Though its system of Five-Year Plans, Malaysia has successfully applied economic planning to guide the development of the country from an economy of agriculture and mining to a largely industrialised one. Now, with its sights set on attaining the economic level of a fully developed nation by 2020, the planning system must be made even more efficient and focused. It must ensure that every investment made in the country, whether public or private, yields not only a maximum return but must directly contribute towards creating the desirable objective of a strong, modern, internationally competitive, technologically advanced, post-industrial economy. The country must focus on securing a credible share of the lead sectors of the future globalised economy. It must make itself fit and conducive to these sectors. The country must also be fully aware of the enormous competition it faces in a region with rapidly expanding and modernising economies, all contending for the same pool of potential international investments.

The National Physical Plan will complement the Five-Year Economic Development Plans and provide the spatial dimension to the sectoral distribution of national resources. Debate and discussion over where public investments should be directed to will continue but within the forum provided by the National Physical Plan preparation process at its inception and at its quinquennial reviews. In between, the nation should concentrate on carrying out the actions and projects agreed upon.

Within the national framework state and local initiative is encouraged. The initiative of State Governments has always been a major contribution to national development and this will always be valued.

The proposals of the National Physical Plan will be constantly monitored and will retain an element of flexibility so that the country can respond quickly to any unexpected changes in the world economic situation. There are, however, certain proposals that should have permanency. This is particularly true of the areas proposed for conservation. The country should not only aim at prosperity but also to maintain the natural beauty of its lands and waters and in ensuring a healthy environment for its people.

Dato’ Seri Abdullah bin Hj. Ahmad Badawi
Prime Minister of Malaysia
26 April 2005
The Ministry of Housing and Local Government welcomes the National Physical Plan as the consultative process of preparation and review of the NPP will allow the Ministry to share the responsibility for national physical planning with the state governments and with other federal ministries. The NPP is the resulting consensus from this consultative process.

At this juncture of the country’s development the Ministry is particularly concerned that rapid urbanisation will inevitably create pockets of urban poverty. The NPP can be a means to indicate the areas where dislocations between in-migration and job creation may occur and provide the Ministry early warning of where the pockets of urban poverty may emerge.

The NPP also indicates areas where there is urgency for regional and inter-city planning. The Ministry enjoins local governments in these areas to take joint action for such regional and inter-city development plans. Attention should be paid to avoid environmental degradation from over development and to secure a good quality of life for people. In short there should be an increased effort to ensure that our cities are vibrant and attractive. The Department of Town and Country Planning under the Ministry will provide the necessary technical assistance for such joint planning.

The NPP provides the framework for the physical planning of the country, but it will remain only a concept without the detailing and without project proposals from the state and local governments and from the federal ministries. The Ministry urges that, where existing local plans are not in conformity with the NPP, they should be rectified. It is the hope of the Ministry that the NPP will become the reference for physical planning throughout the country so that development in any one part or city of the country is in support of, and complementary to, development in other parts and cities of the country.

Dato’ Seri Ong Ka Ting
Minister of Housing and Local Government, Malaysia
26 April 2005
The National Physical Plan (NPP) is a long time coming, and its approval by the National Physical Planning Council has been an important milestone for the Department. Yet this approval only marked the beginning of more challenging roles for the Department and all the agencies involved in physical planning, to whom this document belongs.

Peninsular Malaysia of 13.2 million hectares is not a big area. Unless it is being planned efficiently and systematically, it is not big enough to fulfill all the visions and dreams of its population, or to stand strong in the eyes of the world amidst globalisation. While physical planning on the local and state levels have been done before, this is the first time Peninsular Malaysia is being physically planned as one single integrated unit. Inevitably its implementation requires a lot of cooperation and ‘win-win’ compromise between the states and the various agencies involved.

From the NPP perspective, firstly global competitiveness must be achieved, secondly balance in terms of opportunities must be secured, thirdly sustainable development target must be met, and lastly quality of life is the ultimate aim. Land use planning must provide the enabling physical structures to achieve all these, with the precept ‘every hectares count’.

While NPP may be able to provide this big picture, it will not amount to great things without effective implementation, monitoring, enforcement and review. Therefore, this Department appreciates contributions from all the agencies and individuals who have helped in the preparation of the NPP, and is looking forward to more contributions and cooperation to help realise the aspirations of NPP. It is indeed a journey towards the establishment of an efficient, equitable and sustainable national spatial framework to guide the overall development of the country towards achieving quality living environment and developed nation status by 2020.

Director General
Department of Town and Country Planning
Peninsular Malaysia
26 April 2005
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EXECUTIVE SUMMARY

NATIONAL PHYSICAL PLAN
EXECUTIVE SUMMARY

1 INTRODUCTION

National economic planning has been practised in Malaysia since independence and has successfully guided the transformation of the country from an economy dependent on mining and plantation agriculture to one which is diversified and largely industrialised. Nevertheless, a gap in national development planning is recognised. Spatial planning has been delegated to the local level, to be dealt with in state plans and local plans. This has permitted states and local authorities to be uncoordinated and unguided in their interpretation of their share of the national objectives. The result is that the sum total of state and local plans far exceeds national targets as well as national resources to implement them. The National Physical Plan (NPP) is intended to fill this gap and provide the framework for national physical planning.

2 FUNCTIONS OF THE NPP

In fulfilling the recognised gap in national development planning, the functions of the NPP include:

i. strengthening national planning by providing a spatial dimension to national economic policies;
ii. coordinating sectoral agencies by providing the spatial expression to sectoral policies;
iii. providing the framework for regional, state and local planning;
iv. providing physical planning policies.

The core function of the NPP will be to translate the socio-economic objectives of Vision 2020, OPP 3 and 8 MP, as well as national sectoral objectives, into the spatial dimension to guide the geographical distribution of these objectives among the states and, through the states, among the local areas.

3 SALIENT FEATURES

The Town and Country Planning Act 1976 (Amendment) 2001, A1129 provides the legal basis for the preparation of the NPP and describes its form, which shall:
i. be a written statement formulating strategic policies for the purpose of determining the general directions and trends of the physical development of the nation;

ii. be accompanied by such indicative plans as may be required to clarify the strategic policies; and

iii. contain such other matters as may be prescribed or as the National Physical Planning Council (NPPC) may in any particular case specify.

The NPP shall be prepared through a consultative process between the Federal Government and the State Governments and shall take into consideration the current national urbanisation policy and other similar policies. The NPP is currently confined to Peninsular Malaysia and does not apply to Sabah and Sarawak which are governed by different planning legislations.

The Act stipulates that the Plan be reviewed every five years in tandem with the review of the National Five Year Development Plans. However, it is unlikely that all aspects of the Plan will be changed at the Review as certain proposals require permanency. These include areas designated for conservation or set aside for the protection of water resources. Other development proposals such as major national infrastructure constructions may also require continual implementation over decades. The NPP shall have both a short term perspective in accommodating the socio-economic objectives of the FYMP and the long term perspective of Vision 2020.

4 GOAL

The goal of the NPP is:

THE ESTABLISHMENT OF AN EFFICIENT, EQUITABLE AND SUSTAINABLE NATIONAL SPATIAL FRAMEWORK TO GUIDE THE OVERALL DEVELOPMENT OF THE COUNTRY TOWARDS ACHIEVING DEVELOPED NATION STATUS BY 2020

5 OBJECTIVES

To achieve its goal, four mutually supportive objectives are identified:

i. To rationalise national spatial planning for economic efficiency and global competitiveness.

ii. To optimise utilisation of land and natural resources for sustainable development.
iii. To promote balanced regional development for national unity.

iv. To secure spatial and environmental quality and diversity for a high quality of life.

6 PRINCIPLES

In support of the objectives of the NPP, the following plan principles shall be adhered to in the NPP:

P1 Develop the country as a single integrated unit.
P2 Promote areas of greatest growth potential
P3 Maximise the use of existing and committed infrastructure.
P4 Protect national heritage areas and locations.
P5 Encourage the development of regions based on their potentials.
P6 Favour public transport over private vehicle use for inter-urban and intra-city movement.
P7 Strive towards compact urban forms with clear identity.
P8 Avoid disrupting ecological stability.
P9 Facilitate the development of the k-economy.
P10 Strengthen urban and rural linkages.

7 PLAN CONTEXT

The NPP recognises the features in the current context within which it must succeed in fulfilling its role in national development.

7.1 Global Setting

With globalisation picking up pace, there is an increasingly intensive international competitive climate for investments. Because of Malaysia’s importance as a trading nation and its reliance on its trading position for future growth, the country is vulnerable to international vicissitudes and the threat of emergent competitors. Furthermore, to realise the objective of Vision 2020 to become a developed nation by 2020, the nation must maintain a high growth rate and high investment rate.
7.2 National Setting

A number of important features in the national setting, including both long-standing conditions and emergent trends, constrain strategic development options.

These features include:

- Disparity in development levels between regions.
- A continuing process of sectoral restructuring of the economy with decline in the contribution of agriculture and growth in the urban sectors based on manufacturing and services.
- A potential for growth in the technology-based, value-added and capital intensive activities such as ICT and biotechnology as well as in tourism, educational and health services.
- With economic restructuring, collateral restructuring of employment with a potential shift to a demand for highly skilled and educated workers.
- Continuing intensification of urbanisation with a trend not only of concentration of population in the urban areas but in fact in a few urban regions, namely the conurbations around Kuala Lumpur, George Town and Johor Bahru.

8 DEVELOPMENT STRATEGIES

8.1 Urbanisation

As only the conurbations around Kuala Lumpur, George Town and Johor Bahru are anticipated to have the capacity to compete successfully against international city regions such as Shanghai, Hong Kong, Shenzhen, Singapore, Bangkok and so on, a development strategy of Selective Concentration is recommended by the NPP. The strategy is applied to development location for the manufacturing and service sectors, in particular the nascent and emergent sectors of ICT, biotechnology, education and health services and (non-resort) tourism, and the appropriate type of infrastructure to be put in place to attract investments for these sectors. State capitals outside of the conurbations that are not anticipated to have a competitive capacity shall, however, be supported in terms of their need for services and facilities. Small and intermediate towns shall be developed according to their special features and their local economic niches. Urban-rural economic linkages are to be promoted to support the structural changes taking place in agriculture and to harness the benefits of urbanisation to benefit the rural population.
Development in the rural areas should be concentrated in the Rural Growth Centres and rural services should be reviewed to be more appropriate to the changing rural population structure.

8.2 Regional Balance

Notwithstanding addressing the issue of global competitiveness, the NPP must also address the issue of regional imbalance. This should be carried out while avoiding internal competition and at the same time optimising available resources. The strategies adopted should be realistic and capable of success. Regional balance is, therefore, interpreted as access to equitable levels of income and not necessarily as equal opportunity to the same forms of development. Resource-based industries, forestry-based activities and industries, downstream agriculture-based activities, resort tourism, including eco-tourism, craft-based industries and other niche activities should be directed to the less developed regions and appropriate infrastructure in these regions enhanced to support the activities.

8.3 Optimising the Use of Land

As a physical plan, it is incumbent on the NPP to re-examine the sectoral distribution of land use to ensure the optimal use of land. Agriculture is not expected to be expanding in acreage but in productivity. The greatest demand for land will be in urban expansion but the quantum of land required is relatively small compared to the potential land available for urban development. However, local planning will be required to adjust to the location of the available land. To assist local planning land is categorised according to their agricultural importance to the country, agricultural productivity and environment sensitivity, and ranked. The objective of the ranking system is to enable the determination of land for immediate conversion to other uses or for long-term conservation.

8.4 Safeguarding the Environment

With the absence of a need to make large areas of forest land available for agriculture or for urban use, there is an opportunity to articulate the proposals of the various national councils that have expressed concern regarding the natural environment, such as the Forestry Council, the Coastal Zone Council and the Environmental Council. In response, the NPP proposes the delineation of a forest Central Spine which will be linked to other conservation areas.

Future water supply needs will also be safeguarded by conserving potential river and underground sources of water.
8.5 Planning Appropriate Infrastructure

In national transportation the NPP proposes the long-term commitment to a fast-train system and in local transportation a commitment to favour public transport.

Infrastructure shall be examined as appropriate to the particular areas and their expectations of development.

9 POLICIES

The NPP is articulated as a set of policies as follows:

NPP 1 The NPP shall serve as the framework to achieve integrated and sustainable land use planning in the country.

NPP 2 The planning of urban based activities shall adopt the concept of ‘selective concentration’ for strategic urban centres for all states.

NPP 3 Cooperation in physical planning between Malaysia and its ASEAN neighbours shall be strengthened.

NPP 4 Land and natural resources of the less developed regions shall be used in a sustainable manner to increase the productivity in these regions and reduce regional imbalances.

NPP 5 Planning for industrial land development shall adopt the concept of ‘Industrial Clusters’.

NPP 6 The support of agriculture shall take cognisance of the threats and opportunities of urbanisation.

NPP 7 The eight (8) strategic granary areas comprising Muda (MADA), Kemubu (KADA), IADP Kerian-Sungai Manik, IADP Barat Laut Selangor, IADP Pulau Pinang, IADP Seberang Perak, IADP Terengganu Utara (KETARA) and IADP Kemasin- Semerak shall be conserved.
NPP 8 The different tourism development zones shall concentrate on different packages of tourist products to maximize their resource and locational advantages.

NPP 9 The concentration of urban growth in the conurbations shall be anticipated and accommodated.

NPP 10 The growth of the four main conurbations of Kuala Lumpur, George Town, Johor Bahru and Kuantan shall be supported.

NPP 11 The conurbations shall be planned and developed as integrated regions.

NPP 12 The individuality and physical separation of the cities, towns and villages within the conurbation shall be maintained.

NPP 13 Towns with special features shall be identified and the development of projects exploiting their special features shall be supported with the appropriate infrastructure.

NPP 14 Small and intermediate towns shall be developed in accordance with their localised economic potentials.

NPP 15 The development of Rural Growth Centres (RGCs) shall be reinforced to rationalise the servicing of the rural population.

NPP 16 Planning Standards shall be designed to meet the requirements of a developed country.

NPP 17 A designated central authority shall be charged with the responsibility to publish on regular basis information on land use development.

NPP 18 Environmentally Sensitive Areas (ESA) shall be integrated in the planning and management of land use and natural resources to ensure sustainable development.

NPP 19 A Central Forest Spine (CFS) shall be established to form the backbone of the Environmentally Sensitive Area network.
NPP 20 Sensitive coastal ecosystems shall be protected and used in a sustainable manner

NPP 21 Land development in the highlands shall be strictly controlled to safeguard human safety and environmental quality.

NPP 22 All surface and ground water resources are strategic assets to be safeguarded and used optimally.

NPP 23 In recognition of the inter-relationship between land use and transport an integrated national transportation network shall be established.

NPP 24 An integrated high-speed rail system shall be established.

NPP 25 The national road network shall be further extended for regional travel and local access.

NPP 26 Major airports and seaports shall be developed according to their complementary functions to enhance the nation’s economic competitiveness and facilitates tourist arrivals.

NPP 27 The Transit Orientated Development (TOD) concept shall be promoted as the basis of urban land use planning and ensure viability of public transport.

NPP 28 In all major urban centres, an integrated public transportation system shall be established.

NPP 29 The NPP shall provide the spatial framework for the delivery of integrated infrastructure services at the national and regional level and to the main conurbations.

NPP 30 The supply and projected demand for water by quantity and location should guide the planning of water resource areas.

NPP 31 Ground water resources and recharge areas shall be identified and protected from activities that cause pollution and reduce yield.
NPP 32 All urban settlements shall be serviced by a centralised sewerage treatment system

NPP 33 All urban settlements shall be serviced by an integrated network of solid waste disposal and/or recovery facilities

NPP 34 Land utilised for main drains, streams and rivers shall be designated as drainage or river reserves

NPP 35 As strategic assets, electricity generation plants and the distribution mains shall be located to provide a reliable and efficient supply of power to consumers

NPP 36 Appropriate ICT technology shall be provided as a priority to all settlements

10 IMPLEMENTATION MECHANISM

The institutional responsibilities for the preparation, implementation, monitoring and review of the Plan are shown in the following table:

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The Director General of the Department of Town and Country Planning (DG DTCP) is charged with the responsibility of preparing the Plan, monitoring its implementation and keeping it in review every five years. In carrying out this responsibility the Director-General will rely on the capacity of his department and a number of bodies that have been provided by the Town and Country Planning Act 1976 (TCPA), proposed in the Plan or administratively employed in the current planning process, such as the NPPC, the National Physical Planning Committee (NPP Com.), National Physical Planning Advisory Committee (NPPAC), IAPGs and TWGs.
The Implementation of the Plan, however, will require the support of the various federal and state agencies that have a legal duty to adhere to the policies of the NPP. It is important that the proposals are translated into plans of action and included in the subsequent Five Year Malaysia Plans (FYMP) through the offices of the EPU, Treasury and the NDPC.

Adherence to the recommendations of the NPP should also be manifested in the respective Structure Plans. One of the key instruments for monitoring the Plan and keeping it in review is the establishment of the NPP Land use Planning Intelligent System (LaPiS) to ensure effective exchange of both spatial and attribute data that is necessary to prepare the plan and its review.

The policies of the NPP will remain applicable unless reviewed or replaced. In carrying out the review, the DG DTCP will rely on the directions of the NPPC and the advice of the NPP Com. and NPPAC, as well as the application of indicators and research findings to assess their effectiveness. Critical success factors will depend on the establishment of clear terms of reference on matters that need to be reviewed. Appropriate IAPGs and TWGs should also be established to provide adequate inputs for the Review.

In conclusion the main recommendations made for the implementation of the NPP are as follow:

i Establish the necessary institutional structure for plan preparation and monitoring. This will include among others, the strengthening of the National Physical Planning Division in DTCP, the establishment of the NPP Committee, NPPAC, relevant IAPGs and TWGs, as well as a National Spatial Planning Research Institute to generate information and thinking about national and regional physical planning.

ii Once the NPP is approved the various federal and state agencies need to translate these policies into programmes and projects and include them in the subsequent FYMP.

iii The DG DTCP should be made a permanent member of the NDPC to ensure that the aspirations of the NPP are incorporated into the subsequent FYMP.

iv Establishment of the LaPiS at DTCP and the Structure Plan land use Planning Intelligent System (SLAPiS) at the State Departments of Town and Country Planning.
PREAMBLE

National economic planning has been practised in Malaysia since independence and has successfully guided the transformation of the country from an economy dependent on mining and plantation agriculture to one which is diversified and largely industrialised. National economic planning has brought to the country a level of prosperity that is the envy of other developing countries. Nevertheless, a gap in national development planning is recognised. This is planning in the physical, geographical or spatial dimension. Hitherto spatial planning has been delegated to the local level, to be dealt with in state plans and local plans. This has permitted states and local authorities to be uncoordinated and unguided in their interpretation of their share of the national objectives. The result is that the sum total of state and local plans far exceeds national targets as well as national resources to implement them.

Land conversion in many states and use provisions in many local authority areas far exceed demand and over optimistic development approvals have led to property overhangs. Internecine rivalry between states and between cities for development have led to, on the one hand, the duplication and wastage of types of infrastructure that are intended to attract development and, on the other hand, neglect in public investments in types of infrastructure that should be carried out to support the development already in place. For example, while urban highways and mega shopping complexes are given much local authority attention, sewerage systems, public transportation and flood mitigation projects lag behind.

The need for a national physical plan has been felt and debated over many years. Currently, some attempt at spatial planning to reconcile inter-state and inter-city competition is carried out on an ad hoc basis by national agencies like the Economic Planning Unit and Treasury through the project approval process. These agencies will be better able to carry out their functions with the availability of a standing guideline and framework on the geographical distribution of physical development. The National Physical Plan (NPP) is intended to provide this framework. The framework is intended not only for project approval but also for states and local authorities to formulate their development plans and strategies, and to identify development projects, in a more realistic, focussed and co-operative manner.

The NPP will complement the existing efforts in national development planning which has tended to be socio-economic biased. Economic targets of the Five Year Malaysia Plans (FYMP) and the goals of Vision 2020 will be translated into spatial terms in the NPP. The Plan will also provide the coordinative platform for the various sectoral plans and policies and establish the much needed framework for the preparation of Structure and Local Plans. The NPP is also a response to the impact of globalisation which requires the country to establish a national physical framework that will enhance the country's global competitiveness.

The yardsticks for measuring development have also changed over the years from merely economic growth indicators and outputs to those that measure the quality of life and a development that is sustainable. The NPP is one of the instruments for achieving quality in the living environment and sustainable development. It will serve as a long term national physical plan providing directions and trends on the development, use and conservation of land in the country.
CHAPTER 1

NATIONAL DEVELOPMENT PLANNING FRAMEWORK

NATIONAL PHYSICAL PLAN
CHAPTER 1

NATIONAL DEVELOPMENT PLANNING FRAMEWORK

Development planning is practised at all three tiers of government. At the national level, development planning will be guided by the FYMP, the NPP and the sector policies that emanate from Cabinet, the respective Ministries and Sector Councils. Contextually development planning in the country will operate within the stated goals outlined in Vision 2020 and the Outline Perspective Plans (OPP3) (Figure 1.1). Similarly at the state level, development will be guided by the Structure Plans and sector policies that are articulated from time to time. Local level planning will be carried out in the form of statutory development plans such as the Local Plans and Special Area Plans for the local authority areas.

Figure 1.1 : National Development Planning Framework

Plans used in the country to guide development consist of the following:

- **Vision 2020**

The long-term vision statement for the country, Vision 2020, states the aspiration of the nation. The nation shall become, by the year 2020, “fully developed along all the dimensions: economically, politically, socially, spiritually, psychologically and culturally.” The strategy to achieve this vision is by a high level of economic...
growth through accelerated industrial development and an export based manufacturing sector. Collateral development will involve the accelerated development of science and technology. It will also involve an accelerated development of the service sector, with emphasis on ICT. The private sector is expected to provide the engine of growth to achieve this vision.

- **Outline Perspective Plan**

  The current Outline Perspective Plan is the Third Outline Perspective Plan 2001-2010 (OPP3). This, essentially, is a ten year outline plan which forms the framework for the preparation of the FYMP. A central objective of OPP3 is national unity. Its concentration is at forging a united nation consisting of a progressive and dynamic “Bangsa Malaysia” that “lives in harmony and engages in full and fair partnership”. OPP3 will focus on enhancing regional balance through rapid development of the less developed states. Efforts will be taken to diversify the economic base of the slower growing states into manufacturing and services with emphasis to be given to development of downstream activities in the agriculture sector, such as in handling, processing, packaging and marketing of agro-products, and the development of agro-based industries. Another aim of the plan is to reduce urban rural disparities and improve and strengthen the linkages between urban and rural economies.

- **Five-Year Malaysia Plan**

  The current Five-Year Development Plan is the Eighth Malaysia Plan 2001-2005 (8 MP) which identifies the growing sectors of the economy as services and manufacturing. It confirms further need for the promotion of direct foreign investments and recognises that industrialisation for the future will be faced with intensifying competition among countries for investments, production and markets. The implementation and further elaboration of free trade agreements among nations will engender the deepening of globalisation and make competition intense.

- **Structure Plans**

  Structure Plans distribute the expectation of development within each state and propose major economic and infrastructure projects for the states. The time perspective for Structure Plans is 20 years, and for the current set of Structure Plans, commensurate with the time perspective of Vision 2020.

- **Regional Plans**

  With reference to the Town and Country Planning Act 1976 (Amendment) 2001, A1129, Regional Plans are prepared for areas situated in two or more states where there are significant issues pertaining to cross border development. Each plan is prepared by an appointed Regional Planning Committee for the purpose of guiding and coordinating development within the relevant region. These plans
will serve to assist the State Planning Committees and the local planning authorities within the region on appropriate development measures for the region that will optimise the use of infrastructure and social facilities, coordinate development, avoid duplication of investments and promote the conservation of natural resources. Regional Plans may also be prepared for the Conurbations identified in the NPP covering a number of local authority areas.

- **Local Plans**

Local Plans are designated as the “Development Plans” by the Town and Country Planning Act 1976 and provide the vehicles for development control. In addition to setting the direction of development for a local planning authority area, Local Plans serve, by their consultative process of preparation, as contractual agreements on the use of all land within the plan areas between the local planning authorities and the local residents and land owners. Local Plans are, therefore, besides being guides for development, also a basis of democratic governance and the protection of citizen rights.

National, state and local plans are intended to operate as a cohesive and collectively supportive system directed to achieve Vision 2020. National plans are framed within a time perspective while state and local plans have both a spatial and a time perspective. A spatial framework at the national level is, however, currently absent. The **National Physical Plan (NPP)** fulfils this missing role.

In addition to the various development plans, national sectoral policies such as the National Forestry Policy, National Agricultural Policy, etc. as well as various sectoral plans of varying status, require to be expressed spatially.

### 1.1 Function

The function of the NPP includes:

i. strengthening national planning by providing a spatial dimension to national economic policies;

ii. coordinating sectoral agencies by providing the spatial expression to sectoral policies;

iii. providing the framework for regional, state and local planning;

iv. providing physical planning policies;

### 1.2 Legal Framework

The Town and Country Planning Act 1976 (Amendment) 2001, A1129 provides the legal basis for the preparation of the NPP.
1.3 Form

The form of the NPP shall [Town and Country Planning Act 1976]:

i. be a written statement formulating strategic policies for the purpose of determining the general directions and trends of the physical development of the nation;

ii. be accompanied by such indicative plans as may be required to clarify the strategic policies; and

iii. contain such other matters as may be prescribed or as the National Physical Planning Council (NPPC) may in any particular case specify.

1.4 Consultative Process

The NPP shall be prepared through a consultative process. When preparing the NPP, the Director General of Town and Country Planning shall take into consideration the current national urbanisation policy and other similar policies. The Director General shall consult with every State Authority and such other authorities or bodies as the Council may direct.

This consultative process ensures that state and local aspirations are taken into consideration in the NPP.

1.5 Plan Area

The NPP is currently confined to Peninsular Malaysia. The Plan does not apply to Sabah and Sarawak which are governed by different planning legislations.

1.6 Plan Period

Once the Plan is approved the policies of the NPP will take effect unless they are subsequently altered or replaced. In view of changing socio-economic circumstances of the country, the Act stipulates that the Plan be reviewed every five years in tandem with the review of the National Five Year Development Plans, or as and when directed by the Council.

It is unlikely that all aspects of the Plan will be changed at the Review as certain aspects of the Plan will require permanency. These include areas designated for conservation or set aside for the protection of water resources. Other development proposals such as major national infrastructure constructions may also require continual implementation over decades or require follow-up phases. The NPP shall have both a short term perspective in accommodating the socio-economic objectives of the FYMP and the long term perspective of Vision 2020.
CHAPTER 2

GOAL, OBJECTIVES AND PRINCIPLES

NATIONAL PHYSICAL PLAN
CHAPTER 2

GOAL, OBJECTIVES AND PRINCIPLES

The goal, objectives and principles of the NPP reflect the desire of the nation, as interpreted from the Town and Country Planning Act 1976, to ensure that physical planning creates the spatial patterns, structures, institutions and guidelines necessary to support socio-economic planning. The technical findings on the existing situation, trends, potentials and threats assist in refining the goal, objectives and principles and provide the basis for formulating the strategies and policies that, in turn, provide tangible sets of action for implementing the NPP.

2.1 Goal

Basic to all national planning is the country’s aspiration of attaining developed country status as encapsulated in Vision 2020. A particular onus placed on physical planning is the creation of a quality and efficient physical environment that will be the foundation for the high quality of life, economic prosperity, political unity and social vibrancy envisioned in Vision 2020. Subsumed within this overall objective is the integral need to increase efficiency, regional balance, sustainability and a strong global positioning of the country. The NPP will provide the translation of the national plans into the physical and spatial dimension.

The NPP goal is:

THE ESTABLISHMENT OF AN EFFICIENT, EQUITABLE AND SUSTAINABLE NATIONAL SPATIAL FRAMEWORK TO GUIDE THE OVERALL DEVELOPMENT OF THE COUNTRY TOWARDS ACHIEVING DEVELOPED NATION STATUS BY 2020

2.2 Objectives

Arising from this goal, four mutually supportive objectives are identified:

i. To rationalise national spatial planning for economic efficiency and global competitiveness.

ii. To optimise utilisation of land and natural resources for sustainable development.

iii. To promote balanced regional development for national unity.

iv. To secure spatial and environmental quality and diversity for a high quality of life.
Objective I: To rationalise national spatial planning for economic efficiency and global competitiveness

In order to sustain the high level of investments of around 7.0 % per annum necessary to achieve developed nation status by 2020 the country must be economically efficient and globally competitive over the plan period of Vision 2020. Malaysia will, to a large extent, be dependent on foreign investments and, as envisaged by 8 MP, global competition for investments, as well as for markets, will become increasingly fierce. From the spatial planning perspective this strife for efficiency and investment attractiveness would include the need to focus development activities in selected areas that offer the best growth potential. From the physical planning perspective it would involve the creation of a quality living environment with an integrated and efficient infrastructure.

Objective II: To optimise utilisation of land and natural resources for sustainable development

The many economic sectors, human social activities and environmental protection concerns vie for land. The NPP must seek not only to allocate land for the various uses to meet their needs but also, through sensitive calibration of the quantum of land allocated to each sector, activity or concern, seek to achieve overall efficiency and optimum use of land. Land wastage in the form of idle land and low productivity land in any of the economic sectors should be eliminated. Land use allocation will, however, be very largely constrained by the existing land use pattern and natural topographical conditions.

Each economic sector is faced with a different set of problems and opportunities that will indicate, in broad terms, its future land requirements. Agriculture, for example, faces the necessity to increase productivity rather than expansion in acreage while forestry, with the increasing demand for tropical timber, has the opportunity for expansion in acreage. Expansion of forestry acreage, however, cannot involve natural forests because of the time horizon involved but with forest plantations.

The greatest demand for land in the NPP plan period will, however, come from urban expansion. Of the 8.3 million additional population projected for the period 2000-2020, 8.0 million or 96.0% will be the additional urban population. However, the total amount of land necessary to house this population is very small – no more than 0.33 million hectares – while the land that is identified as potentially available for various uses which could include urban purposes estimated at about 574,053 ha. Total land required for urban use, including existing built-up areas, will amount to only 5.8% of the land area of Peninsular Malaysia. In principle, therefore, there is no necessity for urban expansion to encroach into land that should be protected or conserved for one purpose or another, nor is there any necessity for carrying out large scale land reclamation works. Local planning may, however, need to adjust to the location of available land.

An important role of the NPP is to consolidate the categorisation and ranking of land and apply land categorisation and ranking to land use control, particularly to guiding conversion of land for urban uses.
Objective III: To promote balanced regional development for national unity

Due to historical and physical reasons, Peninsular Malaysia has developed with a palpable disparity between the west and east coasts. National plans, in particular OPP3, have set the reduction of imbalance and the inducement of more equitable development between regions and states as a primary objective.

Improvements in the transportation network, ICT linkage, and development of petroleum and natural gas related industries have, to a certain extent, improved the east coast states. However, the imbalance persists. Unequal development is also not just between the east coast and the west coast but also between sub regions within the west coast, e.g. the Klang Valley as against south Perak or northern Kedah, both of which areas generally exhibit socio-economic characteristics similar to the east coast region.

Balance should be perceived as equal opportunity to comparable incomes and not necessarily as similar forms of development. As such, while the less developed regions may, because of their isolation, be less competitive for certain forms of development, their possession of beaches, scenic beauty, cultural richness and abundant agricultural and forest products could be further exploited to enhance tourism including eco-tourism, agricultural and forestry downstream activities, resource-based industries and craft-based industries. Enhanced investments in infrastructure specifically to support such activities, such as in transportation and communications, should be directed to the less developed regions.

There should, however, be an anticipation that rural-urban migration, which also manifests itself as inter-regional migration, will continue as part of the larger national phenomenon of industrialisation and urbanisation. Skills training of potential migrants will be important to ensure that they integrate into the urban economy.

Objective IV: To secure spatial and environmental quality and diversity for a high quality of life

The environment includes the built environment of cities and towns, the rural environment of farms and plantations and the natural environment of forests and wetlands. The country must protect and conserve the quality of its environment in all three areas.

With rapid expansion of the cities and towns the built environment is in danger of deteriorating into urban sprawns. It will, therefore, be essential to re-examine urban forms, limits and standards as well as the institutions of local planning and development control processes to ensure that a quality urban environment will be in place. The character and integrity of individual cities need to be protected and measures should be introduced to ensure the separation of cities within conurbations as well as measures to guide and control the outward expansion of conurbations.

With the rural environment the shrinking rural population will have a potentially disruptive impact and planning for the depleting rural population will need to be carried out. At the same time there should be assurance that the conversion of agricultural land for urban...
uses should not be disorderly, indiscriminate and inefficient. Findings of the studies carried out indicate that there is no shortage of poor quality agriculture land for conversion to urban uses. There is, therefore, every reason to conserve what remains of the natural environment for the edification and enjoyment of the present and future generations and for the overall enhancement of the national environment.

2.3 Principles

The following are principles that support the above objectives. While some of these principles are directly relevant to a single objective, most are relevant to more than one objective.

P1 Develop the country as a single integrated unit

It is paramount for national unity as well as incidentally efficient for global competitiveness that the country be developed as an integrated unit rather than for states to compete with one another. All resources - natural, manpower and financial - should be used in the most efficient and effective manner to enable the country to focus on niche areas and activities where the country has the competitive advantage.

P2 Promote areas of greatest growth potential

The magnets for investments in East Asia are the city regions such as Shanghai, Shenzhen, Hong Kong, Singapore and Bangkok. Only the areas of greatest growth potential in Malaysia, that is, the conurbations around Kuala Lumpur, George Town and Johor Bahru, have the capacity to rival these international city regions, particularly for investments in the emergent sectors of ICT, biotechnology, health and educational services. In the context of increasingly fierce global competition for investments, it is judicious to focus support of these conurbations.

P3 Maximise the use of existing and committed infrastructure

In order to utilise infrastructural investments efficiently urban expansion should be directed to where adequate infrastructure and social facilities are in place or committed to be put in place. The upgrading of existing infrastructure may be explored. Efforts should also be taken to encourage urban regeneration and infill development to reduce the speculative opening up of green field sites. A culture of upgrading and maintenance should be inculcated in urban administration.

P4 Protect national heritage areas and locations

There should be greater resolve from all quarters to conserve the fast depleting natural resources of the country and manage it in a sustainable manner. In particular a sense of value and national pride for areas of natural beauty and
ecological richness, historical sites and areas of cultural association should be fostered. Such areas and sites may include pristine forests, hills and wetlands, habitats for the Malaysian fauna, rural landscapes, particular sites and locations as well as individual buildings. Conservation may be in tandem with the promotion of such areas, locations, sites and buildings as attractions for international and local tourism.

Pockets of natural and rural landscapes located close to urban areas should also be conserved for the recreation and enjoyment of the expanding urban population, particularly the increasing number of urban children, and generally to enhance the overall living environment.

**P5 Encourage the development of regions based on their potentials**

Regions should be developed and promoted on the basis of their potentials and public investments in infrastructural support should be directed to reinforce these regional potentials. The east coast region, which has been identified to possess great potential for eco-tourism, forestry-and-agriculture-based activities, etc., for example, should receive public investments in the type of infrastructure necessary to support these forms of development while duplication of infrastructure for forms of development more suitable for the west coast should be avoided.

**P6 Favour public transport over private vehicle use for inter-urban and intra-city movement**

This will require the development of an efficient inter-urban public transport system featuring high speed trains, low fare domestic flights, public buses on highways and city centre transportation hubs. For intra-city travel more efforts shall be made to develop further the extent and efficiency of trains, taxis and buses.

**P7 Strive towards compact urban forms with clear identity**

In city and suburban centres integrated, multi-functional and high density projects can increase efficiency, convenience, vibrancy and the image of the urban areas. Transport hubs combined with office, living and shopping uses are examples. This will also lead to a compact city form that will help contain urban sprawl and is amenable to rail-based public transport systems.

In the expansion of the conurbations the integrity and functional cohesion of existing communities should be maintained and not disrupted.

Unplanned development proposals outside of designated city limits should be required to submit rigorous justifications and subject to public scrutiny and objections in line with the statutory requirements for a local plan.
P8  Avoid disrupting ecological stability

Guidelines on development on environmentally sensitive areas should be incorporated into the NPP. Coastal land reclamation for purposes other than seaports, jetties, marinas, bridges and the like should be discouraged. Developments within water catchment areas and other environmentally sensitive areas should be carefully monitored. Water resource management based on the concept of Integrated River Basin Management (IRBM) should be exercised.

P9  Facilitate the development of the knowledge-based economy

To create an impetus for national growth and increase competitiveness there should be an expansion of ICT linkages and connectivity to all parts of the country. Efforts should be made to promote the development of a first class ICT infrastructure network throughout the country and steps taken to develop a large pool of highly skilled ICT workers.

P10  Strengthen urban and rural linkages

Government should institute programmes to support entrepreneurs from the rural growth centres, traditional kampong, the new villages and the small and intermediate towns to initiate agricultural projects to supply food and raw materials to the urban areas as well as small and intermediate industries to service the larger industries of the urban areas.
CHAPTER 3

PLAN CONTEXT

Vision 2020, OPP3 and 8MP as well as the national sectoral policies have established the general guidelines for socio-economic management of the country. The basis of the national vision, objectives and policies, however, rests upon the foundation of the country’s physical setting as well as its past and present economic and social environments. As each of these environments are multifaceted, inseparable and intimately linked to one another, a change in one environment impacts upon the others in foreseeable and unforeseeable, short and long term, positive and negative ways.

The approach adopted by the NPP has been to recognise the significance of the interrelationships of these environments and to assess the issues of spatial relationship in a holistic, integrated and balanced approach. This approach recognises and accepts that the various types of land use activities have generally arranged themselves in geographic space in relatively distinct patterns.

In the Peninsular Malaysia context, at the broadest scale, this pattern has been formed by the physical environment of a western coast, a highland spine and eastern coast area. This pattern of land use is further reinforced by historical and economic factors which have resulted in a heavier concentration of population and higher productivity economic activities taking place on the western coastal plain relative to the other areas. The impact of these factors has resulted in variations in social and economic makeup of the Peninsula which underlie a number of provisions included in the national development plans. An underlying intent of all of the various national development programmes is the need to identify the factors which drive the economy so as to better understand and manage the challenges facing the country’s future.

Of no less importance to the development of the country is the global setting within which Malaysia, as a developing country, must operate. The emergent situation of increasing competition within a globalising world requires that the country must select development strategies that do not jeopardise her ability to compete successfully for international investments. In resolving internal development issues Malaysia must take cognisance of the limitations that the world setting may place on her range of possibilities, especially when the possibilities may be mutually exclusive, and prioritise the issues to be resolved. For example, fast growth may have to take priority over balanced development if the choice between the two is mutually exclusive. The NPP will, however, seek to optimise the choice of possibilities.

The NPP constitutes an integral part of the management plans. It seeks to add a spatial or geographic dimension to the more purely economic and social biased aspects of the development plans. This spatial element of the NPP is directed at ensuring sustainable and efficient utilisation of the country’s natural resources, optimum use of its existing capital as well as its human resources while at the same time, seeking to provide for equitable access to the opportunities afforded by the development of the country.
3.1 Global Setting

3.1.1 World Trade

Malaysia ranks 18th in terms of the value of exports and imports in the year 2000. The significance of these relatively high rankings brings with it the burden of contagion whereby changes in economic and or geopolitical circumstances can flow back into the Malaysian economy. The mid to late 1990’s international monetary crisis and the general under performance of the major economies of the developed countries such as America, Japan and Europe led to an overall decline in Malaysia’s average Gross Domestic Product (GDP) growth rates. This prevailing situation which has been exacerbated by geopolitical issues is also only part of a much larger and more pervasive process of change which is often referred to as ‘globalisation’, a process whereby macro and indeed micro economic activities around the world are increasingly being integrated, interrelated and interlinked.

In a similar vein, the economic emergence of China and India has resulted in a changed competitive platform for trade and investment in the global market. Latin America and Central European countries are also offering attractive investment opportunities which will compete for resources from the USA and Europe.

At the regional level, China and India have become attractive investment destinations and centres for low to medium level technology products at competitive prices. These changes have offered opportunities for Malaysian investors to internationalise and yet, at the same time have challenged a variety of traditionally secure Malaysian industries and enterprises.

Malaysia, in recognising its abilities and weaknesses and in particular its relatively small market size, has adopted a number of strategies aimed at minimising the risks of volatility, bolstering economic resilience, enhancing competition, stimulating increased private investment, venturing into new sources of growth, accelerating transformation to a high technology and knowledge based economy, increasing the supply of quality human capital as well as promoting a more equitable and exemplary value-based society.

3.1.2 International Organisations

At the international level implementation of these measures include participation in the United Nation (UN), World Trade Organization (WTO), Organisation of Islamic Countries (OIC) and other global reach organisations as well as regional and sub regional groupings aimed at mutually enhanced economic activity. In particular these latter agreements include ASEAN, ASEAN Free Trade Agreement (AFTA), and the Indonesia-Malaysia-Singapore Growth Triangle, the Indonesia-Malaysia-Thailand Growth Triangle and the Brunei Darussalam-Malaysia-Philippines East ASEAN growth area (Figure 3.1).
FIGURE 3.1: REGIONAL ECONOMIC COOPERATION
Malaysia, on the whole has benefited from the globalisation process through foreign direct investments of the early 1990s. Even so, two emerging trends of the globalisation process must be addressed if the country is to at least maintain its present status. The first of these is to accept the changing circumstances associated with greater competition for foreign direct investments and secondly to engage with the more developed countries in the use of ICT and technology to enhance productivity and quality as well as niche market products and processes.

The preparation of the NPP forms part of the government’s response to the challenges of globalisation. Among the responses adopted has been for an increased emphasis to be placed upon the private sector to be the core of the national engine of growth. The government sectors role will be more of facilitator through institutional support and as a provider of infrastructure.

3.2 National Setting

To facilitate comparisons with other countries of the region as well as the world at large, broad based population and economic criteria have been adopted to describe Malaysia’s past and projected performance.

3.2.1 National Population Growth

Peninsular Malaysia’s population increased from 11.4 million in 1980 and 14.8 million in 1991 to 18.5 million in 2000. This represents an average annual growth rate of 2.38% per annum (1980-1991) and 2.53% per annum (1991-2000). For the year 2000, the Peninsular Malaysia’s population accounted for 79.6% of the country’s total of 23.3 million (Table 3.1).

The NPP has projected Peninsular Malaysia population to increase from 18.5 million in year 2000 to 26.8 million in 2020 at 1.9% per annum growth between 2000-2020 (Table 3.1). This is the population that could be supported by projected economic and employment growth. The 2020 population, based on natural increase is about 26.0 million, implying the economic based projection allows the immigration of about 800,000 non-citizens.

By region, the highest growth was recorded for the Central Region at 3.01% per annum between 1980-1991 and at 4.17% per annum between 1991-2000. Among the states, Selangor grew fastest at 4.32% and 6.32% per annum respectively during the two periods. The slowest growth rates were recorded for Perak at 0.82% and 0.42% per annum for the two periods respectively.

i. Regional Population Pattern

While overall growth has been significant, an even more notable impact with respect to population has been the movement of people from one state to another over the past 20
years. The northern and eastern regions for example have suffered relative declines (35.0% to 27.1% and 19.5% to 17.3% respectively) in their shares of Peninsula population while the central region has been a major recipient of people with its share rising from 33.1% to 40.5%. Johor by comparison has basically managed to sustain its population share.

This pattern of migration reflects the development of the country and in particular the rise of the manufacturing and services sectors.

Table 3.1: Distribution of Population and AAGR (%) by State, 1980, 1991, 2000 and 2020

<table>
<thead>
<tr>
<th>State/Region</th>
<th>Population Size</th>
<th>Percentage Distribution (%)</th>
<th>AAGR (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perlis</td>
<td>148,276</td>
<td>190,182</td>
<td>204,450</td>
</tr>
<tr>
<td>Kedah</td>
<td>1,116,140</td>
<td>1,364,504</td>
<td>1,649,756</td>
</tr>
<tr>
<td>Pulau Pinang</td>
<td>954,638</td>
<td>1,116,801</td>
<td>1,313,449</td>
</tr>
<tr>
<td>Perak</td>
<td>1,805,198</td>
<td>1,974,893</td>
<td>2,051,236</td>
</tr>
<tr>
<td>Northern Region</td>
<td>4,024,252</td>
<td>4,646,801</td>
<td>5,218,891</td>
</tr>
<tr>
<td>Selangor</td>
<td>1,515,537</td>
<td>2,413,567</td>
<td>4,188,876</td>
</tr>
<tr>
<td>WP Kuala Lumpur</td>
<td>977,102</td>
<td>1,226,708</td>
<td>1,379,310</td>
</tr>
<tr>
<td>Negeri Sembilan</td>
<td>573,578</td>
<td>722,017</td>
<td>859,924</td>
</tr>
<tr>
<td>Melaka</td>
<td>464,754</td>
<td>529,199</td>
<td>635,791</td>
</tr>
<tr>
<td>Central Region</td>
<td>3,530,971</td>
<td>4,891,491</td>
<td>7,063,901</td>
</tr>
<tr>
<td>Johor</td>
<td>1,638,229</td>
<td>2,162,357</td>
<td>2,740,625</td>
</tr>
<tr>
<td>Southern Region</td>
<td>1,638,229</td>
<td>2,162,357</td>
<td>2,740,625</td>
</tr>
<tr>
<td>Pahang</td>
<td>798,782</td>
<td>1,081,148</td>
<td>1,288,376</td>
</tr>
<tr>
<td>Terengganu</td>
<td>540,626</td>
<td>808,556</td>
<td>898,825</td>
</tr>
<tr>
<td>Kelantan</td>
<td>893,753</td>
<td>1,207,684</td>
<td>1,313,014</td>
</tr>
<tr>
<td>Eastern Region</td>
<td>2,233,161</td>
<td>3,097,388</td>
<td>3,500,215</td>
</tr>
<tr>
<td>Peninsular Malaysia</td>
<td>11,426,613</td>
<td>14,797,616</td>
<td>18,523,632</td>
</tr>
<tr>
<td>% of Peninsular Malaysia</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>East Malaysia</td>
<td>2,318,628</td>
<td>3,582,039</td>
<td>4,751,058</td>
</tr>
<tr>
<td>MALAYSIA</td>
<td>13,745,241</td>
<td>18,379,655</td>
<td>23,274,690</td>
</tr>
</tbody>
</table>

Population Distribution and Basic Demographic Characteristics, Census 2000, DOS
Note: AAGR – Average Annual Growth Rate

ii. Urban-Rural Population

The criteria adopted in the population census allows for the differentiation of urban and rural communities. The pattern of change evident in the Table 3.2 highlights the changing character of Malaysia’s economy associated with the emergence of the manufacturing and lately, the services sectors.
Using the percentage of population residing in urban areas as a measure of development, Malaysia’s transformation from rural-based to urban-based economy is reflected in this change. The 1970, Malaysia’s urban population accounted for 28.4% of total population. By 1980 this had risen to 34.2% and to 50.7% in 1991. For the Peninsular, this figure was 54.3% or 7.7 million people in 1991.

**Table 3.2: Population in Urban and Rural Areas by Region, 1991, 2000 and 2020**

<table>
<thead>
<tr>
<th>Region</th>
<th>1991</th>
<th>2000</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Urban</td>
<td>Rural</td>
<td>Urban</td>
</tr>
<tr>
<td>Northern Region</td>
<td>2,277,177</td>
<td>51.4</td>
<td>2,150,525</td>
</tr>
<tr>
<td>Central Region</td>
<td>3,358,736</td>
<td>72.4</td>
<td>1,282,983</td>
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<tr>
<td>Southern Region</td>
<td>989,910</td>
<td>47.8</td>
<td>1,079,830</td>
</tr>
<tr>
<td>Eastern Region</td>
<td>1,053,324</td>
<td>35.2</td>
<td>1,939,238</td>
</tr>
<tr>
<td>Peninsular Malaysia</td>
<td>7,679,147</td>
<td>54.3</td>
<td>6,452,576</td>
</tr>
</tbody>
</table>

Source: (1) 1991 - Preliminary Count Report for Urban and Rural Areas, Census 2000, DOS  
(2) 2000 - Population Distribution and Basic Demographic Characteristics, Census 2000, DOS

The pattern in 2000 for the country as a whole showed 62.0% residing in urban areas while for the Peninsular this has risen to 65.4% or 12.1 million people.

On a regional basis, the Central Region which registered with the highest percentage of urban residents in 1991 at 72.4% also recorded the highest percentage in 2000 at 84.0%.

While the Eastern Region recorded the lowest levels of urbanisation (which covers the highlands and eastern coastal plain lands) the pattern of increasing urbanisation was also noted where the urban residents rose from 35.2% in 1991 to 40.8% in 2000.

This pattern of increasing urbanisation of the population is expected to continue up to 2020 when it is anticipated at least 75.0% of the Peninsula population will reside in urban areas. **Table 3.3** shows the urban-rural population by 5 year interval 2000-2020.

On the other hand, Malaysia’s rural population has declined from 6.45 million or 45.7% in 1991 to 6.40 million or 34.6% in 2000. While still managing a small absolute growth in numbers to 6.69 million persons, its relative share is expected to fall to around 25.0% by 2020.

The implications arising from this change in the rural areas will be rising incomes and rising productivity as rural enterprises adjust to the reduced availability of local and indeed, foreign labour. For the small holders, in particular, shifts to planting of less labour intensive crops is also expected with agro forestry offering attractive sustainable yields as a medium-long term alternative to oil palm, rubber and other high maintenance crops.
## Table 3.3: Urban – Rural Population (‘000), 2000 - 2020

<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Urban</td>
<td>Rural</td>
<td>Total</td>
<td>Urban</td>
<td>Rural</td>
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<tr>
<td>Perlis</td>
<td>70.1</td>
<td>134.4</td>
<td>204.5</td>
<td>89.4</td>
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<tr>
<td>Kedah</td>
<td>648.0</td>
<td>1,001.8</td>
<td>1,649.8</td>
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<td>1,015.7</td>
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<tr>
<td>Pulau Pinang</td>
<td>1,052.1</td>
<td>261.4</td>
<td>1,313.4</td>
<td>1,209.7</td>
<td>242.5</td>
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<td>Perak</td>
<td>1,203.9</td>
<td>847.4</td>
<td>2,051.2</td>
<td>1,424.8</td>
<td>757.2</td>
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<tr>
<td>Northern Region</td>
<td>2,974.0</td>
<td>2,244.9</td>
<td>5,218.9</td>
<td>3,493.1</td>
<td>2,145.7</td>
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<tr>
<td>Selangor</td>
<td>3,675.5</td>
<td>521.4</td>
<td>4,188.9</td>
<td>4,699.0</td>
<td>370.0</td>
</tr>
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<td>W.P. Kuala Lumpur</td>
<td>3,379.3</td>
<td>-</td>
<td>3,379.3</td>
<td>1,581.0</td>
<td>-</td>
</tr>
<tr>
<td>Negeri Sembilan</td>
<td>459.3</td>
<td>400.7</td>
<td>859.9</td>
<td>528.3</td>
<td>379.4</td>
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<td>Melaka</td>
<td>427.3</td>
<td>208.5</td>
<td>635.8</td>
<td>512.8</td>
<td>682.1</td>
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<td>Central Region</td>
<td>5,933.3</td>
<td>1,130.6</td>
<td>7,063.9</td>
<td>7,321.1</td>
<td>917.6</td>
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<tr>
<td>Johor</td>
<td>1,787.5</td>
<td>953.1</td>
<td>2,740.6</td>
<td>2,086.8</td>
<td>933.2</td>
</tr>
<tr>
<td>Southern Region</td>
<td>1,787.5</td>
<td>953.1</td>
<td>2,740.6</td>
<td>2,086.8</td>
<td>933.2</td>
</tr>
<tr>
<td>Pahang</td>
<td>540.9</td>
<td>747.5</td>
<td>1,288.4</td>
<td>600.6</td>
<td>764.5</td>
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<tr>
<td>Terengganu</td>
<td>437.5</td>
<td>461.3</td>
<td>898.8</td>
<td>507.5</td>
<td>505.5</td>
</tr>
<tr>
<td>Kelantan</td>
<td>448.9</td>
<td>864.1</td>
<td>1,313.0</td>
<td>494.7</td>
<td>853.3</td>
</tr>
<tr>
<td>Eastern Region</td>
<td>1,427.2</td>
<td>2,073.0</td>
<td>3,500.2</td>
<td>1,602.8</td>
<td>2,123.3</td>
</tr>
<tr>
<td>Peninsular Malaysia</td>
<td>12,122.1</td>
<td>6,401.5</td>
<td>18,523.6</td>
<td>14,503.8</td>
<td>6,119.8</td>
</tr>
</tbody>
</table>


**National Physical Plan**

- [Plan Context](#)
3.2.2 Economic Performance

i. National Gross Domestic Product (GDP)

The positive and negative impacts of globalisation upon Malaysia’s economy are clearly reflected in the country’s GDP for the years 1990 to 2000. As Figure 3.2 illustrates the country has enjoyed an average annual growth rate of 7.0%, with a high of 9.5% for the period 1990-1995 dropping to 4.7% for 1996-2000 due, in part, to the international monetary crisis.

For the period 2000 to 2020, at a national level the government projects an average annual growth rate of 7.0% per annum. The basis of this growth (subject to a continued relatively stable world economy) relies upon the private sector’s adoption of knowledge as a key factor in production and the continuing integration and blurring of the economic sectors as new info technologies and knowledge workers evolve from the old “production type” economy, particularly, in the services and manufacturing sectors.

Figure 3.2: GDP Growth for Peninsular Malaysia, 1990-2020

<table>
<thead>
<tr>
<th>Year</th>
<th>Malaysian GDP (RM bil)</th>
<th>Peninsular Malaysia GDP (RM bil)</th>
<th>AAGR (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>106.0</td>
<td>88.4</td>
<td>4.8%</td>
</tr>
<tr>
<td>1995</td>
<td>166.6</td>
<td>138.1</td>
<td>7.5%</td>
</tr>
<tr>
<td>2000</td>
<td>218.6</td>
<td>174.6</td>
<td>6.1%</td>
</tr>
<tr>
<td>2005</td>
<td>313.4</td>
<td>251.8</td>
<td>7.7%</td>
</tr>
<tr>
<td>2010</td>
<td>452.7</td>
<td>364.9</td>
<td>6.5%</td>
</tr>
<tr>
<td>2015</td>
<td>617.3</td>
<td>500.0</td>
<td>6.5%</td>
</tr>
<tr>
<td>2020</td>
<td>845.3</td>
<td>685.0</td>
<td>6.5%</td>
</tr>
</tbody>
</table>

(2) Malaysia GDP 2000 extracted from 8MP, Table 2-6, p 35
(3) Population 2000 extracted from Population Distribution and Basic Demographic Characteristics, Census 2000

Source: (1) 8MP
(3) Population Distribution and Basic Demographic Characteristics, Census 2000
ii. Regional Patterns of GDP Contribution

The contributions to GDP by regions and states illustrated in Figure 3.3 and Table 3.4 show significant differences that can substantially be attributed to the economic history of the country and its topographical character.

### Table 3.4: GDP by States, 2001–2020

<table>
<thead>
<tr>
<th>State / Region</th>
<th>State GDP RM million in 1987 Prices</th>
<th>Average Annual Growth (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perlis</td>
<td>1,362</td>
<td>1,940</td>
</tr>
<tr>
<td>Kedah</td>
<td>9,087</td>
<td>13,041</td>
</tr>
<tr>
<td>Pulau Pinang</td>
<td>17,314</td>
<td>24,904</td>
</tr>
<tr>
<td>Perak</td>
<td>17,153</td>
<td>24,371</td>
</tr>
<tr>
<td>Northern Region</td>
<td>44,916</td>
<td>64,256</td>
</tr>
<tr>
<td>Selangor</td>
<td>44,708</td>
<td>64,743</td>
</tr>
<tr>
<td>WP Kuala Lumpur</td>
<td>25,968</td>
<td>37,272</td>
</tr>
<tr>
<td>Negeri Sembilan</td>
<td>6,776</td>
<td>9,562</td>
</tr>
<tr>
<td>Melaka</td>
<td>6,148</td>
<td>8,743</td>
</tr>
<tr>
<td>Central Region</td>
<td>83,600</td>
<td>120,320</td>
</tr>
<tr>
<td>Johor</td>
<td>23,425</td>
<td>33,950</td>
</tr>
<tr>
<td>Southern Region</td>
<td>23,425</td>
<td>33,950</td>
</tr>
<tr>
<td>Pahang</td>
<td>8,250</td>
<td>11,917</td>
</tr>
<tr>
<td>Terengganu</td>
<td>12,746</td>
<td>17,937</td>
</tr>
<tr>
<td>Kelantan</td>
<td>5,061</td>
<td>6,987</td>
</tr>
<tr>
<td>Eastern Region</td>
<td>26,057</td>
<td>36,841</td>
</tr>
<tr>
<td>Pen. Malaysia</td>
<td>177,998</td>
<td>255,367</td>
</tr>
</tbody>
</table>

Note: GDP at 1987 prices for 2000, 2005 and 2010 are extracted from BMP and OPP3. Beyond 2010, GDP estimates are based on national growth targets and assumed distribution among states.

Source: (1) BMP, Table 5-3, p 139
(2) OPP3, Table 4-9, p 110

The economic significance of the Central Region which contributed 47.0% to GDP in 2000 cannot be underestimated. This needs to be compared to Northern Region, which contributed 25.4% and the Southern Region, which added a further 13.4% for the same year.

State contributions to GDP for both existing and projected figures exhibits even further variations with Selangor and Wilayah Persekutuan Kuala Lumpur the most significant contributors at almost 40.0%. The relative contribution from the far northern and east coast states by comparison is generally below 5.0% except for Terengganu at 7.0% which has oil production as a resource.

While this relative disparity in contribution to GDP is of concern to policy planners at a macro level, the economy operates as a unit. Measures to enhance the performance of the east coast states thus needs to focus on their comparative advantages which are
land, culture and environments rather than reactive programmes for relocation and dispersal of enterprises which would seriously affect the image of the country and the viability of affected economic enterprises.

iii. Sectoral Contributions and Projections

Over the period 1990-2000 and as projected through the 2020, while changes in the relative contribution of the three sectors are expected, broad based economic growth is to continue (Figure 3.3).

![Figure 3.3: Sectoral GDP Contribution and Growth, 1990-2020](image)

The agriculture sector is experiencing the most significant changes in that its trend in contribution to GDP is expected to continue to fall from its 1990 level of 25.6% to its 2000 level of 14.7% and to fall further to 4.9% by 2020. This structural change needs to be managed through a variety of programmes such as consolidation of small holder lots into

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Note: Estimated from unpublished data, EPU 2000

Source: (1) 8MP
(2) Unpublished data, EPU 2000
more viable larger production units, agricultural extension services and social and employment readjustment courses.

The manufacturing sector is expected to also undergo structural changes but these are expected to be substantially limited to the firms themselves as they adjust to the introduction of higher levels of new technology and use of information technologies. These changes are likely to result in a shift in the character of employment categories with an increasing demand for skilled and professional workers. Meeting the needs of this shortfall will involve the universities and colleges as well as the creation of special skills training institutes.

Other programmes to facilitate the enhancement of the manufacturing sector will involve promotion of Research and Development (R&D), creation of support services, utilization of ICT, strengthening of the industrial clusters and support of small medium enterprises (SME).

The tertiary sector is expected to take up the shortfall from the agricultural sector by increasing its share from a year 2000 share of 50.2% to 58.0% by 2020. The main contributors to growth of this sector are expected to come from tourists attracted by leisure and business opportunities offered in shopping, meetings, conventions, exhibitions, culture, nature and eco-tourism as well as healthcare and higher education. Other sub sectors expected to contribute to the enhancement of the sector are finance and transport.

A wide range of programmes have already been established as reflected in sectoral master plans such as tourism, finance and improvements to ports and shipping. Full realization of the benefits of these programmes will require closer coordination and integration of programmes, particularly in the tourism sector.

At the state level, considerable variations exist between relative contributions to both state and national level of GDP. This is illustrated in Figure 3.4, state sectoral share to GDP 2000 where the advanced states of Selangor and Wilayah Persekutuan's economy contrasts with the three east coast states.

Projected state sectoral shares through to 2020 further reflect the structural changes and challenges for the future, particularly for Terengganu and Kelantan, where the need for agricultural readjustment, development of products, niche market and downstream agro product development are necessary. The tertiary sector offers these two states considerable potential in the form of culture, beach island and nature tourism. Development of skills centres to support these industries will be essential for the full potential to be realized (Table 3.5).
FIGURE 3.4: STATE SECTORAL SHARE TO GDP, 2000

<table>
<thead>
<tr>
<th>Economic Sectors</th>
<th>Economic Regions</th>
<th>GDP RM million at 1987 prices</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary</td>
<td>Central</td>
<td>RM 45 000 million</td>
</tr>
<tr>
<td>Secondary</td>
<td>Eastern</td>
<td>RM 30 000 million</td>
</tr>
<tr>
<td>Tertiary</td>
<td>Northern</td>
<td>RM 15 000 million</td>
</tr>
</tbody>
</table>

Source: Unpublished data, EPAL, 2000. BMP
Table 3.5: Projected State GDP Sectoral Shares (%), 2001-2020

<table>
<thead>
<tr>
<th>Year</th>
<th>Perlis</th>
<th>Kedah</th>
<th>Pulau Pinang</th>
<th>Perak</th>
<th>Selangor</th>
<th>WP Kuala Lumpur</th>
<th>Negeri Sembilan</th>
<th>Melaka</th>
<th>Johor</th>
<th>Pahang</th>
<th>Terengganu</th>
<th>Kelantan</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Primary (%)</td>
<td>Secondary (%)</td>
<td>Tertiary (%)</td>
<td>Primary (%)</td>
<td>Secondary (%)</td>
<td>Tertiary (%)</td>
<td>Primary (%)</td>
<td>Secondary (%)</td>
<td>Tertiary (%)</td>
<td>Primary (%)</td>
<td>Secondary (%)</td>
<td>Tertiary (%)</td>
</tr>
<tr>
<td>2000</td>
<td>12.6</td>
<td>4.3</td>
<td>33.3</td>
<td>22.5</td>
<td>32.9</td>
<td>54.1</td>
<td>62.8</td>
<td>59.2</td>
<td>53.5</td>
<td>28.2</td>
<td>52.8</td>
<td>63.9</td>
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<td>2020</td>
<td>18.3</td>
<td>8.1</td>
<td>22.5</td>
<td>26.2</td>
<td>65.7</td>
<td>55.2</td>
<td>55.2</td>
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<td>56.3</td>
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<td>18.7</td>
<td>39.4</td>
<td>25.0</td>
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<td>12.4</td>
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<td>79.5</td>
<td>79.5</td>
<td>67.4</td>
<td>79.5</td>
<td>67.4</td>
<td>79.5</td>
<td>79.5</td>
</tr>
</tbody>
</table>

Note: (1) The shares of economic shares to GDP by states are based on Table 1, unpublished GDP by sectors from EPU for the period 2001–2010. GDP estimates are not adjusted for bank charges and import duties.
(2) Estimates for 2011-2020 are based on trends in sectoral growth for period 2001-2010 and adjusted for implied of sectoral development at national level.

Source: (1) Table 1, unpublished data, EPU 2001-2010

iv. Malaysian Employment

The national labour force grew by 3.1% per annum from 7.042 million in 1990 to 9.572 million in 2000. Total employment during the corresponding periods was 6.686 million and 9.271 million respectively, an increase of 3.3% per annum. This growth in labour force was accompanied by a small increase in the employment population ratio and a more significant increase to 1.9 in the worker-household ratio.

As the growth pattern suggests, job creation (employment against labour force), resulted in a reduction of the unemployment rate from 5.1% in 1990 to 3.1% in 2000 or from 356,000 to 301,300 (Table 3.6).


<table>
<thead>
<tr>
<th></th>
<th>1990</th>
<th>1995</th>
<th>2000</th>
<th>AAGR (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labour Force ('000)</td>
<td>7,042.0</td>
<td>8,254.0</td>
<td>9,572.5</td>
<td>3.23</td>
</tr>
<tr>
<td>Total Employment ('000)</td>
<td>6,686.0</td>
<td>7,999.2</td>
<td>9,271.2</td>
<td>3.65</td>
</tr>
<tr>
<td>Employment-Population Ratio</td>
<td>0.37</td>
<td>0.39</td>
<td>0.40</td>
<td>-</td>
</tr>
<tr>
<td>Workers-household Ratio</td>
<td>1.43</td>
<td>1.78</td>
<td>1.89</td>
<td>-</td>
</tr>
<tr>
<td>Unemployment ('000)</td>
<td>356.0</td>
<td>254.8</td>
<td>301.3</td>
<td>-</td>
</tr>
<tr>
<td>Unemployment Rate (%)</td>
<td>5.1</td>
<td>3.1</td>
<td>3.1</td>
<td>-</td>
</tr>
</tbody>
</table>

Source: 7MP and 8MP
In terms of employment by occupational group there was an increase in the demand for workers who are highly skilled and educated, due to the strategic shift towards higher value-added activities with capital intensity and the use of new technology (Table 3.7). The fastest growing occupations were in the professional and technical, and the administrative and managerial categories during the 1991-2000 period.

Table 3.7: Malaysia : Employment ('000) by Occupational Groups, 1990, 1995 and 2000

<table>
<thead>
<tr>
<th>Occupational Group</th>
<th>1990 ('000)</th>
<th></th>
<th>1990 (%)</th>
<th></th>
<th>2000 ('000)</th>
<th></th>
<th>2000 (%)</th>
<th></th>
<th>2010 ('000)</th>
<th></th>
<th>2010 (%)</th>
<th></th>
<th>2020 ('000)</th>
<th></th>
<th>2020 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional &amp; Technical Workers</td>
<td>586</td>
<td>8.8</td>
<td>1,020</td>
<td>11.0</td>
<td>1,405</td>
<td>11.8</td>
<td>2,007</td>
<td>13.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Administrative &amp; Managerial Workers</td>
<td>164</td>
<td>2.4</td>
<td>389</td>
<td>4.2</td>
<td>429</td>
<td>3.6</td>
<td>639</td>
<td>4.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clerical &amp; Related Workers</td>
<td>653</td>
<td>9.8</td>
<td>1,029</td>
<td>11.1</td>
<td>1,191</td>
<td>10.0</td>
<td>1,502</td>
<td>10.1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sales Workers</td>
<td>769</td>
<td>11.5</td>
<td>1,020</td>
<td>11.0</td>
<td>1,727</td>
<td>14.5</td>
<td>2,260</td>
<td>15.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Service Workers</td>
<td>778</td>
<td>11.6</td>
<td>1,094</td>
<td>11.8</td>
<td>1,620</td>
<td>13.6</td>
<td>2,171</td>
<td>14.6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agricultural Workers</td>
<td>1,846</td>
<td>27.6</td>
<td>1,678</td>
<td>18.1</td>
<td>1,846</td>
<td>15.5</td>
<td>1,636</td>
<td>11.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Production &amp; Related Workers</td>
<td>1,891</td>
<td>28.3</td>
<td>3,041</td>
<td>32.8</td>
<td>3,692</td>
<td>31.0</td>
<td>4,654</td>
<td>31.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>6,686</td>
<td>100.0</td>
<td>9,271</td>
<td>100.0</td>
<td>11,910</td>
<td>100.0</td>
<td>14,870</td>
<td>100.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: 7MP and 8MP

The basis for the rapid urban growth is reflected in the reduction of agricultural workers where for the period 1990 to 2000 it experienced a 9.5% decline in category share from 27.6% in 1990; a trend expected to continue to 2020, albeit at a slower rate where only 11.0% will be employed in this sector.

The emerging change to a knowledge economy is also reflected in the absolute and percentage increases for professional and technical workers where a doubling of workers per decade is expected with the percentage increase rising from 8.8% in 1990 to 13.5% in 2020. A parallel rise in service and sales workers from around 23.0% in 1990 to 30.0% in 2020 also reflects the changing base of Malaysia’s economy.

3.2.3 Land Use Pattern

i. Land Use Categories

The present land use pattern is a product of the country’s physical, historical and socio-economic environments.
Peninsular Malaysia Land Use 2001 is categorised into four major land uses:  

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Area (ha)</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Built-up areas</td>
<td>437,090</td>
<td>3.3%</td>
</tr>
<tr>
<td>Agriculture</td>
<td>6,668,730</td>
<td>50.6%</td>
</tr>
<tr>
<td>Forests</td>
<td>5,844,890</td>
<td>44.4%</td>
</tr>
<tr>
<td>Water Bodies</td>
<td>230,930</td>
<td>1.7%</td>
</tr>
</tbody>
</table>

**Peninsular Malaysia Land Area** 13,181,640 ha. 100.0%

Notes:
1. Existing Land use distribution is based on the DOA Land Cover Map, 1991 (digital data). Statistical data discussed in the various NPP Technical Reports (e.g. Global Framework and Macro Economy Technical Report, 2001 – Chapter 4.0: Primary Sector, Environmental and Natural Resources Technical Report, 2001 are based on latter publications and data from DOA and DOF respectively.
2. Agriculture use includes the category ‘other’ uses such as vacant and grass land as identified in the Global Framework and Macro Economy Technical Report, 2001
3. Inclusive of wetlands.
4. Water Bodies includes lands identified as ‘ex-mining’.
5. Land area estimations are to the nearest 10 ha.

**ii. Regional Patterns in Distribution of Land Use**

The overall land use pattern, particularly when the percentage of built-up areas and agricultural areas are considered, vividly illustrates the differences between the states in the Central Region and the states in the Northern and Eastern Region.

Superficial assessment of development status based on percentages of built-up areas compared to agriculture land however needs to take account of the relative size of each state and of the significant forest acreages of the three east coast states (Pahang, Terengganu and Kelantan). This is underlined by the fact that the highland spine, which is substantially unsuitable for development, traverses these three states. The impression of imbalance in the land use pattern between the West Coast and the East Coast is hence a reflection not so much of different levels of development but of different terrain conditions (Table 3.8 and Figure 3.5)

**a. Built-up Areas**

Built-up areas are defined in the NPP as areas under predominantly urban use but comprising a variety of land uses such as residential, commercial, industrial and institutional uses together with supporting facilities such as roads, public utilities, open spaces, parks and vacant lands.

Existing built up areas account for only 437,090 ha. or 3.3% of total Peninsular Malaysia, and of these, nearly 45.0% (196,249 ha.) are in the Central Region where Kuala Lumpur, the municipalities of Selangor, Seremban and Melaka are located.
Table 3.8: Land Use for Peninsular Malaysia, 2001 (ha.)

<table>
<thead>
<tr>
<th>State / Region</th>
<th>Land Area (ha.)</th>
<th>Built Up</th>
<th>Agriculture</th>
<th>Forest</th>
<th>Water Bodies</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>Perlis</td>
<td>8,980</td>
<td>11.0</td>
<td>61,359</td>
<td>75.4</td>
<td>10,169</td>
</tr>
<tr>
<td>%</td>
<td>2.1</td>
<td>0.9</td>
<td>12.5</td>
<td>921</td>
<td></td>
</tr>
<tr>
<td>Kedah</td>
<td>34,008</td>
<td>3.6</td>
<td>565,929</td>
<td>59.8</td>
<td>340,655</td>
</tr>
<tr>
<td>%</td>
<td>7.8</td>
<td>8.5</td>
<td>36.0</td>
<td>6,160</td>
<td></td>
</tr>
<tr>
<td>Pulau Pinang</td>
<td>29,565</td>
<td>28.3</td>
<td>45,289</td>
<td>43.4</td>
<td>24,383</td>
</tr>
<tr>
<td>%</td>
<td>6.6</td>
<td>0.7</td>
<td>23.4</td>
<td>5,118</td>
<td></td>
</tr>
<tr>
<td>Perak</td>
<td>42,954</td>
<td>2.0</td>
<td>939,797</td>
<td>44.8</td>
<td>1,004,716</td>
</tr>
<tr>
<td>%</td>
<td>9.8</td>
<td>14.1</td>
<td>47.9</td>
<td>109,121</td>
<td></td>
</tr>
<tr>
<td>Northern Region</td>
<td>115,507</td>
<td>3.6</td>
<td>1,612,374</td>
<td>49.9</td>
<td>1,379,923</td>
</tr>
<tr>
<td>%</td>
<td>26.4</td>
<td>24.2</td>
<td>42.7</td>
<td>121,320</td>
<td></td>
</tr>
<tr>
<td>Selangor</td>
<td>131,106</td>
<td>16.5</td>
<td>390,179</td>
<td>49.0</td>
<td>257,588</td>
</tr>
<tr>
<td>%</td>
<td>30.0</td>
<td>5.9</td>
<td>32.4</td>
<td>16,908</td>
<td></td>
</tr>
<tr>
<td>W.P. Kuala Lumpur</td>
<td>18,158</td>
<td>63.5</td>
<td>9,848</td>
<td>34.4</td>
<td>219</td>
</tr>
<tr>
<td>%</td>
<td>42.3</td>
<td>0.1</td>
<td>0.8</td>
<td>366</td>
<td></td>
</tr>
<tr>
<td>Negeri Sembilan</td>
<td>29,724</td>
<td>4.5</td>
<td>448,757</td>
<td>67.5</td>
<td>183,461</td>
</tr>
<tr>
<td>%</td>
<td>6.8</td>
<td>6.7</td>
<td>27.6</td>
<td>3,372</td>
<td></td>
</tr>
<tr>
<td>Melaka</td>
<td>17,261</td>
<td>10.4</td>
<td>139,194</td>
<td>84.1</td>
<td>8,596</td>
</tr>
<tr>
<td>%</td>
<td>3.9</td>
<td>2.1</td>
<td>5.2</td>
<td>364</td>
<td></td>
</tr>
<tr>
<td>Central Region</td>
<td>196,249</td>
<td>11.9</td>
<td>987,978</td>
<td>59.7</td>
<td>449,864</td>
</tr>
<tr>
<td>%</td>
<td>44.9</td>
<td>14.8</td>
<td>27.2</td>
<td>21,010</td>
<td></td>
</tr>
<tr>
<td>Johor</td>
<td>65,379</td>
<td>3.4</td>
<td>1,378,695</td>
<td>72.3</td>
<td>438,686</td>
</tr>
<tr>
<td>%</td>
<td>15.0</td>
<td>20.7</td>
<td>23.0</td>
<td>24,933</td>
<td></td>
</tr>
<tr>
<td>Southern Region</td>
<td>65,379</td>
<td>3.4</td>
<td>1,378,695</td>
<td>72.3</td>
<td>438,686</td>
</tr>
<tr>
<td>%</td>
<td>15.0</td>
<td>20.7</td>
<td>23.0</td>
<td>24,933</td>
<td></td>
</tr>
<tr>
<td>Pahang</td>
<td>27,382</td>
<td>0.8</td>
<td>1,471,212</td>
<td>41.0</td>
<td>2,075,952</td>
</tr>
<tr>
<td>%</td>
<td>6.3</td>
<td>22.1</td>
<td>57.8</td>
<td>17,758</td>
<td></td>
</tr>
<tr>
<td>Terengganu</td>
<td>23,669</td>
<td>1.8</td>
<td>564,121</td>
<td>43.6</td>
<td>665,895</td>
</tr>
<tr>
<td>%</td>
<td>5.4</td>
<td>8.5</td>
<td>51.4</td>
<td>41,132</td>
<td></td>
</tr>
<tr>
<td>Kelantan</td>
<td>8,906</td>
<td>0.6</td>
<td>654,346</td>
<td>43.5</td>
<td>834,567</td>
</tr>
<tr>
<td>%</td>
<td>2.0</td>
<td>9.8</td>
<td>55.5</td>
<td>4,782</td>
<td></td>
</tr>
<tr>
<td>Eastern Region</td>
<td>59,957</td>
<td>0.9</td>
<td>2,689,679</td>
<td>42.1</td>
<td>3,576,414</td>
</tr>
<tr>
<td>%</td>
<td>13.7</td>
<td>40.3</td>
<td>56.0</td>
<td>63,672</td>
<td></td>
</tr>
<tr>
<td>Peninsular Malaysia</td>
<td>437,092</td>
<td>3.3</td>
<td>6,668,726</td>
<td>50.6</td>
<td>5,844,887</td>
</tr>
<tr>
<td>%</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

FIGURE 3.5: LAND USE, 2001

- **Built-up Area**
- **Agriculture**
- **Forest**
- **Water Bodies**
- **Highway**
- **Federal Road**
- **State Road**
- **Railway**
- **State Capital**
- **Major River**
The most heavily built-up state is Wilayah Persekutuan Kuala Lumpur with 63.5% of its 28,591 ha in this category. Pulau Pinang is a distant second with 28.3%, while Kelantan and Perlis, at the other end of the spectrum have only 2.0% and 2.1% respectively classed as built-up.

b. Agriculture

Existing agricultural areas, which include areas under crop as well as cleared land, grassed land, unused/vacant land, account for some 6.7 million ha. Department of Agriculture statistics indicate that a total of 4.3 million ha. were under agricultural cultivation in the year 1999.

Included in the agriculture land use category are the 8 designated strategic granary areas:

1. Muda Agricultural Development Authority (MADA)
2. Kemubu Agricultural Development Authority (KADA)
3. IADP Kerian - Sungai Manik
4. IADP Barat Laut Selangor
5. IADP Pulau Pinang
6. IADP Seberang Perak
7. IADP Terengganu Utara (KETARA)
8. IADP Kemasin-Semerak

These areas together account for 311,912 ha. of land.

Oil palm plantations, which are heavily concentrated in Johor, Negeri Sembilan, Selangor, Melaka, Pahang and Terengganu are the largest use in the agriculture category accounting for at least 2 million ha. Rubber plantations which occupy a further 1.2 million ha. are generally located in Melaka, Negeri Sembilan and Perak.

For the smaller states such as Perlis and Melaka while agriculture dominates the land use at 75.4% and 84.1% respectively, the acreages devoted to this use are relatively small (Perlis 61,359 ha.) compared to states such as Pahang (1,471,212 ha.) and Johor (1,378,695 ha.) which account for 22.1% and 20.7% respectively of the national acreages.

c. Forest

The forest category comprises forests and wetlands and covers approximately 5.9 million ha. or approximately 44.4% of total land area in Peninsular Malaysia.

It is made up of 4.85 million ha. of Permanent Forest Estate (PFE), 0.77 million ha. Protected Areas (0.1 million ha. within PFE), and 0.39 million ha. state land forest. The PFE which accounts for 82.0% of the total forest cover is mainly made
up of inland forest (4.5 million ha.), peat swamp forest and mangrove forest (278,900 ha.) and plantation forest (74,400 ha.).

The relatively large size of the three east coast states is reflected in the acreages under forest and wetlands. These three states account for 3.5m Ha or 61.0% of all forest land area alone. On the West Coast only Perak has significant acreages under forestry with over 1.0 million Ha or 47.9%.

d. Water Bodies

Water bodies, which includes the area occupied by major rivers, reservoirs and ponds, account for about 1.7% of Peninsular Malaysia. This category includes ex-mining ponds which are strongly represented in Perak.

The relatively small areas ascribed to ‘water bodies’ for Melaka (0.2%), Negeri Sembilan (1.5%), Perlis (0.4%) and Kedah (2.7%) reflect the findings of technical studies that these states are likely to be subject to ‘water stress’.

Selangor and Pulau Pinang have also been identified as falling into this same category. The areas ascribed to water bodies at 7.3% and 4.3% of the two states’ area respectively, is a minuscule 16,908 ha. and 4,448 ha. compared to the 42,915 ha. for Perak and 38,952 ha. for Terengganu.

iii. Current Settlement Pattern

The current settlement patterns are a product of the country’s past and present economic regime where the various modes of production determines the geographical spread of activities and hence of people.

With the passage of time, changes in the political settings, in consumer preferences, lifestyle and technology result in new and evolving economic circumstances. These changes lead to changes in the centres of production and hence in settlement patterns. Such changes take place slowly because of inertia due to social factors, a general reluctance of people to adjust and of the desire for full recovery of the costs of infrastructure and other heavy investments.

The emergence of a new economic regime does not necessarily wipe out the settlement pattern generated by a previous regime but in some circumstances modifies and builds upon it. Changes in the economic regime can however occur very rapidly, a process likely to be enhanced with the rapid spread and adoption of technology. This process has and is likely to continue to impact upon the present settlement pattern in Peninsular Malaysia.

The present pattern for the Peninsula includes a dominant zone of relatively well-developed cities and towns, plantations and commercial farms along the West Coast from the foothills of the central range to the coast. The larger cities and towns are mainly engaged in manufacturing and the provision of services. The smaller towns provide retail
services and government-sponsored services, generally to the public, with scattered incidence of manufacturing. However, there remain pockets of subsistence farming within this zone as well as a concentration of such subsistence farming within the northern periphery of the zone in eastern Kedah and in Perlis.

There is no clear zone to the east of the main range of development and human settlements. The population centres are generally scattered but with concentrations in the Kelantan delta, the Terengganu estuary area and the western foothills of Pahang, along the East Coast and along the rivers. Most of the settlements still engage in semi subsistence farming. Within the same area are also the more recently settled swaths of the erstwhile Regional Development Authorities of southern Kelantan, central Terengganu, Jengka, south-east Pahang and south-east Johor.

Industrial activities have penetrated the Kuantan and southern Terengganu area as well as central Pahang. Tourism has become important to the coastal zone and offshore islands. However, in general the eastern half of the Peninsula is less well developed than its western half.

An infrastructure of roads, rails, ports and airports support the settlement system. Generally, however, the communication and transportation network is better developed on the West Coast than on the East Coast. A highway runs the length of the West Coast zone while a highway to the East Coast is now a reality. A railway also runs the length of the West Coast, while the railway on the East Coast runs only half its length and through the middle of the country rather than along the coast. The two major ports and Kuala Lumpur International Airport (KLIA) are located on the West Coast. The infrastructure system reflects the economic dominance of the West Coast.

Over the past few decades Peninsular Malaysia has been experiencing rapid urbanisation with the proportion of the Peninsula population living in urban areas increasing from 26.7% in 1970 to 65.4% in 2000. Not only has the population shifted towards urban areas but the urban population itself has also become concentrated into a small number of conurbations, namely the towns around Kuala Lumpur, George Town and Johor Bahru. These three conurbations combined account for almost 40.0% of the Peninsular population and is likely to increase to between half and three-quarters by 2020.

Urbanisation is characterised not only by rural-urban migration but migration directly to the conurbations. Population in the villages is being depleted. Although most villages retain their older residents, remoter villages are likely to atrophy and disappear. With a few notable exceptions, major and minor urban centres outside the conurbations are also losing their share of the urban population to the conurbations.

Between the populated areas of the two coasts remains an empty heart of unpopulated or very sparsely populated jungle, covering the main range and the eastern range. This is an area that is not only a sanctuary for the rich wildlife of the country but a heritage that should perhaps be cherished by Malaysians (Figure 3.5).
iv. **Urban Growth Conurbations and Centres**

To complement the economic assessment of growth, an urban population component was added which concluded in designation of settlement according to a functional hierarchy. This hierarchy identified seven levels of urban settlement of which four have been incorporated into the macro level NPP assessment. The hierarchy by functional center and population size is detailed in **Table 3.9**.

**Table 3.9: Proposed Hierarchy of Conurbations 2020**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>National Growth Conurbation</td>
<td>Kuala Lumpur</td>
<td>4,815.4</td>
<td>8,457.7</td>
<td>3,642.3</td>
<td>51.7</td>
</tr>
<tr>
<td>Regional Growth Conurbations</td>
<td>George Town</td>
<td>1,266.8</td>
<td>2,424.5</td>
<td>1,157.7</td>
<td>14.8</td>
</tr>
<tr>
<td></td>
<td>Johor Bahru</td>
<td>1,013.0</td>
<td>1,836.6</td>
<td>823.6</td>
<td>11.2</td>
</tr>
<tr>
<td></td>
<td>Kuantan</td>
<td>317.0</td>
<td>637.9</td>
<td>320.9</td>
<td>3.9</td>
</tr>
<tr>
<td>Sub-total Main Conurbations</td>
<td></td>
<td>7,412.2</td>
<td>13,356.7</td>
<td>5,944.5</td>
<td>81.6</td>
</tr>
<tr>
<td>Intermediate (Connective) Growth Conurbations</td>
<td>Ipoh</td>
<td>608.1</td>
<td>1,085.7</td>
<td>477.6</td>
<td>6.6</td>
</tr>
<tr>
<td></td>
<td>Melaka</td>
<td>395.5</td>
<td>667.0</td>
<td>271.5</td>
<td>4.1</td>
</tr>
<tr>
<td>Urban Growth Centres / Future Conurbations</td>
<td>Kota Bharu</td>
<td>269.9</td>
<td>418.9</td>
<td>149.0</td>
<td>2.6</td>
</tr>
<tr>
<td></td>
<td>Alor Star</td>
<td>252.9</td>
<td>385.3</td>
<td>132.4</td>
<td>2.4</td>
</tr>
<tr>
<td></td>
<td>Kuala Terengganu</td>
<td>272.5</td>
<td>368.8</td>
<td>96.3</td>
<td>2.2</td>
</tr>
<tr>
<td></td>
<td>Kangar</td>
<td>54.4</td>
<td>86.1</td>
<td>31.7</td>
<td>0.5</td>
</tr>
<tr>
<td>Sub-total Other Conurbations</td>
<td></td>
<td>1,853.3</td>
<td>3,011.8</td>
<td>1,158.5</td>
<td>18.4</td>
</tr>
<tr>
<td>Total Conurbations</td>
<td></td>
<td>9,265.5</td>
<td>16,368.5</td>
<td>7,103.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>


a. **National Growth Conurbation : Kuala Lumpur Conurbation**

The Kuala Lumpur Conurbation which encompasses Kuala Lumpur, Putrajaya, Shah Alam, Klang, Nilai and Seremban is proposed as the National Growth Zone. The effective Kuala Lumpur Conurbation encompasses an area of approximately 504,000 ha. stretches from Kuala Selangor in the north to Port Dickson in the south. The Kuala Lumpur Conurbation is to provide for a potential population of 8.46 million or 32.0% of the Peninsular Malaysia population by 2020 (**Figure 3.6**).

A major issue for the Kuala Lumpur conurbation, given the projected population, is the need for further in-depth studies to address the need for urban land in view of environmental aspects, implications on the quality of life for the conurbation residents and providing for infill and redevelopment of areas within the conurbation. This review should also establish zones of green lungs to provide for identity of communities as well as regional recreational space.
FIGURE 3.6: CONURBATION AND SPECIAL FEATURE TOWNS
b. Regional Growth Conurbation

- George Town Conurbation

This is an area based on Pulau Pinang and adjacent areas in southern Kedah and northern Perak. This conurbation has been referred to as the George Town Conurbation.

In the case of George Town Conurbation, the proposed conurbation area will extend into three states: Pulau Pinang, southern Kedah, and northern Perak.

The George Town Conurbation is expected to provide for a support population of 2.42 million within an area of 150,000 ha. by 2020.

- Johor Bahru Conurbation

The Johor Bahru Conurbation is expected to provide for a population of 1.84 million by 2020 and the area is expected to cover the southern part of the state stretching from Tanjung Pelepas in the west to Pasir Gudang in the east.

- Kuantan Conurbation

The strategic location, infrastructure and comparative advantage has warranted the inclusion of Kuantan in the category Regional Growth Conurbation although on size alone it functions at a lower level. It is expected a Kuantan Conurbation extending into southern Terengganu will emerge with a population of some 0.64 million and that it will function as a focus point for the East Coast growth.

c. Intermediate (Connective) Growth Conurbations

Ipoh and Melaka represent Intermediate (Connective) Growth Conurbations. Ipoh is projected to account for a population of 1.09 million while Melaka is projected to have a population of 0.67 million by year 2020.

In the post-2020 period subject to development of high speed rail connections, Melaka could potentially represent a southern growth (connective) conurbation to the Kuala Lumpur Conurbation.

d. Urban Growth Centres

The remaining state capitals viz. Kota Bahru, Alor Star, Kuala Terengganu and Kangar represent the next layer of the hierarchy with administrative functions of central importance. However many state capitals are not likely to grow economically in the fierce global competitive climate.
e. Future Conurbations

Within the Peninsula context there exist a number of distinct lower order centres which are manufacturing and service centres in their own right. These centres cater not only to the international markets but also to local rural areas. Examples of these well-established towns are Muar-Batu Pahat-Kluang and the emerging centres of Temerloh-Mentakab and Sitiawan-Lumut-Manjung.

These areas have the potential to become the nucleus of the future conurbations.

v. Conurbation Delineation

The urban growth process being substantially private sector initiated is typically undertaken on an ad hoc basis and with non-sequential additions to the existing developed lands. That is, new development is often scattered over an area adjacent to existing urban areas but in discrete and relatively separate schemes. In recognition of this process and the need to rationalize spatial planning, optimise utilization of land for sustainable development, the NPP has identified conceptual edges to the prime urban areas which allows for the identification of the larger functioning economic entity. These areas, referred to as conurbations, include the core urban centre as well as adjoining urban and rural type land areas within a catchment assessed on travel time criteria and physical constraints.

The NPP proposes the use of several basic parameters for the purpose of delineating an edge to a conurbation. The use of designated parameters which have been set at the macro NPP level will guide and ensure an integrated and consistent approach in terms of the future delineation of all conurbations within Peninsular Malaysia.

Parameters taken into consideration in the detailing of the delineation of conurbations have been:

- Committed Development.
- Acceptable travelling time, door to door, for journey to work (Kuala Lumpur conurbation - 45 minutes, Regional Conurbations and other State Capitals - 30 minutes).
- Physical: buildings based on concentration.
- Exclusion of Prime Agricultural Areas (PAA) as designated by the NPP.
- Exclusion of Priority Environmentally Sensitive Areas (ESA) as designated by the NPP.

However, it is presumed that the final delineation of the various conurbation boundaries will be refined to include further parameters which are relevant at the regional, state and local levels. As an example, the NPP distinguishes PAA which are of prime importance at macro national level, whereas the various state level studies may identify ‘agricultural crops’ not located in a PAA which are of utmost importance to the state for conservation and protection and hence an additional parameter must duly be incorporated in the detailed delineation of the conurbation areas.
vi. Small and Intermediate Towns

Towns between 10,000 and 80,000 populations are classed as small and intermediate towns. Except for those located within the sphere of influence of the conurbations and those exceptional groups like Temerloh-Mentakab, Lumut-Sitiawan-Manjung or the somewhat bigger towns like Muar-Batu Pahat-Kluang, most of these towns have languished. This is an impact of the changing structure of the Malaysian economy.

Small and intermediate towns had developed based on trade with and services to their hinterlands, including administrative services. The hinterland economies, based on agriculture, have not expanded. Unless such towns can industrialise as those within the sphere of influence of the conurbations, or expand their economies based on a special feature, their growth will remain constrained. At the same time, because of rising incomes elsewhere, they are faced with the pressure of out-migration of the younger population. The result is generally a population decline, although the total economies of the towns may not decline (Table 3.10).

The process of decline is likely to be slow as the older generation of shopkeepers will cling on to their businesses in spite of the continuous marginalisation that they face. But their children would be unlikely to continue their businesses and are more likely to migrate out, contributing to the flow of population to the conurbations.

On the other hand, small and intermediate towns that are located within the expansion sphere of the conurbations are likely to be absorbed and become satellite towns or suburbs to the main metropolis of the conurbation. They are likely to experience very rapid population growth and dramatic changes in their employment base. In the last decade several such towns, for example, Nilai, Rawang, Balakong, Senai, Ulu Tiram, etc. have gone through this experience. As transportation facilities such as highways and fast train connections from the conurbations extend further out, more small and intermediate towns will benefit from development expansion from the urban cores.

What the small and intermediate towns face is a historical experience that similar towns in other countries that had industrialised had faced. Artificial injection of investments into those towns that are declining does not make for economic efficiency. Government policies should not aim at stemming the demographic changes but in helping the small and intermediate towns become small prosperous places. They are still needed by the countryside even if the countryside can only sustain a limited trading population. Entrepreneurs from these towns may provide the linkage between the urbanised economy of the cities and the rural areas. They should be supported in their agricultural, service and other enterprises. Educational and training programmes to help prepare the young to migrate and integrate into the urban economy would be called for.
### Table 3.10: Small and Intermediate Towns Population Changes

<table>
<thead>
<tr>
<th>Urban Centre</th>
<th>Population</th>
<th>AAGR</th>
<th>Population Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1991</td>
<td>2000</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>JOHOR</strong></td>
<td></td>
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<tr>
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<td>5.43</td>
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<td>18,680</td>
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<td>Ulu Tiram</td>
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<td>9.40</td>
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<td>39,006</td>
<td>5.39</td>
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<tr>
<td>Mersing</td>
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<td>20,094</td>
<td>0.59</td>
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### Population Change Category 5

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### TERENGGANU

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</table>

### West Malaysia Total Urban Population

- **Population 1991**: 7,679,147
- **Population 2000**: 12,122,090
- **AAGR**: 5.20

### West Malaysia Total Population

- **Population 1991**: 14,131,723
- **Population 2000**: 17,470,092
- **AAGR**: 2.50


---

5. **Population Change Category**:

1. Fast Growth
2. Average Growth
3. Slow Growth
4. Stagnant
5. Declining

---

### vii. Special Feature Towns

There are, however, some small and intermediate towns, or even towns which have not reached the urban centre threshold of 10,000 populations that enjoy a special feature that could be a basis for economic growth (Table 3.11). However, the limits of development based on such special features must be recognised to avoid waste of resources.

### viii. Rural Growth Centres

At the very lowest level of ‘centres’ would be the Rural Growth Centres (RGC). These are central villages that could conveniently serve a rural hinterland of several villages. However, in the process of urbanisation and rural out-migration many of the villages and hamlets are likely to become depopulated and no longer economic to be serviced properly. It may become necessary to consolidate the rural population at the RGCs, which will also make it possible for the services provided to be enhanced. Incidentally rural services such as in education and health should be re-examined to match them with the emergent rural population structure.
<table>
<thead>
<tr>
<th>Special Feature</th>
<th>Centre</th>
</tr>
</thead>
</table>
| Border Town                     | Bukit Kayu HItam  
Padang Besar  
Rantau Panjang  
Pengkalan Kubur  
Bukit Bunga  
Pengkalan Hulu |
| Tourism Towns                   | Port Dickson  
Mersing  
Bandar Cukai  
Kuah  
Tanah Rata  
Fraser’s Hill  
Raub  
Kuala Lipis  
Gua Musang  
Jerantut  
Maran  
Muadzam Shah  
Kuala Rompin |
| Special Role Centre             | Putrajaya                                                             |
| Special Industry Centre         | Kerith  
Cyberjaya                                                            |
| Future Communications and Transport Node | Temerloh-Mentakab  
Kuala Lipis  
Gua Musang  
Lumut-Sitiawan-Manjung |
CHAPTER 4

DEVELOPMENT STRATEGY

4.1 Impact of Global Trends

The development strategy for the NPP has been formulated to provide a spatial or geographical expression to Vision 2020, OPP3, and 8 MP, as well as the sectoral master plans for agriculture, industry, tourism, water management and transport. The spatial expression of these national plans and national sectoral policies requires the country:

i. To rationalise national spatial planning for economic efficiency and global competitiveness.

ii. To promote balanced regional development for national unity.

iii. To optimise utilisation of land and natural resources for sustainable development.

iv. To secure spatial and environmental quality and diversity for a high quality of life.

Simultaneously, the formulation of the NPP must take cognisance of the processes affecting the global economy and the nation’s prospects for economic development. At the global level two particular processes have been observed that are having a substantial impact not only on the composition of world trade patterns but also on the pattern of land use of the ‘knowledge type’ economies.

The first of these processes is globalisation where, at a city level, the factors of significance are the breaking down of trade barriers and the increasing global reach of large corporations.

The second process has been referred to as the emergence of the k-economy, a feature of the post-industrial revolution. This process involves a shift from manufacturing and goods handling towards employment in and production of services and the generation of knowledge as an economic product together with the use of knowledge to enhance economic productivity. Nascent elements of this shift are already evident in the Malaysian economy. It is hence possible as well as critical for Malaysia to be able to attract international investments in these emergent sectors to ensure that the country not only achieves the objectives of Vision 2020 but also maintain a competitive position in the post-2020 period.

The new global trend creates a new worldwide calculus of lowest cost and highest return locations. Preferred locations must offer efficient infrastructure and good access to international communications and transport as well as other support services and facilities. An integral feature of the k-economy is its dependence on knowledge workers,
either locally produced or attracted to a location by job opportunities and the overall environment. Knowledge workers are characterised by their mobility as they are supported by their relative affluence, their level of education and their cosmopolitan adaptability. The criterion of attractiveness of a location to them, after the availability of the knowledge-based employment itself, is the quality of life that the location can offer to them and their families. Planning for the k-economy must, therefore, take cognisance of not only what attracts investors but also what attracts knowledge workers.

A result of these two processes that have been observed at the international scale is the emergence of what may be referred to as new urban hierarchies consisting of ‘advanced cities’ that offer higher order services. Below these cities are ‘developing cities’ within which manufacturing still represents the economic base.

A common character of the advanced cities is the increase in agglomeration of higher order services activities not only in a fewer number of centres but also into even more centralised locations. This process of increasing concentration involves information handling services activities such as business and finance, command and control functions, including international corporate headquarters, tourism including both leisure and business, and creative and cultural industries as well as specialised services which include advanced healthcare, higher education and research and development. At the international level, the leading global cities include London, New York and Tokyo. These are followed by a much larger group servicing specific locations or catchments such as Sydney for the western Pacific Rim, Milan for fashion and Los Angeles for media. At the regional level, Malaysia, represented by Kuala Lumpur, is competing against Singapore and to a lesser extent Bangkok to be the leading ‘advanced city’ for the region.

Some of the qualities essential to attract knowledge workers and that are, therefore, supportive of the higher level services activities, include quality housing, international quality education for children, international quality health services for families, high-end shopping as well as recreational and sports clubs. There is also a need for a generally cosmopolitan living environment offering safe and vibrant living conditions, variety and tolerance in cultural activities and expressions, a wide choice in entertainment and cuisine, and a cosmopolitan life style. All of these qualities are already available in the three main metropolises of the country and particularly in Kuala Lumpur.

These assets should be utilised more aggressively in attracting international investors to the country. It would be injudicious to attempt to steer investors to less developed locations, unless, for reasons of their own, such sites are specifically requested for. Nor would it be wise to divert financial resources to build up the infrastructure in small isolated towns and cities and less developed regions, since the facilities in the main metropolises have yet to be fully exploited and it would take perhaps many years to accumulate the features in the isolated cities and towns before they become attractive to international investors and knowledge workers. The NPP, therefore, proposes a basic development strategy of ‘Selective Concentration’, focussing on the three main conurbations of Kuala Lumpur, George Town and Johor Bahru as the vehicles for propelling Malaysia towards the aspirations of Vision 2020 and into the era of k-economy.
4.2 Urbanisation

In the last several decades since independence Malaysia has been experiencing accelerating urbanisation as a result of the structural economic change from dependence on mining and plantation agriculture to manufacturing and services. There has, however, not only been rapid urbanisation but also, in the census decade 1991-2000, a less obvious but highly significant trend in urban development. This is the centripetal concentration of the urban population in a small number of city regions, namely the conurbations around Kuala Lumpur, George Town and Johor Bahru. Indeed, the main concentration is in the Kuala Lumpur conurbation, with George Town and Johor Bahru struggling to keep pace. Johor Bahru has the advantage of proximity to Singapore and can benefit from overspill development from Singapore. George Town has a long tradition of cosmopolitan urban services to its regional sphere of influence and maintains its position as the second city of the Peninsula (having lost its first position to Kuala Lumpur soon after the selection of Kuala Lumpur as the national capital).

The changing world economy superimposes its effects on individual industrialising countries, and these effects are felt particularly in the pattern of urban centres. While the accelerated pace of urbanisation may be driven by internal forces, the concentration of productive investments and population into a small number of city regions is as much a response to external forces, with the necessity to direct international trade, communications and exchange of information, movement of people, and so on, into concentrated channels and points of contact and commerce with the wider world.

It may appear logical to expect that only one large centre would have emerged in a small country like Peninsular Malaysia while other centres would have declined. However, Malaysia is fortunate in that a strong urban hierarchy had already been developed over many years in the colonial and post-colonial eras and this hierarchy, with strong local groups of entrepreneurs, continues to provide a sustainable geographical base for further industrialisation and economic modernisation. A pattern of polycentric interdependent urban centres has emerged with the Kuala Lumpur conurbation being the ‘advanced’ city supported by the George Town and Johor Bahru conurbations (Figure 4.1). Nevertheless, there is early indication that the Kuala Lumpur conurbation is growing faster than either the George Town or the Johor Bahru conurbation and the emergence of a single overwhelming primate city is not off the cards. Pre-emptive action should be taken to forestall such further concentration of population and productive capacity into one single super conurbation. Among the strategies proposed by the NPP is a fast rail system connecting the main cities. This will provide the quick and easy connection of the peripheral conurbations to the core conurbation and reduce the centripetal pressure to locate businesses in the core conurbation.

The NPP recognises these trends are part of the international processes associated with globalisation and transformation into the k-economy. These processes, in combination with efficiency assessments, suggest that the present trend for urban development to concentrate in the larger centres at the expense of rural areas and the smaller urban settlements will continue. At a macro economic level, given the present stage of economic
FIGURE 4.1: URBAN HIERARCHY LINKAGES

Conurbation Levels
- Level 1
- Level 2
- Level 3 and 4

Conurbation Employment Influence Zone

Major Economic Linkages
growth enhanced economic performance will also continue to require that development generally be focused on core centres rather than be spread thinly over a broad but relatively underdeveloped economic landscape.

For the NPP, enhanced performance of the economy, particularly with respect to attracting foreign direct investment, suggests the need for a pattern of continuing concentration of urban development in selected centres. The challenge for the national and lower level planning authorities is to manage this urban growth, both in the fast growing conurbations as well as in the slow growing or even declining urban areas, to create urban centres offering residents a high quality of life, access to community support such as schools, colleges, hospitals and parks as well as services, good quality urban transport and utilities.

Urban centres outside of the three major conurbations are anticipated to grow more slowly and, over time, lose their share of the urban population. The capability of state capitals to service their surrounding populations should, however be supported. A special case should also be made of Kuantan. Although clearly not in the same league as George Town and Johor Bahru, it should be selected for infrastructural support on a par with the other two conurbations. Focusing on Kuantan as an exception is a development strategy for regional balance by making it possible to create a substantial centre on the East Coast as a base for an economic spread effect.

Many small and intermediate towns, except for those lying within the sphere of influence of the conurbations, are likely to decline in population. For lower tier authority planners this should be seen as a challenge to enhance productivity and efficiency of the small and intermediate towns and create small prosperous places rather than be unduly overwhelmed by population loss. There are, however, a number of small and intermediate towns that have shown indications of becoming the nucleus of future conurbations. These include Mentakab-Temerloh, Lumut-Sitiawan-Manjung and Muar-Batu Pahat-Kluang. There is also a number of small centres that possess special features that may provide a basis for the development of niche activities.

Selective concentration remains the basic strategy for the NPP. Within the conurbations, presently festering and emergent urban issues will be encountered. With the rapid expansion and spread of the conurbations an ad hoc non sequential development resulting in high infrastructure costs, loss of recreational space and green lungs, as well as inner city decay, are some of the imminent threats. The NPP proposes counter measures to anticipate these threats. Nevertheless, the imagination and diligence of lower tier planners and city administrators will be fully challenged.
4.3 Regional Balance

Notwithstanding addressing the issue of the country’s need for global competitiveness, the NPP must also address the issue of regional imbalance. This should be carried out while avoiding internal competition as well as be realistic and capable of success. Regional balance is, therefore, interpreted as equal access to equitable levels of real income and personal development opportunities and not necessarily as equal opportunity to the same forms of development. Land and natural resources of the less developed regions, which still remain not fully utilised, should be further used to increase the productivity of these regions and, therefore, help to reduce regional imbalances. Resource-based industries, forestry-based activities and industries, downstream agriculture-based activities, resort tourism, in particular eco-tourism, craft-based industries and other niche activities – in other words economic activities that are not subject to the same degree of global competition as the activities that are being attracted to the conurbations should be directed to the less developed regions. Appropriate infrastructure in these regions, especially in ICT and the transportation network in the areas of potential tourism development should be enhanced to facilitate their development and expedite their integration into the k-economy activities to promote regional balance include an early extension of the national highway system to Kelantan.

Regional balance has also be interpreted as setting the stage for future development. Hence, the inclusion of the Kuantan conurbation as one of the urban regions to be promoted together with George Town and Johor Bahru, as a reception area for the emergent and advanced economic sectors.

The modernisation of agriculture and enhancement of agricultural incomes, however, remains a basic factor in the eventual abolition of regional imbalances. Nevertheless, out-migration from the less developed regions should be anticipated in the national development strategy. There is a need to strengthen the provision of educational, technical training and social development programmes in the less developed states in anticipation of the need for segments of these populations to integrate more effectively into the urban economy of the conurbations.

4.4 Rural Development

The Department of Statistics definition of an urban area is a threshold of 10,000 populations, below which settlements are considered to be rural. At present, settlements generally regarded to be rural based could be broadly categorised as traditional villages or new villages, Orang Asli settlements and FELDA settlements. The settlements are presently nested within the category of land identified as ‘agriculture’.

Some 1,189 traditional and new villages are identified likely to remain rural within the plan period as they do not fall within the sphere of influence of existing urban centres (IP 7). Of these villages, 771 traditional villages are located within PAA, thus indicating the continuing importance of agricultural sector activities for the rural population affected. This
indicates the importance of providing employment opportunities through higher yield agriculture crops for the rural population residing within these areas. In this respect, one of the recommendations is to encourage agricultural activities such as cash crops, market gardening and livestock within strategically located agricultural areas, that is villages close to designated conurbations. The process of urbanisation itself should be harnessed to support rural population economically and so produce a beneficial impact on the lives of the rural population.

To diversify the rural economic base, the development of economic activities based on resource-based manufacturing, craft-based industries, value-added downstream agriculture-based activities, eco-tourism and forestry should be encouraged in the Rural Growth Centres (RGC). Development of non-agricultural activities should, however, proceed in tandem with the modernisation of agriculture, including the rationalisation of management units and application of modern technology and methods.

The socio-economic role of the traditional villages should be to enhance their status by designating functions relying upon inherent advantages of the surrounding areas such as linkages to special feature towns, nature tourist attraction areas, coastal tourism towns or agricultural areas, offering downstream development possibilities. In addition to the promotion of high value agricultural activities within rural areas, it is proposed that the rural areas and population be closely integrated with future tourism activities to capture the benefits of this high potential and high growth industry.

A generalised range of possible economic focus areas for rural enterprises have been identified based on location and the local economic base (IP 7). As has been noted in many economically (and socially) vital centres, their success is often driven by a positive approach to the role of culture and of individual enterprise. Rural-urban economic linkages should be enhanced. Entrepreneurs from rural growth centres, traditional villages, new villages, Orang Asli settlements or even from the small and intermediate towns embarking on agricultural projects to supply food and materials to the population of the urban conurbations or the tourist resorts or to supply intermediate industrial or other services to the industries of the conurbations should be supported by government programmes. While suggested economic linkages have been identified, more detailed studies are however required to establish a viable economic base for each rural growth centre, new village or small town. In all instances, individual SMI and SME initiatives resulting in enhanced economic performance should be supported. The implementation of future infrastructure and rural development programmes should ensure that the benefits of economic growth of the country can accrue to the rural population and enable their effective participation in the national economy.

The rural areas will, nevertheless, still face population decline not only because of the pull factor of urban employment but also because of the push factor of agricultural modernisation and increase in productivity. It is, therefore, important to rationalise rural settlements not only to support an expanding urban-based economy but also to service the remaining rural population efficiently and effectively.
The maintenance of public services, such as in public health, education, communications and public transport, utilities, security, recreational facilities and so on in the villages and the small and intermediate towns, should continue but should be rationalised. The distribution of the services, as well as the types of services and facilities provided, need to be monitored and adjusted. The nation is already facing the necessity of closing schools in rural areas because of the decline in the school-going age population in rural areas. Public health services, which hitherto have concentrated on maternity and child-care in the rural areas, may also need to be re-examined. As the population structure changes and more child-bearing age women become concentrated in the urban areas, the present birth-related rural health care services may have to move with the population to the urban areas. At the same time the aging population of rural areas will require that geriatric care, which is still poorly developed, be quickly and greatly enhanced.

As the rural population decreases some villages, including traditional villages, new villages, Orang Asli settlements, as well as FELDA settlements, are likely to decline to a level where the provision of public facilities and services is no longer sustainable. The rural population should be consolidated at rural growth centres where a high level of public facilities and services can continue.

4.5 Optimising the Use of Land

4.5.1 Land Availability Assessment

The phenomena of urban growth in the Peninsula, reinforced by the significance of the contribution to GDP by urban based activities, has resulted in an impression of broad scale urban sprawl. The Peninsula wide land use analysis however suggests built-up areas only accounted for 3.3% of Peninsula land in 2000.

An assessment of the need to accommodate future urban growth was thus undertaken to establish not only the gross area of land required for future urban growth but also to identify at state level expected directions of growth. The land use assessment incorporates the findings of the sectoral studies on agriculture, the environment, utilities and transport.

4.5.2 Agriculture Land

The National Agriculture Policy (NAP3) seeks to enhance the performance of the rural sector through optimal use of resources and proposes to reduce the cost of food imports. Among the measures incorporated into the NPP to fulfil these requirements is the designation of PAA. The intent of the process is to delineate the PAA via a multiplayer ranking sieve to identify, conserve and protect those agricultural areas of high productivity value and to direct urban encroachment to areas of lower agricultural productivity value.
The criteria utilised in the assessment include:

i. Designated granary areas,

ii. Existing agricultural lands under Soil Class 1 and 2, and

iii. An agro-climatic assessment of productivity that provided for delineation of oil palm Rank 1 and 2 areas.

The distribution of the various types of PAA is illustrated in Table 4.1.

### Table 4.1: Prime Agricultural Areas

<table>
<thead>
<tr>
<th>State / Region</th>
<th>Prime Agricultural Areas (ha.)</th>
<th>Paddy</th>
<th>%</th>
<th>Oil Palm Rank 1 &amp; 2</th>
<th>%</th>
<th>Agriculture under Soil Class 1 &amp; 2</th>
<th>%</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perlis</td>
<td></td>
<td>28,314</td>
<td>9.1</td>
<td>-</td>
<td>-</td>
<td>21,645</td>
<td>1.1</td>
<td>49,959</td>
</tr>
<tr>
<td>Kedah</td>
<td></td>
<td>113,231</td>
<td>36.3</td>
<td>5,436</td>
<td>0.5</td>
<td>179,102</td>
<td>9.3</td>
<td>297,769</td>
</tr>
<tr>
<td>Pulau Pinang</td>
<td></td>
<td>14,154</td>
<td>4.5</td>
<td>4,584</td>
<td>0.4</td>
<td>10,527</td>
<td>0.5</td>
<td>29,265</td>
</tr>
<tr>
<td>Perak</td>
<td></td>
<td>48,359</td>
<td>15.5</td>
<td>63,923</td>
<td>6.1</td>
<td>339,907</td>
<td>17.6</td>
<td>452,189</td>
</tr>
<tr>
<td>Northern Region</td>
<td></td>
<td>204,058</td>
<td>65.4</td>
<td>73,943</td>
<td>7.1</td>
<td>551,181</td>
<td>28.5</td>
<td>829,182</td>
</tr>
<tr>
<td>Selangor</td>
<td></td>
<td>21,311</td>
<td>6.8</td>
<td>115,815</td>
<td>11.1</td>
<td>115,748</td>
<td>6.0</td>
<td>252,874</td>
</tr>
<tr>
<td>WP Kuala Lumpur</td>
<td></td>
<td>-</td>
<td>-</td>
<td>1,408</td>
<td>0.1</td>
<td>705</td>
<td>0.0</td>
<td>2,113</td>
</tr>
<tr>
<td>Negeri Sembilan</td>
<td></td>
<td>-</td>
<td>-</td>
<td>69,787</td>
<td>6.7</td>
<td>186,269</td>
<td>9.6</td>
<td>256,056</td>
</tr>
<tr>
<td>Melaka</td>
<td></td>
<td>-</td>
<td>-</td>
<td>14,748</td>
<td>1.4</td>
<td>65,988</td>
<td>3.4</td>
<td>80,736</td>
</tr>
<tr>
<td>Central Region</td>
<td></td>
<td>21,311</td>
<td>6.8</td>
<td>201,758</td>
<td>19.3</td>
<td>368,710</td>
<td>19.1</td>
<td>591,779</td>
</tr>
<tr>
<td>Johor</td>
<td></td>
<td>-</td>
<td>-</td>
<td>329,894</td>
<td>31.5</td>
<td>461,127</td>
<td>23.9</td>
<td>791,021</td>
</tr>
<tr>
<td>Southern Region</td>
<td></td>
<td>-</td>
<td>-</td>
<td>329,894</td>
<td>31.5</td>
<td>461,127</td>
<td>23.9</td>
<td>791,021</td>
</tr>
<tr>
<td>Pahang</td>
<td></td>
<td>1,950</td>
<td>0.6</td>
<td>382,457</td>
<td>36.5</td>
<td>290,920</td>
<td>15.1</td>
<td>675,327</td>
</tr>
<tr>
<td>Terengganu</td>
<td></td>
<td>9,552</td>
<td>3.1</td>
<td>58,464</td>
<td>5.6</td>
<td>128,917</td>
<td>6.7</td>
<td>196,933</td>
</tr>
<tr>
<td>Kelantan</td>
<td></td>
<td>75,041</td>
<td>24.1</td>
<td>704</td>
<td>0.1</td>
<td>129,862</td>
<td>6.7</td>
<td>205,607</td>
</tr>
<tr>
<td>Eastern Region</td>
<td></td>
<td>86,543</td>
<td>27.8</td>
<td>441,625</td>
<td>42.2</td>
<td>549,699</td>
<td>28.5</td>
<td>1,077,867</td>
</tr>
<tr>
<td>Peninsular Malaysia</td>
<td></td>
<td>311,912</td>
<td>100.0</td>
<td>1,047,220</td>
<td>100.0</td>
<td>1,930,717</td>
<td>100.0</td>
<td>3,289,849</td>
</tr>
</tbody>
</table>


The agricultural lands represent the largest single use category in the Peninsula with palm oil and rubber plantations being the most significant activity. Sectoral studies indicate that at the macro level, no additional lands need be made available for this use. All projected increases in productivity are to be achieved through enhanced production technologies and utilisation of the substantial areas of under utilised and vacant rural lands.

At the micro level however significant changes are expected as farmers respond to opportunities offered by access to the larger and increasing affluent urban population, of import substitution, particularly of food products and as they engage in the niche market export of tropical products such as fruits and flowers. Malaysian farmers will also seek to utilise its comparative advantage as a secure Muslim country to promote ‘Halal’ products to the Muslim world.
The output of this analysis based on the approach that PAA should be conserved as part of the country’s need to be relatively self-sufficient in food production and that the agriculture sector should be an efficient user of land is the generalised location of PAA (IP 4). Studies at state and local levels should further refine the delineation of these areas.

4.5.3 Forest and Environmentally Sensitive Lands

A similar multi-layered ranking exercise was undertaken for the other non-agriculture non-urban (built-up) areas. This process which covered, among other considerations, the status of forest lands, marine parks, catchment areas, drainage, recharge areas, erosion risk and elevation identified three classes of Environmentally Sensitive Areas (ESA). These are:

- **ESA Rank 1**: All protected areas, potential protected areas, wetlands, turtle landing sites, catchment areas of existing and proposed dams and areas with contours above 1000 metres above mean sea level (a.m.s.l).

- **ESA Rank 2**: All other forests, wildlife corridors, buffer zones around ESA Rank 1 areas and areas with contours between 300-1000 metres a.m.s.l.

- **ESA Rank 3**: All marine park islands, buffer zones around ESA Rank 2 areas, catchment areas for water intakes, areas for groundwater extraction (well fields), areas with erosion risk greater than 150 ton/ha./year, areas experiencing critical or significant coastal erosion and areas between 150-300 metres a.m.s.l.

The output of the sensitivity analysis is shown in IP 8.

With respect to the land use assessment, forest lands were identified as the second most significant land use in the Peninsula. Most of these lands are the State Government controlled forest reserves. Although classified in different categories and in areas of variable terrain, they represent the most distinctive land use pattern in the Peninsula.

The forest lands form an almost continuous corridor of land from the north to south. This pattern of use offers the opportunity to create a unique forest spine corridor which would act as a reservoir for biodiversity and associated opportunities arising from the biotechnology, provide protection areas for water catchments, create environments offering opportunities for nature and eco tourism as well as provide regional recreation facilities for the urban population. These functions would co-exist with programmes for the sustainable management of selected forests for logging. This latter activity would complement efforts in agro forestry as Malaysia exploits its comparative advantage in the production of tropical hard woods.
At the macro level no requirement exists for lands to be excised from forest category for alternative uses. As mentioned, agricultural expansion will be based on increased productivity and crop changes on the existing acreage: urban expansion will utilise the least productive agriculture lands. Conserving forests lands would be integral to optimising the use of land in the country. Indeed the multifunctional role of the forest lands should be enhanced through the recognition of the central forest spine and programmes to create linkages and corridors to the more isolated reserves (IP 9). These corridors could include mono culture crops but would exclude housing and similar activities.

4.5.4 Urban Land

i. Requirements

In assessing the land required for urban purposes two factors were considered, viz. the demand for land generated by the increase in urban population and secondly an assessment of lands that could be made available for urban uses without jeopardizing the integrity of key land uses considered essential as food supply, agricultural production purposes or which are subject to environmental constraints.

The assessment of demand was based on a number of assumptions, the most significant among these being that overall the typical pattern of development in Peninsular Malaysia will not change significantly. However, in line with NPP objectives to achieve higher levels of land use efficiency, better use of infrastructure, in particular public transport and to create a higher quality urban environment with more parks and recreation areas, the present overall gross urban density of approximately 29 persons per hectare will need to decrease slightly to 25 persons per hectare. This target gross urban density has been adopted to establish a macro level assessment of the need to provide urban land.

For the individual states, this figure will need to be adjusted to account for the development characteristics of each area. The present overall gross density of Kuala Lumpur is for example higher than 25 persons per hectare. At the Kuala Lumpur conurbation level however, 25 persons per hectare is an applicable average even though individual components of the conurbation, such as Wilayah Persekutuan Kuala Lumpur have been developed at higher densities.

For the year 2000, Peninsular Malaysia’s urban population of 12.12 million is accommodated on built-up lands which have been assessed at 437,090 hectares. Accounting for the increase in urban population to the year 2020, a further 331,520 hectares of land will be required for urban uses. This results in a total commitment for urban land in 2020 of some 768,610 hectares; an area equivalent to approximately 5.8% of Peninsular Malaysia’s land area (Table 4.2 and Figure 4.2).
### Table 4.2: Urban Land Required Between 2000 and 2020 and Land Available Not Subject to Development Limitations

<table>
<thead>
<tr>
<th>State/region</th>
<th>Urban Land Required (ha)</th>
<th>Lands Not Subject to Limitations (ha)</th>
<th>Net Position (ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perlis</td>
<td>1,800</td>
<td>840</td>
<td>- 960</td>
</tr>
<tr>
<td>Kedah</td>
<td>28,560</td>
<td>18,152</td>
<td>- 10,408</td>
</tr>
<tr>
<td>Pulau Pinang</td>
<td>25,080</td>
<td>20,499</td>
<td>- 4,581</td>
</tr>
<tr>
<td>Perak</td>
<td>26,760</td>
<td>133,530</td>
<td>+ 106,770</td>
</tr>
<tr>
<td>Northern Region</td>
<td>82,200</td>
<td>173,021</td>
<td>+ 90,821</td>
</tr>
<tr>
<td>Selangor</td>
<td>111,720</td>
<td>13,884</td>
<td>- 97,836</td>
</tr>
<tr>
<td>WP Kuala Lumpur</td>
<td>19,600</td>
<td>5,123</td>
<td>- 14,477</td>
</tr>
<tr>
<td>Negeri Sembilan</td>
<td>10,040</td>
<td>22,989</td>
<td>+ 12,949</td>
</tr>
<tr>
<td>Melaka</td>
<td>10,760</td>
<td>36,397</td>
<td>+ 25,637</td>
</tr>
<tr>
<td>Central Region</td>
<td>152,120</td>
<td>78,393</td>
<td>- 73,727</td>
</tr>
<tr>
<td>Johor</td>
<td>52,080</td>
<td>135,976</td>
<td>+ 83,896</td>
</tr>
<tr>
<td>Southern Region</td>
<td>52,080</td>
<td>135,976</td>
<td>+ 83,896</td>
</tr>
<tr>
<td>Pahang</td>
<td>17,720</td>
<td>113,000</td>
<td>+ 95,280</td>
</tr>
<tr>
<td>Terengganu</td>
<td>9,960</td>
<td>55,207</td>
<td>+ 45,247</td>
</tr>
<tr>
<td>Kelantan</td>
<td>17,440</td>
<td>18,456</td>
<td>+ 1,016</td>
</tr>
<tr>
<td>Eastern Region</td>
<td>45,120</td>
<td>186,663</td>
<td>+ 141,543</td>
</tr>
<tr>
<td>Peninsular Malaysia</td>
<td>331,520</td>
<td>574,053</td>
<td>+ 242,533</td>
</tr>
</tbody>
</table>

Note: Derived from projected urban growth and a gross density of 25 persons per hectare

#### ii. Supply

A land supply analysis shows that by excluding lands identified as built-up, PAA, ESA, some 574,053 ha. are available for a variety of uses.

Land classified as built-up, PAA, ESA are referred to as land having pre-existing limitations. Lands not recognised as being subject to pre-existing limitations are classified as available for development purposes. The purposes may include urban uses, agriculture and any other uses.

The analysis suggests that at a macro level the needs of future urban land use can be accommodated without the need to intrude into lands subject to use limitations such as PAA or ESA. However, redevelopment of existing built-up areas and the use of brownfield sites within built-up areas may, indeed should, be conducted.

Applying the same rigorous criteria at state level however shows that five states viz., Perlis, Kedah, Pulau Pinang, Selangor and Wilayah Persekutuan Kuala Lumpur will need to utilise either land designated as PAA or ESA (Table 4.2).
FIGURE 4.2: LAND AVAILABILITY ASSESSMENT

<table>
<thead>
<tr>
<th>Land Subject to Development Limitations</th>
<th>Land Not Subject to Development Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sieve 1: Existing Built-up Area</td>
<td></td>
</tr>
<tr>
<td>Sieve 2: Environmentally Sensitive Areas (ESA) Rank 1, 2 and 3</td>
<td></td>
</tr>
<tr>
<td>Sieve 3: Prime Agriculture Areas</td>
<td></td>
</tr>
<tr>
<td>Sieve 4: Areas with Physical Constraints (Contour &gt; 300 Metres &amp; Slope &gt; 25 Degrees)</td>
<td></td>
</tr>
</tbody>
</table>
Given the type and level of constraints applicable to ESA lands, this suggests that apart from the use of PAA lands, only selected parts of ESA Rank 3 land may potentially be considered for urban uses. Considerable care in land use planning however will be required, particularly in the use of water catchments and water recharge areas.

For Perlis, Kedah and Pulau Pinang given the significance of the granary areas and the enormous investment in the irrigation schemes, use of the lower ranked ESA land may need to be considered ahead of use of the PAA lands to overcome the apparent short fall in land required for future urban use.

Analysis of land required for future urban use and lands not subject to limitations, that is lands not classified as PAA or ESA Rank 1, 2 or 3, for Selangor and Wilayah Persekutuan Kuala Lumpur shows that even if some of the lowest rank ESA lands were assigned for urban use, potentially there is still a need to utilise PAA lands for urban uses. Given the present pattern of urban land use development within these states, in the interests of efficiency and effective use of national resources, priority should be given to urban land use consolidation over use of PAA.

Factors which will however militate against the loss of PAA lands and use of ESA Rank 3 lands in these two areas will include adoption of generally higher gross densities in the main conurbation areas, use of vacant lands within the present built-up areas as well as rehabilitation and redevelopment of existing buildings sites. Specific development plans for Kuala Lumpur Conurbation should consider in greater detail which areas should be consolidated as well as the provision of green corridors as part of the need to conserve and protect the PAA and ESA.

iii. Housing

An assessment of present and projected needs for housing up to 2020 shows it can be accommodated within the designated urban centres without the need for conversion of forest lands to housing nor the use of the most environmentally sensitive lands.

The major challenge in spatial planning terms is to initiate a mind set change from the present perception that all lands adjacent to urban areas are ripe for development. The NPP has recognised that considerable waste of resources can (and has) occurred when land has been prepared either through conversion and layout plan approval but without a thorough assessment of demand. As the urban areas expand this process of increasing supply versus maturing of demand will be exacerbated. Management and dissemination of information on supply and demand for urban purposes, land suitability, incorporation of PAA and forest lands in conurbations into green belts are to be adopted to avoid property overhangs and inefficient use of lands adjacent to urban areas.

Identification of routes, recognizing the long lead times and need for operational efficiencies required by public transport should also be assessed in the managed release of future urban land particularly in the urban conurbations. The assessment also needs to consider the capacity and cost of upgrading of existing infrastructure and utilities such as...
water supply and delivery of electricity and road space in the sitting of future urban growth.

iv. Industry

While the past twenty years saw a substantial change in the type and performance of the industrial sector, expectations of the future are of consolidation, changes in operational characteristics, increasing niche marketing and creation of brand names.

The macro level assessment of industrial land showed no additional land is required for this use. As inter and intra industry adjustments however take place, a demand for sites with specific locational advantages may need creation of new sites. As most of these adjustments will be in and around the major urban conurbations provision for these changes has been accommodated within the overall allocations of 'urban land'.

Industry in the past has been seen as an impetus for growth in rural areas, particularly as a means to address regional economic imbalances. This has resulted in large areas being assigned to the use in the East Coast. Use of the lands will need to be re-evaluated.

The Industrial Master Plan cluster concept of industrial development using broad based criteria such as source of inputs, markets, cost of transport, access to labour, skills, capacity and reliability of infrastructure and other support services will be considered in the selection of industry type and sitting of clusters. Special efforts are however to be made to promote down stream linkages of rural area production centres to assist development in those area.

4.5.5 Tourism

In terms of spatial planning of tourism, the whole country is a destination and not just selected locations or sites of special interest. The appeal for the tourist is the total scene; the land and how it is used, the people, the culture. The attractions, which draw the tourists, are only an expression of the total ethos of the country.

Malaysia's development status, location and multi-cultural composition, allow for numerous experiences while the mountains, forests, islands and beaches are all destinations in their own right.

An assessment of Peninsular Malaysia’s tourism assets was undertaken which ranked sites in terms of potential and importance. The sites selected hence represent an expression of Malaysia’s history, culture, natural environment, as well as its shopping, recreation and entertainment potential.

The 8MP forecasts that tourist arrivals to Malaysia will grow at an average annual rate of 9.0 percent per annum. Assuming that this trend is maintained during the plan period, it is estimated that tourist arrival in Peninsular Malaysia will be approximately 36.0 million by 2020.
Tourism development in Malaysia should involve a balanced strategy aimed at both international and domestic markets. This will require the Federal Government, with the support of the State Governments and the private sector, to encourage the development of a balanced tourism product with adequate infrastructure, an accommodation mix in line with visitor preferences, ancillary tourism facilities and activities to cater to the needs of both international and domestic tourists.

i. **Priority Tourism Activities**

Priority should also be placed on tourism activities, and the NPP listing is as follows:

a. International shopping for ASEAN region and other international visitors - the main conurbations of western coast area

b. Health or media tourism for western coast and eastern coast areas.

c. Socio cultural heritage tourism encompassing the past and present lifestyles of Malaysia’s multi ethnic groups - eastern coast area and the main conurbations.

d. Destination resort tourism capable of sustaining high yield, international and domestic tourists - the coastal and island resorts of western and eastern coast areas

e. Eco-tourism and other special interest tourism with an emphasis on niche markets particularly, amongst overseas market segments - central highlands and eastern coast area.

f. Educational tourism offering government certified quality courses through private institutions to international students - the main conurbations, western coast area.

g. Cultural tourism with an emphasis on the traditional kampongs, beaches and islands environment – eastern coast area

h. Promotion of Malaysia as a MICE destination.

i. Development of a World War II Heritage Trail.

ii. **Priority Tourism Towns**

There are several towns that are strategically located i.e. within close vicinity of tourist attraction areas. For example Taiping is located close to the Matang Mangrove Forest Reserve and the Bubu Forest Reserve, which can function as a nature based tourism town, while Padang Besar, Bukit Kayu Hitam and Rantau Panjang are border towns which can be further developed as gateway towns. Their potentials as Tourism Towns should be exploited and their economic activities oriented accordingly. Conflicting activities e.g. polluting and heavy industries should be discouraged within designated Tourism Towns.
iii. Special Tourism Zones

One of the recommendations of the NPP is the designation of Special Tourism Zones for future tourism planning purposes.

Future development within designated Special Tourism Zones will need to be monitored to ensure the long term protection of existing and potential tourist attraction areas as national assets. Of particular importance is the need to restrict the establishment of heavy and polluting industries within Environmentally Sensitive Areas located within the Special Tourism Zones to ensure that there is no negative impact on environmental quality. Within such areas, future urban and industrial developments are to be focused within existing urban centres and industrial areas.

Among the growth sectors, tourism offers good potential to off set regional economic imbalances between the West Coast and the central highlands and East Coast. Eco and nature tourism, the beaches and culture of the East Coast are assets to be developed and enhanced through close cooperation between the public and private sectors, enhanced infrastructure information and the delivering of quality services to visitors.

A range of urban based tourism products are to be developed. Among these are health services particularly catering for ASEAN visitors, education services which utilise the country’s multi lingual character and proficiency in English as well as offering shopping as part of the utilisation of facilities available for meetings and exhibitions building upon its good quality hotels and myriad tourism attractions.

4.5.6 ICT Development

The National Information Technology Agenda (NITA) is a strategic framework for IT programme development at federal, state and local government levels. It is intended to draw in the participation of the private and non-government sectors as well as the community at large. The thrust of NITA is seen as a triangle in which infrastructure, software applications and people are inextricably linked. The goal is to create a stimulating working and living environment that provides all Malaysians with equal access to information and knowledge.

While the Multimedia Super Corridor (MSC) located within the Kuala Lumpur conurbation serves as a catalyst to expand IT-related industries and to provide an enabling environment for the orderly development of IT industry in the country, other IT centres will include George Town conurbation and Johor Bahru in its linkages to Singapore. Contrary to popular opinion trends in the use of ICT has to encourage further agglomeration of activities rather than be dispersed. This is primarily due to the need for sophisticated back up services which would not be available in more remote locations.

Within the context of the NPP, the national and regional growth conurbations of Kuala Lumpur, George Town, Johor Bahru and Kuantan are to be developed as intelligent cities.
The programme shall then entail all capital cities within the country to form a nationwide network of intelligent cities linked to the global information highway.

4.5.7 Infrastructure

A characteristic of the all modern developed centres is the quality of the supporting infrastructure and the quality of life afforded to residents through housing, education, recreation and health facilities.

To this end, the NPP recognises that for the country to operate as an integrated unit and to allow for balanced development, the provision of high quality infrastructure and services is critical.

i. Water

The most fundamental of these services is the provision of water to meet the varying demands of the urban population, agriculture and industry. The National Water Resources Study up to 2050 (NWRS) has estimated the demand for domestic, industrial and irrigation in Peninsular Malaysia to increase from 10,833 million m$^3$/year of water in 2000 to 13,900 million m$^3$/year in 2020, an increase of some 22.0% (Table 4.3).

<table>
<thead>
<tr>
<th>Demand Sector</th>
<th>Units</th>
<th>2010</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic</td>
<td>Mld</td>
<td>2,987</td>
<td>3,862</td>
</tr>
<tr>
<td></td>
<td>Mld</td>
<td>8,184</td>
<td>10,582</td>
</tr>
<tr>
<td>Industrial</td>
<td>Mld</td>
<td>2,592</td>
<td>3,561</td>
</tr>
<tr>
<td></td>
<td>Mld</td>
<td>7,101</td>
<td>9,756</td>
</tr>
<tr>
<td>Sub Total</td>
<td>Mld</td>
<td>5,578</td>
<td>7,423</td>
</tr>
<tr>
<td></td>
<td>Mld</td>
<td>15,285</td>
<td>20,338</td>
</tr>
<tr>
<td>Irrigation</td>
<td>Mld</td>
<td>6,517</td>
<td>6,517</td>
</tr>
<tr>
<td></td>
<td>Mld</td>
<td>17,857</td>
<td>17,857</td>
</tr>
<tr>
<td>Total</td>
<td>Mld</td>
<td>12,095</td>
<td>13,940</td>
</tr>
<tr>
<td></td>
<td>Mld</td>
<td>33,142</td>
<td>38,195</td>
</tr>
</tbody>
</table>


The per capita water availability for Peninsular Malaysia in 2050 is projected to decrease to approximately 3,000 m$^3$/year. It is projected that Negeri Sembilan will face severe shortage by 2010; Pulau Pinang and Melaka by year 2020. Selangor and Perlis will be in the same category by 2050. The water-rich states are Perak, Johor, Pahang, Terengganu and Kelantan.

Consideration has thus been given to the protection of water sources and to the future water needs of both the urban and rural areas. Water surplus and water stressed areas
have been identified and these have been matched against water source catchments, dams, and water recharge and aquifer areas (IP 14).

Apart from the water transfer programmes other specific proposals for water management include the designation of 38 dam sites and the protection and rehabilitation of existing rivers and water bodies through the use of buffer zones and conservation of wetlands, peat areas and lakes (inclusive of ex-mining ponds).

ii. Transportation Network

The development of a comprehensive transportation network is seen as a means of integrating the various state economies whereby the country can operate as a single integrated unit with the various states maximising on their comparative advantages for the benefit of the nation as a whole.

IP 13 indicates the conceptual Integrated National Transportation Network for Peninsular Malaysia to support the NPP Development Strategy.

Strategies in terms of the transportation network comprise the following aspects:

a. Network Configuration
b. National Gateways and Transportation Nodes
c. Urban Transportation and Intelligent Transport Systems

a. Network Configuration

The road and rail networks are to be appropriately linked to facilitate multimodalism and to achieve an integrated national transportation system.

- High-Speed Rail System

Based upon efficiency criteria, a 300 kph high-speed rail system is proposed to consist essentially of a West Coast line, an East Coast line and two cross lines spanning and linking together the two coastal spines.

The high-speed rail system is proposed as a bulk mover both for people and for goods servicing all existing conurbations and state capitals. It should also connect all the major gateways and ports (seaports, inland ports and airports) in the country.

As the high-speed train proposals along the West Coast, to the East Coast and the east-west links have a long term horizon, corridor alignments need to be identified and incorporated into lower tier plan to be protected as part of the staged implementation of these programmes.
• **Road Network**

The expressway system is to be extended to ensure effective linkages between the various states. A minimum of three expressway crosslinks will be provided to bridge the West Coast and East Coast expressway systems.

The extensive network of lower hierarchy roads such as the federal and state roads, shall be upgraded to support and complement the national expressway system. The present network of roads should be further strengthened leading to the formation of a ladder pattern configuration (IP 13).

b. **National Gateways and Transportation Nodes**

• **Kuala Lumpur International Airport**

The most important gateway for overseas arrivals to the country is the Kuala Lumpur International Airport (KLIA).

With an annual throughput of 14.7 million passengers per annum (mppa), KLIA is operating currently at about 60.0% of its existing capacity of 25 mppa. KLIA has an expandable ultimate capacity of some 50 mppa. Given the availability of some 40.0% spare capacity, the most urgent task is for KLIA to create a critical mass which is large enough to become self-generating.

Externally, KLIA is strategically situated midway of the air routes from Europe, Middle East and Indian Sub-Continent (at the north) to the Australasia and Oceania countries (at the south), and is equally strategic for travel from the East Asian countries (China, Japan, Korea and Taiwan) to the South African Continent. Strategic alliances with airlines plying these routes may accentuate its role and appeal as a hub.

KLIA must be made into an integrated national transportation hub whereby travellers bound for external destinations generated locally within its natural hinterland can be channelled efficiently and multimodally through KLIA (IP 13).

• **KL Sentral**

KL Sentral shall be the national transportation hub linking the major transportation nodes in the country with a range of multimodal services. Being the central station, KL Sentral shall be the confluence point of the nation’s high-speed rail system and the meeting point of the Express Rail Link, the KTM Commuter Line, the Light Rail Transit and the KL Monorail.

To be a truly effective urban transportation interchange, KL Sentral must be well served by an efficient feeder bus system and be integrated with a well-designed network for non-motorised transport modes such as walking and cycling.
c. Airports

Four international airports are proposed to be in operation to support the overall NPP development strategy (IP 13).

- Kuala Lumpur International Airport (KLIA),
- Pulau Pinang – Bayan Lepas International Airport,
- Johor Bahru (Senai) – Sultan Ismail International Airport, and
- Langkawi - Mat Sirat International Airport.

The development of Sultan Ismail International Airport in Johor Bahru is planned to be integrated with Port of Tanjung Pelepas as one of the cargo transhipment mega hubs for the region.

d. Sea Ports

Existing sea ports and designated functions are as below (IP 13)

- National Ports : Port Klang, Port of Tanjung Pelepas
- Regional Ports : Pulau Pinang Port, Kuantan-Kemaman Port
- Coastal and Feeder Ports : Pasir Gudang Port, Langkawi Port and Lumut Port

Port Klang and Port of Tanjung Pelepas (PTP) are to be the major national ports, albeit each with a different focus.

Port Klang, with its central location and proximity to the nation’s domestic hinterland, is to be established as the national hinterland port with extensive intermodalism and efficient landbridging services to other ASEAN countries such as Singapore, Thailand, Cambodia, Myanmar and Laos. PTP on the other hand, is to concentrate on its development to be a regional transhipment hub for South-East Asia with an extensive maritime feeder services to all ASEAN countries.

The maritime service by two national ports should further be complemented and strengthened by Pulau Pinang Port and Kuantan-Kemaman Port. Main shipping lines, which prefer to load and unload their goods directly at the Northern Region of the Peninsula could be catered for by Pulau Pinang Port. Similarly, Kuantan-Kemaman Port could cater for those who wish to ship directly to the Eastern Region of the Peninsula and for those shipping lines from the Pacific Rim countries that do not navigate en route past the Straits of Melaka.
The development of an efficient and extensive intermodalism and feeder and hub port system in freight transportation should be rigorously promoted. The setting up of a National Commission on Intermodal Transportation (NATCIT) or equivalent to help to move the intermodal development in the country to a globally competitive level is therefore needed. This will certainly improve the competitive edge of the two national ports in their endeavours to become the leading top ports in the South-East Asian region.

- **Urban Transportation and Intelligent Transport System**

The urban transportation strategy, as advocated in the 8MP is to focus on the development of an integrated, efficient and reliable urban environment in all the major urban centres in Malaysia. The emphasis will be on the need to have a more efficient, safe and comfortable public transport system to enable a modal shift from private car usage.

It is proposed that for major urban centres in Malaysia, a modal split ratio of 50:50 between private and public transport shall be adopted as a city mission. Kuala Lumpur presently has a modal split ratio of 80:20 in favour of private transport.

To achieve this modal split, a fully integrated system and network will require creation of one single multimodal/multifunction transportation authority to oversee public transportation which will include rail systems, bus routing and other para transit modes. Detailed studies at conurbation level will be required to prioritise provision of infrastructure to achieve the modal split and coordinate siting of fixed track networks to be in areas of greatest demand. For the lower order urban centres which are not likely to exceed the 500,000 population mark, this transport system should rely more upon buses.

The use of Intelligent Transport Systems (ITS) will complement the development of enhanced urban public transport facilities. This system relying upon advanced electronics communications and IT for monitoring and tracking real time information on traffic flows and volumes is to be applied to better manage limited road space. The present level of ITS infrastructure is to be expanded in the three main conurbations.

### 4.5.8 Utilities and Services

#### i. Electricity

The peak demand for electricity supply is expected to increase threefold by 2020 due to increases in demand by domestic, commercial, industrial users. The projected demand and supply scenario up to 2020 is shown in the Table 4.4.
### Table 4.4: Installed Capacity, Peak Demand and Reserve Margin, 2000 - 2020

<table>
<thead>
<tr>
<th>Year</th>
<th>Accumulated Installed Capacity (MW)</th>
<th>Peak Demand (MW)</th>
<th>Reserve Margin (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>12,479</td>
<td>9,712</td>
<td>28.5</td>
</tr>
<tr>
<td>2005</td>
<td>20,819</td>
<td>15,380</td>
<td>35.4</td>
</tr>
<tr>
<td>2010</td>
<td>25,854</td>
<td>19,887</td>
<td>30.0</td>
</tr>
<tr>
<td>2015</td>
<td>32,997</td>
<td>25,382</td>
<td>30.0</td>
</tr>
<tr>
<td>2020</td>
<td>42,113</td>
<td>32,395</td>
<td>30.0</td>
</tr>
</tbody>
</table>


To meet this demand additional power plants are proposed to be located at the periphery of the main conurbations of Kuala Lumpur, Johor Bahru, George Town and Kuantan.

In order to reduce use of fossil fuels, utilisation of Renewable Energy (RE) solution and Energy Efficiency (EE) will be pursued. The target is to achieve use of RE from the present 0.5% to 5.0% of generation mix by 2005. As for EE the target is to improve use by about 10.0%, which will result in a savings of RM1.0 billion by 2005.

The steady growth in demand will require the transmission and distribution of electricity being strengthened to improve the adequacy and reliability of supply. Among the committed transmission projects are the 500kv line from Gurun-Air Tawar in the north, Pasir Gudang-Yong Peng in the south and the connection from Manjung Power Station to Air Tawar main sub-station. It is proposed that the 500kv line be extended to the Kuantan Conurbation which is designated as one of four Regional Conurbations for Peninsular Malaysia.

The link to Thailand will also be upgraded with high voltage direct current transmission for transfer capability of 300MW upgradable to 600MW. This will pave the way for the establishment of the ASEAN Power Grid. Besides Singapore, grid connections to Indonesia should also be pursued.

ii. **Telecommunication**

Internet and wireless technologies represent two of the fastest developing technologies in the telecommunications field. A backbone network such as the one covering the MSC’s 386 route km high speed broadband fibre optic cable linking Kuala Lumpur City Centre (KLCC), Putrajaya, Cyberjaya and KLIA have been completed.

An extensive fibre optic network of 62,600 km has been installed linking states and major towns across the country enabling high capacity broadband transmission capable of carrying data, audio and video. With the four satellite gateways at Kuantan, Labuan, Melaka and Semantan (Kuching), connections to countries around the Indian and Pacific Oceans are available. The migration to third generation (3G) mobile communications technology will free up internet access without limitations to physical constraints.
Adoption of internet based services such as e-commerce and provision of broadband access on flat rate bandwidth-based pricing mechanism will promote internet usage and the uptake of internet based applications. These facilities will allow Malaysia to compete in the higher order high value services at the international level.

iii. Drainage

Under the NPP development strategy, drainage and flood mitigation programmes for the period up to 2020 are to address flood problems for the main conurbation areas of Kuala Lumpur, George Town, Johor Bahru and Kuantan.

Traditional flood mitigation approaches shall be integrated with source control measures based on Manual Saliran Mesra Alam (MASMA). Flood risk maps for Peninsular Malaysia are to be prepared to ensure that adequate provision and consideration is given to this aspect for future physical and land use planning exercises. To this end, contemporary approaches in flood mitigation based on preventive measures which centre on avoidance of flood prone areas for development are to apply. An exception can be allowed for agricultural activities, for which a suitable risk must be factored in for flooding. The principle is to curb intrusion of urban uses into wetlands and flood plain areas that serve as natural flood storage facilities. This environment friendly policy promotes conservation of wetlands and their flora and fauna as well as provides regional level recreation facilities for urban residents.

iv. Sewerage

In line with the need to create world class cities, a major commitment to sewerage treatment will be required. The 13 sewerage projects comprising ten sewerage treatment plants and three central sludge treatment facilities will increase service totals to 14.4 million people.

For the Peninsula as a whole, target proposals are to have 85.0% of the population of the 49 larger local authorities, provided with centralised sewerage systems, with the remainder relying on septic tanks.

Of the 95 smaller local authorities, 30.0% of the population are to be provided with centralised sewerage systems, with the rest using septic tanks.

The level of service of sewerage facilities will need to be upgraded with priority given to densely populated areas within the main conurbations of Kuala Lumpur, George Town, Johor Bahru and Kuantan. Priority will also be given to the offshore islands and Environmentally Sensitive Areas such as marine parks and nature reserves.
4.5.9 Community Facilities – Higher Education and Hospital Facilities

- Public Universities

Public universities and hospitals are community facilities considered to be relevant at national level planning, due to comparatively larger land usage as well as special characteristics that may help to achieve NPP objectives, especially those relating to regional balance, area specialization, etc.

Presently there are nine public universities in Peninsular Malaysia. Under the 8MP, four new public universities have been proposed, one each in Perlis, Negeri Sembilan, Melaka and Pulau Pinang.

Based on population projections, five additional public universities are required to meet the 50.0% target\(^1\) enrolment.

At least two of the five proposed additional public universities are proposed to be in the Eastern Region. One of these universities could focus on environmental studies and tourism as main academic core in view of the area being designated as a Special Tourism Zone.

- Public Hospitals

At present there are 85 public hospitals in Peninsular Malaysia. Another 16 are to be completed under the 8MP. Future locations of new hospitals are proposed to relate to catchment areas which have to be distance and transport related, provision of ample space for expansion of hospitals to grow to full health complexes with all medical and ancillary services and facilities, like nurses training and accommodation, R&D, recreation, etc.

It is estimated that by 2020, the 26.8 million population targeted for Peninsular Malaysia would require about 57,000 hospital beds in around 153 hospitals. To meet this target another 50 hospitals are required.

4.6 Conceptual Development Strategy

The layering of the outcome of the sectoral assessments of future land use patterns and of long term infrastructure proposals is expressed in the conceptual development strategy plan. This plan shows the agricultural and forest lands providing a base layer overlaid by main urban centres and infrastructure proposals (IP 2).

\(^1\) OPP3 target that 40% of the population at the age of 17-23 years to receive tertiary education by the end of the plan. For age cohort 17-23 years, from year 2010 onwards, targets are assumed to rise at constant rate of 5.0% every 5 year.
The spatial expression of the concept over the three distinct geographic spaces of Western Coast Area, Eastern Coast Area and Central Highlands are as follows:

4.6.1 Western Coast Area

i. To anticipate and respond to the continued urban growth of the three main conurbations of Kuala Lumpur, Johor Bahru and George Town.

ii. To facilitate development of industrial enterprises within the conurbations and for non resource based industrial development to locate only at selected non-metropolitan centres offering conditions for long term viability; be competitive and for enterprises to utilise existing infrastructure.

iii. To facilitate the emergence of Kuala Lumpur, Johor Bahru and George Town and major urban centres providing niche market, local, regional and international tourism services, shopping, healthcare and education.

iv. To ensure the optimal use of existing infrastructure, in particular roads, airports and sea ports and avoid duplication of these facilities.

4.6.2 Eastern Coast Area

i. To recognise the uniqueness of the East Coast in terms of potential for nature, cultural beach and island tourism.

ii. To focus on the growth potential of Kuantan for industry and the services sector to create a significant East Coast growth node.

iii. To facilitate the emergence of Kota Bharu as a growth pole for the modern economy via a growth triangle involving Pulau Pinang, South Thailand and Kelantan.

iv. For industrial development to focus on existing urban centres using the existing resource base as the catalyst for growth and development.

v. To enhance residents potential to participate in the modern economy through education and social development programmes.

4.6.3 Central Highlands

i. To recognise the significance of the forest spine and topographic constraints to agricultural and urban development in the Central Highlands.

ii. To promote the integration of the forest reserves in the Central Highlands into a continuous forest spine.
iii. To create and enhance the economic base of the tourism sector through eco and agro tourism serviced by enterprises in selected strategically located rural urban settlements such as Cameron Highlands.

iv. To promote the concept of sustainability in forest management not only of log production but also with respect to habitat for fauna and wildlife.

v. For future urban development in the Central Highlands to focus on existing urban centres to enhance the multiplier effects of services of larger urban centres on the surrounding rural areas.
CHAPTER 5

POLICIES

A primary concern of the NPP is to ensure that Malaysia is globally competitive for investments in manufacturing and services, in particular in the sub-sectors of electronics, knowledge and communications technology, bio-technology, education and health tourism, and related sub-sectors. In order to do so it shall support, promote, and enhance the infrastructure and general development of those regions of the country that have the highest potential in attracting such investments and are in the best position to provide the competitive edge over similar regions in neighbouring countries. The NPP shall adopt a development strategy of ‘selective concentration’.

The NPP shall simultaneously promote and support the development of resource-based, agriculture-based and craft-and-culture-based industries and services, such as forestry and timber products manufacturing, traditional artisan crafts and manufactures, agricultural downstream activities, eco-tourism and general tourism, and cross-border trade and cross-border linked development, in those regions where such resources and opportunities are located. It shall also promote the development of the rural areas in general through support and enhancement of high value food production and commercial agriculture.

The NPP shall, therefore, provide a spatial planning strategy for international competitiveness and a framework for national developmental cohesion and discipline. The spatial framework avoids internal attrition and waste arising from internecine rivalry and provides a basis for inter-state co-operation and mutual support. Without prejudice to global competitiveness, the NPP shall simultaneously promote co-operation among Malaysia’s close neighbours.

The federal government shall implement the NPP through its control of development budgeting. The policies and measures formulated and enunciated here shall provide the guidelines for the implementation of the NPP. While the NPP is, *inter alia*, an exercise in national discipline, provision for debate, discussion and consensus is ensured in its process of formulation and in the five-year reviews. Within the agreed framework of the NPP, local initiative is encouraged.

The main users of the NPP are expected to be the Federal and State agencies responsible for planning, development and financial allocations as well as local agencies responsible for development control and land administration. However, all other agencies are expected to study and elaborate the implications of the NPP on their particular sectors, such as on education, public health and so on. Private sector property developers will also find the firm and agreed projections of population distribution as well as the transparent disclosure of forward distribution of public investments in infrastructure reliable guides for their investments. This will avoid speculative development in the private sector and future mismatch between property development and demand.
5.1 Setting a National Spatial Framework

**IP 1 : National Spatial Framework 2020**

The NPP established a spatial framework for the general direction of physical development for the nation. It shall form the basis on which lower tier Development Plans such as Structure Plans and Local Plans, as well as sectoral plans such as Transportation and Rural Development plans, are to be drawn up, and shall ensure that these plans conform to a cohesive set of national objectives and policies. The spatial framework will ensure that national resources are optimally used, duplication in infrastructure investment avoided, and more sustainable development in the states achieved. This spatial framework also complements the Five-Year Malaysia Plan (FYMP) which outlines the economic strategies of the nation. The plan-led development approach does not, however, impute a rigid centralised planning structure, but rather a system that is sufficiently flexible to accommodate top-down and bottom-up inputs current in the country’s system of planning. Aspirations of the states and local authorities shall be matters to be raised, discussed and rationalised at the time of formulation of the NPP and at the five-year reviews.

**NPP 1**

The NPP shall serve as the framework to achieve integrated and sustainable land use planning in the country.

**Measures:**

i. Development Plans (Structure Plans and Local Plans) and sectoral plans and policies shall conform to the provisions of the NPP.

ii. For uniformity of measurement, Development Plans shall apply the standards and criteria of the NPP, such as in:

   a. Land Use Classification
   b. Criteria for Land Availability Assessment

iii. Existing Development Plans shall be reviewed to comply with the provisions of the NPP.

iv. Population targets as provided in the NPP (as shown in the table) shall, within a stipulated variation range (+/- 5%), be adhered to as the basis for the preparation of Structure Plans, the planning of public infrastructure and social facilities, as well as for the approval of private development applications.

v. The NPP shall provide the spatial framework for the formulation of the FYMP.
5.2 Enhancing National Economic Competitiveness

Economic globalisation and world trade liberalisation offer opportunities in the form of open markets, increased inflows of investments and job opportunities but they also pose challenges to a developing country like Malaysia. There is increased competition especially among ASEAN countries and between ASEAN, China and India, which are emerging as major economic forces in this part of the world. The key to each nation’s success in meeting the challenges and maximising the benefits of globalisation and liberalisation is competitiveness.

In meeting the challenges of an increasingly global competitive environment and in line with the 8MP, the NPP proposes a land development strategy that focuses on the promotion of sustainable economic growth and also offers long term social balance. Its strategic thrust is to enhance those regions of the country which have shown a capacity in the recent past to compete with international world-class city regions for investments, so as to sustain their competitiveness and provide the country with the driving force for further development. This strategic thrust is particularly pertinent to the emergent sectors of ICT, biotechnology and knowledge-based services, in which Malaysia is still an emerging participant.

The NPP spatial strategy places a reliance on the urban-based manufacturing and tertiary services sectors to provide the basis for sustained economic growth and employment generation. An implication of this strategy is that certain urbanised regions, in particular the conurbations around Kuala Lumpur, George Town, Johor Bahru and Kuantan will continue to grow faster than the small and intermediate towns as well as other urban centres outside of the conurbations. The continuing migration of people from the rural and smaller urban centres should be facilitated through support programmes such as the provision of reception housing in the destination cities and sectoral redeployment through intensified training and education.
The NPP has adopted a concept of selective concentration. By this concept it is expected the main conurbations of Kuala Lumpur, George Town, Johor Bahru and Kuantan will be the primary recipient areas for foreign and local investments not only in the established sectors of manufacturing and services but also in the emergent sectors of ICT, privatised health, educational services and non-resort tourism.

The concept however recognises that where local or foreign investment is able, or desires, to locate away from the main conurbations, optimal use of existing physical and social infrastructure shall be promoted by focusing commitments on selected urban centres such as state capitals and urban growth areas such as Temerloh-Mentakab, Lumut-Sitiawan-Manjung, Kluang, Batu Pahat and Muar. To achieve a more balanced distribution, however, Kuantan is expected to emerge as the prime economic urban centre in the East Coast.

In summary, a finer interpretation of selective concentration is the expectation that the main conurbations are to be the prime centres of growth, but where sustainable development can be located away from those areas, it is to focus on only selected centres rather than be thinly and ineffectively dispersed over a broad economic landscape.

Simultaneously rural incomes are expected to rise through improved productivity forced upon the agricultural sector by the competition for labour. Rising productivity in the rural areas has to be associated with the restructuring of rural enterprise units and the use of new and improved technology. Continued urbanisation is seen as a necessary condition for increasing productivity in the rural areas as it provides the markets for agricultural products and, more importantly, stimulates specialisation of agricultural activities among regions in the country. The agricultural sector is expected to be more land-efficient through the intensive use of suitable agricultural land and the adoption of high-level technology.

The concentration of high value-added economic activities in urban areas also provides the basis for specialisation and increased productivity in the tertiary sector and in manufacturing. The urban centres provide concentrated markets for output and the link with the global market through which technological know-how is also disseminated and absorbed. Within the urban centres, the driving force is expected to be the tertiary sector which is targeted to grow at 8.0% per annum over the next 20 years. Tourism and related activities including the distributive trade and the financial sectors will be the major forces of growth in the future. The emergence of knowledge centres within the conurbations will support and encourage the extensive use of ICT and R&D in all sectors.

While the manufacturing sector has stabilised and matured, its continued growth and expansion will be through use of new technologies and the strengthening of the technological base of the industries. This change in structure and operations will be accompanied by a shift to knowledge-based production with increasing reliance on ICT.
and internally generated research and product development. Industries that rely upon relatively unskilled labour as a key component in operations will be subject to increasing competition from other emerging developing countries that will result in a rationalisation of operations and location. Provision of industrial land will need to take into account linkages, access to ICT and other support services.

The NPP supports and complements the cluster concept put forward by the Industrial Master Plan by translating the industrial clusters spatially across the country, indicating locations for key industrial clusters in the West and East Coasts based on their spatial strengths. The adoption of the cluster concept in industrial development encourages synergies, specialisation and exploitation of comparative advantages in the use of physical resources such as infrastructure in the form of access to ports, airports, the rail network and highways as well as non-physical resources in the form of capital, human resources and knowledge.

Competitiveness can also be enhanced through international regional cooperation. On its own, a nation may not have the means to meet the onslaught of global and economic liberalisation but a grouping of nations may be able to exploit these challenges to benefit its members. Malaysia is among such nations that have realised the significance of participating in regional cooperation. Membership in ASEAN has been taken further into the formation of a regional trade bloc – ASEAN Free Trade Agreement - and into the creation of regional growth triangles. The growth triangles – the Indonesia-Malaysia-Singapore Triangle (IMS-GT) and the Indonesia-Malaysia-Thailand Triangle (IMT-GT) exploit the advantages of interregional cooperation and facilitate the flow of benefits from regional cooperation to participating states. Johor and the states in northern Peninsular Malaysia stand to benefit the most from these growth triangles.

Among the many requirements to be economically competitive and resilient is efficiency in the use of national resources. Land is an important national asset and its efficient use through careful and effective planning is crucial towards enhancing national competitiveness in the global arena. Hence, land use planning should be based on an integrated approach throughout the country. This would not only reduce duplication and waste of resources but would also provide an avenue to reduce regional inequalities within the country. Inter-state cooperation in land and resource management is vital for sustainable socio-economic development.

In Peninsular Malaysia, imbalances in economic growth exist between the West and East Coasts. Within the West Coast, imbalances also occur between the more developed states, especially in the northern region where states like Kedah and Perlis are relatively less developed compared to Pulau Pinang and Perak. Reducing these imbalances is important towards enabling Malaysia to achieve national integration. Managing and planning the use of land resources in the less developed states forms an integral part of the NPP because it would enhance the sustainable development of scarce resources in these states whilst contributing to the reduction of imbalances in the medium to long term.
NPP 2

The planning of urban-based economic activities shall adopt the concept of ‘Selective Concentration’ for strategic urban centres for all states.

IP 2 : Selective Concentration Development Strategy

Measures:

i. Concentrate urban-based economic activities in main conurbations of Kuala Lumpur, George Town, Johor Bahru and Kuantan to promote efficiency in land use and infrastructure planning.

ii. Where operational efficiencies permit, urban-based economic activities able to locate away from the main conurbations are to locate at selected urban growth centres that offer efficiency in the use of existing infrastructure as well as local human and natural resources.

iii. Facilitate the development of industrial enterprises within the conurbations in the West Coast to achieve economies of scale.

iv. Encourage the development of privatised educational and training infrastructure in existing urban centres to facilitate the transition into the k-economy and to act as a catalyst for economic growth.

v. Locate knowledge-based activities and cyber cities in the main conurbations and other selected urban growth centres in line with the criteria set by the Multimedia Super Corridor (MSC) Implementation Council.

vi. Encourage the optimal use of existing main infrastructure facilities such as highways, railways, airports, and seaports to avoid wasteful duplication of these facilities.

NPP 3

Cooperation in physical planning between Malaysia and its ASEAN neighbours shall be strengthened.

Measures:

i. Exploit the opportunities presented by the Growth Triangles, namely IMT-GT and IMS-GT, to further generate development in the northern and southern parts of Peninsular Malaysia.

ii. In the northern region, planning of economic activities shall encourage the development of a seamless corridor between Northern Malaysia, Northern Sumatera (Medan) and Southern Thailand (Songkhla/Hat Yai). The planning of
IP 2: SELECTIVE CONCENTRATION DEVELOPMENT STRATEGY

The strategy of selective concentration implies the main conurbations are to be the prime centres of growth but where sustainable development can be located away from those areas, it is to focus on only strategic centres.
an international transportation network such as an international rail network with links to sea entries should adopt the seamless corridor concept.

iii. Encourage interstate cooperation to effectively exploit their respective comparative advantages and optimise the use of their infrastructure, land and human resources.

iv. Establish Special Economic Zones (SEZ) in participating states to cater for new areas of regional co-operation such as halal-food processing.

v. Kelantan is encouraged to become a member of the northern economic region in order to promote synergistic linkages with Southern Thailand and to gain access to a larger market provided by the George Town conurbation.

vi. Programmes shall be developed to encourage the east coast states to develop their recognized skills in crafts such as batik, wooden boat building and wood carving into internationally recognized niche market production centres.

vii. The country will also look at exporting professional services and forge cooperation in physical planning with ASEAN countries and national planning institutes of member countries

**NPP 4**

Land and natural resources of the less developed regions shall be used in a sustainable manner to increase the productivity of these regions and reduce regional imbalances.

**Measures:**

i. Encourage economic diversification through the widening of the economic base of the less developed states by:

   a. Agricultural activities through the strengthening of agricultural downstream processing of agricultural products to increase rural income levels.

   b. Areas with strong nature tourism potential, particularly in the Eastern Coast Area, shall be conserved and promoted.

ii. Strengthen infrastructure facilities, especially in ICT and transportation network in agricultural areas and areas of tourism potential to facilitate and expedite their integration into the modern economy.

iii. Strengthen the provision of educational technical training and social development programmes in the less developed states in anticipation of the need for segments of these populations to integrate more effectively into the urban economy.
NPP 5

Planning for industrial land development shall adopt the concept of ‘Industrial Cluster’.

**IP 3 : Industrial Centres and Potential Industrial Clusters**

**Measures:**

i. Implement the Industrial Cluster concept as follows:

a. Internationally-linked clusters are to be supported in the main conurbations through the establishment of an integrated network of infrastructure facilities including social amenities.

b. The location of policy-driven clusters such as transportation, materials and machinery shall be supported and encouraged in selected conurbations, depending on their respective comparative advantages.

c. Resource-based clusters and craft-based clusters shall be directed to the less developed states to serve as a catalyst for growth.

ii. Proposal for new industrial estates outside of the main conurbations and selected growth centres must be supported by a detailed programme identifying actual occupants, activities, linkages and viability studies.

iii. Existing underutilised yet developed industrial estates outside of the main conurbations and selected growth centres are to be evaluated to identify existing weakness in industrial locational criteria and to identify possible alternative uses.

iv. All new proposals for industrial estates are to demonstrate adoption of appropriate industrial locational criteria such as linkages between input resources and product, distribution and market, human resources and the capacity thresholds of infrastructure, where an emphasis should be given to the capacity of the water delivery system.

v. New industrial estates catering for heavy or pollution-generating activities shall not be located in designated nature/eco-tourism towns.

5.3 Modernising Agriculture

Agricultural acreage is expected to decline over time as urban uses compete with agricultural uses. The high costs of labour and land have also made the country less competitive in agricultural products compared to neighbouring countries. Despite these constraints, the agricultural sector remains important and can be enhanced to contribute still further to the national economy. Agricultural activities also continue to be dominant in employment in the East Coast and the northern states on the West Coast.
IP 3 : INDUSTRIAL CENTRES AND POTENTIAL INDUSTRIAL CLUSTERS

<table>
<thead>
<tr>
<th>Industrial Centre:</th>
<th>Existing Industrial Cluster:</th>
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</thead>
<tbody>
<tr>
<td>Industrial Growth Centres Level 1</td>
<td>Food-based</td>
</tr>
<tr>
<td>Industrial Growth Centres Level 2</td>
<td>Wood-based</td>
</tr>
<tr>
<td>Industrial Growth Centres Level 3</td>
<td>Printing and Publishing</td>
</tr>
<tr>
<td>Industrial Growth Centres Level 4</td>
<td>Chemical and Petroleum</td>
</tr>
<tr>
<td>Potential Industrial Cluster</td>
<td>Plastic Product</td>
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<tr>
<td></td>
<td>Rubber Product</td>
</tr>
<tr>
<td></td>
<td>Non Metallic and Mineral Product</td>
</tr>
<tr>
<td></td>
<td>Textile</td>
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<td></td>
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</tr>
</tbody>
</table>

- Electrical and Electronic
- Basic Metal
- Transport Equipment
- International Airport
- Domestic Airport
- Seaport
- Railway
- Highway
The Third National Agricultural Policy (NAP3) has specifically emphasised the maximisation of income through optimal use of resources. This entails raising productivity and sustaining growth. Another goal of the NAP3 is enhancing food security. To achieve its goals, the NAP3 advocates that the granary areas be designated as permanent paddy producing areas, that oil palm cultivation be sustained through improved productivity, and that synergistic links between forestry and wood-based industry be fostered.

In supporting the NAP3, there is a need to develop a rational land use strategy that seeks a compromise between the need for agricultural land and the increasing demands of a rapidly urbanising economy that focuses on urban-based activities. Due cognisance must be taken of the strategic position of the granary areas as the main food producing areas in the country. Consideration should also be given to the importance and dominance of oil palm cultivation and the need to rationalise the conversion of large estates to urban uses. Long-term prospects for rubber cultivation even on a small-scale appear uncertain and weak, thus demanding a review of land allocated for rubber cultivation in order to avoid penalising specifically the current rubber smallholders as well as the country as a whole.

**NPP 6**

**The support of agriculture shall take cognisance of the threats and opportunities of urbanisation.**

**IP 4: Prime Agricultural Areas**

**Measures:**

i. Prioritise agricultural land to conserve Prime Agricultural Areas (PAA).

ii. The 8 granary areas, oil palm areas under Rank 1 and 2 and all other agricultural areas under Soil Class 1 and 2 are to be designated as PAA. The following strategy shall apply to PAA:

a. All PAA outside of designated urban areas shall not be permitted for conversion to urban uses. Only conversion from one crop to another or from agriculture to agro-tourism and forest plantations may be permitted.

b. All PAA within the designated conurbations that fall within green belts shall be permanently conserved. Only conversion from one crop to another or to livestock raising and aquaculture shall be permitted.

c. A national exercise shall be carried out to identify, designate and map the PAA.

d. All Development Plans shall incorporate the areas of PAA onto their coverage.
IP 4: PRIME AGRICULTURAL AREAS

- Paddy Rank 1 (within Designated Granary Areas)
- Oil Palm - Rank 1
- Oil Palm - Rank 2
- Existing Agricultural Areas Under Soil Class 1 & 2
- State Capital
- State Boundary
iii. Productivity in the agricultural sector shall be enhanced through the rationalisation of management units, adoption of new technology and, particularly within and around the conurbations, conversion to high-value crops.

iv. The development of emerging agricultural sub-sectors such as aquaculture and livestock shall be promoted.

v. Existing major food production areas such as vegetable farms, tea plantations, livestock and aquaculture areas shall be conserved to support the national food programme.

vi. The change of crops in areas that are strategically located close to major urban centres to food and cash crop cultivation shall be encouraged.

**NPP 7**

The eight (8) strategic granary areas comprising Muda (MADA), Kemubu (KADA), IADP Kerian-Sungai Manik, IADP Barat Laut Selangor, IADP Pulau Pinang, IADP Seberang Perak, IADP Terengganu Utara (KETARA) and IADP Kemasin-Semerak shall be conserved.

Measures:

i. Permanent development limits for all urban centres within these areas shall be established.

ii. There shall be no conversion of paddy land in these areas to urban or any other uses beyond the established urban limits except for paddy related activities.

iii. In the Structure Plans for states with granary areas, urban development shall be diverted from these areas and alternative locations for urban development shall be identified.

iv. Water catchments for the granary areas shall be identified and conserved to ensure adequate and quality water supply for paddy cultivation.

v. Fiscal measures shall be introduced to assist states that are required to conserve granary areas.

**5.4 Strengthening Tourism Development**

Of the three national productive sectors, the service sector is targeted to be the main engine of growth where it is expected to be contributing almost 60% to GDP. The development of the service sector is strategic in attracting future foreign direct investments (FDIs) and enhancing Malaysia’s global competitiveness.
Tourism is seen as the main driver of growth within this sector. Tourist arrivals are targeted to grow at an average rate of 7.5% and the aim is to attract more international tourists to lengthen their stay in Malaysia. There is a need to diversify tourism products to capture a larger market as well as to develop good supporting facilities to ensure that Malaysia stays competitive in this area. Supporting facilities would include the ‘software’ of human resources and an efficient transportation system, which play key roles in moving tourists from the entry points to other parts of the country to enable them to maximise their stay.

Four tourism development zones have been identified by the National Tourism Policy as the primary tourism development zones in Peninsular Malaysia. They include the Kuala Lumpur-Melaka corridor, the Penang-Langkawi-Northwestern States, South-East Johor and the Peninsular East Coast. Within these zones, only tourist attraction areas of international and national importance and interest (gazetted Protected Areas and potential Protected Areas) are highlighted in the NPP.

**NPP 8**

**The different tourism development zones shall concentrate on different packages of tourist products to maximise their resource and locational advantages.**

**IP 5 : Major Tourist Attraction Areas**

**Measures:**

i. International shopping shall be encouraged in designated major urban centres such as Kuala Lumpur and Johor Bahru in order to maximise tourist and excursionist gateway capture of economic benefits.

ii. Environmentally sensitive integrated resort tourism suitable for high yield international and domestic tourists shall be promoted in the Eastern Coast Area with its outstanding natural beauty.

iii. Educational and health-care tourism shall be further developed as a niche product in the major urban areas particularly Kuala Lumpur, Melaka, Johor Bahru and Pulau Pinang. MATRADE shall assist to promote these products vigorously in target overseas markets.

iv. The value-added contributions from Meetings, Incentives, Conventions and Exhibitions (MICE) shall be maximised through the active promotion of primary sites in Kuala Lumpur and secondary sites in Pulau Pinang, Langkawi and Genting Highlands.

v. Infrastructure and support facilities necessary to strengthen and promote eco-tourism, socio-cultural and heritage tourism in the Eastern Coast Area to a niche market shall be developed.
vi. Tourism infrastructure and visitor facilities shall be upgraded to standards expected by international tourists to enhance competitiveness, without compromising the effects on the environment.

vii. A strong ground transportation system and integrated tourism packages shall be planned for, or improved, to support tourism growth and expansion.

viii. Heavy industries and utility plants, such as power generation stations, incinerators and landfills, shall not be sited at or close to designated tourism locations.

ix. Resource protection and management measures shall be vigorously and strictly implemented in the following areas:

a. Nature/Eco-tourism sites (such as Endau-Rompin, Tanjung Piai, Penang National Park, Taman Negara, Cameron Highlands, Fraser's Hill, Tasik Bera, Tasik Chini, Tasik Kenyir, Royal Belum Forest Reserve, Matang Mangrove Forest Reserve, Pulau Redang and Pulau Perhentian).

b. Prehistoric / archeological / historic sites and buildings (such as Lenggong, Bujang Valley, Kota Melawati, Stadthuys Building and the Sultan Abdul Samad Building).

c. Rural-tourism priority districts (such as Kuala Selangor, Lipis, Pontian, Besut, Alor Gajah and Baling).

x. The identification of areas of outstanding natural beauty and strong tourism potential and their designation as tourism sites shall continue.

xi. Guidelines on permissible development for individual eco-tourism sites, requiring involvement of local residents, promotion of local culture and reinvestment in the local environment shall be formulated.

xii. As a new policy direction, a more attractive financial assistance for the states that conserve their land for tourism activities, shall be worked out.

5.5 Managing Changing Human Settlements

The level of urbanisation in Peninsular Malaysia has increased from 54.3% to 65.4% in the inter-censal period 1991-2000 and is expected to increase to 75.0% by 2020. During the plan period of the NPP the intensification of urbanisation will be the dominant feature of Malaysian geography and economics. Urbanisation is also marked by the increasing primacy of the three main city regions of Kuala Lumpur, George Town and Johor Bahru, around which conurbations are being formed. The fastest growing towns in the period 1991-2000 have been those that cluster around these cities - the ten fastest growing towns in the period concerned being Subang Jaya, Skudai, Batu 9 Cheras, Pasir Gudang, Kulim, Kajang, Shah Alam, Gelugor, Ampang Jaya and Klang. The three main
conurbations will continue to grow faster than the rest of the country and attract immigrants. Population projection of the three main conurbations is as shown in Table 5.1.

**Table 5.1: Population Projection of Main Conurbations**

<table>
<thead>
<tr>
<th>Conurbation</th>
<th>Year 2000 (in million)</th>
<th>Year 2020 (in million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kuala Lumpur</td>
<td>4.8</td>
<td>8.5</td>
</tr>
<tr>
<td>George Town</td>
<td>1.3</td>
<td>2.4</td>
</tr>
<tr>
<td>Johor Bahru</td>
<td>1.0</td>
<td>1.8</td>
</tr>
<tr>
<td>Total as % of Peninsular Population</td>
<td>38.4 %</td>
<td>47.3%</td>
</tr>
</tbody>
</table>

The formation of a nascent fourth conurbation is also taking place around Kuantan. The selected strategy of selective concentration based on the main conurbations will reinforce these four conurbations.

Vision 2020 and OPP3 strategies are based on a high level of economic growth through accelerated industrial development and an export-based manufacturing sector. The 8MP also confirms the growing sectors of the economy as services and manufacturing. It further identifies a need for the promotion of FDIs and recognises that industrialisation for the future will be faced with intensifying competition among countries for investments and markets. These challenges and the economic planning strategies formulated to meet them imply a focus and dependence on the urban areas for the country’s future development. They also imply a general freedom of location for investors in accordance with the imperatives of their particular businesses, and international investors are likely to prefer locations that not only have the physical infrastructure to support the needs of their businesses, and that provide proximity to other businesses and industries, but also the infrastructure to support the lifestyle of knowledge workers on whom their businesses will depend. Such lifestyle needs include social, recreational and sports clubs, a variety of entertainment, outlets for cultural expression, international schools for children, high-end shops for wives, convenient access to international travel and a generally stimulating social environment. Only the highly urbanised conurbations can provide these conditions. The strategy of selective concentration avoids impinging on the capability of our most dynamic urban centres to compete against other urban centres in the West Pacific region and sustains their competitiveness. The implied outlook for Peninsular Malaysia is, therefore, a continuing process of concentration of productive investments, employment and population in the main conurbations.

The trend in urbanisation towards primacy of the main cities may be modified but not countered, as past policies in rural urbanisation in the example of the Regional Development Authority (RDA) areas, have shown. Any attempt to direct industrial development to areas dictated by the government may not only result in ineffective public investments but also losing the competitiveness of Malaysia in attracting FDIs or even losing local investments to Malaysia’s competitors, and, therefore, jeopardising achieving the objectives of Vision 2020. Modification of the current development trend may include a continuing support for the development of selected and limited locations in the less developed regions such as Kuantan and south Terengganu in order to encourage a balance in the geographical development of the country and to strengthen the base for
further industrialisation of these regions. It also includes channelling overspill and excess development to conurbations located between the main conurbations such as Ipoh, Melaka, Temerloh-Mentakab and Lumut-Sitiawan-Manjung.

The small and intermediate cities and towns in general, including some state capitals, have generally not developed as fast as the main conurbations and have experienced a loss in their share of the urban population in the decade 1991-2000. Public investments in infrastructure in order to attract development in the sectors facing global competition to the small and intermediate cities and towns will not be cost-effective. Their developmental viability should, therefore, depend on sectors that are not subject to global competition, or at least less intensive global competition, such as resource-based manufacturing, resource-based services, craft-based industries, downstream agricultural activities, forestry, as well as the general modernisation of the agricultural sector. There will be competition among the small and intermediate cities and towns for such forms of development. Priority should be directed to the state capitals such as Kota Bharu, Kuala Terengganu and Kangar, or in the case of downstream agricultural activities, to those centres located in the midst of modernising agriculture such as Tanah Rata, Kluang, Muar and Batu Pahat. Some of the modernising agricultural areas are of course already catered for by the conurbations. Many small and intermediate cities and towns will, therefore, still face stagnation and potential decline.

There are a few exceptions, particularly towns that have a potential in those sectors related to in-situ resource development, that is, in those niche sectors which are not subject to intensive international competition. These towns may be referred to as special feature towns. They include towns located close to sites of outstanding natural beauty or areas of natural, archaeological or historical attraction that can become tourist resort towns (example: Tanah Rata and Port Dickson) and new bases for eco-tourism (example: Raub and Kuala Lipis), as well as towns that cater to or support a particular mining operation or a particular industry arising from mining (example: Kerteh). They also include towns that can exploit their locations such as border towns that benefit from cross-border trade and international developmental co-operation (example: Padang Besar and Rantau Panjang). They further include towns that have been created for a special purpose and which will receive exceptional public financial support (example; Putrajaya and Cyberjaya), but this last group of towns are generally located within the expanding conurbations and their development will be supported by the growth of the conurbation concerned. The exceptions also include clusters of towns which, because of their locational advantage in relation to the transportation system of the country as well as other factors, have the potential to become the nuclei of future conurbations, namely, the Lumut-Sitiawan-Manjung area in Perak and the Temerloh-Mentakab area in Pahang. State Governments may direct infrastructural investments that are appropriate to the type of development anticipated to these exceptional areas identified.

The rural areas will face population decline not only because of the pull factor of urban employment but also because of the push factor of agricultural modernisation. It is, therefore, important to rationalise rural settlements not only to support an expanding urban-based economy but also to service efficiently the remaining rural population.
The maintenance of public services, such as in public health, education, communications and public transport, utilities, security, recreational facilities and so on in the small and intermediate cities and towns, and in the villages, should continue but should be rationalised. Such public expenditures do not constitute development investment but an equitable share of the general prosperity of the country. The level of services in the cities, towns and villages that may be declining should not be permitted to fall below the national standard, even if it requires that the rich areas must support and subsidise the poor areas. National integration must presuppose an equitable distribution of national wealth and this equitable distribution is achieved through public services and facilities.

The distribution of the services, as well as the types of services and facilities provided, need, however, to be monitored and adjusted. The nation is already facing the necessity of closing schools in rural areas because of the decline in the school-going age population in rural areas. At the same time more schools need to be built in the urban areas. These changes will continue over the plan period of the NPP. Space standards for schools may also need to be reviewed. The high cost of urban land may make the present generous space standards no longer affordable. Schools will have to consider seriously the sharing of playing fields, the time-sharing of municipal games fields, and the option of promoting less space-consuming games and so on. It is important to bear in mind that by 2020 three out of four Peninsular Malaysians will be living in urban areas, and nearly one out of two Peninsular Malaysians will be living in the three main conurbations, with the proportion of children probably even higher.

Public health services, which hitherto have concentrated on maternity and child-care in the rural areas, may also need to be re-examined. As the population structure changes and more child-bearing age women become concentrated in the urban areas, the present birth-related rural health care services may have to move with the population to the urban areas. At the same time the aging population of rural areas will require that geriatric care, which is still poorly developed, be quickly and greatly enhanced.

As the rural population decreases some villages, including traditional villages, new villages, Orang Asli settlements, as well as FELDA settlements, are likely to decline to a level where the provision of public facilities and services is no longer sustainable. The rural population should be consolidated at Rural Growth Centres (RGCs) where a high level of public facilities and services can continue. To diversify the rural economic base, the development of economic activities based on resource-based manufacturing, craft-based industries, value-added downstream agriculture-based activities, eco-tourism and forestry should be encouraged in these RGCs. Development of non-agricultural activities should, however, proceed in tandem with the modernisation of agriculture, including the rationalisation of management units and application of modern technology and methods. The process of urbanisation should be harnessed to enhance rural productivity and incomes, so that even when physical development appears to be occurring only in selected areas, the benefits of urbanisation is felt throughout the country through a structural change in agriculture.
Within the conurbations, urban sprawl and the consequential deterioration of the urban environment is an issue in the continuing expansion of the conurbations. While the conurbations themselves should be encouraged to grow in order to absorb development investments, individual cities within the conurbations should not lose form, character and functional efficiency. Urban planning at the local level should seek to nurture a liveable environment in the individual cities, maintain the integrity of relationships between the city cores and suburbs and minimise travel time between centres and peripheries. The conurbations should not become a chaotic and continuous mass of undifferentiated urban uses, imposing upon its inhabitants journeys to work, school, shopping or play, that are unnecessary, long, or that criss-cross one another.

The inner cores of the conurbations have also experienced a loss of their share of population to the suburbs and satellite towns in the decade 1991-2000. The city of Kuala Lumpur has grown at a slower rate than its conurbation and George Town has actually lost population. The population of Kuala Lumpur City grew at 1.4% p.a. while its conurbation grew at 5.6% p.a. – not including Kuala Lumpur City itself, the conurbation in fact grew at 7.7% p.a. The population of George Town shrank by 2.2% p.a. or 17.8% over the inter-censal period. This is in spite of the growth of employment in the core cities at rates that surpass their surrounding suburbs. For the year 2000 the employment ratio of Kuala Lumpur City was 0.59 against a conurbation ratio of 0.41 and a national ratio of 0.40 (Draft Kuala Lumpur Structure Plan 2020). This suggests that people continue to work in the core cities but move out to live in the suburbs. There is, therefore, increasing commuting.

The main cause of population movement out of the core cities may be attributed to the increasing cost of city housing, making living in the cities beyond the affordability of middle and lower income groups. Only subsidised housing in the form of low-cost housing manages to retain a proportion of the low income groups in the cities. However, while subsidised housing is extended to the poorest city dwellers it is not extended to the middle-income and lower middle-income groups. A situation may be developing in which the core cities are populated by the richest and the poorest and little in between. This is not a desirable social mix.

As low-cost housing areas are dependent on public maintenance not only of the infrastructure but also of the buildings themselves, they are vulnerable to dilapidation and neglect. The contrast between rich areas and poor areas can become very visible, again not a desirable social condition for the cities.

The out-migration of population from the inner cities may make way for the conversion of old housing areas to commercial and office uses, but many areas are left to decay as the rate of abandonment outpaces the rate of redevelopment. The decay of inner city areas will become increasingly an issue over the next two decades. Urban policies need to be put in place to guide the planning of cities, particularly the older cities in the main conurbations. Greater effort need to be made at the local planning level to deal with the design and renewal of specific sites and locations as well as any other impediments to redevelopment such as land tenure issues. In the Malaysian context ‘inner city’ should not be interpreted strictly as a geographical term implying a central location but should
include old areas and settlements that might have been hastily built or built without proper planning and have become parts of the cities, such as traditional villages and new villages.

The aspiration to attain developed country status and to enjoy the quality of urban life of a developed country involves the onus to adopt developed country standards for the physical environment. Present planning standards, particularly standards of open space provision, recreational parks and facilities, need to be reviewed. Standards and quality of infrastructure provision, such as in water supply, sewerage, street and drain cleanliness need to be monitored, reviewed and compared with international standards.

Malaysia is still experiencing a property overhang, which immobilises capital and resources, which has come about from speculative development. Future property overhangs should be prevented from recurring. It is incumbent on approving authorities to be restrained in the approval of development applications and to be guided by projections of housing and property demand based on realistic population projections. Development applications include the application for land conversion and sub-division. Approval of land conversion should not be at a rate faster than five years ahead of projected demand for development land. Presently some states have approved conversions sufficient to meet the demand for development up to twenty years ahead. In addition to the planning control exercised by state governments and local authorities, it is important that the private sector also exercises self discipline and responds more sensitively to state planning projections. A contributing cause of speculative development is the lack of accurate, regular and transparent information on the housing and property situation available to developers and property purchasers. Exacerbated by economic recession it engenders a property overhang.

The policies for managing human settlements should also be integrated with the sectoral policies in agriculture, conservation of resources and the environment, and other sectors that have an impact on land use. For example, the agricultural policy of conserving the strategic granary areas would require that urban development be diverted from cities located in the midst of granary areas like Alor Star. Such diversion could be areas just outside the paddy growing lands or to other cities and towns in the state. The details of urban diversion would be matters for state and local planning to address, but national policies should include financial assistance to states involved with the necessity for such urban diversion.

National policies on human settlements should also encourage local initiative where such initiative does not contradict the national spatial framework. For example, the aspirations of Kuala Lumpur City as contained in its Structure Plan should be supported. Support would be translated into federal financial allocations for local programmes.
NPP 9

The concentration of urban growth in the conurbations shall be anticipated and accommodated.

IP 6 : Hierarchy of Conurbations

Measures:

i. The levels of conurbations proposed for priority development are as follow:

<table>
<thead>
<tr>
<th>Level</th>
<th>Designation</th>
<th>Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>National Growth Conurbation</td>
<td>Kuala Lumpur-Klang Valley-Seremban</td>
</tr>
<tr>
<td>2</td>
<td>Regional Growth Conurbation</td>
<td>i.  George Town-Kulim-Sungai Petani-Northern Perak</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ii. Johor Bahru-Pasir Gudang-Tanjung Pelepas</td>
</tr>
<tr>
<td></td>
<td></td>
<td>iii. Kuantan-Kemaman</td>
</tr>
<tr>
<td>3</td>
<td>Intermediate (Connective) Growth Conurbation</td>
<td>i.  Ipoh</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ii. Melaka</td>
</tr>
<tr>
<td>4</td>
<td>Urban Growth Centre / Future Conurbation</td>
<td>i.  Alor Setar</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ii. Kota Bharu</td>
</tr>
<tr>
<td></td>
<td></td>
<td>iii. Kuala Terengganu</td>
</tr>
<tr>
<td></td>
<td></td>
<td>iv. Kangar</td>
</tr>
<tr>
<td></td>
<td></td>
<td>v.  Temerloh-Mentakab</td>
</tr>
<tr>
<td></td>
<td></td>
<td>vi. Lumut-Sitiawan-Manjung</td>
</tr>
<tr>
<td></td>
<td></td>
<td>vii. Muar-Batu Pahat-Kluang</td>
</tr>
</tbody>
</table>

ii. The extent of the conurbations has been demarcated as follow:

a. For the National Growth Conurbation a 45 minutes travel time from the employment centres of core cities.

b. For all other conurbations a 30 minutes travel time from the employment centre of the core city.

iii. As a new urban policy direction, use of vacant land within the present built-up area, rehabilitation and redevelopment of existing building sites shall be emphasized.

NPP 10

The growth of the four main conurbations of Kuala Lumpur, George Town, Johor Bahru and Kuantan shall be supported.

Measures:

i. In addition to the general support for services and manufacturing, the global competitiveness of the main conurbations for local and foreign direct investments
IP 6: HIERARCHY OF CONURBATIONS

Conurbation Hierarchy

- Level 1: National Growth Conurbation
- Level 2: Regional Growth Conurbation
- Level 3: Intermediate (Connective) Growth Conurbation
- Level 4: Urban Growth Centre/Future Conurbation

- State Capital
- Highway
- Federal Road
- Railway
in the k-economy growth sectors of ICT, health and education tourism, and biotechnology shall be given special attention and support.

ii. The provision of infrastructure and facilities particularly in power supply, housing, recreation, entertainment and environmental quality, which are necessary to support the k-economy sector shall be enhanced.

iii. Where necessary and appropriate, specific areas shall be identified and developed within the conurbations for the housing of ICT and biotechnology enterprises.

iv. Integrated mass transit systems shall be developed in the main conurbations to enhance the efficiency of the conurbations.

v. The aspiration to develop and promote Kuala Lumpur as a ‘world class city’ shall be supported.

vi. Overspill industries and services from the main conurbations shall be encouraged to locate in the intermediate (connective) growth conurbations and future conurbations of:

a. Ipoh
b. Melaka
c. Temerloh-Mentakab
d. Lumut-Sitiawan-Manjung
e. Muar-Batu Pahat-Kluang

NPP 11

The conurbations shall be planned and developed as integrated regions.

Measures:

i. Regional plans for the conurbations shall be prepared.

ii. In the case of a conurbation lying wholly within a single state the regional plan for the conurbation may be prepared in one or other of the following ways:

a. Local planning authorities within the conurbation area may, together and under the supervision of the State Planning Committee, prepare a regional plan for the conurbation;

b. The Structure Plan may incorporate a regional plan for the conurbation.

iii. In the case of a conurbation covering the areas of more than one state, Regional Planning Committees shall be formed, comprising all local planning authorities within the conurbation, representatives of the state governments involved and a representative of the federal government.
iv. Regional plans for the conurbations shall, among other things, address such matters as new towns and growth centres within the conurbations, transportation, water supply, sewerage systems, solid waste disposal, green belts, industrial estates, and flood mitigation.

v. Conurbation boundaries as shown in the NPP are not intended to be ‘hard boundaries’ but indications of the potential extent of the conurbations based on acceptable travel time from core cities. There are no conurbation boundaries as such for the purpose of planning or development control. The local authority areas within the conurbations provide the basis for planning and development control. Limits of development of the individual cities and towns within the conurbations shall, therefore, be agreed upon and delineated in the regional plans for the conurbation and shall be strictly observed by the individual local authorities.

vi. Excess development that cannot be accommodated within the prescribed urban limits of existing cities and towns shall be directed to new towns and growth centres located within the conurbations.

vii. The general population targets of the four main conurbations for the NPP plan period (2020) are as follow:

a. Kuala Lumpur Conurbation : 8.5 million  
b. George Town Conurbation : 2.4 million  
c. Johor Bahru Conurbation : 1.8 million  
d. Kuantan Conurbation : 0.6 million

viii. In delineating city limits, land shall be provided in between individual cities and towns which shall be set aside from development. Such land shall form a green belt, and, if deem necessary, legislation may be enacted to provide for the creation, maintenance and control of green belts.

ix. Isolated forest reserves, PAA and ESA Rank 1 and 2 shall form parts of the green belts. Agriculture Soil Class 3 land may also be included in the green belts as local authorities and State Governments deem fit.

x. The development control of lands designated as PAA and ESA shall be enforced in the green belts. Generally, development in the green belts shall be restricted to the use of land for recreational purposes, and the suitable type of recreational activities should depend on the type and sensitivity of the area.

xi. Land conversion and development applications shall be assessed on the basis of a sequential test¹ to minimise speculative development.

xii. State land within the urban limits shall be reserved for public use.

¹ Sequential test refers to a sequential approach to the release of land and buildings for housing, supported by a system of regional and sub-regional reconciliation of housing needs and demand.
NPP 12

The individuality and physical separation of the cities, towns and villages within the conurbations shall be maintained.

Measures:

i. The development limits of individual cities, towns and villages within the conurbations shall circumscribe the horizontal expanse of the individual cities, towns and villages.

ii. The integrity of relationships between the core areas of individual cities and their peripheries shall be maintained.

iii. While inter-city movements within conurbations shall be facilitated by mass transit systems, land use planning in the conurbations shall aim at minimising the necessity for inter-city travel.

iv. Structure Plans and Local Plans shall encourage infilling and the use of brownfield sites within the urban areas, to better utilise existing and committed physical and social infrastructure.

v. Local planning shall create scope for urban regeneration in the core cities not only for the purpose of economic growth but also for the purpose of enhancing the living environment.

vi. Local planning shall be sensitive to the conservation of historical, cultural and architecturally outstanding areas to enhance the character and uniqueness of individual cities.

vii. A hierarchy of infrastructural, social and recreational facilities shall be established within each conurbation to promote greater efficiency in public investments and the use of public facilities.
NPP 13

Towns with special features shall be identified and the development of projects exploiting their special features shall be supported with the appropriate infrastructure.

Measures:

i. Examples of towns with special features include:

<table>
<thead>
<tr>
<th>Special Feature</th>
<th>Town</th>
</tr>
</thead>
<tbody>
<tr>
<td>Border Town</td>
<td>Bukit Kayu Hitam</td>
</tr>
<tr>
<td></td>
<td>Padang Besar</td>
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<tr>
<td></td>
<td>Rantau Panjang</td>
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<td></td>
<td>Pengkalan Kubor</td>
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<tr>
<td></td>
<td>Bukit Bunga</td>
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<tr>
<td></td>
<td>Pengkalan Hulu</td>
</tr>
<tr>
<td>Tourism Town</td>
<td>Port Dickson</td>
</tr>
<tr>
<td>(including eco-tourism)</td>
<td>Mersing</td>
</tr>
<tr>
<td></td>
<td>Bandar Cukai</td>
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<tr>
<td></td>
<td>Kuah</td>
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<tr>
<td></td>
<td>Tanah Rata</td>
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<tr>
<td></td>
<td>Fraser's Hill</td>
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<tr>
<td></td>
<td>Raub</td>
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<tr>
<td></td>
<td>Kuala Lipis</td>
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<td></td>
<td>Gua Musang</td>
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<td></td>
<td>Jerantut</td>
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<tr>
<td></td>
<td>Maran</td>
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<tr>
<td></td>
<td>Muadzam Shah</td>
</tr>
<tr>
<td></td>
<td>Kuala Rompin</td>
</tr>
<tr>
<td>Special Role Centre</td>
<td>Putrajaya</td>
</tr>
<tr>
<td>Special Industry Centre</td>
<td>Kertih</td>
</tr>
<tr>
<td></td>
<td>Cyberjaya</td>
</tr>
<tr>
<td>Future Communications and Transport Node</td>
<td>Temerloh-Mentakab</td>
</tr>
<tr>
<td></td>
<td>Lumut-Sitiawan-Manjung</td>
</tr>
<tr>
<td></td>
<td>Kuala Lipis</td>
</tr>
<tr>
<td></td>
<td>Gua Musang</td>
</tr>
</tbody>
</table>

Other towns may be identified in the Structure Plans. Support infrastructure includes roads, public transport, utilities and public facilities.

NPP 14

Small and intermediate towns shall be developed in accordance with their localised economic potentials.

Measures:

i. Public amenities and facilities in all cities, towns and villages shall be maintained at a level commensurate with the needs of their population.
ii. Private investments in resource-based industries, craft-based industries, value-added agricultural activities, eco-tourism and similar industries and services in cities, towns and villages around which the resources or the base activities are located shall be supported by public investments in infrastructure necessary for such developments.

iii. Urban development shall be coordinated with national policies relating to land use, such as the Agricultural Policy to safeguard food producing areas. As an example, urban development should be diverted from cities and town located within designated granary areas to locations not reserved for rice production. Federal assistance, including financial assistance, should be made available for such urban development diversion.

**NPP 15**

The development of Rural Growth Centres (RGCs) shall be reinforced to rationalise the servicing of the rural population.

**IP 7: Potential Rural Economic Clusters**

*Measures:*

i. The existing RGCs shall be reviewed and its implementation programme expedited.

ii. Social and commercial services and public facilities shall be consolidated at RGCs.

iii. Public investment in infrastructure shall be concentrated in RGCs to support resource-based economic activities, craft-based industries, agriculture-based and forestry-based downstream activities.

iv. Villages of historical, heritage, cultural and architectural value should be selected as RGCs. Where any such village cannot be selected, a special programme should be created for its conservation.

v. The residents of villages where the population has become too small, or which are too isolated, to service or which, for any reason, have become uneconomic to service, should be encouraged to relocate to RGCs.
IP 7: POTENTIAL RURAL ECONOMIC CLUSTERS

1. Tourism & Agriculture-based
2. Island Tourism-based
3. Eco Tourism, Agriculture & Agro-Forestry-based
4. Urban, Cash Crop & Agriculture-based
5. Urban, Tourism & Agriculture-based
6. Urban, Agriculture-based & Agro-based Industry
7. Urban & Industrial, Cash Crop & Agriculture-based
8. Tourism, Cash Crop & Agriculture-based
9. Cash Crop, Agriculture & Tourism-based

Legend:
- Urban Area Catchment
- Agriculture Areas
- Forest
- Highlands
- Rural Settlements
- Town with population above 10,000
NPP 16

Planning standards shall be designed to meet the requirements of a developed country.

Measures:

i. Existing planning standards shall be benchmarked against international developed country standards and upgraded where appropriate with the view of ensuring a quality of life for Malaysians that is commensurate with a developed country status. Upgrading may be selective to ensure that any higher standards adopted are practical, appropriate to the local cultural, climatic and other conditions.

ii. The implementation of enhanced standards may be carried out gradually to avoid any potential drastic impact on land and house prices.

iii. The adoption of enhanced planning standards should be monitored and reviewed over an extended period of time.

iv. Planning standards to be reviewed shall include space standards for public facilities as well as private sector development standards.

v. The quality and range of municipal services provided shall also be reviewed to commensurate with the aspirations of a developed country.

NPP 17

A designated central authority shall be charged with the responsibility to publish on regular basis information on land use development.

Measures:

i. The central authority shall be identified by the National Physical Planning Council.

ii. Every local planning authority shall be required to supply to the designated central authority, at regular intervals, information on planning approvals and issue of Certificates of Compliance and Completion (CCC) it has carried out.

iii. Every district land office shall be required to supply to the designated central authority, at regular intervals, information on land conversions approved in its district.

iv. The designated central authority shall determine the frequency of publication in consultations with stakeholders and the frequency of reporting by the local planning authorities and land offices.
v. The designated authority shall, in consultations with the stakeholders, determine the formats for reporting and publication and the type of information to be included (whether in units, land acreages, quantum of floor space, housing types and so on). Information may include applications received and applications rejected.

vi. All Development Plans shall include a programme designating when land is 'ripe for development' and conversion to urban use. Approval for the conversion of land from agriculture to urban use shall adhere to such a programme. Where conversion is well ahead of development there should be a moratorium on conversion. The rate of conversion should be no more than 5 years ahead of projected development.

5.6 Conserving Natural Resources and the Environment

The effective management of natural resources and the environment is vital to the quality of human life and overall wellbeing of the country. It is recognized that land resources, being used for a variety of purposes of which all interact with both positive and sometimes negative outcomes, should be planned and managed in a holistic and integrated manner. This approach is advocated in the United Nations sponsored Agenda 21 programmes. Prudent management of natural resources and the environment is thus vital for the creation of an efficient, equitable and sustainable national spatial framework for the NPP.

The management of natural resources and the environment in a sustainable manner is a challenge to the country. The significant loss of forest cover is a good example - Peninsular Malaysia has already lost more than half of its original forests to agriculture and urban development (Table 5.2). While most of these forest clearings were needed to provide for the growing population, better planning and management of land could have minimised the loss and avoided fragmentation of the remaining forests. Fragmentation is one of the major threats to the conservation and maintenance of biodiversity and ecosystem.

<table>
<thead>
<tr>
<th>Year</th>
<th>Area (ha.)</th>
<th>% of Total Land</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early 19th. Century</td>
<td>-</td>
<td>(est.) - 90</td>
</tr>
<tr>
<td>1946</td>
<td>10,144,808</td>
<td>77</td>
</tr>
<tr>
<td>1970</td>
<td>8,008,767</td>
<td>61</td>
</tr>
<tr>
<td>1999</td>
<td>5,938,068</td>
<td>45</td>
</tr>
</tbody>
</table>

Source: Forestry Department, 2000
At present, the remaining forests play a vital role in safeguarding our water supply, providing forest produce and recreation and acting as a gene pool. Similarly, wetlands are among the most threatened ecosystems and their conservation is vital for the well-being of the country. Wetlands play important roles in flood mitigation and recharging groundwater storage. Conversion of wetlands to other land uses will aggravate flooding in many parts of the country. Most of the wetland forests especially on the west coast of Peninsular Malaysia have been developed and the remaining areas are under threat of encroachment and over-exploitation.

Currently, the Protected Areas (PA) in Peninsular Malaysia include gazetted National and State Parks, Wildlife Reserves / Sanctuaries, Marine Parks, Protection Forests (of the Permanent Forest Estate, or PFE) and other areas designated for statutory protection. This categorisation is based on the definition by the Convention on Biological Diversity (UNEP, 1992), to which Malaysia is signatory, which is: A geographically defined area which is designated or regulated and managed to achieve specific conservation objectives. Another definition that has been used is one provided by the International Union for the Conservation of Nature (IUCN), that is: An area of land and/or freshwater/marine body legally demarcated and dedicated to the protection, preservation and enhancement of biological diversity and of natural and associated cultural resources and managed through legal or other effective means (MOSTE, 1997).

Although these PA already comprise various habitats/ecosystems, the distribution of reserves reveals that some habitats/ecosystems are seriously under-represented, namely wetlands and lowland dipterocarp forests. Moreover, despite these PA being gazetted, there are provisions that allow degazettement for short-term economic uses.

Uncontrolled development in the highlands is also a growing problem that requires unambiguous policy directions. Highland in this document refers to land with elevation above 300m as adopted in the Study for the Sustainable Development of the Highlands of Peninsular Malaysia (EPU, 2002). The last decade has seen intensive development in the highlands, particularly in the established hill stations for commercial agriculture and tourism. The changes are particularly noticeable at hill stations such as Genting Highlands, Cameron Highlands and Fraser’s Hill, while development in other highlands is also fast intensifying. Many disasters such as flash floods and landslides have occurred that may be attributed to uncontrolled development. The natural topography of highlands is in itself extremely susceptible to soil erosion and landslides. In addition, disturbance from land development in such steep terrain will result in siltation of rivers and streams, thus increasing the incidence of flash floods downstream.

Policies are also needed both to protect and to manage our water resources. Incompatible developments within water catchments lead to pollution and deteriorating river water quality and significantly increases cost of water treatment. Besides the hazards of flash floods and landslides, other issues include over exploitation of water resources, land subsidence, encroachment onto floodplains and riparian buffer zones and loss of ecological integrity.
The coastal zones of Peninsular Malaysia have generally been experiencing rapid development including large-scale reclamation for tourism and urban purposes. Policies are needed to control and guide these developments so that the potential threats to the marine and coastal ecosystems such as alteration and loss of habitat, coastal pollution, over exploitation and coastal erosion and deposition can be minimised and monitored.

**NPP 18**

Environmentally Sensitive Areas (ESA) shall be integrated in the planning and management of land use and natural resources to ensure sustainable development.

**IP 8 : Environmentally Sensitive Areas**

**Measures:**

i. The management of ESA shall be guided by the following criteria:

   a. ESA Rank 1 – No development, agriculture or logging shall be permitted except for low-impact nature tourism, research and education.

   b. ESA Rank 2 – No development or agriculture. Sustainable logging and low impact nature tourism may be permitted subject to local constraints.

   c. ESA Rank 3 – Controlled development where the type and intensity of the development shall be strictly controlled depending on the nature of the constraints.

ii. Areas that will be inundated by proposed dams may be logged, subject to the timing requirements of dam construction. Areas between proposed inundated areas and the 1000m contour level within a proposed dam catchment may be sustainably logged, subject to the conditions applicable to the appropriate ESA ranking. An existing logging concession in a proposed dam catchment and potential Protected Area may continue until the expiry of the concession.

iii. There shall be adequate buffer zones between ESA and urban or agriculture development. A minimum standard of buffer zone shall be established. Permanent buildings should not be permitted in the buffer zone. The buffer zone may be utilised for agro-forestry. Within the designated conurbations, ESA buffer zones may be incorporated into the green belts.

iv. Structure Plans and Local Plans shall refine and delineate the ESA identified in the NPP to include other ESA that may be of importance at the state or local levels.
IP 8: ENVIRONMENTALLY SENSITIVE AREAS

- **ESA Rank 1:**
  1. All Protected Areas, potential Protected Areas, wetlands and turtle landing sites
  2. Catchment of existing and proposed dams
  3. All areas above 1000 m contour

- **ESA Rank 2:**
  1. All other forests, corridors linking important Protected Areas, buffer zone around Rank 1 areas
  2. All areas between 300 m - 1000 m contour

- **ESA Rank 3:**
  1. All marine park islands, buffer zone around Rank 2 areas
  2. Catchment of water intakes and groundwater extraction (wellfields)
  3. All areas between 150 m - 300 m contour, all areas with erosion risk above 150 ton/ha/yr, all areas experiencing critical or significant coastal erosion

Legend:
- Marine Park
- State Capital
v. The Protected Areas (PA) network shall be enlarged to include a full representation of the diversity of natural ecosystems, particularly the lowland dipterocarp forests and wetlands. To achieve this, the following areas are recommended to be gazetted as PA, and shall be managed as ESA Rank 1:

a. Parts of Southeast Pahang Peat Swamp Forest, Pahang
b. Parts of Kuala Selangor North Peat Swamp Forest, Selangor
c. Kuala Langat North Peat Swamp Forest, Selangor
d. Klang Islands (Pulau Klang, Pulau Che Mat Zain and Pulau Tengah), Selangor
e. Parts of Matang Mangrove Forest Reserve, Perak
f. Ulu Muda Forest Reserve, Kedah
g. Tasik Chini and its surrounding wetland, Pahang
h. All forests above 1000m elevation except for Special Management Areas.

This PA network, which crosses state boundaries, is best coordinated at the national level to achieve effective management, comprehensive monitoring and integration with economic and development policies.

vi. Further detailed studies at the Structure and Local Plan levels shall determine the locations and sizes of all PA. All PA shall be protected from any form of urban and agricultural development.

vii. Isolated PFE shall be integrated into urban development to serve as regional parks and part of the country's network of recreational areas.

viii. PFE that have been degazetted for development shall be simultaneously replaced with forests that are of similar quality and size.

ix. All present State Land Forest shall be gazetted as PFE and be subjected to appropriate silvicultural treatment to further improve the productivity of such forests.

x. Future functions of the forest land shall be recommended in the context of the proposed development strategy for each region.

xi. Fiscal measures shall be introduced to assist states that are required to conserve areas for environmental purposes beyond the needs of their states. This includes Protected Areas as well as water catchments.
**NPP 19**

A Central Forest Spine (CFS) shall be established to form the backbone of the Environmentally Sensitive Area network.

**IP 9: Central Forest Spine**

*Measures:*

i. The CFS shall be gazetted as a protection forest under the National Forestry Act.

ii. Management plans, guidelines and operational procedures shall be formulated to regulate the functions and uses of the CFS.

iii. The tourism economic base within the CFS shall be enhanced.

iv. Studies shall be undertaken to determine the possibility of re-establishing the integrity and connectivity of forests and wetlands through the implementation of the linkages between the following four major forest complexes:

   a. Banjaran Titiwangsa-Banjaran Bintang-Banjaran Nakawan,
   b. Taman Negara-Banjaran Timur,
   c. South East Pahang, Chini and Bera Wetlands,
   e. Endau Rompin Park-Kluang Wildlife Reserves.

v. Rivers shall be used as connecting corridors to maintain the integrity and connectivity of forest ecosystems. Structure Plans and Local Plans shall incorporate the concept of using the rivers and forests as the backbone for developing the country’s network of linear recreational areas and for maintaining ecological balance.
IP 9: CENTRAL FOREST SPINE

- Forest Cover
- Central Forest Spine Boundary
- Forest Spine Linkages
- Forest Complexes
- State Capital

Forest Complexes:
1. Banjaran Titiwangsa-Banjaran Bintang-Banjaran Nakawan
2. Taman Negara-Banjaran Timur
3. South East Pahang-Chini and Bera Wetlands
4. Endau Rompin Park-Kluang Wildlife Reserve
**NPP 20**

**Sensitive coastal ecosystems shall be protected and used in a sustainable manner.**

**IP 10: Sensitive Coastal Ecosystems**

**Measures:**

i. Coastal reclamation for future urban expansion shall not be carried out except for the development of ports, marinas and jetties.

ii. Sensitive coastal ecosystems of national importance shall be gazetted as Protected Areas and could be utilised for low-impact nature tourism. Amongst others, these include:

   a. Parts of the mangroves in Larut Matang District, which are important for West Coast fisheries, should be gazetted as protection forests.

   b. Klang Islands, especially Pulau Tengah, which should be protected as a bird sanctuary.

   c. Kuala Selangor Nature Park should be enlarged by incorporating parts of Banjar North and Banjar South Forest Reserves and be protected.

   d. Turtle nesting sites such as Pulau Redang, Kuala Setiu Bahru, Geliga and Paka in Terengganu, Pulau Upeh in Melaka and Chendor in Pahang should be protected as turtle sanctuaries.

   e. Kuala Gula should be protected as a sanctuary for migratory birds.

   f. All islands within marine parks should be designated as ESA Rank 3 as minimum requirement, and development should be controlled accordingly to help safeguard the marine parks. Subject to further studies, some marine park islands will be designated ESA Rank 1 or 2.

Other sensitive coastal ecosystems shall continue to be identified in the Structure Plans.

iii. Adopt policy recommended by National Integrated Coastal Zone Management for coastal areas.

iv. Coastal area land use plan shall be prepared.
IP 10: SENSITIVE COASTAL ECOSYSTEMS
NPP 21

Land development in highlands shall be strictly controlled to safeguard human safety and environmental quality.

IP 11 : Highlands And Special Management Areas

Measures:

i. Future urban and agriculture development in the highlands shall only be permitted in three Special Management Areas (SMA) viz.:
   
a. Cameron Highlands-Kinta-Lojing,
   b. Genting Highlands-Bukit Tinggi-Janda Baik
   c. Fraser’s Hill.

Within the SMA, future agriculture development shall only be permitted in areas with slopes of 25° or below.

ii. New golf courses and industries shall not be permitted in the highlands.

iii. The synergy between agriculture and tourism shall be strengthened to optimise the use of resources.

iv. The planning and design of highland developments shall be based on the recommendations of the Study for the Sustainable Development of the Highlands of Peninsular Malaysia (EPU, 2002).

NPP 22

All surface and ground water resources are strategic assets to be safeguarded and used optimally.

IP 12 : Industrial Sites within Water Catchments

Measures:

i. Surface and ground water resource and recharge areas shall be identified and delineated as areas requiring special land use management and subject to specific land use control.

ii. All existing and future land use activities within surface and ground water resource and recharge areas should not jeopardise nor add to the cost of water treatment for human consumption.

iii. New industrial development and other activities that could be a source of water borne pollution shall not be permitted in water catchments.
IP 11: HIGHLANDS AND SPECIAL MANAGEMENT AREAS

- Mountain ( > 1000 meters a.s.m.l.)
- Highland ( > 300 meters a.s.m.l.)
- Special Management Areas
- Hill Station
- State Capital
- State Boundary

Source: Study For The Sustainable Development of The Highlands of Peninsular Malaysia, 2002 (CPF)
IP 12: INDUSTRIAL SITES WITHIN WATER CATCHMENTS

- **Existing Dam Catchment**
- **Proposed Dam Catchment**
- **Water Intake Catchment**

Legend:
- **Existing Industrial Site**
- **Proposed Industrial Site**
- **State Capital**
iv. Existing industries within water catchments shall be required to adopt appropriate environmental management measures to protect public health and the water quality.

v. Water catchments upstream of dams shall be gazetted as protection forests to ensure that there will be no further encroachment of incompatible land uses into such areas.

vi. Water bodies shall be managed to protect the aquatic flora and fauna, with the objective to sustain living rivers.

5.7 Integrating the National Transportation Network

The road and expressway network of Peninsular Malaysia is well developed, especially on the West Coast, although the expressway system has yet to be extended to the East Coast. However, road travel for people is generally slow and tedious. While air travel is much faster, it involves considerable non-travel time, including movement from city to airport, processing time and waiting time. Air transport for the passenger becomes worthwhile when the travel time is at least several times longer than the non-travel time. This becomes the case when the distance between departure point and destination is sufficiently far apart. The average distance between major cities of the Peninsular, particularly the main conurbations, is about 300 km. This makes air travel seems much faster only in comparison with road travel or travel by the existing rail service, that is, in the absence of any real alternative. A high-speed rail service would completely change the perspective and provide a different paradigm for the development of Peninsular Malaysian cities.

The NPP proposes that an integrated national transportation system be developed in which railway forms the core system for people and goods transportation while the road system provides both an alternative mode and an articulation of the system. The two must be well integrated in order to work efficiently and effectively. The two networks of road and rail must also interact and interlink to facilitate multimodal movement of goods and people.

The national expressway system is as yet incomplete. Its extension to the East Coast, particularly to link the East Coast cities of Kota Bharu and Kuala Terengganu to the West Coast conurbations, must be given priority consideration. Supporting and complementing the national expressway system shall be an extensive network of lower hierarchy roads such as the federal and state roads. These are essential for traffic dispersal from the expressway system, for local access, and particularly for access to the rural areas. Although the linkage between urban areas and rural areas may utilise all the different levels of highways and roads as well as railways or even air service, the most critical part of the system will be the state roads, particularly the kampung (village) roads.

The rail system using high-speed design criteria is yet to be fully exploited as a means not only to link effectively the different parts of the country but also to unify the different elements of the national transportation system. Given the distribution pattern of the main
urban centres, a national high-speed rail transport system shall best serve as a comprehensive unifying system linking all state capitals. A minimum of two east-west cross-links (north and central) shall be considered in the development of the national high-speed rail system. When performing at a speed of 300km/h or more, the high-speed rail will be the most optimal and appropriate choice in terms of journey time, carrying capacity and safety. Apart from considering the latest technologies in rail transport, the execution of the high speed network should also include an evaluation of upgrading the present narrow (1.0m) gauge to the internationally accepted 1.435m gauge.

Complementing the inter-state high-speed rail, the main urban conurbations should have their own light and mass rail transit (LRT and MRT) systems for urban transit. Railway stations will become the focal points of urban life and activity. Railway stations will become community places in addition to being transportation interchanges.

In relation to sea traffic, Malaysia plays the role of a regional transhipment hub and its ports also serve as regional hinterland ports. As a transhipment hub, Malaysia functions as the transfer point for different shipping lines where cargo is off-loaded from one ship to other ships and forwarded to different port destinations. Seaports and inland ports are oriented essentially for the transportation of goods rather than people. The most important objective of a port is to ensure the efficient and speedy transfer of goods from inland transport to maritime transport and vice versa.

Port Klang and the Port of Tanjung Pelepas (PTP) should be promoted as the two major national ports, albeit each with a different focus. Port Klang, with its central location and proximity to the nation’s domestic hinterland, should ideally build on this comparative advantage to focus on being the regional hinterland port with extensive intermodalism and efficient land-bridging services to other ASEAN countries. PTP, given its locational characteristic on the other hand, should concentrate its development to be a regional and international transhipment hub for South-East Asia with extensive maritime feeder services to all ASEAN countries.

For air traffic, strategically KLIA has the potential to be a competitive hub for air travel between the northern hemisphere and the southern hemisphere. The strength of KLIA lies in the fact that it has a large hinterland of some 23 million potential travellers. The key for KLIA to unlock its latent potential is to galvanise its large hinterland together with the country’s vast potential for tourism to generate a critical mass which would entice a greater number of airlines to operate from KLIA.

Domestically, with the introduction of the high-speed train as the trans-peninsular transportation spine, domestic air travel will become increasingly less significant, and so will regular, scheduled domestic air services. Tourism-related chartered services may then assume a more significant role.

Within most urban centres, the transportation system is neither balanced nor sustainable. In order to achieve a reasonable degree of sustainability there is a need to have a more efficient, safe and comfortable public transport system to permit a modal shift from private car usage. Kuala Lumpur for example, with a current modal split of about 80:20 in favour of private transport, reflects an obvious imbalance between private and public vehicle
usage. Due to the existing imbalance and number of cars more road infrastructure will need to be provided unless a shift of mode from private transport to public transport is imposed. Hence, a modal split of 50:50 is proposed as a national strategy for all major urban centres.

In the immediate future, road transport shall continue to provide the basic mode of travel for the movement of people and goods. While the expressway network substantially caters for inter-state movement in the West Coast, the older federal and state roads still cater for substantial interstate and local movements.

This network, basically laid down some decades ago, urgently needs upgrading in terms of road alignment, widening and village by-passes to enhance road safety and cater for the high volumes and faster travel speeds of today’s vehicles. The prime focus of this programme should be all federal roads and main rural-urban roads that are hindering the growth potential of rural areas capable of servicing the conurbations and rural-urban commuters.

**NPP 23**

In recognition of the inter-relationship between land use and transport an integrated national transportation network shall be established.

**IP 13 : Integrated National Transportation Network**

**Measures:**

i. A single agency shall be identified to coordinate integration of the nation’s public and private transportation systems where an emphasis should be placed on enhanced use of public transportation services in major urban areas.

ii. A master transportation services network plan incorporating the role and function of road, rail, sea and air facilities and services at a national level shall be developed.

iii. In order to optimise use of resources, the role and function of each road shall complement rather than duplicate each other.

iv. To facilitate emergence of an integrated transportation network, studies shall be undertaken to identify movement corridors and for these corridors to be subsequently incorporated into Structure and Local Plans.

v. Corridors shown in Structure and Local Plans shall be protected from alternative land uses.

vi. While implementation of a transportation network may be undertaken incrementally, the overall works programme shall be consistently executed to achieve completion.
IP 13: INTEGRATED NATIONAL TRANSPORTATION NETWORK

- Existing and Committed Expressway
- Proposed Expressway
- Proposed Highway (Actual Alignment)
- NPP Proposed Highway
- NPP Proposed Road Upgrading (Coastal Road)
- Proposed High-Speed Rail
- Major Federal / State Road
- Existing Railway
- International Airport
- Domestic Airport
- National Sea Port
- Regional Sea Port
- Coastal / Feeder Sea Port
- Rail Station
- Interchange
- State Capital
vii. All main public transport terminals shall be developed in each of the main urban conurbations, state capitals and urban growth centres, as seamless multi-mode integrated hubs catering for buses, taxis, private cars, LRT, MRT and interstate trains.

viii. A hierarchy of transportation systems comprising rail, road, sea and air services to link all states economic activities in Peninsular Malaysia shall be established. The high-speed rail shall act as the core system supported by the road network.

**NPP 24**

**A national integrated high-speed rail system shall be established.**

**Measures:**

i. Corridors for the high-speed rail system shall be established and protected in a phased programme.

ii. All state capitals should be linked via the high-speed rail network with the rail stations acting as focal points for community and transportation activities.

iii. The priority route for implementation of the high-speed system shall be the Kuala Lumpur-Johor Bahru-Singapore link, followed by the Kuala Lumpur-George Town link and subsequently north to Bangkok, as part of the Trans-Asian Railway.

iv. Two east-west links should be established as part of the high-speed rail network, one from Kota Bharu to George Town and the second from Kuantan to Kuala Lumpur.

v. The present ERL route to KLIA would form part of the high-speed rail network.

vi. KL Sentral shall be the national transportation hub linking the major transportation nodes with a range of multimodal services.

**NPP 25**

**The national road network shall be further extended for regional travel and for local access.**

**Measures:**

i. The road network shall form the base layer on which the proposed high-speed rail system shall be overlaid.

ii. The expressway system shall be extended to cover both the West Coast and the East Coast regions in which a minimum of three expressway cross-links should be provided to better integrate the Western Coast Area, Central Highlands and Eastern Coast Area.
iii. Supporting and complementing the national expressway system shall be an extensive network of lower hierarchy roads such as the federal and state roads, essentially for traffic dispersal from the expressway and the rail system, and for local access.

NPP 26

Major airports and seaports shall be developed according to their complementary functions to enhance the nation's economic competitiveness and facilitate tourist arrivals.

Measures:

i. Planning and development shall support the functions and roles of the international airports as follows:

a. KLIA as the main international gateway and the regional hub of South-East Asia.

b. Bayan Lepas International Airport as the major hub serving the industrial, commercial and tourism needs of the northern region.

c. Mat Sirat International Airport shall complement Bayan Lepas and support the role of Pulau Langkawi as the major site for exhibitions, conventions and tourism.

d. Sultan Ismail International Airport as the major hub of the southern region and to support the function of the Port of Tanjong Pelepas.

ii. Sultan Haji Ahmad Shah (Kuantan), Sultan Ismail Petra (Kota Bharu) and Sultan Mahmud (Kuala Terengganu) airports are to be upgraded to facilitate arrivals of chartered international flights.

iii. Planning and development shall support the functions and roles of major seaports as follows:

a. National Ports:

- Port Klang - regional hinterland port providing for eventual land-bridge services to Asian countries. To remain as the national load centre in terms of international cargo movement. It shall be characterized by a high level of connectivity with the surrounding countries (through various infrastructural developments such as the Trans-Asian Railway) and a strong emphasis on multimodalism and intermodalism.

- Port of Tanjung Pelepas - international and regional transhipment hub for Asia-Pacific.
b. Regional Ports:

- Pulau Pinang Port and Kuantan-Kemaman Port. The former focuses on shipping lines from the west, whilst the latter caters to those from the east.

c. Coastal and Feeder Ports:

- Pasir Gudang Port, Langkawi Port and Lumut Port.

These ports shall provide for the efficient bulk movement of goods and serve as intermodal and multimodal hubs.

**NPP 27**

The Transit Oriented Development (TOD) concept shall be promoted as the basis of urban land use planning to ensure viability of public transport.

**Measures:**

i. The main railway terminals shall be developed as integrated multi-mode transportation terminals and foci for commercial, residential and social activities.

ii. Park-and-ride facilities shall be provided to promote the railway stations as transportation hubs of the towns and shall be incorporated into all urban railway stations.

iii. Walkway linkages shall be provided to connect the railway stations with other major landmarks or developments in the town centres.

iv. For major towns, the railway station and its immediate areas shall be designated for high-density commercial and residential development.

v. For those cities with their own rail networks, the stations shall be designated as the foci providing mixed-use services and activities.

vi. The conurbations of Kuala Lumpur, George Town and Johor Bahru shall incorporate LRT and MRT routes into the urban fabric.

vii. The present LRT routes in the Kuala Lumpur conurbation shall be better integrated and extended to service the new outer growth centres.
NPP 28

In all major urban centres, an integrated public transportation system shall be established.

Measures:

i. Transportation in all major urban centres shall adopt a modal split of 50:50 between public and private transport.

ii. An integrated, regular and frequent public bus service shall be provided in all urban settlements of population up to 0.5 million.

iii. For urban settlements with populations of more than 0.5 million, an integrated mass rapid transit system shall be adopted.

iv. Traffic management measures including Intelligent Transport Systems (ITS) shall be adopted to enhance traffic efficiency.

5.8 Providing Appropriate Infrastructure

A key indicator of development status is reflected in the availability and quality of infrastructure in the form of roads, water supply, drainage, piped gas supply, waste management, power, telecommunications and the like. For the Peninsula, the pattern of availability and quality of the full range of infrastructure services varies considerably, not only between states but also within particular states. While national development policies with respect to provision of basic infrastructure services such as roads and water has been successfully implemented, the quality of services available in parts of the major urban areas has been generally found wanting.

The rapid rate of urbanisation combined with institutional and financial weaknesses, has resulted in the need for providers of services to ‘catch up’ with users’ expectations and demands. This issue is most critically expressed in the main conurbations where a combination of inadequacy of roads, absence of public transport and poor land use integration has led to congestion and community cost inefficiencies. Failure to anticipate the rapid increase in demand generated by urban activities has also resulted in shortfalls in supply of water, power and telecommunication services.

The importance of the need to protect all water resource areas as well as to manage efficiently the supply and delivery of water should not be underestimated. For example, while water appears to be ubiquitous, present and projected rates of consumption indicate many centres of population will be subject to water stress in the near and mid-term futures.

Solutions will require adoption of integrated river basin and water resource management programme, in addition to husbanding the present sources via rehabilitation of the present infrastructure, recycling of run-off and reuse of waste water.
The present extraction rates of ground water for domestic, industrial and irrigation purposes, particularly during the dry season in Kelantan and Selangor, warrants adoption of water management measures to ensure that this resource is maintained at sustainable levels and the quality of water is not subject to pollution. Currently the issues relating to ground water resource are ground water pollution arising from uncontrolled development within and surrounding the recharge areas, over-extraction that leads to land subsidence, saline water intrusion particularly in coastal areas, and the lowering of ground water tables within peat swamp areas.

Quality of life issues related to sewerage, solid waste and flood management have suffered from a late start in the general perception of the need for these services as part of normal health and safety requirements of citizens.

At present Malaysia is ranked at level 2 in terms of ICT on a 1 to 4 scale where 4 is high use of ICT. In terms of national development, the provision of good ICT infrastructure is vital for Malaysia to be a regional hub for ICT development. Emphasis will continue to be placed on making ICT accessible and affordable to the masses through efficient technologies. The MSC shall provide the model for the provision of a similar utility provision and level of service for new cyber cities.

The NPP recognises these deficiencies in ICT and proposes efforts be directed to improving the quality of services by focussing initially on the main conurbations, by attending to shortfalls in service availability, and to enhancing and providing a more even spread in the quality of services. Each of the service providers should establish integrated national and specific area programme based on the spatial distribution priorities established in the NPP.

**NPP 29**

The NPP shall provide the spatial framework for the efficient delivery of integrated infrastructure services at the national and regional level and to the main conurbations.

**Measures:**

i. National agencies encompassing:

   a. Water supply and distribution,
   b. Sewerage,
   c. Waste management,
   d. Transportation inclusive of all public transport,
   e. Power supply and distribution,
   f. Telecommunication and
   g. River and coastal management

shall adopt the NPP as the basis for planning and coordinating provision of infrastructure services.
ii. National infrastructure agencies shall oversee state and local level agencies to ensure programmes are consistent with the intent of the NPP.

iii. The NPP population projections and distribution proposals shall be utilised as the basis for infrastructure service supply and distribution programmes.

iv. Proactive proposals for delivery of services shall be adopted to enhance efficiency and reduce costs and delays in the delivery of the services.

v. Enhanced management of infrastructure services shall be achieved through the implementation of requirements for all infrastructure services/providers to maintain records using Geographic Information Systems (GIS).

**NPP 30**

The supply and projected demand for water by quantity and location should guide the planning of water resource areas.

**IP 14 : Water Resources And Water-Stressed Areas**

*Measures:*

i. National policies on water shall be formulated to encompass issues such as water resources conservation, alternative sources for water-stressed areas, opportunity costs for conservation of water catchments, reduction of water loss, reuse and recycling of water and water demand management.

ii. States with the ability to supply water to water-stressed areas shall be encouraged to protect water catchments and to develop their export potential of this resource.

iii. Integrated Water Resource Management (IWRM) and Integrated River Basin Management (IRBM) are to be adopted as input of land use planning.

**NPP 31**

Ground water resource and recharge areas shall be identified and protected from activities that cause pollution and reduce yield.

**IP 15 : Ground water Resources**

*Measures:*

i. Structure Plans and Local Plans shall delineate ground water resource areas (wellheads) and recharge areas as part of the integrated land use management plans.
IP 14: WATER RESOURCES AND WATER-STRESSED AREAS
IP 15 : GROUND WATER RESOURCES

Ground Water Yield:
(Gallons/Hours/Well)
- Below 2500
- >2500 - 4000
- >4000 - 6000
- Above 6000

Legend:
- Major River
- State Capital
ii. Land use controls and buffer requirement shall be imposed to protect ground water resources including recharge areas and wellheads.

iii The use of public wells and important ground water resources catering for commercial, industrial and agricultural activities shall be monitored, particularly to avoid over-extraction.

iv Drainage controls shall be imposed in the vicinity of important ground water areas such as peat swamps and freshwater swamps to maintain the water table required to sustain these ecosystems.

**NPP 32**

All urban settlements shall be serviced by a centralised sewerage treatment system.

**Measures:**

i. Priority shall continue to be given to rationalisation and centralisation of the sewer networks and treatment systems for the main conurbations, major urban settlements and tourist activity towns and islands.

ii. Sewerage treatment policies shall be extended to encompass all land use activities in urban areas. To optimise delivery cost and efficiency, centralised sewerage treatment plants and mains network should be established proactively in accordance with the spatial policies for new growth urban areas.

iii. Appropriate technology solutions to sewerage treatment should be applied in rural and low density housing areas.

**NPP 33**

All urban settlements shall be serviced by an integrated network of solid-waste disposal and/or recovery facilities.

**Measures:**

i. Solid-waste disposal and/or recovery system of facilities may include waste processing, transfer, treatment or other necessary facilities and shall be monitored at all times by the appropriate health and environmental agencies.

ii. The system of facilities shall be shared by as many urban centres as feasible, taking into consideration the local infrastructure of roads and the location of facilities.
iii. The location of the facilities shall comply with national guidelines as contained in the National Solid Waste Master Plan, taking into consideration the prevention of any health hazard to, and adverse effect on the environment of surrounding population.

iv. Due to long-term health and environmental factors, disused sanitary landfill and other contaminated sites shall not be utilised for human habitation.

v. Waste generation management shall be promoted. Active promotion of recycling of waste shall be instituted with respect to solid waste collection and disposal in accordance with the National Solid Waste Master Plan.

**NPP 34**

Land utilised for main drains, streams and rivers shall be designated as drainage or river reserves.

**IP 16 : Flood Prone Areas**

**Measures:**

i. Studies should be undertaken to evaluate the impact of flood frequency of main drain and river systems on human and economic activities.

ii. Structure Plans and Local Plans shall incorporate adequate reserves for all main drains and rivers.

iii. The Urban Storm Water Management (USWM) manual proposals shall be applied in all urban areas.

iv. For rural areas and areas not subject to USWM proposals but subject to flooding, appropriate flood mitigation measures shall be adopted.

v. To enhance the quality of urban life, the USWM retention system and riverbank system shall be integrated to create continuous urban parkway networks.

vi. In conjunction with the implementation of the USWM proposals, measures such as the reuse and recycling of rainwater shall be developed and applied.
IP 16: FLOOD PRONE AREAS

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<tr>
<td>Light Purple</td>
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<tr>
<td>Teal</td>
<td>Flood Prone Areas (1 year Average Recurrence Interval)</td>
</tr>
<tr>
<td>Major River</td>
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NPP 35

As strategic assets, electricity generation plants and distribution mains shall be suitably located to provide a reliable and efficient supply of power to consumers.

IP 17: Power Supply Grid

Measures:

i. Positioning of distribution networks should include impact evaluations on land use and aesthetics, particularly in nature tourism locations.

ii. Renewable energy such as energy from solar, wind, wave and biomass are to be promoted to complement traditional power generation sources.

NPP 36

Appropriate ICT technology shall be provided as a priority to all settlements.

Measures:

i. The criteria adopted by the MSC should provide a basis for content and quality of service.

ii. Appropriate technologies should be applied to ensure rural-urban digital divide in access to ICT is minimized.

iii. Promotion and use of ICT in all levels of government and the private sectors should be a priority.
IP 17: POWER SUPPLY GRID

Power Line:
- 500 kV O/H
- 275 kV O/H
- 275 kV U/G
- 132 kV O/H
- 132 kV U/G

Symbols:
- Hydro Power Station
- Major Sub-Station
- Thermal Power Station
- State Capital
CHAPTER 6

IMPLEMENTATION MECHANISM

Once the NPP is approved there is a general duty on the part of all agencies of the Federal and State Governments to ensure that its objectives are achieved. While the Director General of Town and Country Planning (DG DTCP) is responsible for preparing the NPP, its implementation is the responsibility of all Federal and State agencies. Agencies identified in the plan to administer the policies are required to translate them into action plans, programmes and projects and to include such programmes and projects in the subsequent FYMP. The DG DTCP shall monitor the implementation of the Plan and report periodically to the National Physical Planning Council (NPPC).

6.1 Institutional Mechanism for Implementing the NPP

6.1.1 Existing Agencies Involved in Spatial Planning

Functionally the main department entrusted with the responsibility for spatial planning is the Federal Department of Town and Country Planning (DTCP). However, there are several ministries and agencies involved in spatial planning. The Department will exercise technical leadership and ensure that spatial planning is coordinated. The NPP is one of the instruments through which this coordination could be achieved.

Some of the key ministries that play an important role in spatial planning are the Ministry of Housing and Local Government, Ministry of Natural Resources and Environment, Ministry of Rural and Regional Development, Ministry of Works, Ministry of Transport and the Ministry of Agriculture and Agro-based Industry. It is important that these Ministries should be represented in the NPPC.

There is also a growing proliferation of national councils related to physical development. These councils include the National Water Resources Council, the National Council for Coastal Erosion, the National Housing Council, the Klang Valley Regional Planning Council, the National Minerals Council and the proposed National Environmental Council. It is important that linkages are established with these Councils when preparing the Plan.

6.1.2 Integrated National Development Planning System

The main policy council for spatial planning will be the NPPC. Unlike the other councils the NPPC is established by law under the Town and Country Planning Act 1976. Essentially there are three parallel streams relating to the different components of national development planning (Figure 6.1):

i. National socio-economic development planning under the National Economic (Planning) Council and the NDPC;
ii. National Physical Planning under the NPPC;

iii. Project Implementation and Monitoring under the National Development Council.

All three streams of development planning have parallel functions that relate to organisations at the Federal and State levels. What may be important is to forge horizontal linkages particularly at the Secretariat and Technical Working Committee levels. At a functional level it is important that DTCP is represented in the NDPC and similarly the EPU is represented in the NPP Committee.

6.1.3 National Physical Planning Process

The proposed national physical planning system is shown in Figure 6.2. Under this proposal there will be five inter related bodies related to National Physical Planning:-

i. National Physical Planning Council (NPPC)
ii. NPP Committee
iii. National Physical Planning Advisory Committee (NPPAC)
iv. National Physical Planning Agency
v. Spatial Planning Research Institute

Apart from the NPPC which is provided by law the other bodies are the recommendations of this Plan. The functions of these bodies are discussed in Section 6.1.4.

The NPP Committee is proposed to be chaired by the Secretary General of the Ministry responsible for Town Planning and attended by relevant heads of government agencies and departments. The Secretariat to the NPP Committee will be provided by the Federal Department of Town Planning. It is also proposed that a National Physical Planning Advisory Committee be set up to advice the Minister on current concerns and issues relating to physical planning. This is similar to that practised in Denmark and Holland. The composition of the three related committees and councils are also different. The NPPC will be the highest physical planning council in the country and will comprise of Federal and State Ministers. The NPP Committee will comprise mainly of related government heads of departments while the Advisory Committee will include the NGOs, Professional Institutes, Business Councils and special interest groups.

The main agency responsible for preparing the NPP will be the Federal Department of Town and Country Planning. The department will issue call circulars to both Federal and State agencies to furnish the department with information and project proposals that have a bearing on national physical planning through the NPP Land Use Planning Intelligent System (LaPiS). Similar to the process of preparation and review of the national development plan, Inter Agency Planning Groups (IAPG) will be established to prepare and review policy papers. The IAPG may also be further reduced to smaller Technical Working Groups (TWG) to discuss technical reports. Technical working papers should be issue related and not compartmentalised by sectors. Some of the relevant planning issues could include coastal areas management, sustainable highland development, role of small towns in regional development, etc.
Figure 6.2: Proposed National Physical Planning Structure

Parliament

Cabinet

National Physical Planning Council

- Chairman: PM
- Federal Ministers
- State MB
- Secretary: DG of Town and Country Planning

Secretariat: FDTCP

Constitutional Councils

- National Land Council
- National Council for Local Government
- National Finance Council

Sector Policies

- National Housing Council
- Coastal Engineering Council
- Water Resources Council
- Environmental Council
- National Mineral Council
- Regional Planning Council

National Physical Planning Advisory Committee

- Chairman: Minister for Town Planning
- NGO’s Business Council, Special Interest Groups
- Professional Bodies

Secretariat: FDTCP

NPP Committee

- Chairman: Secretary General for Town Planning
- Deputy Chairman: DG of Town & Country Planning

Secretariat: FDTCP

National Physical Planning Agency

- Federal Town and Country Planning Department

Research Institute

- Spatial Planning and Development Institute

IAPG

State Planning Committee

- Chairman: Menteri Besar
- Technical Departments
- Secretary: Director state DTCP

State DTCP

Local Planning Authority

Municipal Planning Department
In addition to the NPP, the NPPC may also issue planning guidelines similar to the Planning Policy Guidelines (United Kingdom) to the various states from time to time.

Once the Draft Plan is prepared, it is reviewed by the NPP Committee before it is submitted to the NPPC for approval. The approved plan is further endorsed by Cabinet before it is tabled to Parliament for information. Policies and proposals that are within the jurisdiction of the Constitutional Councils i.e. the NLC, NCLG and the NFC may be further tabled in the respective councils. The decisions of these constitutional councils are generally binding on the states.

6.1.4 National Physical Planning Institutional Structure

i. The National Physical Planning Council (NPPC)

The NPPC is established by way of an amendment to the TCPA 1976 (A1129). The functions of the council are:

a. To promote town and country planning as an effective instrument for the achievement of sustainable development.
b. To advise the Federal and State Governments on matters related to town and country planning.
c. To approve the Draft National Physical Plan and keep it in review from time to time.
d. To coordinate physical development at a national and regional level to ensure a sustainable form of development.
e. To formulate a uniform set of rules and guidelines on planning procedures in the country.
f. To advise the State Planning Committees on planning applications and plans which are referred to the council for its advice.
g. To give directions to the Director General of Town and Country Planning consistent with the provisions of the Act.
h. The Council may also perform any other functions incidental or consequential to the Act.

The members of the NPPC are shown in Table 6.1.
Table 6.1: Members of the NPPC

<table>
<thead>
<tr>
<th>The permanent members under the TCPA 1976 are:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Chairman: Prime Minister</td>
</tr>
<tr>
<td>2. Deputy Chairman: Deputy Prime Minister</td>
</tr>
<tr>
<td>3. Minister (for Town Planning, should this post be separate from the Minister of Housing and Local Government)</td>
</tr>
<tr>
<td>4. Minister of Housing and Local Government</td>
</tr>
<tr>
<td>5. Minister of Finance</td>
</tr>
<tr>
<td>6. Minister for Land</td>
</tr>
<tr>
<td>7. Menteri Besar or Chief Minister of every state</td>
</tr>
<tr>
<td>8. Minister for the Federal Territories</td>
</tr>
<tr>
<td>9. Not more than 7 other members to be appointed by the Chairman</td>
</tr>
</tbody>
</table>

Other relevant Ministers and members although not mentioned in the Act should include:

1. Minister of Works
2. Minister for Rural and Regional Development
3. Minister for Natural Resources and Environment
4. Minister of Transport
5. Minister of Agriculture and Agro-based Industry
6. Chief Secretary to the Government (KSN) / Chairman of the NDPC

The Director General of Town and Country Planning is the Secretary of the Council

ii. **NPP Committee**

The functions of the Committee are as follows

a. Discuss and review issues related to national physical planning.
b. Establish the broad terms of reference for the preparation and review of the NPP.
c. Review the Draft NPP before it is tabled to the NPPC for approval
d. Identify spatial planning issues/projects/programmes that may have financial implications that require the attention of the NDPC or the National Finance Council.
e. Review all planning policy guidelines (PPG) for approval by the NPPC.
f. Review strategic planning applications that are referred to the NPPC for its advice (Under S.22 (2A) TCPA).

The members of the NPP Committee are mainly heads of technical departments and could include the following (Table 6.2):
### Table 6.2: Members of the NPP Committee

| 1. | Secretary General of the Ministry responsible for Town Planning as the Chairman |
| 2. | Director General of Town and Country Planning as the Deputy Chairman |
| 3. | Director General of Economic Planning Unit |
| 4. | Secretary General of the Ministry of Finance |
| 5. | Director General of the Implementation and Coordination Unit. |
| 6. | Director General of Land and Mines |
| 7. | Director General of Survey and Mapping |
| 8. | Director General of Public Works Department |
| 9. | Director General of Drainage and Irrigation |
| 10. | Director General of the Environmental Quality |
| 11. | Director General of Forestry |
| 12. | Director General of Agriculture |
| 13. | Director General of Wildlife and National Parks |
| 14. | Director General of Fisheries |
| 15. | Director General of Minerals and Geoscience |
| 16. | State Directors of Town and Country Planning |

The Secretariat will be provided by the Federal Department of Town and Country Planning.

### iii. National Physical Planning Advisory Committee

The functions of this committee are:

a. Advise the Minister on issues concerning town and country planning in the country.

b. The members of this committee are required to prepare briefs to be discussed at the meeting. These briefs will serve as inputs to the preparation and review of the NPP.

c. Highlight the concerns of the public with respect to physical planning

The membership of the committee is by invitation and should include the following (Table 6.3):

### Table 6.3: Members of the National Physical Planning Advisory Committee

| 1. | Minister responsible for Town Planning as the Chairman. |
| 2. | Director General of Town and Country Planning as Deputy Chairman. |
| 3. | Members of Professional Bodies / Institutes |
| 4. | Non Governmental Organisation (NGO) especially those related to development, conservation and the environment. |
| 5. | Research Institutes and Universities. |
| 6. | Business Councils such as FMM and REHDA |
| 7. | Other special interest groups. |

The Secretariat will be provided by Federal Department of Town and Country Planning.
iv. National Physical Planning Agency

The National Physical Planning Agency is the Federal Department of Town and Country Planning. Under the TCPA, the DG of Town and Country Planning is required to prepare the NPP. This will require the existing National Physical Planning Division be strengthened to keep the NPP in review. This will also entail increased staffing with sufficient skills as well as enhancing the GIS capabilities of the Department.

v. Spatial Planning Research Institute

It is important that the NPP benefits from the latest R&D in spatial planning. While some of these inputs could come from the universities, it may be necessary that the government establishes a research institute for Spatial Planning and Development in order to have a continuous R&D programme on national physical planning. This institute should preferably be an autonomous self regulating research institute that is supported by government grants. It could be modelled after ISIS with full powers to hire and fire staff. It is common to have research institutes to support a national spatial planning programme. Examples include KRIHS in Korea, Habitat (Nairobi), International Centre for Sustainable Cities (Canada), International Institute for Urban Environment (Netherlands).

vi. IAPG and TWG

IAPG and TWG comprising representatives from various government agencies and NGOs should be established prior to the preparation of the next review of the NPP. The IAPG will accordingly frame the TOR for the next review. The review will essentially address national spatial issues identified by the IAPG in the subsequent 5 year period.

6.1.5 Public Participation in the Preparation of the National Physical Plan

Public participation in the case of the NPP shall take the form of consultation with the State Authorities and utility boards as well as dialogues with selected NGO groups. The TCPA requires the Director General of Town Planning to consult every state authority and such other bodies as the NPPC may direct [S6B (3)]. Once the Plan is prepared and approved by the National Physical Planning Council it could be presented to the Cabinet for endorsement.

Extensive publicity must be given when preparing and reviewing the NPP. The concerns of the stakeholders have to be taken into account while preparing the Plan. Other avenues for public participation could include:

i. Focus group discussions;
ii. Dialogue sessions similar to the Budget Dialogues;
iii. Creating an interactive opinion survey through electronic media;
iv. Exhibitions, seminars and workshops.
Similar to the situation in the Netherlands, it is proposed that a National Physical Planning Advisory Committee be set up to advice the Minister on public issues concerning Town and Country Planning in the Country (Table 6.3).

6.2 Plan Implementation

There are 36 policies and proposals identified in the NPP. These policies cover a wide range of issues that have a bearing on the physical development of the country. The policies of the NPP will be implemented by various Federal and State agencies responsible for administering them. The measures suggested to implement these policies are contained in Chapter 5. The principal implementing agencies identified to implement these policies are shown in Table 6.4. In tandem with the FYMP and the project planning cycle, these agencies will have to take proactive actions to translate these policies into action plans, programmes and projects. A concerted effort will be made to ensure that these projects are included in the subsequent FYMP. This will also require the forging of horizontal linkages with the economic and project planning cycles (Section 6.2.1).

The proposals of the NPP will also be implemented through the respective Structure Plans which will have to conform generally to the proposals of the NPP. As Structure Plans are gazetted documents, they will additionally provide the statutory basis for implementing the policies.

This is generally instituted through the following ways:

i. While preparing the Structure Plan, the State Director of Town and Country Planning (the Director) is required to examine the provisions of the NPP and other national economic, social, physical, environmental and conservation policies.

ii. The Draft Structure Plan must contain matters prescribed by the SPC and the NPPC. This would suggest that the NPPC may issue planning guidelines from time to time and it would be incumbent on the States to conform to these guidelines in the Structure Plans.

iii. In considering whether to approve the Draft Structure Plan, the SPC is required to consult with the NPPC for its direction and advice. Should the SPC fail to reach a decision within 6 months of its submission, the Director may refer the Draft Structure Plan to the NPPC for a decision.

iv. In considering planning applications involving the following categories of development i.e.:

a. new township with a population exceeding 10,000 or covering an area of more than 100 ha or both;
b. major infrastructure or utility projects such as airports, seaports, railway lines, highways, erection of dams, main power stations and toxic waste disposal sites;

c. development affecting hill tops and hill slopes in areas designated as environmentally sensitive;

The SPC is required to refer the matter to the NPPC for its advice on the application.

v. The NPPC may make rules with respect to any matter in the Act. The rules made by the Council will prevail over the rules made by the State Authority.

Table 6.4: Implementing the Policies

<table>
<thead>
<tr>
<th>Policies</th>
<th>Principal Implementing Agencies</th>
<th>Implementation Initiatives</th>
</tr>
</thead>
<tbody>
<tr>
<td>NPP 1: The NPP shall serve as the framework to achieve integrated and sustainable land use planning in the country</td>
<td>Federal and State agencies, DTCP</td>
<td>Translate the strategies and proposals of the NPP into the Structure Plan (SP) and Local Plans (LP)</td>
</tr>
<tr>
<td>NPP 2: The planning of urban-based activities shall adopt the concept of ‘selective concentration’ for strategic urban centres for all states</td>
<td>Federal and State agencies, SEDC, Min. of Education, MDC, DTCP</td>
<td>Locate urban-based activities such as industrial enterprises, privatized educational and training institutions, cyber cities and main infrastructure facilities in strategic urban centres</td>
</tr>
<tr>
<td>NPP 3: Cooperation in physical planning between Malaysia and its ASEAN neighbours shall be strengthened</td>
<td>EPU, Min. Foreign Affairs, State agencies, DTCP, Professional Services, Development Corporation, MOF</td>
<td>Promotion of projects in the Regional Growth Areas, establishment of Special Economic Zones, exporting professional services and cross border developments</td>
</tr>
<tr>
<td>NPP 4: Land and natural resources of the less developed regions shall be used in a sustainable manner to increase the productivity of these regions and reduce regional imbalances</td>
<td>DOA, Min. of Tourism, MEWC, Min. of Entrepreneurial and Cooperative Dev, Min. of Rural and Regional Development, DTCP, DMG</td>
<td>Encourage economic diversification especially in the agriculture and tourism sectors as well as bridging the digital divide and providing technical training and social development programmes</td>
</tr>
<tr>
<td>NPP 5: Planning for industrial land development shall adopt the concept of industrial clusters</td>
<td>MITI, SEDC, DTCP</td>
<td>The locational criteria of industrial estates include various factors such as environmental impact, economics and accessibility and conformity to the concept of industrial clusters</td>
</tr>
<tr>
<td>NPP 6: The support of agriculture shall take cognisance of the threats and opportunities of urbanisation</td>
<td>DOA, DTCP, LPA</td>
<td>Conserve PAA and major food production areas. The PAA have to be identified in the SP and LP</td>
</tr>
<tr>
<td>Policies</td>
<td>Principal Implementing Agencies</td>
<td>Implementation Initiatives</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>----------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>NPP 7:</strong> The eight (8) strategic granary areas comprising Muda (MADA), Kernubu (KADA), IADP Kerian-Sungai Manik, IADP Barat Laut Selangor, IADP Pulau Pinang, IADP Seberang Perak, IADP Terengganu Utara (KETARA) and IADP Kemasin-Semerak shall be conserved</td>
<td>DOA, DTCP</td>
<td>The granary areas have to be demarcated in the SP and LP</td>
</tr>
<tr>
<td><strong>NPP 8:</strong> The different tourism development zones shall concentrate on different packages of tourist products to maximize their resource and locational advantages</td>
<td>Min. of Tourism, DTCP, LPA</td>
<td>Identify various tourism products in the country and effective programme to promote these products and to provide necessary supporting infrastructure</td>
</tr>
<tr>
<td><strong>NPP 9:</strong> The concentration of urban growth in the conurbations shall be anticipated and accommodated</td>
<td>Federal and State agencies, DTCP</td>
<td>Identify conurbation areas in SP and prepare appropriate regional plans for the conurbations</td>
</tr>
<tr>
<td><strong>NPP 10:</strong> The growth of the four main conurbations of Kuala Lumpur, George Town, Johor Bahru and Kuantan shall be supported</td>
<td>Federal and state agencies, DTCP</td>
<td>Establish Regional Planning Committee for the conurbations and other support initiatives in ICT, health, education, tourism and public transport systems</td>
</tr>
<tr>
<td><strong>NPP 11:</strong> The conurbations shall be planned and developed as integrated regions</td>
<td>Federal and state agencies, DTCP</td>
<td>Prepare regional plans</td>
</tr>
<tr>
<td><strong>NPP 12:</strong> The individuality and physical separation of the cities, towns and villages within the conurbation shall be maintained</td>
<td>Federal and state agencies, DTCP, LPA</td>
<td>Undertake comprehensive urban planning including the establishment of urban limits in the LP</td>
</tr>
<tr>
<td><strong>NPP 13:</strong> Towns with special features shall be identified and the development of projects exploiting their special features shall be supported with the appropriate infrastructure</td>
<td>DTCP, Min. of Tourism</td>
<td>Identify Special Feature Towns in SP and institute appropriate development programmes</td>
</tr>
<tr>
<td><strong>NPP 14:</strong> Small and intermediate towns shall be developed in accordance with their localized economic potentials</td>
<td>Federal and state agencies, DTCP</td>
<td>Provide public amenities, encourage resource based and craft industries and develop them as important marketing towns for agricultural produce.</td>
</tr>
<tr>
<td><strong>NPP 15:</strong> The development of Rural Growth Centres (RGCs) shall be reinforced to rationalise the servicing of the rural population</td>
<td>Ministry of Rural and Regional Development, DTCP, DOA</td>
<td>Review existing RGC and undertake comprehensive planning and development programme on rural settlements</td>
</tr>
<tr>
<td><strong>NPP 16:</strong> Planning Standards shall be designed to meet the requirements of a developed country</td>
<td>Federal and state agencies, DTCP</td>
<td>A comprehensive review of existing planning standards should be carried out</td>
</tr>
<tr>
<td><strong>NPP 17:</strong> A designated central authority shall be charged with the responsibility to publish on regular basis information on land use development</td>
<td>DTCP, LPA</td>
<td>Prepare and publish land use information</td>
</tr>
</tbody>
</table>
### Policies

| NPP 18: Environmentally Sensitive Areas (ESA) shall be integrated in the planning and management of land use and natural resources to ensure sustainable development | DOF, DOE, DTCP | Demarcate ESA and buffer zones in SP and LP |
| NPP 19: A central forest spine (CFS) shall be established to form the backbone of the Environmentally Sensitive Area network | DOF, DOE, Wildlife Dept., DTCP | Identify Forest Spine in the Development Plans and draw up appropriate management plans for the CFS |
| NPP 20: Sensitive Coastal ecosystems shall be protected and used in a sustainable manner | DID, DTCP, Wildlife Dept, Fisheries Dept. | Identify and protect mangrove forest, turtle landing sites, marine parks and landing sites for migratory birds. These areas have to be protected by law or identified as ESA in the SP and LP |
| NPP 21: Land development in the highlands shall be strictly controlled to safeguard human safety and environmental quality | EPU, Dept of Land and Mines, LPA, DTCP | Apply existing guidelines and recommendations of the Study for Sustainable Dev. Of the Highlands of Peninsular Malaysia, EPU 2002 |
| NPP 22: All surface and ground water resources are strategic assets to be safeguarded and used optimally | DMG, DID, Water Authorities, DOF, DOE, DTCP, State Authorities | Demarcate surface and ground water resource and recharge areas and establish appropriate management plans |
| NPP 23: In recognition of the inter relationship between land use and transport an integrated national transportation network shall be established | EPU, MOT, Min. of Works, PWD, DTCP | Prepare an Integrated Transportation Network Plan and identify a coordinating agency |
| NPP 24: A national integrated high-speed rail system shall be established | MOT, DTCP | Prepare a feasibility study on the proposal. Identify corridor in SP and LP and develop state capitals as rail-based transportation hubs |
| NPP 25: The national road network shall be further extended for regional travel and local access | HPU, PWD, DTCP | Develop expressway cross links to better integrate the east and west coast areas |
| NPP 26: Major airports and seaports shall be developed according to their complementary functions to enhance the nation’s economic competitiveness and facilitate tourist arrivals | EPU, MOT | Enhance support infrastructure and facilities at major airports and seaports |
| NPP 27: The Transit Orientated Development (TOD) concept shall be promoted as the basis of urban land use planning and ensure viability of public transport | MOT, LPA, DTCP | Identify TOD in regional plans for conurbation, SP and LP. Introduce compact city development and integrated public transportation system |
| NPP 28: In all major urban centres, an integrated public transportation system shall be established | EPU, MOT, DTCP, LPA | Encourage the use of public transport facilities including bus and rail in all major urban centres |
6.2.1 Establishing Linkages with Socio-Economic Planning and Project Planning

National socio-economic planning and project planning processes are well institutionalised in the country. National socio-economic planning takes the form of the OPP and the FYMP. The NPP on the other hand will provide the spatial component to National Development Planning. The NPP however is a new planning activity and it is necessary that both horizontal and vertical linkages are established with the corresponding committees to ensure the successful implementation of the Plan.

In translating the proposals of the NPP into projects and programmes the following actions need to be taken:

i. Federal and State agencies should refer to the NPP and make project bids in conformity to the recommendations of the NPP.
ii. The NDPC and EPU should give weight to projects that are in line with the recommendations of the NPP.

iii. The DG of TCP should be a permanent member of the NDPC to ensure that the aspirations of the NPP are incorporated in the subsequent National Development Plans.

iv. DTCP should be included in the project budgeting and programming process. Currently the central agencies involved in this process are the EPU and Treasury.

v. The IAPG for the FYMP relating to physical planning should be chaired by the DG of TCP.

6.2.2 Establishing Linkages with Sector Councils

Related sector policies are made by the relevant Ministries, Central Agencies and Sector Councils. Some of these councils are established under the Constitution such as the NLC, NCLG and the NFC while others are set up administratively e.g. the National Water Resources Council. In preparing the NPP, the DG is required to take into consideration the national urbanisation policy and other national policies and consult relevant authorities and bodies. The following actions may be taken to forge linkages with these councils.

i. Hold focus group discussions and dialogue sessions with the relevant councils while preparing the plan.

ii. The NPP shall take into consideration the relevant national sector policies when the plan is prepared.

iii. Include members of the various councils in the IAPG and TWG and have them prepare technical working papers as inputs to the NPP.

iv. Strategic recommendations that affect land and local government may be deliberated in the respective NLC and the NCLG to ensure compliance by the State and Local Authorities.

6.2.3 Establishing Linkages with Planning Authorities

There is a need to establish strong linkages with planning authorities at the state and local levels. The Structure Plans have to conform to the NPP and similarly the LP with the SP. All draft Structure Plans will have to be referred to the NPPC for advice before it can be approved by the SPC. The NPPC may issue letters of non conformity for Structure Plans that are contradictory in essence to the objectives and policies of the NPP. The DG of TCP may also issue circulars and directions of the Council to the relevant planning authorities from time to time. It is also important that state land use information is made readily available to DTCP. This will be realised through the establishment of the LaPiS at the DTCP with linkages to the State Structure Plan Information System (SLaPiS) (Section 6.3.3).
6.3 Plan Monitoring

Plan monitoring provides the framework for the continuous evaluation which would become the basis for the review of the NPP. Key development indicators would be examined and the continuing validity of all assumptions, forecasts and objectives checked. The following section discusses the methodology to monitor the performance of the NPP and the implementation of NPP policies.

6.3.1 Scope of Monitoring

The scope of monitoring involves determining the various aspects of the NPP which would need to be monitored. There are two major objectives in monitoring, namely:

i. To monitor the application of the NPP policies through the use of relevant indicators.

ii. To determine the extent of conformity in land use planning between the NPP and SP. The main aspects of land use planning to be monitored would include land use changes pertaining to the following:-

   a. Sustainable urban land use patterns with special emphasis on the physical growth of urban land and conurbations as proposed in the NPP.

   b. The preservation and conservation of environmentally sensitive areas and green belts including the status of forest areas as proposed in the NPP.

6.3.2 Monitoring Agencies

The DTCP as the custodian of the NPP and the State DTCP as the custodian of Structure Plans are the lead agencies to conduct the monitoring process. The role of each agency is defined below:

i. The NPP Division of DTCP is the lead agency responsible for monitoring national land use planning information and policy indicators for future reviews of the NPP.

ii. The respective State DTCP will take the lead in maintaining its own land use planning information and monitoring land use changes at state level.

6.3.3 The Monitoring Process

Monitoring land use changes can be processed through the establishment of appropriate instruments such as the use of indicators and the setting up of an appropriate information system which would allow for continuous evaluation and support informed decision making.
i. Application of key policy indicators

a. The key instrument that will be used to monitor the progress and application of land use policies are the NPP policy indicators. The indicators can be modified, removed or added to the list with each Review. The NPP policy indicators are for Peninsular Malaysia and will be collected on an annual basis by the NPP Division DTCP from selected data providers. The data providers will be required to collect the requisite information in a prescribed format and forward them to DTCP on a regular basis. Indicators are prepared in the form of numeric and statistical measures based on quantifiable dimensions such as area, proportion, ratio, and indices. The usefulness of the indicators is based on their relevancy, timeliness, ease of understanding and reliability. Table 6.5 outlines the NPP policies, the key indicators and data providers.

### Table 6.5: NPP Policies Indicators

<table>
<thead>
<tr>
<th>Policies</th>
<th>Policy Indicators</th>
<th>Data Providers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>NPP 1</strong>: The NPP shall serve as the framework to achieve integrated and sustainable land use planning in the country</td>
<td>Key land use and population indicators of the NPP will be monitored in the SP and LP 1. ESA 2. PAA 3. Area under CFS 4. State population targets in SP</td>
<td>EPU, DTCP, LPA, DOF, DOE, DOA, DOS</td>
</tr>
<tr>
<td><strong>NPP 2</strong>: The planning of urban-based economic activities shall adopt the concept of ‘Selective Concentration’ for strategic urban centres for all states</td>
<td>1. Area approved for planned industrial estates 2. Number of and enrolment at private educational and training institutions 3. Designated area of cyber cities in the main conurbations</td>
<td>MDC, MIDA, MITI, Min. of Higher Learning, Min. of Human Resource, DTCP</td>
</tr>
<tr>
<td><strong>NPP 3</strong>: Co-operation in physical planning between Malaysia and its ASEAN neighbours shall be strengthened</td>
<td>1. Number of joint venture projects implemented in the Regional Growth Triangles 2. Number and area of Special Economic Zones established 3. Number and type of cross border projects (with more than RM1 million capital investment) implemented</td>
<td>EPU, MOF, SEDC</td>
</tr>
<tr>
<td><strong>NPP 4</strong>: Land and natural resources of the less developed regions shall be used in a sustainable manner to increase the productivity of these regions and reduce regional imbalances</td>
<td>1. Number and area of agro-based projects implemented in rural areas by state 2. Number and area of eco and agro-tourism projects implemented in rural areas by state 3. Internet access and penetration in rural areas</td>
<td>DOA, DOF, Min of Tourism, Min. of Rural and Regional Dev., MEWC, DTCP</td>
</tr>
<tr>
<td>Policies</td>
<td>Policy Indicators</td>
<td>Data Providers</td>
</tr>
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</tr>
</tbody>
</table>
| **NPP 5:** Planning for industrial land development shall adopt the concept of industrial clusters | 1. Total number, type and location of industries by state  
2. Area of industrial land in designated industrial growth centres | MIDA, MITI, DTCP, SEDC |
| **NPP 6:** The support of agriculture shall take cognisance of the threats and opportunities of urbanisation | 1. Area of approved urban development in PAA  
2. Rate of change (%) per annum of loss of PAA to urban development | DOA, DTCP, state agencies |
| **NPP 7:** The eight (8) strategic granary areas comprising Muda (MADA), Kemubu (KADA), IADP Kerian-Sungai Manik, IADP Barat Laut Selangor, IADP Pulau Pinang, IADP Seberang Perak, IADP Terengganu Utara (KETARA) and IADP Kemasin-Semerak shall be conserved | 1. Area approved for urban development in strategic granary areas  
2. Rate of change (%) per annum of loss of strategic granary areas to urban development | DOA, DTCP |
| **NPP 8:** The different tourism development zones shall concentrate on different packages of tourist products to maximise their resource and locational advantages | 1. Number and area of tourism development zones by type and by state | Min. of Tourism, Min. of Culture, Arts and Heritage, state agencies |
| **NPP 9:** The concentration of urban growth in the conurbations shall be anticipated and accommodated | 1. Proportion (%) of total urban population in conurbations | DOS, DTCP |
| **NPP 10:** The growth of the four main conurbations of Kuala Lumpur, George Town, Johor Bahru and Kuantan shall be supported | 1. Area approved for urban development  
2. Length of road network (km) in the conurbations  
2. Length of rail network (LRT and Commuter Rail) in the conurbations  
3. Growth of internet subscribers in the conurbations  
4. Number of private hospitals in the conurbations | LPA, PWD, MOT, MEWC, Min. of Health |
<p>| <strong>NPP 11:</strong> The conurbations shall be planned and developed as integrated regions | 1. Number of conurbations with regional plans by year | DTCP |
| <strong>NPP 12:</strong> The individuality and physical separation of the cities, towns and villages within the conurbations shall be maintained | 1. Area designated for green belts within the conurbations | DTCP, LPA |
| <strong>NPP 13:</strong> Towns with special features shall be identified and the development of projects exploiting their special features shall be supported with the appropriate infrastructure | 1. Number of towns with special features identified in the NPP and SP | DTCP, LPA |</p>
<table>
<thead>
<tr>
<th>Policies</th>
<th>Policy Indicators</th>
<th>Data Providers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>NPP 14:</strong> Small and intermediate towns shall be developed in accordance with their localised economic potentials</td>
<td>1. Number of SMEs registered with MIDA and SMIDEC in small and intermediate towns 2. Number of towns designated as agricultural market towns in SP and LP</td>
<td>MIDA, SMIDEC, DTCP</td>
</tr>
<tr>
<td><strong>NPP 15:</strong> The development of Rural Growth Centres (RGCs) shall be reinforced to rationalise the servicing of the rural population</td>
<td>1. Number of RGCs identified in SP and LP</td>
<td>Min. of Rural and Regional Dev, DTCP</td>
</tr>
<tr>
<td><strong>NPP 16:</strong> Planning standards shall be reviewed to meet the requirements of a developed country</td>
<td>1. Number of Federal planning standards and guidelines reviewed and adopted by the States</td>
<td>DTCP</td>
</tr>
<tr>
<td><strong>NPP 17:</strong> A designated central authority shall be charged with the responsibility to publish on regular basis information on land use development</td>
<td>1. Number of publications on land use development produced per year</td>
<td>DTCP</td>
</tr>
<tr>
<td><strong>NPP 18:</strong> Environmentally Sensitive Areas (ESA) shall be integrated in the planning and management of land use and natural resources to ensure sustainable development</td>
<td>1. Area designated/ gazetted as ESA 2. Area designated/ gazetted as buffer zones around ESA</td>
<td>DOF, DOE, DTCP, LPA</td>
</tr>
<tr>
<td><strong>NPP 19:</strong> A Central Forest Spine (CFS) shall be established to form the backbone of the Environmentally Sensitive Area network</td>
<td>1. Percentage of total area of Forest Spine gazetted as protected forest by state</td>
<td>DOE, DOF, Wildlife Dept., DTCP</td>
</tr>
<tr>
<td><strong>NPP 20:</strong> Sensitive coastal ecosystems shall be protected and used in a sustainable manner</td>
<td>1. Number and area of coastal reclamation by state 2. Area of coastal ecosystem designated/ gazetted as ESA by state</td>
<td>DOF, DID, Fisheries Dept. DTCP</td>
</tr>
<tr>
<td><strong>NPP 21:</strong> Land development in highlands shall be strictly controlled to safeguard human safety and environmental quality</td>
<td>1. Area of new urban and agricultural development approved in the highlands by state</td>
<td>EPU, DOA, DTCP, LPA</td>
</tr>
<tr>
<td><strong>NPP 22:</strong> All surface and ground water resources are strategic assets to be safeguarded and used optimally</td>
<td>1. Number of industrial sites located in water catchments and ground water recharge and resource areas</td>
<td>DOE, DMG, MIDA, DTCP, SEDC</td>
</tr>
<tr>
<td><strong>NPP 23:</strong> In recognition of the inter-relationship between land use and transport an integrated national transportation network shall be established</td>
<td>1. Number of integrated multi-modal and intermodal transportation centres by state 2. Establishment of single authority in coordinating transportation system</td>
<td>MOT, HPU, PWD, DTCP</td>
</tr>
</tbody>
</table>
| **NPP 24:** A national integrated high-speed rail system shall be established | 1. Corridor of high-speed rail  | EPU, MOT, DTCP, state agencies  
- Approved (km)  
- Budgeted (RM)  
- Built (km) |
| **NPP 25:** The national road network shall be further extended for regional travel and for local access | 1. Length of expressway (km /1000 population) by state | HPU, PWD, DTCP |
### Policies

| NPP 26 | Major airports and seaports shall be developed according to their complementary functions to enhance the nation's economic competitiveness and facilitate tourist arrivals |
| NPP 27 | The Transit Oriented Development (TOD) concept shall be promoted as the basis of urban land use planning to ensure viability of public transport |
| NPP 28 | In all major urban centres, an integrated public transportation system shall be established |
| NPP 29 | The NPP shall provide the spatial framework for the efficient delivery of integrated infrastructure services at the national and regional level and to the main conurbations |
| NPP 30 | The supply and projected demand for water by quantity and location should guide the planning of water resource areas |
| NPP 31 | Ground water resource and recharge area shall be identified and protected from activities that cause pollution and reduce yield |
| NPP 32 | All urban settlements shall be serviced by a centralised sewerage treatment system |
| NPP 33 | All urban settlements shall be serviced by an integrated network of solid waste disposal and/or recovery facilities |
| NPP 34 | Land utilised for main drains, streams and rivers shall be designated as drainage or river reserves |
| NPP 35 | As strategic assets, electricity generation plants and distribution mains shall be located to provide a reliable and efficient supply of power to consumers |
| NPP 36 | Appropriate ICT technology shall be provided as a priority to all settlements |

### Policy Indicators

<table>
<thead>
<tr>
<th>Policy</th>
<th>Indicators</th>
<th>Data Providers</th>
</tr>
</thead>
<tbody>
<tr>
<td>NPP 26</td>
<td>Airports and seaports upgraded/developed</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Approved (Number)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Amount Budgeted (RM)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Built (Number)</td>
<td></td>
</tr>
<tr>
<td>NPP 27</td>
<td>Number of TOD established in the conurbations and urban centres</td>
<td></td>
</tr>
<tr>
<td>NPP 28</td>
<td>Modal split ratio (calculated from O-D surveys in major urban centres)</td>
<td></td>
</tr>
<tr>
<td>NPP 29</td>
<td>Public transport ridership per 1,000 population</td>
<td></td>
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<tr>
<td></td>
<td>Number of Public telephones per 1,000 population</td>
<td></td>
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<tr>
<td></td>
<td>Area for residential commercial and industrial use in flood prone areas (based on 50 year return periods)</td>
<td></td>
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<tr>
<td>NPP 30</td>
<td>Per capita water availability by state (m³/person)</td>
<td></td>
</tr>
<tr>
<td>NPP 31</td>
<td>Number of polluting industries located in ground water recharge areas</td>
<td></td>
</tr>
<tr>
<td>NPP 32</td>
<td>Number of urban settlements and population serviced by centralised sewerage treatment system</td>
<td></td>
</tr>
<tr>
<td>NPP 33</td>
<td>Number of centralised solid waste treatment plants in conurbations</td>
<td></td>
</tr>
<tr>
<td>NPP 34</td>
<td>Area of streams and rivers designated as reserves by state</td>
<td></td>
</tr>
<tr>
<td>NPP 35</td>
<td>Number of breakdowns per annum in conurbations</td>
<td></td>
</tr>
<tr>
<td>NPP 36</td>
<td>Number of fixed line telephones per 100 households</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Number of PC ownership per 100 households</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Number of internet subscribers per 100 households by urban and rural areas for each state</td>
<td></td>
</tr>
</tbody>
</table>
ii. Establishment of the NPP Land Use Planning Intelligent System (LaPiS) to be maintained by the NPP Division, DTCP:

a. LaPiS is set up as the info-structure framework to support the whole process of implementation, monitoring and review stages of the NPP. It will contain support modules which can track land use changes and monitor the application of selected land use policies.

b. To ensure conformity among the different tiers of land use planning, LaPiS will be developed within a framework of an integrated land use planning information system which will comprise three components i.e. LaPiS, State Land Use Intelligent System (SLaPiS) and District Land Use Intelligent System (DLaPiS). This integrated framework will allow for effective data and information sharing among the three levels of organisations responsible for physical planning.

c. There are two major sets of information flow in the LaPiS

- There shall be a vertical flow of information between the SLaPiS and the LaPiS. DTCP State will supply updated land use data and other information collected from the State Structure Plan and various Local Plans to Federal DTCP which will in turn analyse the land use changes and monitor the continued relevance of selected land use policies. The vertical flow of information shall be made obligatory between State and Federal DTCP (Figure 6.3).

- There shall be a horizontal flow of information from the line agencies and major data providers to LaPiS. The horizontal flow of information will involve relevant government departments and agencies that will supply necessary information to the LaPiS. The horizontal flow of information may be achieved through a process of negotiations in the form of MOUs between DTCP and the various government agencies and departments (Figure 6.4).
Figure 6.3: Vertical Information Flows

NPP LAND USE PLANNING INTELLIGENT SYSTEM (LaPiS)

Socio-economic tables & projections

ECONOMIC
Global Trade
Macro Economy
Primary
Secondary
Tertiary

DEMOGRAPHIC-SOCIAL
Population & Households
Urban Settlements
Rural Settlements
Community Facilities

INFRASTRUCTURE
Roads
Rail
Ports
Airports
Utilities

LAND USE
Built-up Area
Existing
Residential
Commercial
Industrial
Recreation Areas
Others
Committed projects
Proposed projects
Approved projects

PHYSICAL ENVIRONMENT
Elevation
Slope
Rivers
Lakes, Ponds
River Basins
Water Catchment Zones
Forest Reserves
Mining
Soils
Agro-climatic

Remotely sensed data

SLaPiS
STATE LAND USE & ZONING PLANS
COMMITTED DEVELOPMENT

DLaPiS
Parcel lot level information
Local Area Data
Development Projects

DTCP (FEDERAL)

DTCP (STATES)

LOCAL AUTHORITIES

Figure 6.4: Major Data Providers in LaPiS (Horizontal Information Flows)

GOVT. AGENCIES related to
Tourism
Forestry
Minerals & GeoScience
Drainage & Irrigation
Environment Utilities

MOU

JUPEM (CAMS)

MOU

EPU DEPT OF STATISTICS

MOU

DEPT. OF AGRICULTURE MACRES

MOU

GOVT. AGENCIES related to
Housing
Education
Health
Trade & Industries
Social Facilities
Transport
d. Updating the Information in LaPiS. One of the main objectives of LaPiS is to ensure that accurate, timely and up to date information will be available for subsequent NPP Reviews which are scheduled at five year intervals. Consequently, data maintenance and updating of LaPiS information system will be on an annual basis in order to analyse land use changes in a timely manner. There are two distinctive tasks involved in data maintenance and updating of the LaPiS, namely:

- Updating the statistical information base: The statistical database is made up of selected profiles of activities covering sectors such as economics (primary, secondary and tertiary sectors); population, housing and settlements; infrastructure, utilities and services, land-use and the environment. Appropriate tables specifying the types of data required will be sent to each data provider on an annual basis. The older sets of statistical data will be archived but can be retrieved for analysis purposes when required. The updated version will form the basis for the next set of data for the Review.

- Monitoring land use changes: This will be done from the bottom up, that is, information on land use changes would be tracked at state level and generalised to meet the needs of the LaPiS information system.

iii. Establishment of Information System in State DTCP

State DTCP should be the hub for the information system at the state level. In order to achieve this, each state DTCP would have to establish land use information system which will include the State Structure Plan Land use Planning Intelligent System and the Planning Approval Information System.

a. To achieve consistency, the land use base maps for each state are prepared and standardised in both scale and format to facilitate comparison of land use patterns both at the state and federal level. The principal source of land use maps at state level will be the DOA Mapping Division. There is a need for DTCP to enter into an MOU with DOA, so that each state can have access to a standardised base map. These maps will be updated with urban land use information from the local authorities.

b. For the purposes of tracking land use changes in the LaPiS, information need to be compiled on approved development projects of 20 hectares and above for smaller states such as Pulau Pinang, Perlis, Melaka and Negeri Sembilan and 50 hectares and above for the other states. Information such as the status of approved projects and the types of land use will also be monitored.

c. The schedule for updating approved development projects from the State DTCP will be on an annual basis.
d. The transfer of land use information from the State DTCP to LaPiS will be in digital format to minimize errors. The LaPiS will establish guidelines for the conversion of data to the required format.

iv. Data Sharing Measures

Data sharing between Federal and State DTCP is an important element to facilitate the monitoring process. Data sharing measures and the necessary steps to be taken can be implemented in two broad phases, namely Phase 1 covering the period of 2005 and Phase 2, covering the period from 2006-2008. These are summarised as follows:

a. Phase 1: 2005

- Establishment of a TWG to oversee the process of vertical integration and information sharing procedures within DTCP. The TWG will also be responsible for negotiating MOUs at an inter-organisational level to foster horizontal linkages with external data providers.

- The development of three IT applications which would support vertical linkages such as:
  - LaPiS Planning Support System (for internal stakeholders);
  - LaPiS Homepage (for external stakeholders)
  - Development of State Planning Monitoring System to track and update land use changes

- DTCP has to strengthen and upgrade the GIS Units at both the Federal and State levels in meeting staff requirements, training facilities and the necessary software and hardware to facilitate the vertical flow of information between the State and the Federal DTCP.

- Federal DTCP will prepare the necessary guidelines and manuals on the development of the integrated three-tier information system framework

- An Executive Information System (EIS) in the form of a user friendly interface will be provided in the LaPiS especially for senior management and executives. Up-to-date land use information can be accessed, viewed and retrieved to assist in decision making. Eventually the EIS will be used as a decision support system and made available in a web environment.

- Development of an enhanced land use planning support system that would incorporate all the three tiers of land use planning that will allow for monitoring land use changes and the policy indicators.
b. Phase 2: 2006-2010

- Expanding the vertical linkages to the third tier, i.e. the local planning authorities which are the custodians of the respective District Local Plan Information Systems. This will be achieved through the development of data sharing mechanisms and procedures between local planning authorities and DTCP.

- Achieving a consistent flow of information through vertical and horizontal integration by utilising the Malaysian Geospatial Data Infrastructure (MyGDI formerly known as NALIS). The MyGDI programme is currently being developed to enable land related digital data to be exchanged seamlessly between various government departments and agencies in the country as shown in Figure 6.5.

Figure 6.5: Vertical and Horizontal Linkages Land Use Planning Information System, 2020


6.4 Review of the NPP

There is a duty on the part of the various planning authorities to keep the different plans in review i.e. NPP, Structure Plans and the Local Plans. The concept of a hierarchy of plans implies that the lower tier plans should conform to the higher tier. When a Local Plan is prepared there is a duty to take cognizance of current development policies, be they national policies or state policies. This would suggest that development plans would influence and affect one another. Hence it is important that there is a coordinated programme for the preparation of the various plans. Most of these plans also require a lead time of between 18-24 months for their preparation (Figure 6.6).
The NPP should be reviewed every five years in tandem with the Review of the FYMP. To achieve this, data required for such reviews must be made available beforehand for the exercise to be undertaken in a timely manner. Collection of data for the preparation of a Review should commence at least two years before the Review. As the custodian of the LaPiS, it will be incumbent upon DTCP to ensure that the requisite data and information, particularly the indicators, are kept in review and made available.

### 6.4.1 Evaluating the effectiveness of the Policies

There is a need for continuous evaluation of the NPP policies to ascertain its effectiveness in achieving national development objectives. It would be incumbent on DTCP, the Spatial Planning Research Institute and Universities to undertake research initiatives from time to time to ascertain the effectiveness of the NPP policies. The findings of this research will provide useful information for the subsequent Plan Review.

### 6.5 Proposals

The institutional responsibilities for the preparation, implementation, monitoring and review of the Plan are shown in Table 6.6. The DG of DTCP is charged with the responsibility of preparing the Plan, monitoring its implementation and keeping it in review every 5 years. In carrying out this responsibility he will rely on the capacity of his.
department and a number of committees that have been proposed in the Plan such as the NPPC, NPP Committee, NPPAC, IAPG and TWG.

The Implementation of the plan however will require the support of the various Federal and State agencies that have a legal duty to adhere to the policies of the NPP. In this respect it is important that the proposals are translated into plans of action and included in the subsequent FYMP through the offices of the EPU, Treasury and the NDPC. In order to enhance the effectiveness of the NDPC, the DG of DTCP shall be made a permanent member.

Adherence to the recommendations of the NPP will also be manifested in the respective Structure Plans. One of the key instruments for monitoring the Plan and keeping it in review is the establishment of the LaPiS to ensure effective exchange of both spatial and attribute data that is necessary to prepare the plan and its review.

The policies of the NPP will remain applicable unless reviewed or replaced. In carrying out the review, the DG will rely on the advice of the NPPAC, the NPP Committee, directions of the NPPC and the application of indicators and research findings to assess their effectiveness. Critical success factors will depend on the establishment of a clear Terms of Reference of matters that need to be reviewed. Appropriate IAPG and TWG will also be established to provide adequate inputs for the Review.

### Table 6.6: Institutional Responsibility for Plan Preparation, Implementation, Monitoring and Review

<table>
<thead>
<tr>
<th>Activity</th>
<th>Responsibility</th>
<th>Enabling Law</th>
<th>Enabling Instruments/ Institutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plan preparation</td>
<td>DG DTCP</td>
<td>TCPA</td>
<td>NPPC, LaPiS, IAPG, TWG, NPPAC, NPP Committee</td>
</tr>
<tr>
<td>Plan Implementation</td>
<td>All Federal and State Agencies</td>
<td>TCPA</td>
<td>NDPC, EPU, Treasury, DTCP</td>
</tr>
<tr>
<td>Monitoring</td>
<td>DG DTCP</td>
<td>TCPA</td>
<td>NPPIS, NDPC, Indicators</td>
</tr>
<tr>
<td>Plan Review</td>
<td>DG DTCP</td>
<td>TCPA</td>
<td>NPPC, NPP Committee, NPPAC, LaPiS, IAPG, TWG</td>
</tr>
</tbody>
</table>

The main proposals for the implementation of the NPP are as follows:

1. Establish the necessary institutional structure for plan preparation and monitoring. This will include among others, the strengthening of the National Physical Planning Division in FDTCP, the establishment of NPP Committee, NPP Advisory Committee, National Spatial Planning Research Institute, IAPG and relevant TWG.
ii. Once the NPP is approved, the various Federal and State agencies need to translate these policies into programmes and projects and include them in the subsequent FYMP.

iii. The DG of DTCP should be made a permanent member of the NDPC to ensure that the aspirations of the NPP are incorporated into the subsequent FYMP.

iv. Establishment of the NPP LaPiS at FDTCP and the State Structure Plan Land Use Information System (SLaPiS) at DTCP State.
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tr>
<td>7MP</td>
<td>7th Malaysia Plan</td>
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<tr>
<td>8MP</td>
<td>8th Malaysia Plan</td>
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<tr>
<td>AAGGR</td>
<td>Average Annual Growth Rate</td>
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<tr>
<td>AFTA</td>
<td>ASEAN Free Trade Agreement</td>
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<tr>
<td>ASEAN</td>
<td>Association of South-East Asian Nations</td>
</tr>
<tr>
<td>DG</td>
<td>Director General</td>
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<tr>
<td>DID</td>
<td>Department of Irrigation and Drainage</td>
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<tr>
<td>DLaPiS</td>
<td>District Land Use Planning Intelligent System</td>
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<tr>
<td>DMG</td>
<td>Department of Mineral and Geoscience</td>
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<tr>
<td>DOA</td>
<td>Department of Agriculture</td>
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<tr>
<td>DOE</td>
<td>Department of Environment</td>
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<tr>
<td>DOF</td>
<td>Department of Forestry</td>
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<tr>
<td>DOS</td>
<td>Department of Statistics</td>
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<tr>
<td>DTPC</td>
<td>Department of Town and Country Planning</td>
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<tr>
<td>EPU</td>
<td>Economic Planning Unit</td>
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<tr>
<td>ERL</td>
<td>Express Rail Link</td>
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<td>ESA</td>
<td>Environmentally Sensitive Areas</td>
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<td>FDI</td>
<td>Foreign Direct Investment</td>
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<td>FYMP</td>
<td>Five Year Malaysia Plans</td>
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<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
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<tr>
<td>GIS</td>
<td>Geographic Information System</td>
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<tr>
<td>IADP</td>
<td>Integrated Agricultural Development Project</td>
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<tr>
<td>IAPG</td>
<td>Inter Agency Planning Group</td>
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<tr>
<td>ICT</td>
<td>Information and Communication Technology</td>
</tr>
<tr>
<td>ICU</td>
<td>Implementation and Coordination Unit</td>
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<tr>
<td>IMS-GT</td>
<td>Indonesia-Malaysia-Singapore Growth Triangle</td>
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<tr>
<td>IMT – GT</td>
<td>Indonesia-Malaysia-Thailand Growth Triangle</td>
</tr>
<tr>
<td>IP</td>
<td>Indicative Plan</td>
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<tr>
<td>KADA</td>
<td>Kemubu Agricultural Development Authority</td>
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<tr>
<td>KLIA</td>
<td>Kuala Lumpur International Airport</td>
</tr>
<tr>
<td>KSN</td>
<td>Chief Secretary to the Government</td>
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<tr>
<td>LaPiS</td>
<td>Land Use Planning Intelligent System</td>
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<td>LA 21</td>
<td>Local Agenda 21</td>
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<td>LP</td>
<td>Local Plan</td>
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<td>LPA</td>
<td>Local Planning Authority</td>
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<td>LRT</td>
<td>Light-Rail Transit</td>
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<td>MADA</td>
<td>Muda Agricultural Development Authority</td>
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<td>MASMA</td>
<td>Urban Storm Water Management Manual for Malaysia</td>
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<td>MDC</td>
<td>Multimedia Development Corporation</td>
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<td>MEWC</td>
<td>Ministry of Energy, Water and Communication</td>
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<td>MHLC</td>
<td>Ministry of Housing and Local Government</td>
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<tr>
<td>MICE</td>
<td>Meetings, Incentives, Conventions and Exhibitions</td>
</tr>
<tr>
<td>MITI</td>
<td>Ministry of International Trade and Industry</td>
</tr>
<tr>
<td>MOSTE</td>
<td>Ministry of Science, Technology and Environment</td>
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<tr>
<td>MOT</td>
<td>Ministry of Transport</td>
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<tr>
<td>MOU</td>
<td>Memorandum of Understanding</td>
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<tr>
<td>Abbreviation</td>
<td>Full Form</td>
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<tr>
<td>MRT</td>
<td>Mass Rail Transit</td>
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<tr>
<td>MSC</td>
<td>Multimedia Super Corridor</td>
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<td>MyGDI</td>
<td>Malaysian Geospatial Data Infrastructure</td>
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<td>NAP3</td>
<td>Third National Agricultural Policy</td>
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<tr>
<td>NCLG</td>
<td>National Council of Local Government</td>
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<td>NDPC</td>
<td>National Development Planning Council</td>
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<td>Non Governmental Organization</td>
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<td>National Water Resources Council</td>
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<td>Organisation of Islamic Countries</td>
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<td>PAA</td>
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<td>RDA</td>
<td>Regional Development Authority</td>
</tr>
<tr>
<td>REHDA</td>
<td>Real Estate and Housing Developers' Association</td>
</tr>
<tr>
<td>RGC</td>
<td>Rural Growth Centre</td>
</tr>
<tr>
<td>RPC</td>
<td>Regional Planning Committee</td>
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<tr>
<td>SA</td>
<td>State Authority</td>
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<tr>
<td>SDO</td>
<td>State Development Officer</td>
</tr>
<tr>
<td>SEDC</td>
<td>State Economic Development Corporation</td>
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<tr>
<td>SEPU</td>
<td>State Economic Planning Unit</td>
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<tr>
<td>SLaPiS</td>
<td>State Land Use Planning Intelligent System</td>
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<tr>
<td>SMA</td>
<td>Special Management Areas</td>
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<tr>
<td>SME</td>
<td>Small and Medium Scale Enterprises</td>
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<tr>
<td>SMIDEC</td>
<td>Small and Medium Industries Development Corporation</td>
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<tr>
<td>SP</td>
<td>Structure Plan</td>
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<td>Technical Working Group</td>
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<td>UN</td>
<td>United Nation</td>
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<tr>
<td>UNEP</td>
<td>United Nation Environment Program</td>
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<td>United Nations Development Program</td>
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<tr>
<td>USWM</td>
<td>Urban Storm Water Management</td>
</tr>
<tr>
<td>WTO</td>
<td>World Trade Organization</td>
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