

**IMPLEMENTATION OF SUSTAINABLE  
URBAN DEVELOPMENT BASED ON NEW  
URBAN AGENDA, A CASE OF PENANG,  
MALAYSIA**

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**2021**

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MALAYSIA**

by

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**Thesis submitted in fulfilment of the requirements  
for the degree of  
Doctor of Philosophy**

**November 2021**

## ACKNOWLEDGEMENT

This journey would not have been possible without the invaluable contributions of many important people in my life. First, I would like to recognize the enormous support of my supervisor, Prof. Dr. Aldrin Abdullah. His unlimited support motivated me and made me feel confident in my capacity to accomplish this journey while also prompted me to challenge myself. He generously devoted many hours of his time to provide me with guidance that allowed me to think bigger and broader, own my ideas, push them forward, and take this work to another level. I also want to thank my co-supervisors, Associate Prof, Dr. Nurwati Badarulzaman, for sharing her ideas on my work, and Associate Prof, Dr. Seyed Mostafa Rasoolimanesh, for grateful the guidance that he gave me during the challenging fieldwork. He also has inculcated in me a great interest in this study. I am thankful to my family for the love they give me every day, for the fact that they have been there for me through good and bad times. To my mother and my father, you were instrumental in my decision to start this journey. Your constant love and encouragement have gone a long way in making me what I am today. I especially want to recognize the unconditional support, love, and patience of my wonderful wife, Dr. Reyhaneh Bagheri. Her support and assistance are more valuable to me, considering that she has been going through the same process as me while taking her precious time to assist and support me. She has been a blessing to me. This whole document's space is not enough to tell all the amazing things that she has done throughout these years to help me succeed and stay mentally and physically sane. The special moments we share have been the strength that kept me going. Thanks, my love, for being the best partner that a Ph.D. student could have.

Last but not least, my son Parsa, what would I have done without you? You have tolerated my long absences from home and have always been smiley to me. Thank you so very much for being a wonderful son. Finally, I thank God for giving me the strength and wisdom to carry out this study.

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## **LIST OF ABBREVIATIONS**

CPI	City Prosperity Index
ICT	Information, Communication and Technology
LP	Local Plan
MDGs	Millennium Development Goals
MP8	Malaysia Plan Eighth
MP9	Malaysia Plan Ninth
MP10	Malaysia Plan Tenth
MP11	Malaysia Plan Eleventh
NPP 2	National Physical Plan 2
NUA	New Urban Agenda
NUP1	National Urbanization Policy 1
NUP2	National Urbanization Policy 2
QCA	Qualitative Content Analysis
SAP	Special Area Plan
SD	Sustainable Development
SDGs	Sustainable Development Goals

SUD	Sustainable Urban Development
TCA	Thematic Content Analysis
USIs	Urban Sustainable Indicators
UN	United Nation

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**PELAKSANAAN PEMBANGUNAN BANDAR MAPMAN  
BERDASARKAN AGENDA PERBANDARAN BAHARU: SATU KES DI  
PULAU PINANG, MALAYSIA**

**ABSTRAK**

Kajian ini meneliti penerapan teras pembangunan bandar mampan (*Sustainable Urban Development - SUD*) dalam perancangan bandar dan polisi di Malaysia; pelaksanaan SUD; dan bagaimana Pemacu dan Penghalang memberi kesan terhadap pencapaian teras pembangunan bandar mampan di Malaysia. Malaysia komited untuk menyokong dan melaksanakan SDGs dan Agenda Perbandaran Baharu (*New Urban Agenda – NUA*). Namun, Malaysia memerlukan rangka kerja yang kukuh untuk menentukan keadaan semasa pelaksanaan SUD. Tambahan pula, penentuan pemacu (fasilitator) dan penghalang dapat membantu pelaksanaan SUD. Kajian kualitatif ini menggunakan analisis kandungan tematik terhadap dokumen rasmi perancangan Malaysia sebagai data sekunder, manakala temubual mendalam bersama pakar pula sebagai data primer. Dokumen penting yang digunakan dalam kajian ini termasuk tujuh dokumen perancangan nasional, polisi-polisi pembangunan bandar, dan garis panduan-garis panduan dari 20 tahun lalu sehingga hari ini (1999-2020) untuk memahami arah aliran pelaksanaan SUD di Malaysia. Temubual mendalam yang dijalankan merangkumi 30 orang pakar yang terdiri daripada pihak berkepentingan, para pembuat keputusan, pihak pemaju dalam sektor swasta, dan ahli-ahli badan bukan kerajaan (NGO) di Pulau Pinang. Hasil temubual dianalisis dengan teliti menggunakan rangka analisis kandungan deduktif berdasarkan rangka kerja konseptual Indeks Kemakmuran Bandar (*City Prosperity Index - CPI*). Hasil kajian ini dipanjangkan merangkumi debat teoritikal yang berfokus kepada perspektif SUD dan



NUA yang diperoleh daripada penemuan kajian ini. Kajian ini juga mengenalpasti “Pemacu” dan “Penghalang” dalam pelaksanaan SUD di Pulau Pinang. Kajian ini menyumbang kepada perancangan dalam menjayakan SUD di Pulau Pinang, Malaysia.

**IMPLEMENTATION OF SUSTAINABLE URBAN DEVELOPMENT  
BASED ON NEW URBAN AGENDA, A CASE OF PENANG, MALAYSIA**

**ABSTRACT**

This research investigates the inclusion of sustainable urban development pillars in Malaysian urban plans and policies; the implementation of SUD; and how the drivers and barriers affect achieving sustainable urban development in Malaysia. Malaysia is committed to support and implement the SDGs and NUA. However, Malaysia, requires a comprehensive framework to determine the current situation of implementation of the SUD. Moreover, identifying drivers (facilitators) and barriers can be effective for SUD implementation. This qualitative study used thematic content analysis of Malaysian documents as secondary data and the in-depth interviews for primary data. Relevant documents used for this study include 7 national planning documents, urban planning policies and guidelines from 20 years ago till today (1999-2020) to understand the trend of SUD implementation of Malaysia in documents and policies. Moreover, the interviews were conducted with 30 experts including stakeholders, decision makers in government and developers in private sectors as well as NGOs members in Penang. The interviews were analysed using the deductive content analysis framed by the City Prosperity Index (CPI) conceptual framework. The findings of this research were extended to include a theoretical debate focused on both SUD and New Urban Agenda (NUA) perspectives gleaned from this analysis. Also, this study identified “Drivers” and “Barriers” of implementation of SUD in Penang. This research contributes to successful planning to achieve the SUD in Penang, Malaysia.

# CHAPTER 1

## INTRODUCTION

### 1.1 Introduction

Urbanization and the development of cities are inextricably related to industrialization and income. The rate of urbanization around the world continues to grow. In 1800, the planet was around 5% urban as well as in 1900, urbanization in most developed countries increased dramatically, but the world remained urbanized by less than 15% (Huang et al., 2015). In 2008 the world passed the 50% urban mark, and the urbanization rate continues to rise (Huang et al., 2015; Wu et al., 2014). Malaysia's urbanisation rate has risen to 28.4% in 1970 and 61.8% in 2000, from about 10.0% in 1911. More than 70% of the population of Malaysia living in urban areas was urbanised in 2010 (Yaakob et al., 2010).

It is projected that the world population will be 70% urban by 2050 and 100% urban by 2092 (Batty, 2020). Developing countries adopt urbanization as a national strategy to accelerate economic growth towards balanced urban and rural development. However, people continue to migrate into towns to look for better lives and economic opportunities. Sustainability has become one of the most contested terms in modern times. However, like all such terms, sustainability has a history. The term was first coined in an environmental context in 1712 by Hans Carl von Carlowitz, a German forester, in his book *Sylvicultura Oeconomica* which prescribed how forests can be managed on a long-term basis (von Carlowitz and Irmer, 2000). However, it was not until the 1980s that 'sustainability' came into much wider currency, with the birth of the contemporary environmental movement in the late 1960s and 1970s and

debates about the 'limits to growth' (Meadows et al., 1972).

Sustainable urbanization, therefore, plays an essential role in achieving global sustainability objectives. International organizations and governments at various levels aim for the optimal urban sustainability benefit in line with the promotion of sustainable urbanization (Shen et al., 2011). A collection of indicators, frameworks, and assessment tools has been developed to understand the state or improvements in urban areas with better urban sustainability. (Briassoulis, 2001; Davidson, 1996). Urban sustainable indicators are essential for supporting politicians, experts, and the public in setting targets, performance evaluations, and promoting contact. (Verbruggen and Kuik, 1991).

Consequently, a wide variety of urban sustainability indicators have been used in various cities and regions that vary according to their unique needs and objective (Brandon and Lombardi, 2010; Verbruggen and Kuik, 1991). However, functional difficulties led to inconsistent outcomes in implementing sustainability metrics in diverse settings and, at times, too low sustainable performance gains (Alshuwaikhat and Nkwenti, 2002; Seabrooke et al., 2004; Selman, 2002). One of the principal reasons why the desired output has not been achieved is the lack of indicators to direct and track the sustainable urbanization process (Briassoulis, 2001; Seabrooke et al., 2004). Others considered no valid and universal standards or requirements for the collection of urban sustainability indicators (Kahn, 2007). Urban sustainability indicators and their effective selection play an important role in achieving urban sustainability successfully. However, where urban sustainable development indicators are successfully used, the insights gained from each process have not been shared and used to design new urban sustainable development plans and enhance the decision-

making process for selecting indicators (Shen et al., 2011).

## **1.2 Background of Sustainable Development (SD) and Sustainable Urban Development (SUD)**

The Brundtland Commission first proposed the idea of sustainable development in 1972. The concept has developed since the UN Environment Program (UNEP) Earth Summit in Rio de Janeiro (1992) (Mohamed and Wee, 2016). Sustainable development is easy to describe from a cursory perspective and addresses today's needs without restricting future generations' capacity to respond to their own needs. This ensures that equity for future generations is calculated. But sustainability is more complicated or more challenging to achieve than such a short concept seems to suggest. The intersection of wealth creation, economy, equity, environmental destruction, urbanization, well-being, community, innovation, local and global governance is sustainable development. Cities primarily drive sustainable development, the way they are designed and run, and their way of life. Many ecological, economic, and social structural perplexities have been triggered by humanity's intense capacity to change. One such transition is environmental deterioration, which is the critical engine behind the social transformation. Global change has exacerbated erosion and depletion of resources, society issues, and economic challenges regarding population growth and changing consumption habits. (Saadatian et al., 2011).

Today, sustainable economic growth has become an essential topic for ensuring the productivity of long-term prospects. It is addressed in several countries among the representatives. According to the development research literature in several

nations, the development paradigm has passed through different phases. The idea of sustainable development is now a global problem, and this idea is the source of several divergent economic analysis interpretations. The SD was initially focused only on environmental concerns, but it should also cover social change perspectives and other primary indicators, such as natural, cultural, and economic problems in the realities of change. The critical subject of discussion was sustainable development at the 1992 Rio Earth symposium in Brazil. 152 world leaders from all over the world attended the Rio Earth Summit in Brazil. The symposium aimed at underlining the value of sustainability, which is included in Agenda 21, an action plan, and a recommendation for all countries to implement a national sustainability strategy. Moreover, SD is a politically and scientifically disputed term, and it is crucial to define the key indicators that influence SD. For this reason, we, therefore, need the cooperation of the appropriate agency, in particular the government, to identify the best strategy for achieving its objectives (Rasoolimanesh et al., 2012). Sustainable development should have workable and straightforward meanings, be enforced by consistent policies and initiatives, and be measured through practical, evidence-based interventions.

Urban sustainability is seen as a beneficial state of urban overtime conditions. It is also characterized by intragenerational equity, natural security, limited use of non-renewable resources, economic vitality and diversity, group self-confidence, individual welfare, and basic human needs. (Adinyira et al., 2007). The concept of sustainable development has become embedded in urban planning, and sustainable development would offer environmental sustainability and social and economic benefits (Dias et al., 2014). According to the UN, a sustainable city is a location for long-term social, economic, and environmental growth (Li et al., 2009; Porio, 2015).

This definition is described as an integrated transformation of the social, economic, and ecological structures to ensure financial balance, social change, and environmental protection. A symbiotic report developed by Sweden stated that SUD aims to create an urban environment that is robust and sustainable and considers poverty reduction and living standards (Ranhagen and Groth, 2012; Shathy and Reza, 2016). Sustainable urban growth has become a shared aim for developed and developing countries (May et al., 2000). Thus, with urban sustainability and understanding of urban problems, sustainable indicators are defined as the critical challenge for land managers (Chen and Wang, 2014). Because urbanization is an ongoing interdependent process between social, economic, and environmental development, environmental changes to support the urban economy create an imbalance in the ecological system. (Ichimura, 2003; Omar, 2009). The goal of sustainable urban development is to monitor and regulate urbanization using some indicators (Li et al., 2009). Currently, environmental problems created by urbanization are highlighted due to their harmful effects on human life and the environment (Ichimura, 2003). However, urban sustainability can categorize into two major sections.

1. Urban sustainability or sustainable city
2. Sustainable urban development or sustainable urbanization.

The terms "urban sustainability" and "sustainable city" refer to appropriate conditions such as efficient use of resources, protecting the natural environment, reducing the use of non-renewable resources, economic growth and variety, community self-confidence, social health, and meeting basic human needs (Rasoolimanesh et al., 2012; Roy, 2009; Shen et al., 2011). According to the United Nations Sustainable Cities Program, A sustainable city has safe protection from

environmental adventures that could challenge development achievements. According to Rasoolimanesh (2012) and Whitehead (2003) Sustainable city is claimed to be an economic space in which capitalism's social, economic, and ecological contradictions are controlled and strategically addressed. Here, attention to the sustainable urbanization is important because the cities of the world's emerging economies are increasingly drivers of global prosperity while the planet's resources are fast depleting. It is, therefore, more critical than ever that Member States and United Nations agencies commit themselves to realize the goal of sustainable urbanization as a key lever for development (UN, 2021). must urgently find ways to achieve economic and socially equitable growth without further cost to the environment. Part of the solution lies in how cities are planned, governed, and provide services to their citizens. When poorly managed, urbanization can be detrimental to sustainable development. However, with vision and commitment, sustainable urbanization is one of the solutions to our ever-growing global population. Efforts to create jobs, reduce our ecological footprint, and improve quality of life are most effective when pursued holistically. By prioritizing sustainable urbanization within a broader development framework, many critical development challenges can be addressed in tandem such as energy, water consumption and production, biodiversity, disaster preparedness and climate change adaptation (UN, 2021). While a dynamic process towards suitable conditions includes sustainable urbanization and sustainable urban growth, this process focuses on sustainability, environmental, economic, social, and governance (Shen et al., 2011).

### **1.3 Implementation of SUD and New Urban Agenda (NUA)**

Sustainable Development Goals 11 and the New Urban Agenda (NUA), which



enables the implementation of effective public policies, the adoption of new planning strategies, and the integration of a framework with technology support. (Ben Dhaou et al., 2017). The NUA is a shared vision for a prosperous and more urban sustainable future, in which all people have equal rights, equal access to the benefits of city life and opportunities, and in which the international community reconsiders the urban structures and the physical shape of our urban areas (NUA, 2017). Implementation must also be measured with indicators by data availability (Koch F, 2015). Set of several indicators that can be calculated and used to reflect global sustainability in an area, a neighbour, or a building to implement sustainable principles, sustainable growth, urban sustainability, and sustainable urbanization. The concept of these indicators is still consolidated, and many indicators still exist, which treatment represents a complex collection, measurement, validation, and reinforcement process (Yigitcanlar and Dur, 2010; Yigitcanlar et al., 2015).

#### **1.4 Development Journey of Malaysia**

Great Britain establishes colonies in part of South East Asia, which are occupied by Japan from 1942 to 1945 in the place of current Malaysia (Lockard, 2009). In 1948, it is converted to Federation of Malaya by Great Britain (Lockard, 2009). In the 1957, country announces its independence and in 1963, it is renamed to Malaysia when the Singapore, Sabah, and Sarawak join the Federation (Lockard, 2009). Malaysia experiences a great development and diversifies its economy in manufacturing, services, and tourism, particularly after 1981 (Lockard, 2009).

Malaysia has developed impressively since its inception in 1963. Although it is a relatively young country, many growth areas have taken numerous steps, guided

by long- and medium-term policies. In subsequent decades Malaysia continued to report substantial growth in addressing broader economic, social, and environmental objectives (Ponrahono, 2008). The First Malayan Five-Year Plan 1956 – 1960 was the first economic development plan launched by the Malayan government just before independence in 1957 (Vreeland, 1977). The colonial British government had concentrated available resources on fighting the Malayan communist insurgency instead of developing the rural areas of Malaya (Vreeland, 1977). The Five-Year Plan allocated substantial resources to agricultural and rural improvement, and was administrated by the Prime Minister's department. After independence of Malaysia first plan 1966–1970 was an economic development plan implemented by the government of Malaysia. It was the first economic plan for the whole of Malaysia—Sabah and Sarawak included—as opposed to just Malaya, which previous economic plans (such as the Second Malayan Five Year Plan) had confined themselves to (Casertano, 2013). The plan's objectives were to promote the welfare of all citizens, and improve the living conditions in rural areas, particularly among low-income groups. In 1971, the new economic policy focussed on the theory of growth and equity, based on a two-pronged approach to eradicating poverty and reforming society. In the 1976-80 Third Malaysia plan, environmental protections and sustainable growth were highlighted. Malaysia launched Vision 2020 in an economic, political, social, moral, psychological, and cultural context in 1991. Malaysia set the tone for a wider emphasis on people, development, and equity (Ahmad et al., 2013).

#### **1.4.1 Background of Sustainable Development of Malaysia**

In the 1970s, when the NEC eradicates poverty and reorganises social

imbalances, Malaysia began its journey towards sustainable development (Saadatian et al., 2012). Sustained development includes sustainable economic growth, growth with fair distribution across all parts of society, equitable development, access to required infrastructure and utilities, access to education and health services, and mainstreaming environmental protection are all underlined in the subsequent five-year national development plans, respectively. In 2009, Malaysia formulated the New Economic Model (NEM), and strengthened its sustainable development pledge further on three priorities: high wages, inclusiveness, and sustainable development. This reflects the three components of the 2030 Sustainable Development Agenda (the 2030 Agenda) which cover economic, social, and environmental factors. The NEM provides the basis for Malaysia's development plans until 2020.

In this section, an overview of Malaysia outline of sustainable development thrusts in 6th Malaysian Plan (1991-1995) till 11th Malaysian Plan (2016-2020) as well as National Urbanization Policy (2006-2016) and National Physical Plan 1 and 2 (2005-2020) are described (See Table 1.1).

Table 1.1 Malaysian Plan Period and Thrusts (“Malaysia’s Development Plans & Policies (1956 - Present),” 2020)

Plan	Period	Thrusts
6 <sup>th</sup> Malaysia Plan	1991-1995	It is the first phase in implementing the Second Outline Perspective Plan (OPP2), 1991-2000, which embodies the Nation Development Policy. The main thrust of the Sixth Malaysia Plan (SMP) is to sustain the growth momentum and manage it successfully to achieve the objective of balanced development as enunciated in the NDP.
7 <sup>th</sup> Malaysia Plan	1996-2000	The plan retains and reemphasizes the concept of balanced development, first introduced in 1991, as a significant NDP feature. The Plan continues to give serious attention to strategies for generating sustained rapid economic growth and ensuring that economic growth benefits are equitably shared among Malaysians of all ethnic groups and states.
8 <sup>th</sup> Malaysia Plan	2001-2005	The plan charts the next steps that, as a nation, we will need to take towards becoming a united and fully developed nation in our mold by the year 2020. In formulating this plan, the government considered the progress achieved, took stock of their current position, and the considerable challenges ahead. The strategies and programs presented aim to put the nation on a stronger footing and be more resilient and competitive.
9 <sup>th</sup> Malaysia Plan	2006-2010	The plan will chart the nation's development agenda for the first five years of the National Mission, aiming to translate its thrust into programs and results. Agenda in the Ninth Plan under each of the five thrusts: To move the economy up the value chain. To raise the capacity for knowledge and innovation and to nurture a “first-class mentality.” To address socioeconomic inequalities constructively and productively. To improve the standard and sustainability of quality life. To strengthen institutional and implementation capacity.

Table 1.1 Malaysian Plan Period and Thrusts (“Malaysia’s Development Plans & Policies (1956 - Present), 2020), “Continued.”

Plan	Period	Thrusts
10 <sup>th</sup> Malaysia Plan	2011-2015	<p>In the plan, five critical strategic thrusts have been identified. These thrusts are holistic and comprehensive strategies to achieve the objectives and targets set in the Tenth Malaysia Plan. The five thrusts are as follows:</p> <ul style="list-style-type: none"> <li>Designing Government philosophy and approach to transform Malaysia using NKRA methodology.</li> <li>Creating a conducive environment for unleashing economic growth.</li> <li>Moving towards inclusive socio-economic development.</li> <li>Developing and retaining a first-world talent base.</li> <li>Building an environment that enhances the quality of life.</li> </ul>
11 <sup>th</sup> Malaysia Plan	2016-2020	<p>Will premise the Eleventh Plan on the Malaysian National Development Strategy that will rapidly deliver high impact outcomes to both the capital economy and people's economy at an affordable cost. The Eleventh Malaysia Plan will disproportionately focus on the people – the rakyat will be the centerpiece of all development efforts.</p>
National Urbanization Policy	2006-2016	<p>The plan aims to direct and manage the planning and town development to make them more effective in dealing with the increasing number of urban populations. Emphasizing the balance between the economic, social, and physical growth in the city, NUP acts as the critical thrust for all urban planning and development activities in Peninsular Malaysia (Ministry of Housing and Local Government, 2006). The NUP is devised on six thrusts, namely:</p> <ul style="list-style-type: none"> <li>An efficient and sustainable urban development.</li> <li>Development of an urban economy that is resilient, dynamic, and competitive.</li> <li>An integrated and efficient urban transportation system.</li> <li>Provision of urban services, infrastructure, and utility of quality.</li> <li>Creation of a conducive liveable urban environment with identity.</li> <li>Effective urban governance.</li> </ul>

Table 1.1 Malaysian Plan Period and Thrusts (“Malaysia’s Development Plans & Policies (1956 - Present), 2020), “Continued.”

Plan	Period	Thrusts
National Physical Plan 1	2005-2010	<p>first introduced It was in 2005, which specifies the national strategic spatial planning policies and measures taken to execute them. The NPP's spatial planning vision measures, policies, and land allocations are carried out mainly through the State Structure Plans. Following the framework of national physical development, the systems and plans are subsequently interpreted into State Structure Plan, which provides policies on development and land use in a state.</p> <p>Local Plan is drafted at the local level outlining detailed and site specified development facilitation and control. Another form of a local level plan named as Special Area Plan is required as it provides careful planning of areas needing special treatment.</p>
National Physical Plan 2	2010-2015	<p>the strategic issues of national importance and provide the overall framework for subsequent drawing up of the other more detailed Development Plans For the policy, there are five objectives specified such (Ministry of Housing and Local Government, 2010):</p> <ul style="list-style-type: none"> <li>To rationalize and consolidate the national spatial planning framework supported by a critical strategic infrastructure for economic efficiency and global competitiveness.</li> <li>To optimize the utilization of land and natural resources for sustainable development and biodiversity conservation.</li> <li>To promote more balanced regional development for national economic integration and social unity.</li> <li>To enhance spatial and environmental quality, diversity, and safety for a high quality of life and livability.</li> <li>To facilitate efficient integrated inter-state connectivity and public everyday users’ space provision for social interaction and sustainable communities in line with the ‘1Malaysia’ concept.</li> </ul>

There is a need for Malaysia to build the national, state, and local capacity to collect useful information on urban conditions and trends, convert that information to knowledge through appropriate analytic techniques, and apply that knowledge to formulating and modifying urban policies and programs. These efforts are aligned with the Sixth Malaysia Plan, which states will initiate steps to prepare sustainable development indicators that will provide a yardstick for monitoring and evaluating progress. In the Seventh Malaysia Plan, it describes the measures taken to achieve sustainable development during the earlier Malaysia Plan periods to enhance Malaysia's ability to develop sustainability. The Sixth and the Seventh Malaysia Plan were the pillars of the 1991-2000 development plan. The initiative was in line with Vision 2020, which the government initiated in 1991, as a national ambition to become a fully developed country by 2020. Broadened the focus of growth was through long-term policy to include the economic, political, social, spiritual, psychological, and cultural aspects. It focused on individuals, development, and equity as a long-term strategy (Yusof and Ariffin, 2020).

Malaysia has taken sustainable development into consideration in its strategies, the Ninth Malaysian Plan reports. The implementation, through his ninth principle on sustainable development, of Islam Hadhari has established the basis for government commitment to balance development and environment needs. Malaysia is ranked ninth of 133 countries in the Environmental Performance Index Survey, based on its efforts to mitigate the effects on human health and ecosystem vitality (Joseph, 2013). However, Malaysia has three major sustainability issues and pressures: land use, emissions, and invasive species, which may result in potential unsustainability. The Malaysian Government emphasized a green economy and green tourism in the 10th

Malaysian Plan (Yusof and Ariffin, 2020).

The Ministry of Town and Country Planning and the Ministry of Housing and Local Government were mandated to develop the urban sustainability indicators, and they developed and create an approach known as Malaysia Urban Indicators Network (MURNInet) (Marzukhi et al., 2011).

The 11th Malaysia Plan 2016–2020 (11MP) is therefore predicated on the three NEM aims. The 11MP subject is "Anchoring growth on people," where people are central to all efforts of development, complemented by ensuring that no part of society is left behind in participating and enhancing the development of the country. Critically, the MP11 is aligned to most of the global Sustainable Development Goals (SDGs). The National Physical Plan (NPP), National Urbanization Policies (NUP), Sustainability Assessment (SA) for Local Plans preparation, Rural Planning and indicators are being used at the international level, UN Conference on Sustainable Development (UNCSD) (Shamsuddin and Rashid, 2013).

## **1.5 Problem Statement**

For the last 50 years, UN-Habitat has aimed to better people's lives worldwide in human settlements. Over time, the mandate of UN-Habitat has adapted to our growing urban environment and some developing countries such as Malaysia, which has developed SUD goals and are being implemented (Shamsuddin and Rashid, 2013; Shen et al., 2011). SUD aims to create an urban environment that is robust and sustainable and considers poverty reduction and living standards (Ranhagen and Groth, 2012; Shathy and Reza, 2016).



SUD implementation is the most "challenging and contentious" issue about its understanding and application, as well as one focusing on economic growth rather than overall sustainability (Lee and Huang, 2007; Verma and Raghubanshi, 2018). Lack of implementation, inconsistency between priorities and objectives, and between international agreements and policy areas, unavailability of data and non-quantifiable goals were the major weaknesses listed in the evaluation (Hák et al., 2016; Verma and Raghubanshi, 2018). The need for a framework and indicator system for SUD implementation is recognised critical because providing a common collection of evidence-based indicators identifies important areas for enhancing the sustainability of urban development and will allow decision-makers to model areas and regions where cities are ahead or behind (Lynch et al., 2011). Several indicators covering all three dimensions of sustainable development have been created, by countries such as Hungary, the United Kingdom, and the USA (Milman and Short, 2008). However without a SUD implementation framework, there would be a need to rely on various urban monitoring systems to recognise policy results that cannot be correlated or require decisive steps to move towards sustainability (Lynch et al., 2011).

In addition as part of SUD, the New Urban Agenda (NUA) is a collective vision for a better, sustainable future, in which everyone has equality of rights and access to benefits and resources that cities can afford and in which the international community reassesses our urban and physical environment (NUA, 2017). NUA emphasised that public consultations, multi-stakeholder approaches, good governance are all important. Although SDG 11 addresses the urban level explicitly, with 10 targets and 15 indicators established by the UN (UN-Habitat, 2015), a particular challenge emerges as there are no clear guidelines on how to translate national sustainability

targets to urban level and how to implement SDGs in cities (Koch and Krellenberg, 2018). It is important to enforce SDG indicators effectively from global to national level, and national governments are regarded as key players in that process (Biermann et al., 2017; Tosun and Leininger, 2017). But, at the same time, local SDG implementation still requires municipal actors to apply. Thus, national-urban interactions are especially crucial in order to facilitate the implementation of SDGs in urban areas for the development of indicators at urban level (Koch and Krellenberg, 2018). This is a challenge because current data are often readily available at the state, city or local level and for many other SDGs separately (Schnorr-Bäcker, 2016). Consequently, unlike the current literature on urban SDGs, which only shows a strong urban focus (Arfvidsson et al., 2017; Patel et al., 2017; Satterthwaite, 2016), the relationship between national and local levels should be emphasised (Koch and Krellenberg, 2018). As well as current city data are not adequately comprehensive, reported, or harmonized or are not readily available and usable.

Malaysia is committed to support and implement the 2030 Agenda for SUD. However, policy experiments in Malaysia are decentralised and unsustainable (Hezri, 2004). Executive deficiencies can only be readily traced to the government's refusal to achieve the specified objectives or unwillingness to achieve them (Hezri, 2004). For this reason, Malaysia need a systematic framework is therefore necessary to evaluate the current situation of the SUD and it must be implemented and monitored to fulfil the targets (Saadatian et al., 2012). The major weaknesses were considered to be lack of systematic frameworks or mechanisms and lack of proper indicators for SUD (Saadatian et al., 2012). Moreover, there is no study on sustainable development efforts and programmes over the past 20 years that emphasised Malaysia's strategy, plan and

evaluation tools in a comprehensive manner at the local context (Saadatian et al., 2012). Although the National Voluntary National Report (VNR) at the High-Level Political Forum (HLPF) in 2017 presented the main report on the implementation progress of the SDGs in Malaysia, but as mentioned, these reports and data are focused on the national level, not at the urban or local level. Although the trend of global indicators in national contexts is very relevant for all 17 SDGs, the relationship between global, national and, in particular, local scales is crucial for SDG 11, as the indicators of this SDG need to be broken down. It cannot only be recorded at national level (Koch and Ahmad, 2018; Satterthwaite, 2016).

The CPI framework has developed a set of indicators for SUD evaluation and monitoring, collecting data annually from cities around the world to inform decision-makers in urban policy development and SUD planning (Behrang et al., 2018; Rasoolimanesh et al., 2019; UN-Habitat, 2017). The use of CPI tool and framework in this study helps to clarify the current state of SUD implementation in Malaysia. Moreover, identifying drivers (facilitators) and barriers for SUD implementation can also be effective. It is essential to track drivers (facilitators) and barriers at all levels and factors that can affect the implementation at different stages, aside from the successive implementation phases (Kim et al., 2017; Meiland et al., 2004). In addition, the monitoring of facilitators and barriers at all levels of implementation (initial phase, organisational efficiency, system structure, rules and regulations) is important (Roelofsen et al., 2001). Facilitators and barriers are variables that play an important and effective role in the implementation process of sustainable development goals and influence success at various levels (Meiland et al., 2004). As mentioned, the available reports and data all show performance gains at the national level, and there is no clear

information on the barriers and facilitators that affecting implementation, especially the factors at urban and local levels. Lack of sufficient data has a significant impact on identifying these barriers. On the other hand, it can identify the reasons and factors for the implementation of the plans. Hence, to modify the plans and policies to achieve the 2030 Agenda, it is important for policymakers to identify the facilitators and barriers towards implementing sustainable urban development.

This research seeks to fill up the existing gap in urban studies and Malaysian literature about inclusion of sustainable urban development pillars in Malaysian Urban Plans and Policies; the implementation of sustainable urban development; and how the barriers and facilitators affect achieving sustainable urban development in Malaysia. The findings will lead to a better understanding about implementation of sustainable urban development in Malaysian context and will have important policy and theoretical implications.

## **1.6 Research Objectives**

The research objectives pursued in this study are:

1. To investigate the inclusion of sustainable urban development pillars in the official documents of Malaysian Urban Plans and Policies.
2. To examine the inclusion of sustainable urban development in the implementation of urban plans and policies from urban stakeholders' perspectives.
3. To investigate the barriers and facilitators to achieving sustainable urban development in Malaysian Urban Plans and Policies.

## **1.7 Research Questions**

The questions of this research are formulated as follows:

1. To what extent the sustainable urban development pillars have been included in Malaysian Urban Plans and Policies?
2. To what extent the sustainable urban development pillars have been considered in implementation of urban plans and policies in Malaysia from the perspectives of urban stakeholders?
3. What are the barriers and facilitators to achieving sustainable urban development in Malaysian Urban Plans and Policies?

## **1.8 Significance of the Study**

Habitat III has discussed and agreed on a UNA aimed at enhancing the contribution of cities to sustainable development and ensuring that cities are inclusive, secure, resilient, and sustainable. Over the next two decades, NUA will include the international structure and frameworks for driving sustainable urban development, including the political role of cities and local governments. Both agendas together illustrate the importance of integrating issues of social and environment sustainability, which should be one of the highlights of the Current Urban Agenda. The New Urban Agenda will aim at creating a mutually reinforcing partnership between urbanisation and development. It will build on the direction of the post-2015 development agenda. The aim is to make these two principles parallel to sustainable development. In this regard, Malaysia places a high emphasis on building more prosperous and inclusive societies based on the government's commitment to improving the economy, creating good employment, making more effective use of resources, and protecting the natural

environment and human health. In Malaysia's search for growth for the next twenty years and beyond, Malaysia will deepen partnerships between different stakeholders.

## **1.9 Site of the Study**

### **1.9.1 Malaysia**

Malaysia is a nation bordering Thailand, Indonesia, and Brunei in southeaster Asia that shares water borders with Singapore, Vietnam, and the Philippines. There are coasts along the South China Sea in Malaysia. Over the past 4 decades, Malaysia has made tremendous economic growth progress, transforming itself from an underdeveloped country dependent on natural resources into a middle-income country with a dynamic manufacturing sector. Malaysia is one of the most urbanized countries in East Asia with a rapidly increasing urban population. However, in East Asia, urban areas are among the least dense in the world. According to the site, the metropolitan area of Kuala Lumpur is one of the largest in the country, but not according to population. Malaysia has the fourth largest built-up territory in East Asia since 2010. The metropolitan area expanded between 2000 and 2010, from 3900 km<sup>2</sup> to 4600, an average annual growth rate of 1.5 percent, which is lower than the country of 2.4 percent.

### **1.9.2 Penang**

In 2002, six selected cities and towns in Malaysia introduced SUD indicators in their urban development agenda. These cities and towns of George Town (Penang Island), Johor Bahru, Kuantan, Kuching, Pasir Mas and Batu Pahat have been chosen

as the pioneer in this nationwide study (Shamsuddin and Rashid, 2013). This study is focused on Penang as a case study to illustrate the implementation of SUD. The justifications for the selection is discussed as follows.

Penang is the second smallest of the 13 Malaysian states, covering only 1,031 square kilometres. It consists of two sections, Penang's island on the Malacca Straits and the peninsular mainland of Seberang Perai, which is connected by two bridges and a ferry system. The capital of Penang is Malaysia's second biggest city. In 1957, George Town acquired urban status and was honoured to have the most advanced urban authority in this region, democratically elected.

The state population was estimated at 1.746 million, with 48% on Penang Island and 52% on Seberang Perai in 2017. Highly motorized settlements and industrial areas have been expanding on either side of the canal along the coast, threatening the fragile Penang eco-system of significant beaches, hills, forest, and mangrove areas (Penang Forum Agenda, 2018). Penang, George Town, is Malaysia's second-largest city with a multi-ethnic, multicultural, and multilingual population. In 1957, George Town gained city status and was proud to have its most advanced, democratically elected municipal authority. After the suspension and dissolution of municipal elections around 1970, the city council degenerated (Nasution, 2001). In the national spatial structure after the central region, the Penang city-region occupies a significant position. Penang has become one big urban sprawl, with urban development encroaching on the hills and the coastline.

Penang City Council it is one of the largest cities in Malaysia supported by other satellite cities, namely Sungai Dua, Tanjung Tokong, Jelutong, Bayan Lepas, Tanjung Bungah, Air Itam and Bayan Lepas. Before the development of Kuala Lumpur, the city of

George Town served as a port and financial centre in Peninsular Malaysia. It is the oldest city in Malaysia crowned by Queen Elizabeth II on 1 January 1957 as an urban status area (Latip, 2020).

Among the 13 states of Malaysia, with 90.8% of urbanization level, Penang is one of the most urbanized states in the country (Local Government Department, 2021; Woo and Khoo, 2020). This culturally rich Penang is the second smallest Malaysian state by landmass. Ironically as the second smallest state, it is one of the most populated states in Malaysia. The changing population demographics of Penang is astounding and perplexing. With 1,490 persons per square kilometre, Penang ranked second, just behind the country's capital Kuala Lumpur, in terms of population density in 2010 (Department of Statistics Malaysia, 2015). High rate of urbanization, increasing population and rising property prices together with a state of political hostility between the then federal and state governments have worsened the matters in Penang (Woo and Khoo, 2020). Penang's vision about the future is "Cleaner, Greener, Safer and Healthier Penang," because, in Malaysia, it is only then that can be No.1 (Penang Forum Agenda, 2018).

### **1.10 Methodology of this Research**

This research adopted a qualitative approach to study the phenomenology of sustainable urban development in Penang, Malaysia by utilizing both primary and secondary data. The primary data involved the selection of expert participants based on designated parameters using the purposive snowball sampling method, in-depth interviews and the creation of the theme guidelines and interview questions. While the secondary data entailed content analysis of official documents of Malaysian Urban Plans and Policies over the past 20 years. Data reliability and validity methods (the process of trustworthiness of data) was outlined in detail, accompanied by a summary



of the data analysis. Thematic content analysis was conducted for both set of data. Thematic Content Analysis (TCA) is a descriptive presentation of qualitative data. TCA is mainly called the method for defining, analysing and reporting trends (themes) within data as an independent qualitative descriptive approach (Braun and Clarke, 2006; Vaismoradi et al., 2013).

The qualitative content analysis denotes three approaches to develop categories of the basic building blocks for forming theory. Firstly, deductive (concept-driven) development of categories was derived from the theory and review of literatures (the current state of research) to develop the research questions. Secondly, inductive (data-driven) development of categories was developed through the step-by-step procedure involving the method of open coding until saturation occurs, the continuous organization and systematization of the formed codes, and the development of top-level codes and sub-codes at different levels. The final approach is mixing both deductive and inductive (concept-driven and data-driven) development of codes. In this category, the starting point is usually a coding frame with deductively formed codes and the subsequent inductive coding of all data coded with a specific main category (Kaiser Gabriele, 2019). This research adopted the third approach (mixing deductive and inductive) for data analysis. Data analysis techniques and approaches to fulfil the research objectives are carefully reviewed in Chapter 3. Finally, the ethical considerations for formulating the research plan are clarified in the last section of Chapter 3.

### **1.11 Organization of the Thesis**

This thesis is comprised of five chapters. Chapter One provides the background

for sustainable development, urban sustainability, and new urban agenda. It does so by setting out the introduction of Malaysia's sustainable development history and background on implementation. This chapter also has placed this study in context by presenting the statement of the study's problem statement and significance to show how and why it is important to conduct this study in Penang, Malaysia. This chapter also presents the research questions and objectives and the selected concepts that are important in this study.

Chapter Two consists of a review of the literature on the implementation of sustainable urban development. This review highlights the indicators systems and how to monitor and evaluate performance SUD. This chapter also presents the past studies, followed by an overview of the existing theoretical perspectives and discourses relating to SUD. This is followed by the conceptual framework that guided this research.

Chapter Three describes the methodology used in this study. It also describes the selection of sample interviewed, giving reasons for their selection, the data collection, and data analysis methods. Ethical concerns and fieldwork challenges are also raised in this chapter.

Chapter Four describes the findings and discussion. The chapter presents the perspective of experts on implementing sustainable development pillars and facilitators and barriers of implementation.

Chapter Five concludes this thesis. This chapter is linked to Chapter Four because it presents the research findings and analysis to answer the research questions. The discussion makes a link with past studies, as well as theoretical and conceptual