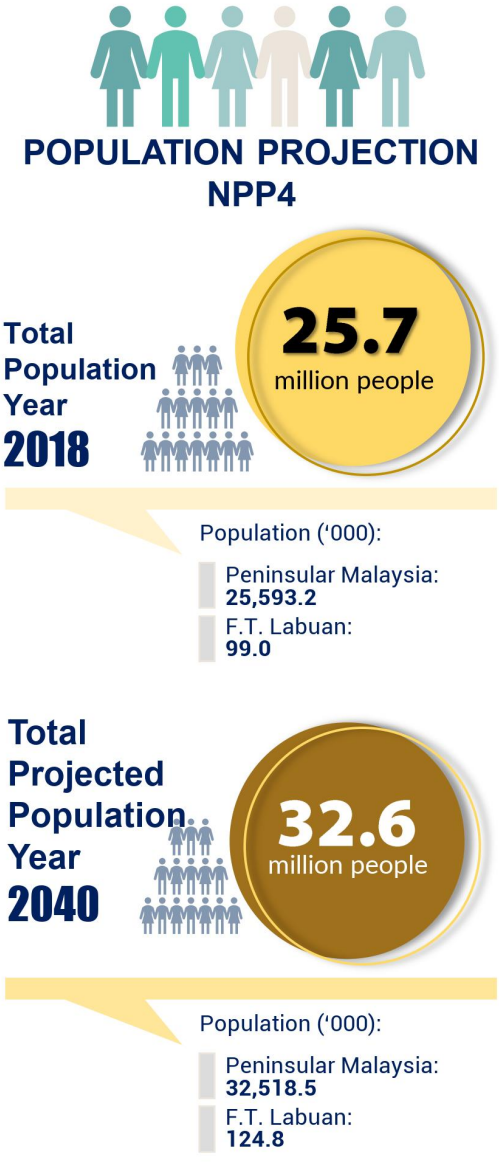
Note: APGR - Annual Population Growth Rate (%)

Based on the projections by the Department of Statistics Malaysia, the country's population is projected to increase to 33.7 million people by 2020. This number is estimated to increase further to 38.0 million people by 2030 and 41.5 million people by 2040, resulting in a low APGR for the period 2018-2040 at 1.1% (**Table 2-1**).

Meanwhile, the United Nations (UN) has projected Malaysia's population at 40.9 million people by the year 2040 with an APGR of 1.0% for the period of 2020 to 2060. The low projected population growth in Malaysia is the result of declining birth rates which are influenced by several factors such as fertility and marriage rates. Malaysia is one of the countries with the lowest fertility rate in ASEAN which is at 1.9 children for each Malaysian women aged 15-49 years old. Marriage rate is also declining as a result of increasing focus on career and rising family cost of living including childcare, housing and daily expenses (Source: World Population Prospects 2019, United Nations).

NPP4 has taken into account the projected population target of **32.6 million** people with an APGR of 1.1% for Peninsular Malaysia and F.T. Labuan until 2040 to ensure that the country's planning and development, as well as economic progress, are in line with its population growth.

Rapid population growth requires proper planning in fulfilling the needs and overcoming population-related issues.



The country's population structure is also expected to change by the year 2040 as a result of the projected increase in the number of senior citizens. Among the factors that contribute to the increase in the population of the elderly is the increase in life expectancy due to good healthcare services and the availability of various medical facilities.

The decline in fertility and birth rates also contributes to the scenario of an aging society in Malaysia. In 2018, 6.5% of Malaysia's population were senior citizens. This percentage is expected to increase to 14.5% by 2040. However, the working age category of the population (15-64 years) and the young age (0-14 years) are expected to experience a relatively significant decline over the same period (refer to **Figure 2-1**).

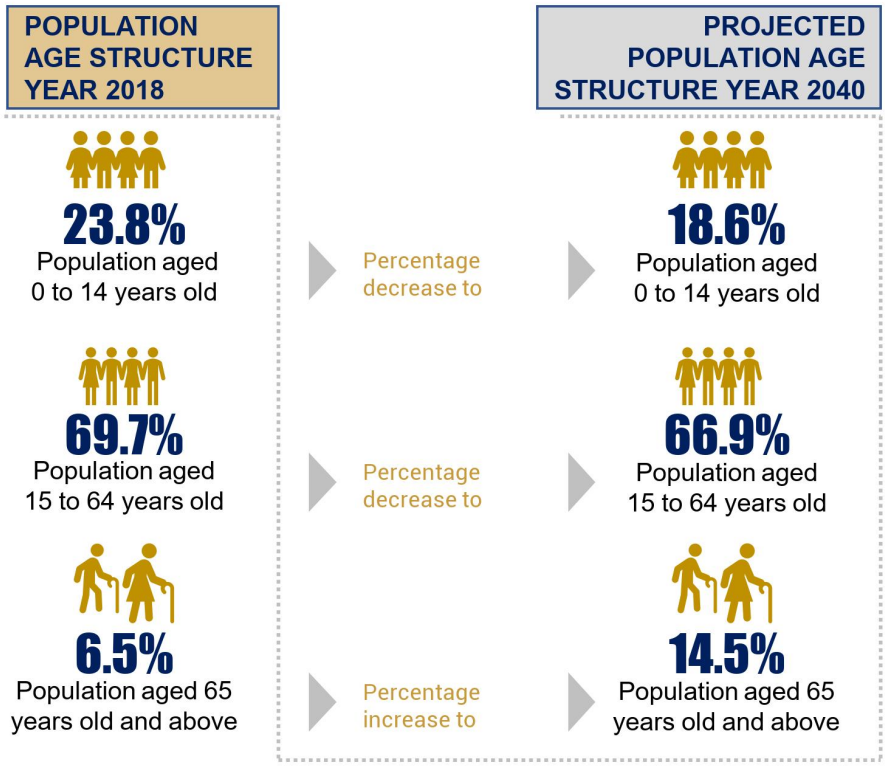


Figure 2-1 : Population Age Structure 2018 & Projections For 2040
Source : *My Local Stats* 2018, & Population Projections (Revised) Malaysia 2010-2040, Department of Statistics Malaysia, 2018

In line with the goals of the National Senior Citizens Policy (DWEN), universal planning must be implemented to ensure that the needs of all ages can be met, especially the provision of infrastructure and facilities that are elderly-friendly and efficient to create an environment that helps them to live well. The provision of an environment that is friendly to the elderly people will also help increase community awareness and concern for their needs and requirements.

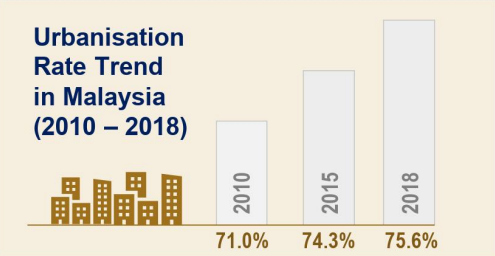
Apart from the provision of appropriate infrastructure and facilities, elderly-friendly planning must also include other aspects such as equitable distribution of opportunities including healthcare, employment, financial stability and social integration so that senior citizens can continue to contribute to the country's physical, economic and social development. The Physical Planning Guidelines for the Elderly has been prepared as a guide in planning, developing and designing elderly-friendly settlements to support the goals of DWEN.

Urbanisation Rate

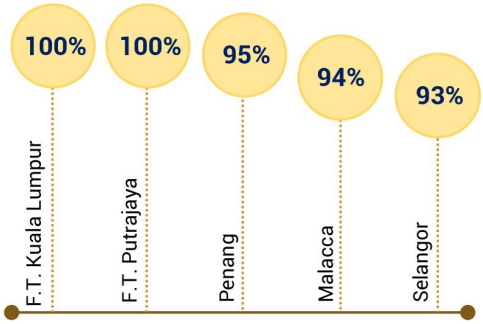
The Second National Urbanization Policy (DPN2) defines 'urban' as:

- gazetted areas as well as adjacent built-up areas where the combined population of these two areas is 10,000 persons or more; or
- special development or district administrative areas; and
- at least 60% of the population aged 15 and above are engaged in non-agricultural activities.

Based on the Department of Statistics Malaysia, the country's urbanisation rate has increased during the 2010-2018 period from 71% to 75.6%. This was in line with the growth of urban areas and the increase in urban population. The urban population in Malaysia has increased from 20.1 million people in 2010 to 24.5 million people in 2018.



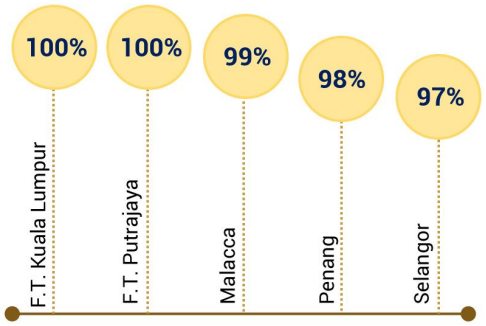
At the state level, the highest urbanisation rate was in the F.T. Kuala Lumpur and F.T. Putrajaya with a rate of 100%. This was followed by Penang with 95% urbanisation rate. Besides development intensity, the small size of the states also contributed to their high rate of urbanisation.



5 States with Highest Urbanisation Rates (2018)
Source: Department of Statistics Malaysia, 2018

The Department of Statistics Malaysia has projected an increased in the urbanisation rate for each state in Malaysia and that by 2040 the urbanisation rate for the country will stand at 85%. The five states with the highest urbanisation rate in 2018 are also projected to remain as the highest in 2040.

NPP4 continues to target the national urbanisation rate of not exceeding 85%. This percentage is seen as the country's readiness to address the issues and challenges arising from the rapid urbanisation such as urban economic competitiveness, high cost of living, global warming and climate change, conservation of biodiversity and agriculture, and provision of infrastructure and social facilities.



5 States with Highest Urbanisation Rates (2040)
Source: Department of Statistics Malaysia, 2018

Development in urban areas continues to be among the major agendas of NPP4 with a focus on the provision of adequate residential facilities, infrastructure and utilities to improve the quality of life of the urban population.

Country Economic Performance

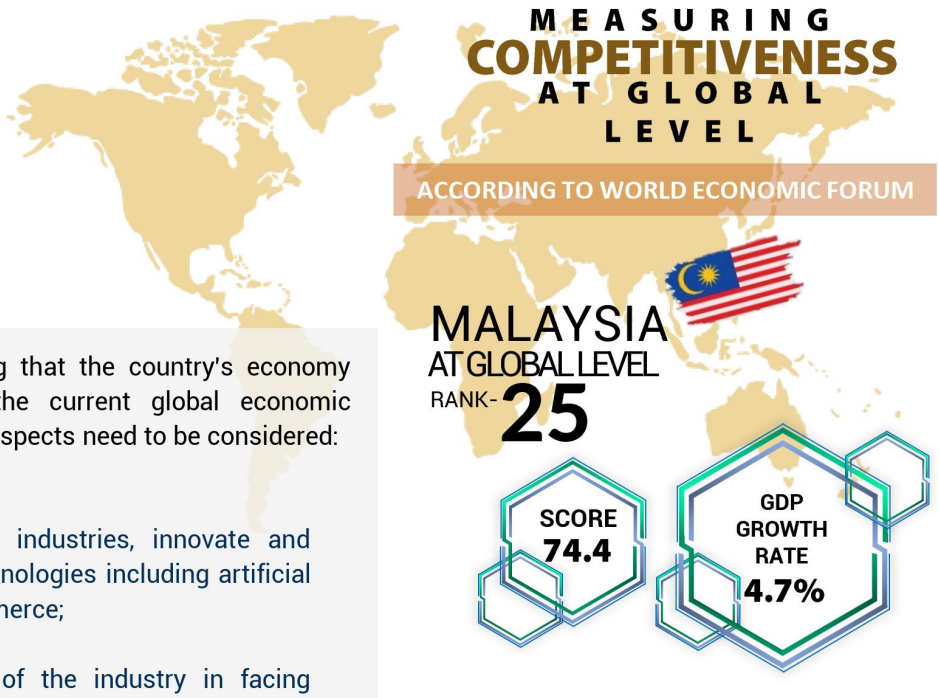
1. Global Level

The Malaysian economy is supported by trade at the global, regional (ASEAN) and domestic levels. For 2018, the Department of Statistics Malaysia reported that the country had recorded a Gross Domestic Product (GDP) growth of 4.7%, out of which 42% (RM1,361.5 billion) were contributed by the country's foreign trade, with the largest contribution from the manufacturing and services sectors. In 2018, ASEAN was the major trading partner (28.6%), followed by China (13.9%) and the European Union (9.8%).

In 2018, Malaysia was ranked 25th in the Global Competitiveness Index conducted by the World Economic Forum. Although Malaysia's position at the global level was encouraging, it was still low compared to other Asia-Pacific countries such as Singapore, Japan and Thailand.

In sustaining and ensuring that the country's economy remains competitive in the current global economic mainstream, the following aspects need to be considered:

- Support relevant local industries, innovate and adapt to the latest technologies including artificial intelligence and e-commerce;
- Ensure the readiness of the industry in facing global challenges such as commodity price volatility, trade wars, pandemics and geo-disasters;
- Strengthen the economic ecosystem through empowering digital economy as well as facilitate access to infrastructure to strengthen higher value chain including the development of business opportunities.



SINGAPORE
Rank: 1
Score: 84.8
GDP: 4.6%

JAPAN
Rank: 6
Score: 82.3
GDP : 1.2%

THAILAND
Rank: 40
Score: 68.1
GDP : 3.3%

Source: mastic.mosti.gov.my , 2018

2. National Level

- **Gross Domestic Product per Capita (2015-2018)**

The economic performance at the national level showed an increase of Gross Domestic Product (GDP) and Gross National Income (GNI) for the period 2015 to 2018. The GDP per capita increased significantly from RM37,739 to RM44,699 (**Figure 2-2**) with a growth rate of 4.32% for the four-year period. Meanwhile, the GNI per capita also increased from RM36,710 to RM43,307 for the same period.

Both indicators give the indication that the country has a good and consistent economic growth with a balanced economic activity, expenditure and national income. Among the factors that contribute to economic growth are investment in economic activities, technological progress, supply of labour, the country's natural resources, and the availability and readiness of physical infrastructure.

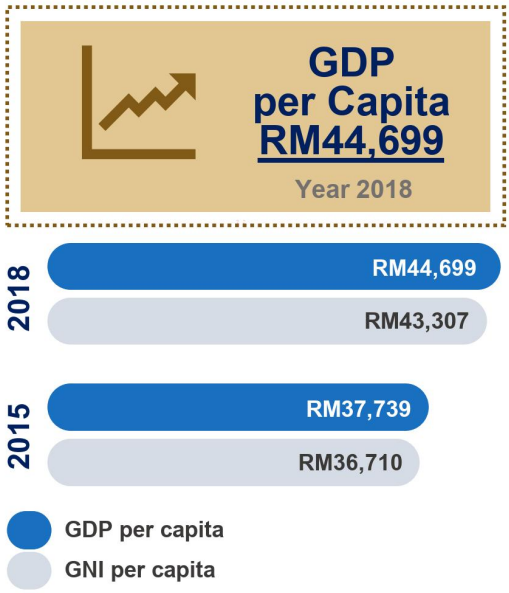


Figure 2-2: Malaysia - GDP Per Capita and GNI Per Capita, 2015 & 2018 (RM in current prices)
Source : Department of Statistics Malaysia, Malaysian Economic Statistics Time Series 2015 (December 2015),
Department of Statistics Malaysia, Statistics Malaysia Yearbook 2018 (December 2019)

It is important that the country's economic growth is maintained so that the status of a high-income country can be achieved. In addition, there is a need to make economic growth more sustainable in the future to reduce poverty and income gaps, create more employment opportunities and accelerate the provision of housing, health services and related basic amenities. Future economic development of the country must be in tandem and adapt to changing global economic scenario which include:

- Flexible labour markets for each sector of the economy
- The use and benefits of digital economic development
- Impacts of increased fuel and electricity consumption
- Changes in world output hubs

Port Klang will continue to be strengthened to play its functions as one of the country's major ports and to support industrial development.

- **Economic Contribution by Sector**

The 2018 Economic Outlook report shows that the country has recorded impressive economic growth over the past decade. The key sectors of the economy such as services and manufacturing have dominated in terms of contribution to the country's GDP. These sectors are expected to remain strong as the country's economic growth prospects.

For 2018, the services sector was dominant, contributing 56.7% of the country's gross production (**Figure 2-3**). Its sub-sectors like wholesale and retail, and finance and insurance as well as information and communications benefited from favourable consumer spending.

The manufacturing sector was also stable and is expected to remain so with an average GDP contribution of around 22.3% driven by continued demand in electrical and electronics (E&E).

The 2018 Economic Outlook Report also targets a modest growth in the construction sector with an average of around 4.8% due to most of the infrastructure development projects were nearing completion and because of unsold properties. Meanwhile, the agriculture sector experienced a decline from 8.3% (2015) to 7.3% (2018). The mining sector also experienced a decline from 8.8% (2015) to 7.6% (2018).

Based on the economic performance, there is a high tendency for the country to further strengthen the services and manufacturing sectors in line with the current and future digital technology developments. Therefore, NPP4 will intensify digital economic activities as the basis for the country's economic growth, especially for the services sector. Meanwhile, the 4IR will also be made the focus in fueling the growth of the manufacturing sector in the future. NPP4 also recognises the importance of the agriculture sector especially in ensuring the security of the national food supply by increasing the subsistence level of crops, livestock and fisheries.

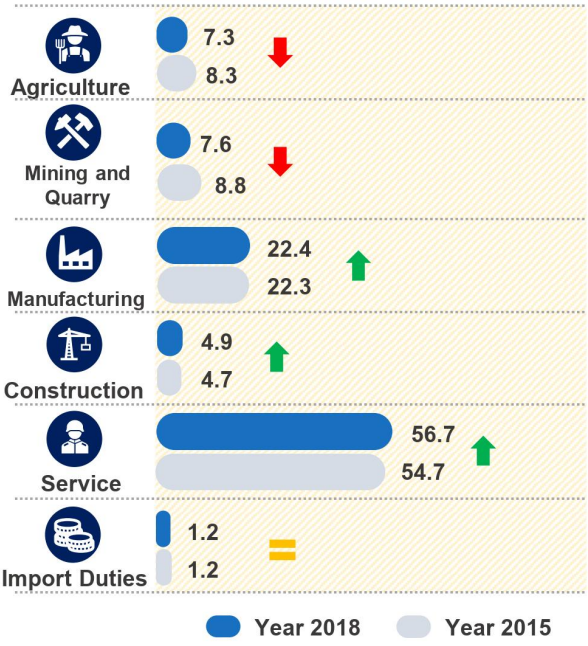


Figure 2-3: Percentage Contribution of Major Economic Sectors of the Country, 2015- 2018
Source: Department of Malaysian Statistics, State Economic Report, 2017. All States (July 2018) Department of Malaysian Statistics, National Accounts. 2015-2018 (May 2019)

Manufacturing activities concentrated in the industrial park at Kulim Hi Tech also contribute to economic growth in Kedah

3. Regional Level

- **Gross Domestic Product (2015 – 2018)**

At the regional level, there exists disparities in terms of economic growth between the region (intra-regional) and the state (inter-regional). This is because high value economic activities are more concentrated in the Central Region states (Selangor and Kuala Lumpur), thus allowing the states to contribute almost 50% to the country's GDP for 2018. To ensure equity, the external factors that contributed to the regional economic disparity need to be addressed.

Selangor and F.T. Kuala Lumpur remained as the major contributors to the country's GDP in 2018 with an estimated contribution of RM322.8 million and RM220.1 million, respectively, or 47.4% of the country's GDP (refer to **Figure 2-4**). This is followed by Johor in the Southern Region and the Northern Region states of Penang and Perak with a combined contribution of 25.8%.

NPP4 supports the agenda as outlined in the SPV 2030 which is to ensure a more distributed economic development (distributive justice) and equity. The growth potential of these states will be mobilised through a number of initiatives that include empowering and strengthening several key sectors, ensuring access to physical and digital infrastructure as well as making major cities and rural areas the driving forces behind the local economy. These measures are also in line with the principles of distributed economy set out in the SPV 2030.

BRIEF FACTS

Distributed Economy Principles (SPV 2030)

- Reducing the value of the urban-rural GINI coefficient;
- Narrowing the GDP gap between states;
- Decreasing the value of the median household income gap between states;
- Identifying and developing state and regional economic catalysts;
- Increasing the number and value added of SMEs for each state; and
- Reducing logistics and markets accessibility constraints.

Source: SPV 2030

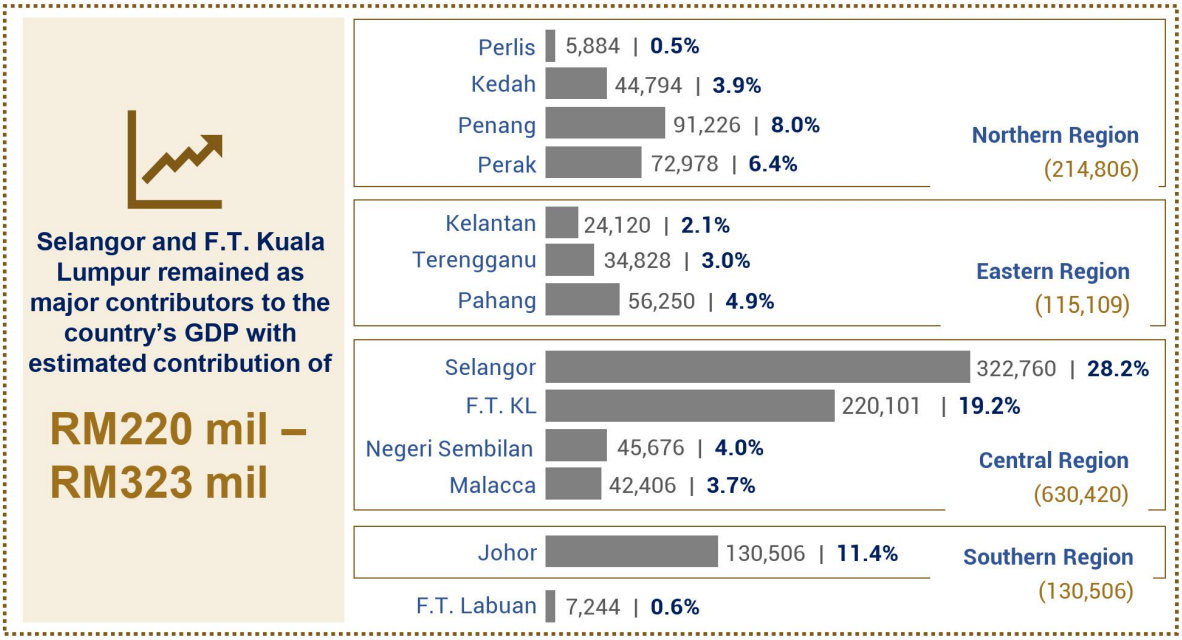


Figure 2-4: State GDP, Year 2018 (RM Million @ constant price 2015)
Source: Department of Statistics Malaysia, 2018

- **Economic Contribution by Sector**

The economic contribution by sector for 2018 for each state is shown in Figure 2-5. The services sector was the main economic contributor in the states for 2018 especially in the F.T. Kuala Lumpur (87.8%) and F.T. Labuan (75.6%).

The manufacturing sector was also a major contributor to the state economy, especially in Penang (43.3%), Melaka (38.5%) and Negeri Sembilan (37.7%).

Although the manufacturing sector is more open and vulnerable to fluctuations in the global economic environment, states such as Penang and Melaka have relatively strong economic fundamentals which make the manufacturing sector in these states relatively resilient to global economic pressures.

Service Sector

Is the leading sector in the country's economic growth

The service and manufacturing sectors are major contributors to Penang's GDP.

PERCENTAGE OF ECONOMIC SECTOR CONTRIBUTION(%)

STATE / ECONOMIC SECTOR	AGRICULTURE	MINING & QUARRY	MANUFACTURING	CONSTRUCTION	SERVICE	IMPORT DUTIES
Perlis	21.4	0.6	7.9	2.5	65.9	1.7
Kedah	12.2	0.3	28.6	2.3	56.0	0.6
Penang	2.2	0.2	43.3	2.9	50.6	1.0
Perak	15.1	0.6	18.1	3.2	62.9	0.1
Kelantan	22.5	1.4	5.3	1.3	69.3	0.1
Terengganu	8.2	0.5	37.5	3.3	50.3	0.2
Pahang	22.1	1.2	21.7	4.3	50.6	0.2
Selangor	1.4	0.2	28.2	5.8	62.0	2.3
F.T. Kuala Lumpur	0.0	0.1	2.7	7.9	87.8	1.5
Negeri Sembilan	7.3	0.5	37.7	4.2	48.4	1.9
Malacca	10.8	0.1	38.5	3.5	46.6	0.4
Johor	12.4	0.5	29.4	7.1	49.3	1.3
F.T. Labuan	1.7	0.0	18.8	2.2	75.6	1.6
Sabah	16.3	28.2	7.7	3.4	44.0	0.4
Sarawak	12.5	22.3	26.8	3.3	38.4	0.4

Figure 2-5 Percentage (%) GDP Contribution by State Key Economic Sectors, 2018
Source: Department of Statistics Malaysia, 2018

Sultan Abd Samad building is one of the widely known independence national historical landmark. Located at the confluence of Klang River and Gombak River, it was formerly the earliest tin mining area in KL. The mining activity has later become the catalyst for Malaysia's economic success to date.

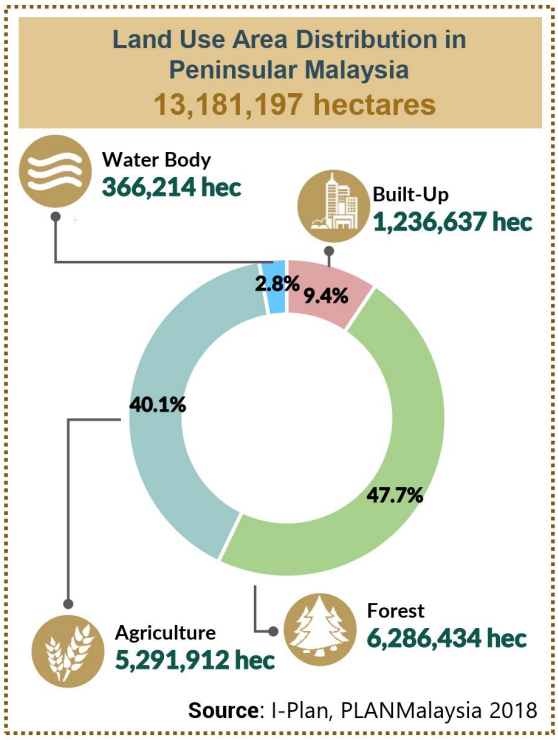
Land-Use Development

In line with NPP4 objective of ensuring optimal and efficient land use of the country, this section details out the current scenario in land development, land use trends, land availability and suitability for development, land use rates as well as projected land requirement based on population growth by 2040.

Current Land Use Classification

NPP4 classifies land use into four (4) main categories, namely:

1. **Built-Up** - covering various types of land uses namely residential, commercial, industrial, institutions and community facilities, transport, infrastructure and utilities, recreational and open space, and vacant land;
2. **Forest** - referring to an area of more than 0.5 hectares with trees over 5 meters in height and canopy coverage of more than 10%, or trees that are able to reach the above criteria in-situ;
3. **Agriculture** - including crops, livestock and aquaculture;
4. **Water Body** - referring to natural or man-made area where the earth's surface is covered by water, such as rivers, coastal areas, lakes, dams, and ponds.



Notes: As defined by the Manual Sistem Maklumat Geografi (GIS) Rancangan Pemajuan, 2013. Meanwhile, JPSM defines forest as area that has been gazetted as forest (Enactment 313), which is referring to the land status.

BUILT-UP

Peninsular Malaysia

The built-up land use covers 1,236,637 hectares or 9.4% of Peninsular Malaysia. Out of this, 30.7% are in the Central Region (covering the states of Selangor, F.T. Kuala Lumpur, F.T. Putrajaya, Negeri Sembilan and Melaka). Meanwhile, at the state level, the main contributors to the built-up area are **Selangor (224,467 hectares), Johor (201,694 hectares) and Perak (159,899 hectares).**

F.T. Labuan

Built-up is the most dominant land use in F.T. Labuan with an area of 4,512.2 hectares (excluding vacant land) or 45.3% of the total area of F.T. Labuan.

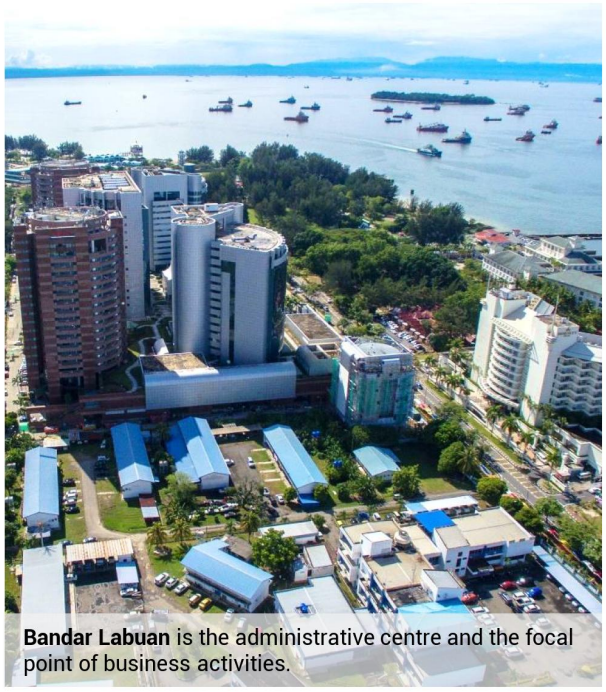
FOREST

Peninsular Malaysia

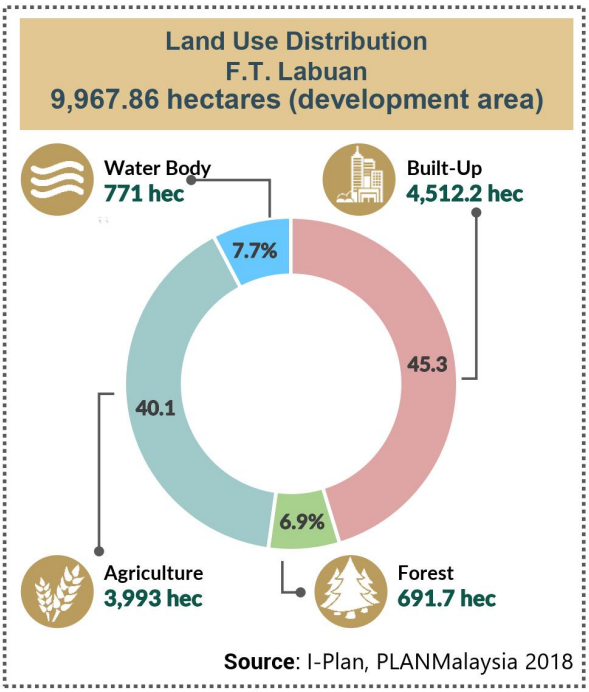
Forest is the most dominant land use in Peninsular Malaysia covering an area of **6,286,434 hectares** or **47.7%** of Peninsular Malaysia. The Eastern Region (covering the states of Kelantan, Terengganu and Pahang) recorded the highest percentage of forest area of 62.1% compared to other regions in Peninsular Malaysia. At the state level, forest land use is highest in **Pahang (2,200,676 hectares), Perak (1,067,570 hectares) and Kelantan (960,394 hectares).**

F.T. Labuan

The forest land use in F.T. Labuan covers 691.7 hectares or 6.9% of the total area of F.T. Labuan.



Bandar Labuan is the administrative centre and the focal point of business activities.



Note: * 58,924.51 hectares (development areas including territorial waters).

AGRICULTURE

Peninsular Malaysia

The agricultural land use covers **5,291,912 hectares or 40.1%** of the of Peninsular Malaysia. The Eastern Region (covering the states of Kelantan, Terengganu and Pahang) recorded the highest percentage of agricultural area of **38.0%** in contrast to other regions. Meanwhile, at the state level, the main contributors to agricultural land use are **Pahang (1,191,889 hectares), Johor (1,154,685 hectares) and Perak (781,220 hectares).**

F.T. Labuan

The agricultural land use in in F.T. Labuan covers **3,993 hectares** or 40.1% of the total area of the Territory. This area covers the area of vacant land in F.T. Labuan.

WATER BODY

Peninsular Malaysia

The water body covers **366,215 hectares** or **2.8%** of the total Peninsular Malaysia. The Eastern Region (covering the states of Kelantan, Terengganu and Pahang) recorded the highest percentage of water bodies at 43.5% compared to other regions. Meanwhile, at the state level, the main contributors to water body land use are **Perak (82,720 hectares), Terengganu (81,691 hectares) and Johor (51,102 hectares).**

F.T. Labuan

The water body land use covers 771 hectares or 7.7% of the total development area of F.T. Labuan.

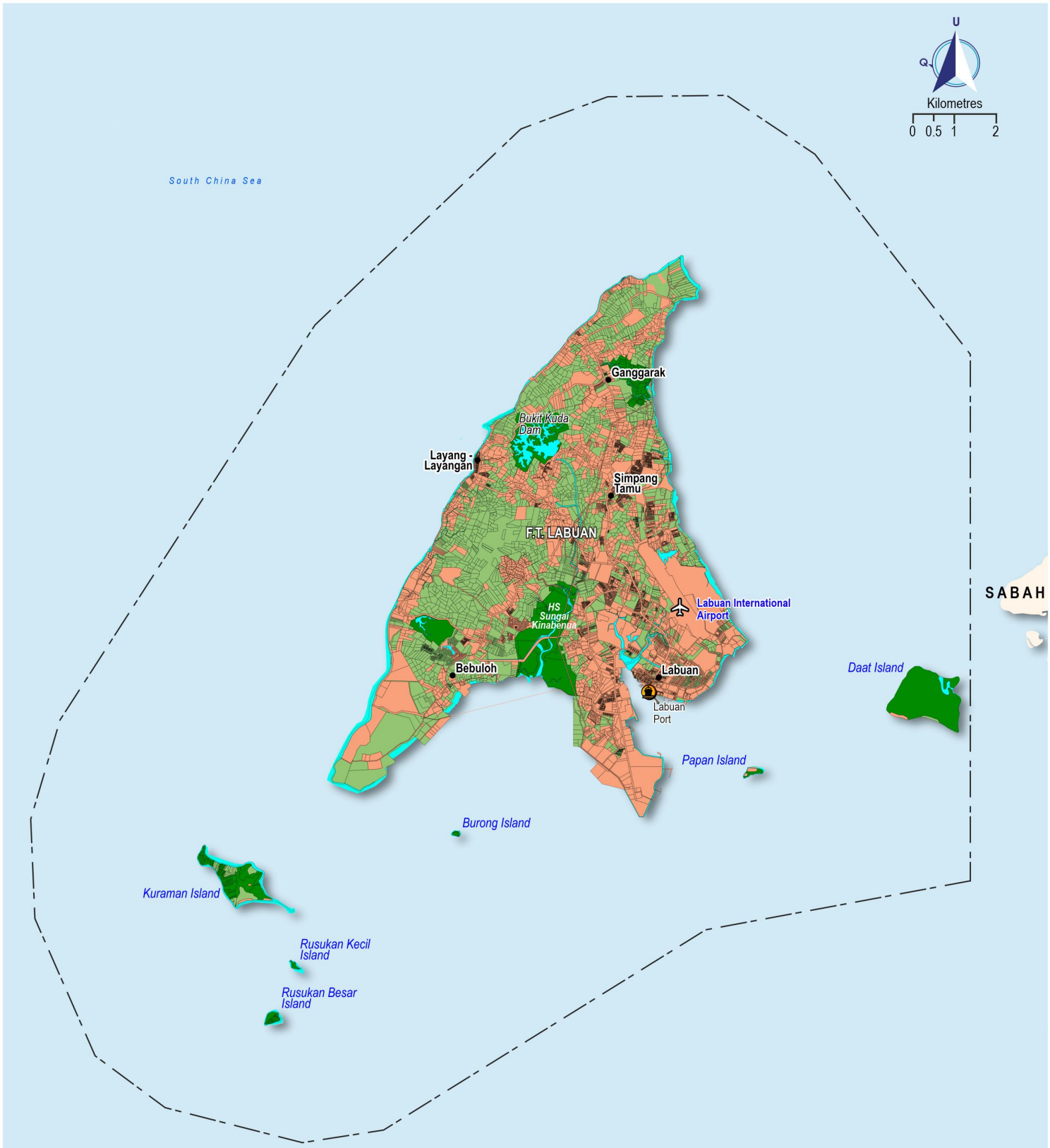
Note: LGK - Langkawi International Airport
AOR - Sultan Abdul Halim Airport
PEN - Penang International Airport
IPH - Sultan Azlan Shah Airport
SZB - Sultan Abdul Aziz Shah Airport
KUL - Kuala Lumpur International Airport
MKZ - Melaka International Airport
JHB - Senai International Airport
KUA - Sultan Ahmad Shah Airport
KTE - Kerteh Airport
TGG - Sultan Mahmud Airport
KBR - Sultan Ismail Petra Airport

MAP 2-1: CURRENT LAND USE 2018 IN PENINSULAR MALAYSIA

Land Use Type	Area (Hectare)	(%)
Built-up	1,236,637	9.4
Agriculture	5,291,912	40.1
Forest	6,286,434	47.7
Water Bodies	366,214	2.8

Others
- Airport
- Port
- State Capital
- State Boundary

Source:
- I-Plan, PLANMalaysia, 2018



MAP 2-2: CURRENT LAND USE 2018 IN F.T OF LABUAN

Land Use Type	Area (Hectare)	(%)
Build-up	4,512.22	45.3
Agriculture	3,992.96	40.1
Forest	691.67	6.9
Water Bodies	770.98	7.7

Others

- Airport
- Port
- Main Town
- Federal Territory of Labuan Boundary

Source:
- Labuan Development Blueprint, 2030

Land Use Trends in Peninsular Malaysia

	[1] NPP1 (2001)	[2] NPP2 (2008)	[3] NPP3 (2014)	[4] NPP4 (2018)
Built-Up (Percentage Change)	3.3% 437,092 hec	5.8% 759,900 hec (+73.9%)	8.9% 1,174,300 hec (+54.5%)	9.4% 1,236,637 hec (+5.3%)
Forest (Percentage Change)	44.4% 5,844,887 hec	44.8% 5,902,000 hec (+1.0%)	49.1% 6,476,900 hec (+9.7%)	47.7% 6,286,434 hec (-2.9%)
Agriculture (Percentage Change)	50.6% 6,668,726 hec	47.5% 6,268,300 hec (-6.0%)	39.4% 5,187,400 hec (-17.2%)	40.1% 5,291,912 hec (+2.0%)
Water Body (Percentage Change)	1.7% 230,935 hec	1.9% 251,500 hec (+8.9%)	2.5% 326,700 hec (+29.9%)	2.8% 366,214 hec (+12.1%)
Total Area Peninsular of Malaysia	100% 13,181,640 hec	100% 13,181,700 hec	100% 13,165,300 hec	100% 13,181,197 hec

Note: Different sources were used by each NPP to obtain land use data.

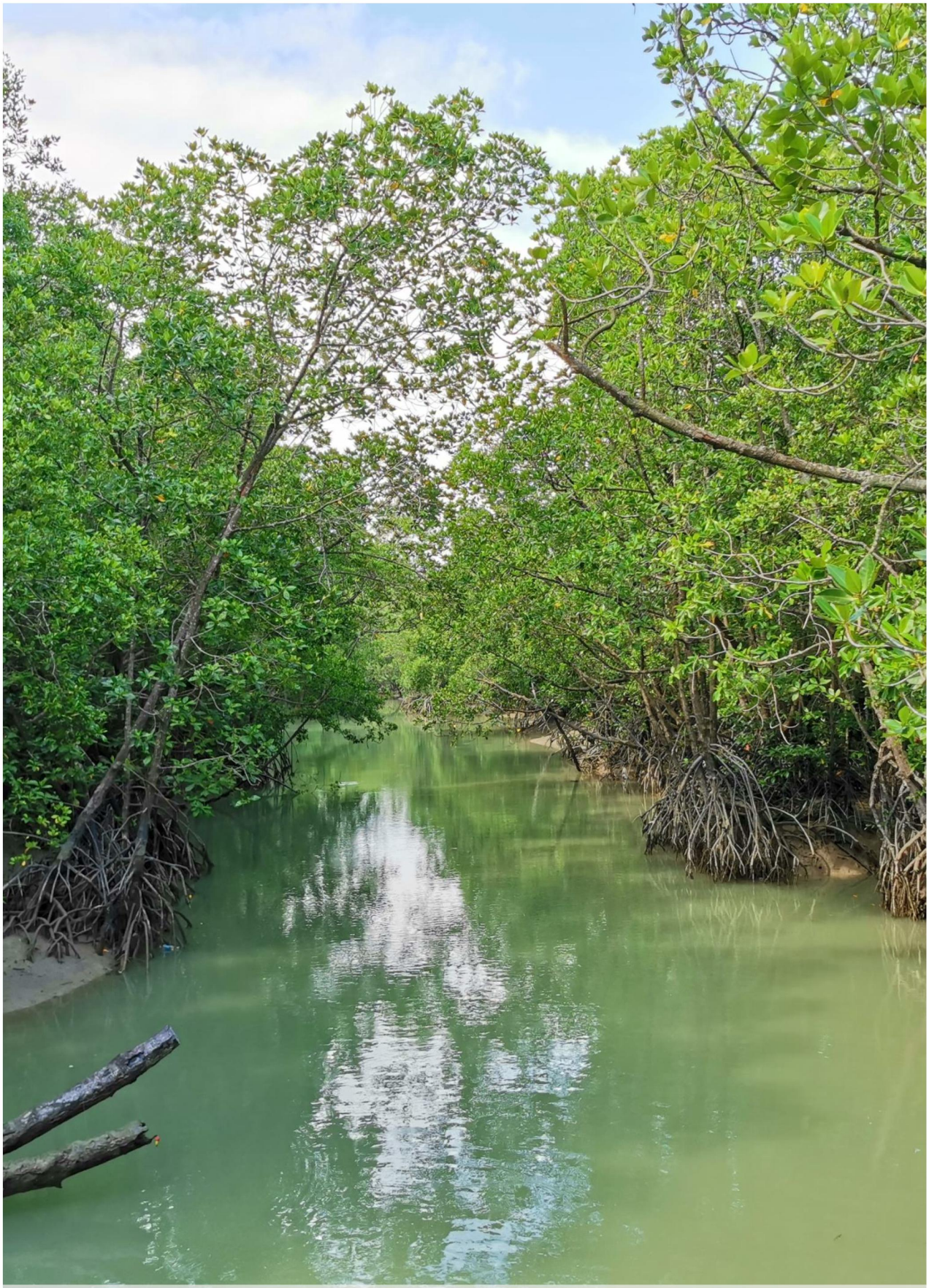
Source: *[1] NPP1, 2001*
[2] NPP2, 2008
[3] NPP3, 2014
[4] I-Plan, PLANMalaysia, 2018

The land use trend of Peninsular Malaysia shows an increase in all land use categories in 2018 as compared to 2014, except for forest land use. Built-up area registered an increase of **+5.3%** as a result of the opening up of new areas for urban development to accommodate population growth. However, because of geographical constraints and availability of transport networks, higher concentration of the new built-up areas are located on the West Coast of the Peninsular Malaysia, especially in major towns and cities.

The increase in built-up area also contributed to the decrease in forest area by **-2.9%** in 2018 compared to 2014. Exploration of forest areas for the purpose of urban development is a major contributing factor to the reduction of forest area in Peninsular Malaysia.

Agricultural area experienced a significant decrease of -17.2% in 2014 but showed a +2.0% increase in 2018. High development pressure on agriculture land makes maintaining agriculture area a challenge especially in urban and suburban areas. Under NPP4, preservation of agricultural area is emphasised in line with the need to ensure the food security of the nation.

To ensure sustainability, optimum land use planning is required. This includes ensuring distribution of land uses is in line with development needs, and urban development is managed and implemented systematically in a well-planned manner without jeopardising sensitive areas such as forest and agriculture land.



Pulau Kukup in Johor is the largest mangrove swamp forest in Malaysia.

Land Availabilty for Development

Land availability for development is a measure of supply of land which is readily available for future development needs and requirements. Assessment of land availability helps to ensure optimal use of land through proper planning and avoid wastage of land.

Figure 2-6 shows the total size of land available for development for Peninsular Malaysia and F.T. Labuan amounting to 4,890,279.9 hectares, or 37% of the land area of Peninsular Malaysia and F.T. Labuan. At state level, Pahang, Johor and Perak are the three states in Peninsular Malaysia with the highest amount of land available for development.

Meanwhile, a total of 8,300,665 hectares, or 63% of Peninsular Malaysia and F.T. Labuan land area, are identified as land with hindrances to development. This consists of areas such as:

1. Level 1 Key Agricultural Areas (KPU) which are areas that need to be protected and preserved from any physical development. Level 1 KPU includes oil palm and rubber plantations, and rice fields;
2. Level 1 Environmentally Sensitive Areas (ESAs) where total physical development is prohibited. Only development with minimum impacts can be allowed in these areas such as eco-tourism especially in archipelago and coastal areas;
3. Current built-up areas; and
4. Committed development areas that have obtained planning permission and development sites that are in the stage of being cleared for development.

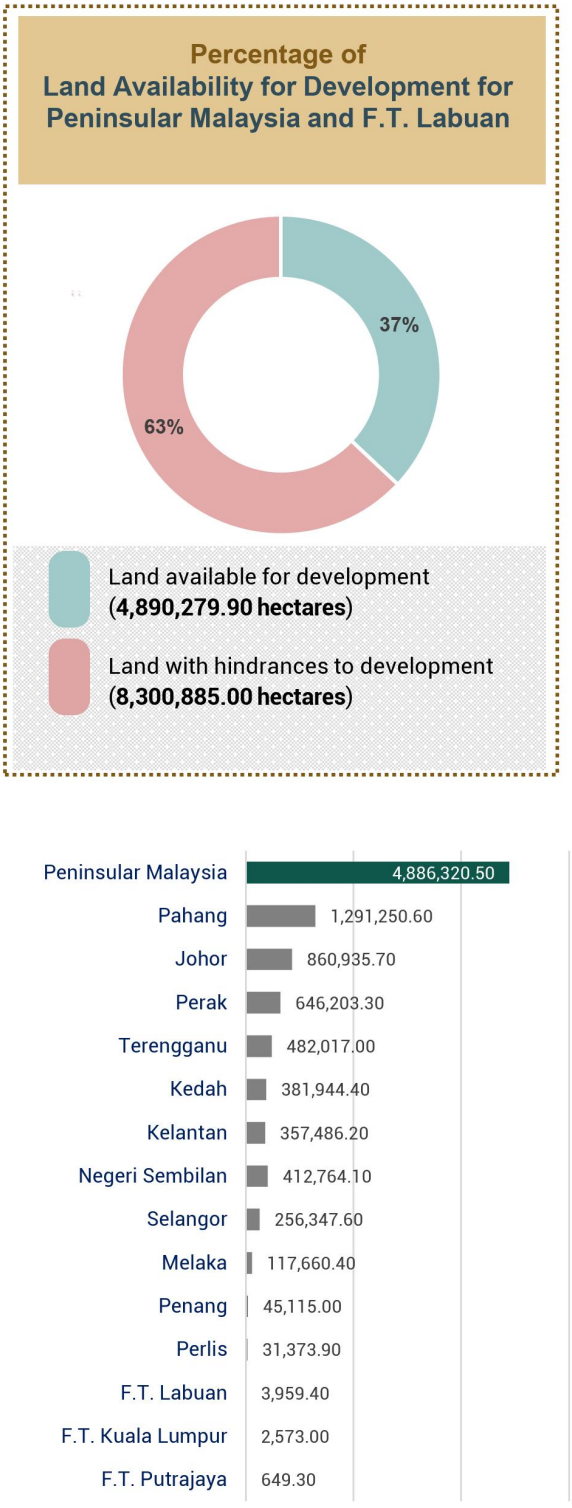


Figure 2-6: Land Availability for Development by State (hectares)

Source: NPP4, 2020

MAP 2-3: AVAILABLE LAND FOR DEVELOPMENT IN PENINSULAR MALAYSIA AND F.T. LABUAN

Available Land Categories

- Available Development Land
- Restricted Development Area

Others

- State Capital
- State Boundary

Source:
- National Physical Plan 4, 2020

Land Suitability for Development

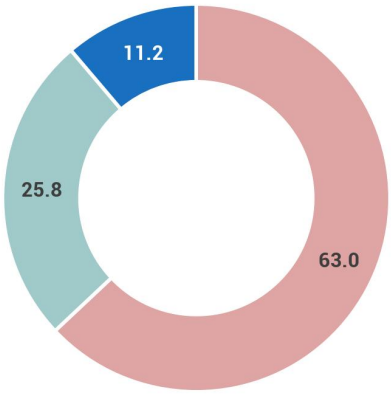
The land available for development **(4,890,279.9 hectares)** is further analysed to determine their suitability for future development. NPP4 considers 6 main criteria in assessing land suitability, which are:

1) Established urban hierarchy as outlined in DPN2;
2) Accessibility to transport nodes such as road network and public transport facilities;
3) Accessibility to public / community facilities such as schools, educational institutions, houses of worship, health facilities and security facilities;
4) Environmentally Sensitive Areas (ESAs);
5) Availability of infrastructure and utility including electricity supply and broadband network; and
6) Geo-physical attributes which include elevation and slope.

Land suitable for development is divided into two (2) categories which are:

1) Very suitable for development;
   - Covers **1,493,523.8 hectares** or 11.2% of the total land area of Peninsular Malaysia and F.T. Labuan;
   - Located close to existing townships and having access to existing transport networks and infrastructure;
   - Located close to existing public facilities;
   - Flat area with gentle slope.

Percentage of Land Suitability for Development (%) for Peninsular Malaysia and F.T. Labuan



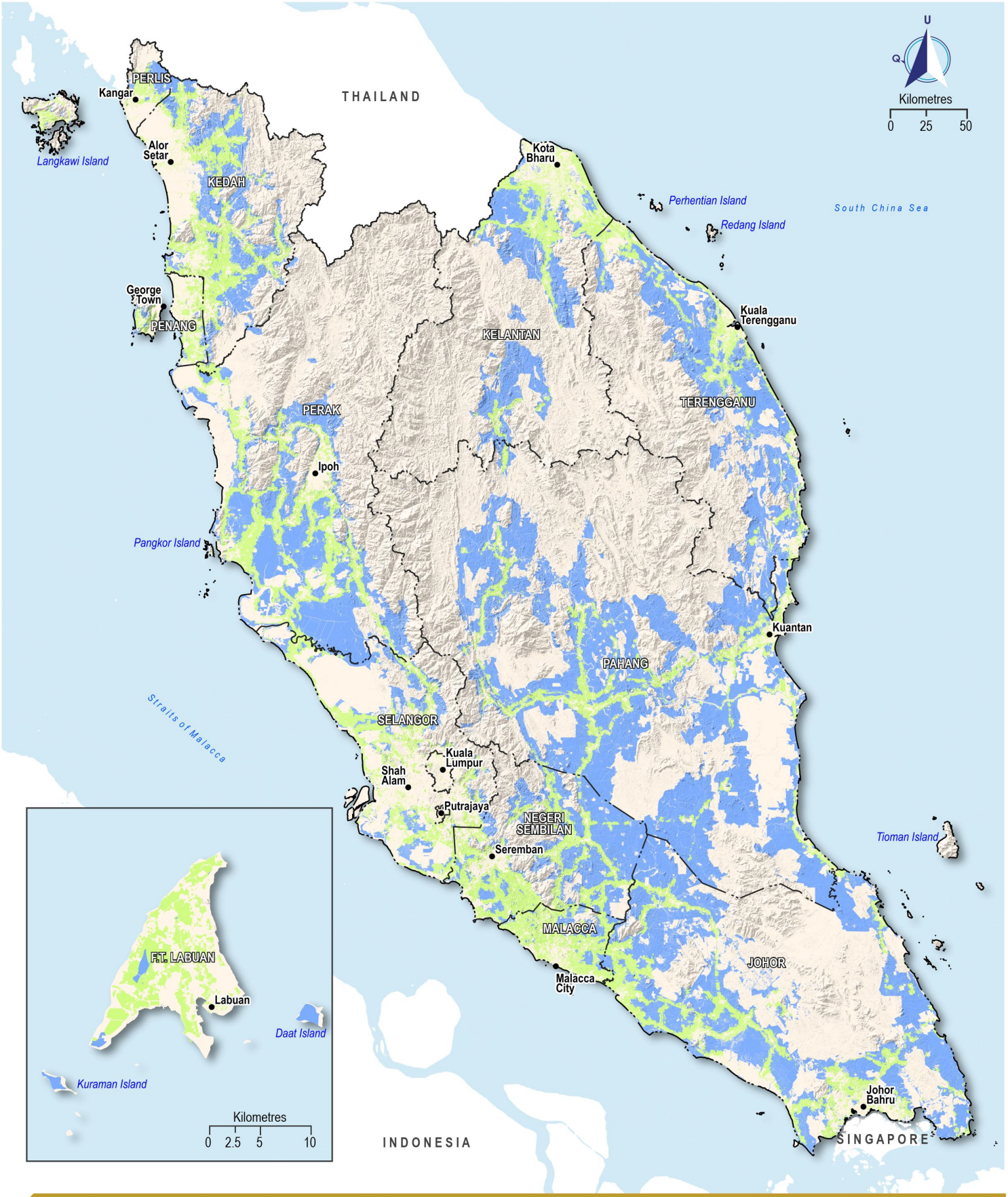
Land Very Suitable for Development (Score: >0.65) **(1,493,523.8 hectare)**

Land Suitable for Development (Score: <0.64) (**3,396,756.1 hectare**)

Land with Hindrances to Development (**8,300,885.0 hectare**)

Source: NPP4, 2020

2) Suitable for development;
   - Covers 3,396,756.1 hectares or 25.8% of the total land area of Peninsular Malaysia and F.T. Labuan;
   - Located away from transport facilities, public facilities and existing infrastructure;
   - Development in these areas must consider the site topology and the impact on the physical and sociocultural environment.



MAP 2-4: LAND SUITABILITY FOR DEVELOPMENT IN PENINSULAR MALAYSIA AND F.T. OF LABUAN

Land Suitability Categories

- Very Suitable
- Suitable
- Restricted Development Area

Others

- State Capital
- State Boundary

Source:
- National Physical Plan 4, 2020

Land Consumption Rate

Land consumption rate per capita refers to the use of land for urban development relative to the total population. The per capita land consumption rate for Peninsular Malaysia is **483m²**.

For Peninsular Malaysia, the states with high land consumption rates (>500m²) are Pahang (899m²), Terengganu (726m²), Negeri Sembilan (717m²), Perak (639m²), Perlis (634m²), Johor (538m²), Kedah (517m²) and Melaka (510m²). F.T. Kuala Lumpur recorded the lowest per capita land consumption rate of **132m².**

BRIEF FACTS

Formula for **Land Consumption Rate (LCR)** calculation

$$LCR = \frac{LN\left(Urb_{t+n} / Urb_{t}\right)}{(y)}$$

Where:

Urb_{t+n} = Urban space in km² for the beginning year

Urb_{t} = Urban space in km² for the current year

Y = The number of years between two calculation periods

Sumber: *UN-Habitat*

Table 2-2: : Land consumption rate per capita by state, 2018

STATE / REGION	BUILT-UP, 2018 (hectare)	POPULATION, 2018 (people)	LAND CONSUMPTION RATE PER CAPITA, 2018 (m² per person)
Perlis	16,063.70	253,500	634
Kedah	111,732.65	2,163,000	517
Penang	46,096.30	1,762,800	261
Perak	159,899.49	2,503,500	639
NORTHERN REGION	**333,792.14**	**6,682,800**	**499**
Kelantan	82,404.15	1,860,500	443
Terengganu	89,147.20	1,228,300	726
Pahang	149,594.38	1,664,700	899
EASTERN REGION	**321,145.73**	**4,753,500**	**676**
Selangor	224,467.30	6,475,000	347
F.T. Kuala Lumpur	23,566.61	1,790,000	132
F.T. Putrajaya	4,343.29	97,200	447
Negeri Sembilan	80,551.51	1,122,900	717
Melaka	47,076.00	922,400	510
CENTRAL REGION	**380,004.71**	**10,407,500**	**365**
Johor	201,694.26	3,749,400	538
SOUTHERN REGION	**201,694.26**	**3,749,400**	**538**
PENINSULAR MALAYSIA	**1,236,636.83**	**25,593,200**	**483**
F.T. Labuan	4,512.2	99,000	456

Source: NPP4, 2020

The land consumption per capita rate is an indication of the current development pattern and intensity.

States with high land consumption per capita rates such as Pahang, Terengganu, Negeri Sembilan, Perak and Perlis have low built-up population densities. Development in these states expands horizontally.

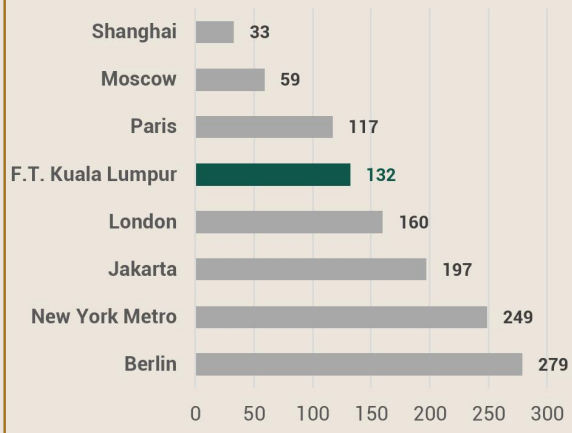
States with low land consumption per capita rates such as F.T. Kuala Lumpur, Penang and Selangor have high built-up population densities with development expanding vertically. Other states like Kelantan, F.T. Putrajaya, F.T. Labuan, Melaka, Johor and Kedah have moderate land consumption per capita and balanced population densities.

The land consumption per capita rate can assist stakeholders, especially PLANMalaysia@Negeri, in understanding the current development pattern of a state. Thus, it is recommended that land consumption per capita rate for each state is further analysed in detail in every Structure Plan study so that stakeholders may obtain a better understanding of the prevalent development pattern of the state. This could help them to ensure a more effective strategic monitoring and control of development within a state especially in terms of its urban expansion.

The opening of new land for physical development must be balanced with population growth of the area. Excessive land opening for urban development can lead to urban sprawl, thus jeopardising forest and agricultural areas conservation efforts.

BRIEF FACTS

Comparison of land consumption rates per capita (m^2 per capita) for F.T. Kuala Lumpur with major cities in the world



Source: Alain Bertaud: *Metropolis: A Measure of the Spatial Organization of 7 Large Cities*, 2001

One of the strategies in controlling urban sprawl is to promote the concept of compact development. Compact development ensures a more efficient use of infrastructure and utilities, and a better management of resources. However, the implementation of compact development in an area must be followed by appropriate planning strategies to ensure that the impact from the resulting increase in population density of the area is addressed.

Areas with low land consumption rates such as F.T. Kuala Lumpur needs to prioritise public transport as the main mode of population mobility. High reliance on the use of private vehicles by the population will lead to traffic congestion and environmental pollution. This will affect the quality of life of the people.

Ratio of Land Consumption Rate to Population Growth Rate (LCRPGR)

The Sustainable Development Goals (SDGs) have outlined the SDG 11.3.1 indicator which measures the **ratio of Land Consumption Rate to Population Growth Rate (LCRPGR)** to indicate the level of inclusivity and sustainability of urban development. This indicator compares the rate of urban sprawl with the rate of population growth in the same spatial scale and time period. This LCRPCR ratio is categorised into the following values:

>1.0	Land consumption rates higher than population growth rates
1.0	Land consumption rate in line with population growth rate.
<1.0	Land consumption rate lower than population growth rate

The ratio of land consumption rate to population growth rate of Peninsular Malaysia for the period from 2015 to 2018 was **1.6**. This indicates that over the same period, Peninsular Malaysia experienced growth of built-up area at a higher rate compared to growth in population.

This ratio was much lower than the ratios recorded for the period 2001-2008 **(16.2)** and 2008-2015 **(3.7)**. The high LCRPGR ratios recorded between 2001 to 2015 were influenced by the country's growth strategy that accorded greater reliance on physical development as one of the drivers of the nation's economic growth.

Details of LCRPGR by states are also presented in **Table 2-3**.

BRIEF FACTS

Ratio of ***Land Consumption Rate to Population Growth Rate*** **(LCRPGR)** calculation method.

$$LCRPGR = \frac{\text{(Annual Land Consumption Rate)}}{\text{(Annual Population Growth Rate)}}$$

Land Consumption Rate (LCR)

$$LCR = \frac{LN\,(Urb_{t+n} / Urb_t)}{(y)}$$

Where:

Urb_{t+n} = Urban space in km² for the beginning year

Urb_t = Urban space in km² for the current year

Y = The number of years between two calculation periods

Population Growth Rate (PGR)

$$PGR = \frac{LN\,(Pop_{t+n} / Pop_t)}{(y)}$$

Where:

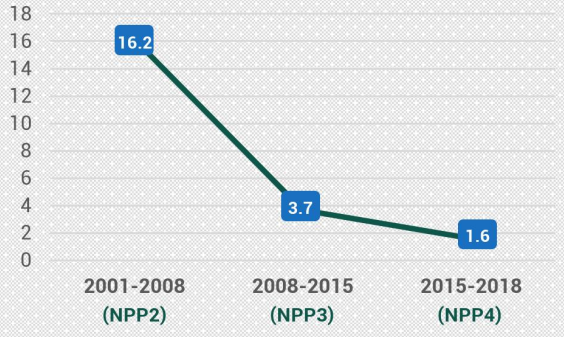
Pop_{t+n} = Total urban population in the beginning year

Pop_t = Total urban population in the current year

Y = The number of years between two calculation periods

Source: *UN-Habitat*

Ratio of Land Consumption Rate to Population Growth Rate in Peninsular Malaysia



Source: NPP4, 2020

Table 2-3: Ratio of land consumption rate to population growth rate (LCRPGR) by state, 2015-2018

STATE / REGION	BUILT-UP, 2015 (hectare)	TOTAL POPULATION, 2015 (people)	BUILT-UP, 2018 (hectare)	TOTAL POPULATION, 2018 (people)	LCRPGR, 2015-2018
Perlis	11,645.37	248,500	16,063.70	253,500	16.2
Kedah	108,617.87	2,096,500	111,732.65	2,163,000	0.9
Penang	41,996.52	1,698,100	46,096.30	1,762,800	2.5
Perak	154,546.96	2,466,900	159,899.49	2,503,500	2.3
NORTHERN REGION	**316,806.72**	**6,510,000**	**333,792.14**	**6,682,800**	**2.0**
Kelantan	78,974.90	1,760,600	82,404.15	1,860,500	0.8
Terengganu	84,107.86	1,161,000	89,147.20	1,228,300	1.0
Pahang	140,490.61	1,607,900	149,594.38	1,664,700	1.8
EASTERN REGION	**303,573.37**	**4,529,500**	**321,145.73**	**4,753,500**	**1.2**
Selangor	206,080.11	6,178,000	224,467.30	6,475,000	1.8
F.T. Kuala Lumpur	23,265.75	1,780,400	23,566.61	1,790,000	2.4
F.T. Putrajaya	4,343,01	83,000	4,343.29	97,200	0.0
Negeri Sembilan	79,834.50	1,088,800	80,551.51	1,122,900	0.3
Malacca	45,400.38	889,000	47,076.00	922,400	1.0
CENTRAL REGION	**358,923.75**	**10,019,200**	**380,004.71**	**10,407,500**	**1.5**
Johor	187,609.21	3,610,300	201,694.26	3,749,400	1.9
SOUTHERN REGION	**187,609.21**	**3,610,300**	**201,694.26**	**3,749,400**	**1.9**
PENINSULAR MALAYSIA	**1,166,913.03**	**24,669,000**	**1,236,636.83**	**25,593,200**	**1.6**
F.T. Labuan	4,494	91,300	4,512.2	99,000	0.1

Note: F.T. Putrajaya recorded a ratio of 0.0 as it showed insignificant built-up growth during the period 2015-2018. The actual value of the ratio recorded was 0.0004.

Source: NPP4, 2020

Based on the table above, seven (7) states recorded a ratio of >1.0 namely Perlis (16.2), Penang (2.5), F.T. Kuala Lumpur (2.4), Perak (2.3), Johor (1.9) Selangor (1.8) and Pahang (1.8). This means that between 2015-2018, the land consumption rates in these states were higher than their population growth rates, indicative of imbalanced growth of urban development compared to population growth.

Although there are instances when higher LCR than PCR are unavoidable, or even allowable, but in general the factors that lead to high LCRPCR ratio must be determined and analysed in detail at state level planning. This is necessary to ensure that land is used optimally and sustainably, and is without wastage.

Developing states may require mega-scale development to act as catalyst in driving local economic growth. Hence, new built-up areas are created to accommodate new urban and physical development. In this instance, it can be expected that the LCRPCR ratio will be higher than 1. However, for developed states with high LCRPCR ratio, such as F.T. Kuala Lumpur, Penang and Johor, a state-level study to review built-up density is required. It is proposed that PLANMalaysia undertake a study on Tahap Ketepuan dan Penentuan Intensiti Pembangunan bagi Pembangunan Bandar to determine urban saturation level and intensity. This study can used by state planning agencies to review the built-up density as well as lowering the LCRPCR ratio of their states.

Projected Land Requirements for Development

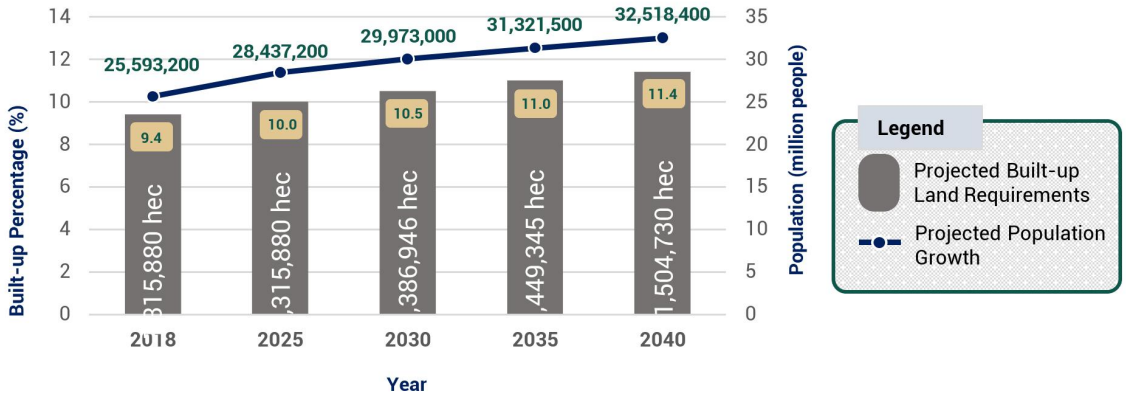
Land use planning at the national, state and local levels should target LCRPGR ratios of 1.0 or <1.0 in each development plan period. Hence, it is important that land requirements for development is projected systematically in advance so that land use planning can be aligned with population growth.

NPP4 has projected the total population of Peninsular Malaysia at 32.5 million by 2040. Based on this number, it is estimated that the built-up area requirement by 2040 will be **1,504,730 hectares,** which is equivalent to **11.4%** of the total land area of Peninsular Malaysia.

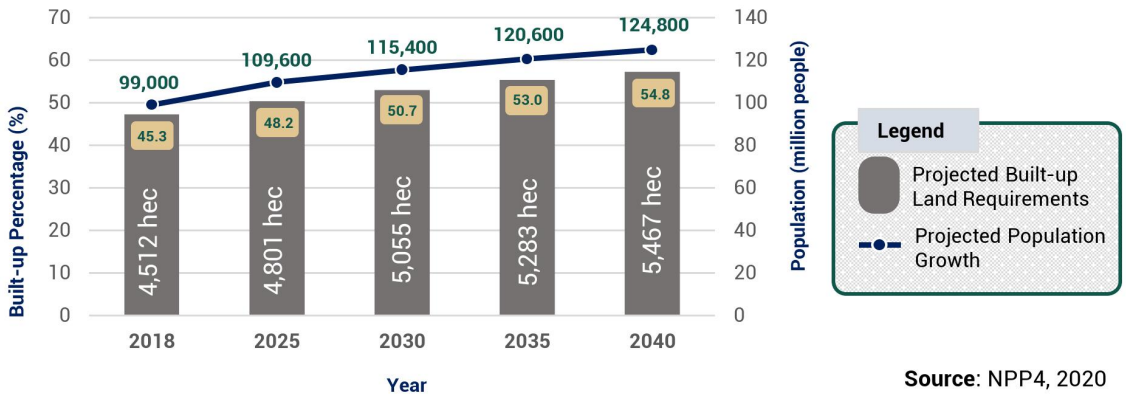
Meanwhile, for F.T. Labuan, based on the projected population of 124,800 people by 2040, the estimated built-up area requirement will be **5,467** hectares, which is equivalent to **54.8%** of the total land area of F.T. Labuan.

The projected built-up area requirements for Peninsular Malaysia and F.T. Labuan are calculated based on the ideal development scenario, with LCRPGR ratio set at 1 to represent balanced land consumption rate and population growth rate. However, as mentioned earlier, a LCRPGR ratio of >1.0 is still allowable for areas that may require mega-scale development to spur the economic growth of the areas and of the country.

Projected Built-up Land Requirement for Peninsular Malaysia based on LCRPGR ratio 1.0



Projected Built-up Land Requirement for F.T. Labuan based on LCRPGR Ratio 1.0



Source: NPP4, 2020

Global and National Development Agenda

NPP4 advocates transformational planning that involves the strengthening of development planning strategies and approaches through the interpretation of global and national development agendas, especially towards a **Prosperous, Resilient and Liveable Nation.** The following are the key agendas and policies considered in the formation of NPP4 .

Global Development Agenda

- Sustainable Development Goals (SDGs)
- New Urban Agenda (NUA)
- Industrial Revolution 4.0 (4IR)
- The Rio Summit | Kyoto Protocol
- Paris Agreement
- Association of Southeast Asian Nations (ASEAN)
- Indonesia-Malaysia-Thailand Growth Triangle (IMT-GT)
- Indonesia-Malaysia-Singapore Growth Triangle (IMS-GT)
- Brunei Darussalam-Indonesia-Malaysia-the Philippines East ASEAN Growth Area (BIMP-EAGA)
- Kalimantan-Sarawak-Sabah (KASABA)
- Asia-Pacific Economic Cooperation (APEC)
- Aichi Biodiversity Target
- Convention on Biological Diversity (CBD)
- Sendai Framework for Disaster Risk Reduction 2015-2030

National Development Policies

- Shared Prosperity Vision 2030
- National Urbanization Policy 2 (DPN2)
- National Rural Physical Planning Plan 2030 (National Rural PPP 2030)
- Rural Development Policy
- National Transport Policy 2019-2030
- National Agrofood Policy 2.0
- National Water Resources Policy
- National Forestry Policy
- National Housing Policy 2018-2025
- National Social Policy 2003
- National Green Technology Policy
- National Solid Waste Management Policy 2016
- National Climate Change Policy
- National Policy on Biological Diversity 2016-2025
- National Policy on the Environment
- National Community Policy
- National Mineral Policy 2
- National Cleanliness Policy
- Security and Public Order Policy
- National Commodities Policy (2011-2020)
- National Affordable Housing Policy
- National Senior Citizens Policy
- Study on Highway Network Development Plan 2030
- National E-commerce Strategic Roadmap
- National Eco-tourism Plan 2018-2025
- National Digital Network Plan (JENDELA)
- Malaysian Smart Cities Framework
- Low Carbon City Framework & Assessment System (LCCF)
- Mid-Term Review of the Eleventh Malaysia Plan (2016-2020)
- National Coastal Zone Physical Plan Study (RFZPPN)
- Central Forest Spine (CFS) 2 Masterplan Study
- Universal Planning and Development Doctrine

A review of the global and national development agendas and policies indicates the needs for the nation's physical planning to give attention to strategies and proposals towards improving environmental quality at the global and regional levels, addressing climate change and reducing greenhouse gas (GHG) emissions.

NPP4 also integrates the elements of 4IR in its planning agenda to develop resilience to industries so that they can withstand the challenges of climate change and the volatility and the uncertainties of global economic market. NPP4 also acknowledges the need to harness and embrace technological advancement through appropriate mechanisms while at the same time realising the Sustainable Development Goals (SDGs) 2030.

The implementation of 4IR is expected to continue to contribute towards driving the performance of the industries in Malaysia. Over the past five years, the manufacturing industry has grown rapidly and has contributed a high 22% to the country's GDP, resulting in increased employment opportunities and making Malaysia an attractive investment destination as well as creating business opportunities for downstream industries and related services sectors.

4IR also leverages on the potential of innovation and digital and smart infrastructure to contribute to human development in line with the recommendations of the New Urban Agenda so that the goal of Leave No One Behind can be realised.

Thus, a review of the global and national development agendas and policies proves to be vital in guiding the formulation of strategies and actions of NPP4 that will drive Malaysia to continue to grow progressively according to its own prospects and potential, thus ensuring economic prosperity and social well-being to all levels of society.

The beautiful skyline of Kuala Lumpur city centre view from Tasik Titiwangsa

Royal Belum State Park in Perak is the largest tropical rainforest preserved by the state government where only activities in relation to research, tourism and park management are permitted to be conducted within the forest.