

Urbanization and growth of Greater Kuala Lumpur: Issues and recommendations for urban growth management

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Abstract

This paper discusses the urban management challenges in the Greater Kuala Lumpur area. Before examining Greater Kuala Lumpur's economic and social environment, we will look at the factors that make it a competitive and fiscally sound entity. When considering urban development and redevelopment, we consider how proposed and ongoing projects, as well as plans, hierarchical links, and road networks, contributed to the increase. Because there is no urban growth boundary, land use change and rural encroachment, as well as environmental degradation and the impact of national economic projects on urban expansion, are both rapid and linear in the analysis. This paper also considers how to manage linear development that results in the creation of new suburbs. Finally, we propose strategies for achieving sustainable urban expansion and management by balancing the financial and governance capacities of Greater Kuala Lumpur local governments.

Keywords: *Urbanization, Greater Kuala Lumpur, Local authority, Urban management*

Introduction

As an alternative to Klang Valley, Greater Kuala Lumpur consists of ten cities and towns spread across an area of 1,078.49 square miles (2,793 square kilometers). The setting here is similar to how Greater London and Greater Toronto describe a larger conurbation that has grown around the original capital. Greater Kuala Lumpur is a global city that connects Asia and the rest of the world, as well as the country's growth conurbation. Greater Kuala Lumpur's convergence of social, economic, industrial, and technological sectors has resulted in unprecedented urbanization and growth. In terms of economic concentration, educational attainment, and social infrastructure, Greater Kuala Lumpur is the country's largest and most important urban area. As a result, understanding the effects of the city's function and expanding global population necessitates a thorough understanding of Greater Kuala Lumpur's urbanization and urban growth management.

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Greater Kuala Lumpur as an International City: Now at its pinnacle of achievement, Greater Kuala Lumpur is expected to maintain its prominence for decades to come (Hadi et al. 2017). The fact that Greater Kuala Lumpur is home to some of the world's busiest ports of entry, major transportation and communication hubs, as well as significant innovation and technology businesses, will be a major factor in its development. As a result, Kuala Lumpur/Greater Kuala Lumpur is now regarded as one of the top ten cities in Asia (Table 1).

The Greater Kuala Lumpur area will soon become a major international hub. One of the first steps in transforming the area into a world-class urban metropolis (Yau et al., 2016) was to identify a few entry-point projects that could be implemented immediately as part of the Economic Transformation Program (ETP) and the National Key Economic Area (NKEA). The following initiatives have been undertaken to boost FDI and job creation: (i) the recruitment of the best internal and external talent in key innovation technology areas; (ii) the construction of a high-speed rail link between Kuala Lumpur and Singapore in order to capitalize on Singapore's agglomeration economy; and (iv) the construction of a massive integrated transportation system linking all districts and urban growth, (v) Greater Kuala Lumpur, on the other hand, has the infrastructure and capability to develop a robust economy capable of competing with the world's leading capitals.

Table 1. Kuala Lumpur regularly features as one of the Top 10 cities in Asia

Mori Global Power City Index 2019	A.T. Global Report 2019	Kearney Cities	IESE Cities in Motion Index 2019	DHL Connectedness 2018	Global
Tokyo	Tokyo	Tokyo	Tokyo	Singapore	
Singapore	Hong Kong	Singapore	Singapore	Kuala Lumpur*	
Seoul	Singapore	Hong Kong	Hong Kong	Abu Dhabi	
Hong Kong	Beijing	Seoul	Seoul	Bangkok	
Dubai	Seoul	Shanghai	Shanghai	Hong Kong	
Beijing	Shanghai	Tel Aviv	Tel Aviv	Ho Chi Minh	
Osaka	Istanbul	Nagoya	Nagoya	Taiwan	
Shanghai	Dubai	Beijing	Beijing	Seoul	
Kuala Lumpur*	Bangkok	Dubai	Dubai	Kuwait City	
Istanbul	Kuala Lumpur*	Kuala Lumpur*	Kuala Lumpur*	Doha	

Source: Author's research

Ten local authorities of Greater Kuala Lumpur

Greater Kuala Lumpur, which includes Malaysia's capital city and its surrounding territories, has nine local governments. These municipal governments' size, density, polarization, and financial resources vary greatly. Kuala Lumpur City Hall came out on top with RM3.6 billion in revenue (2018). Putrajaya came in second with RM604 million in revenue (2017). These sums are not unusual for a federal territory, the national capital, and the administrative capital. The combined annual revenue of Shah Alam and Petaling Jaya city councils, which have city status, is RM300 million. Shah Alam, the state capital,

came in third with RM386 million, followed by Petaling Jaya, Kuala Lumpur's first satellite city, with RM375 million.

Table 2. Greater Kuala Lumpur's local authority and its revenue

Local Authorities	Accountable to	Size	Population*	Density km ²	Revenue*
Kuala Lumpur City Hall	Federal Government	243 km ²	1,453,975	5,983	RM3.623 billion (2018)
Petaling Jaya City Council	State of Selangor	97.2 km ²	520,698	5,356	RM375 million (2016)
Subang Jaya City Council	State of Selangor	162.8 km ²	708,296	4,350	RM 269 million (2016)
Shah Alam City Council	State of Selangor	290.3 km ²	541,306	1,866	RM386 million (2015)
Ampang Jaya Municipal Council	State of Selangor	143.5 km ²	590,000	4,111	RM152 million (2018)
Selayang Municipal Council	State of Selangor	545.0 km ²	613,087	1,028**	RM160 million (2016)
Kajang Municipal Council	State of Selangor	685 km ²	539,561	2,010**	RM 207 million (2016)
Klang Municipal Council	State of Selangor	573.8 km ²	879,867	1,533	RM 255 million (2017)
Putrajaya Corporation	Federal Government	49.3 km ²	101,419	2,069	RM 604 million (2017)
Sepang Municipal Council	State of Selangor	618 km ²	190,890	560	RM 200 million (2020)

*Generated from different years

**density excluding the reserve forest

Source: Annual report, financial report, Auditors report

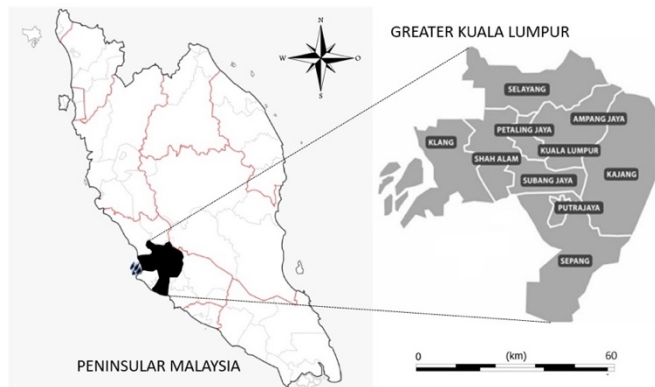


Figure 1. Greater Kuala Lumpur's municipal map

square kilometer, respectively. According to the evidence, these are the most desirable locations for business and retail districts that are both compact and valuable. Apart from

The density of each Local Authority region in Greater Kuala Lumpur varies as well. Petaling Jaya comes in second with 5,356 people per square kilometer, after Kuala Lumpur, which has 5,983 people per square kilometer. Subang Jaya and Ampang Jaya are not far behind, with population densities of 4,350 and 4,111 inhabitants per

their proximity, these areas have benefited the most from Kuala Lumpur's economic decentralization and concentration of numerous businesses and workers. Outlying areas such as Selayang, Shah Alam, and Kajang, as well as the rest of Sarawak, have lower concentrations. They are more polycentric and have fewer economic ties to Kuala Lumpur, but they do have many workers who live in the area and work for various businesses.

Greater Kuala Lumpur is Malaysia's administrative, commercial, and financial hub, and it is expected to account for 40% of Malaysia's GNP and one-third of the country's population by 2025, with approximately 10 million people living in the city metropolitan region (CSDU, 2017). A large number of people have gathered as a result of the abundance of economic opportunities. The government's focus on urban development in Greater Kuala Lumpur has resulted in significant economic growth and investments in high-value sectors. Because of the significant resources and land set aside for high-impact urban development and redevelopment projects, the Greater Kuala Lumpur area has become more appealing to foreign direct investment (FDI) (Table 3). Since the city's professional and technical staff has been drawn to the area, the population has steadily increased.

Table 3. Proposed and On-Going Urban Development and Redevelopment in Greater Kuala Lumpur

Project	Size	Location	Cost	Theme	Completion
TRX	70 acres	Jalan Tun Razak/ Jalan Sultan Ismail	RM40 billion	Global financial districts	2020
Bandar Malaysia	486 acres	Old Kuala Lumpur Airforce base	RM140 billion	Central transport hub and mixed development	2022
Warisan Merdeka	19 acres	Jalan Hang Jebat/ Stadium Merdeka/ Stadium Negara site	RM7 billion	Commercial, luxury hotel and iconic tower (PNB118)	2022
Kwasa Damansara	2330 acres	Subang - Shah Alam - Petaling Jaya	RM48 billion	Integrated township	2025
Cyberjaya City Centre	141 acres	Sepang	RM10.5 billion	Smart City	2022
KLIA Aeropolis	100 acres	Sepang	RM33 billion	Aerotech Park and Digital Free Trade Zone	2023
MRT 2	52 km	Sungai Buloh- Serdang- Putrajaya	RM30.5 billion	Urban mass transportation	2023
Taman Tugu Project	66 acres	Taman Tugu Kuala Lumpur	RM650 million	Urban rainforest/ central park	n.a.

Source: CSDU, 2017

Despite its expanding infrastructure, skyscrapers, transit, and business diversity, Greater Kuala Lumpur must face the challenges of rapid urbanization. According to the third National Physical Plan, urban sprawl continues to be a problem for the proper institution and approach to achieving inclusive sustainability. The expansion of urban centers in all directions is directly related to a decrease in agricultural output in the surrounding area. Concerns have been raised about the overlapping agencies in charge of administering Kuala Lumpur's outskirts. Outlying municipalities were unable to keep up with the rapid and significant changes in land use that occurred as a result of urbanization. The concentration of growth in Greater Kuala Lumpur has also resulted in regional disparities within Malaysia (Hassan, 2017; Hutchinson, 2017). As a result of this regional disparity, other parts of the country have suffered more.

The Kuala Lumpur Growth Conurbation

In the National Physical Plan, Greater Kuala Lumpur and Seremban, the state capital, have been designated as the National Growth Conurbation. The Kuala Lumpur Growth



Figure 2. Growth Hierarchy Linkages Map

Conurbation aimed to house 10.4 million people, or 37% of Peninsular Malaysia's total population, roughly equivalent to 1.6 million more people than lived in Kuala Lumpur in 2005 (FDTP, 2010). Because of its size and population, Greater Kuala Lumpur has already established itself as a regional commercial and financial center, attracting both new businesses and investors. However, the Federal Department of Town and Country Planning (2010) states that an in-depth investigation for significant issues of the Kuala Lumpur Conurbation that must be addressed is the spatial planning concern, namely single uses and increasing density in the brownfield region. As a result, low-density growth has been pushed to the outskirts. Transportation is also a source of concern, especially given that

urban carbon emissions have more than doubled in the last decade.

The Greater Kuala Lumpur area has experienced rapid economic growth over the last three decades, which has had a significant impact on urbanization. Greater Kuala Lumpur's sprawling metropolis has long been a source of frustration for residents. Three factors

have been identified as contributing to Greater Kuala Lumpur's urban sprawl: (i) land prices on the periphery are comparably low; (ii) there is a lack of growth control instruments, such as an urban growth boundary; and (iii) competition in the central business district appears to have created a concentration of investments in the city, leaving the periphery without proper engagement, such as compact development. As part of the study, urban authorities are also investigated for their efforts to reduce sprawl while supporting compact, sustainable development.

According to Abdullah (2012), urban sprawl has been a major issue for the majority of metropolitan authorities in Greater Kuala Lumpur, with an annual growth rate of at least 8%, while the city of Kuala Lumpur has grown by less than 1%. Greater Kuala Lumpur's urban expansion has been aided by speculation, rising home prices on the outskirts of the city, and an abundance of available land. Other Greater Kuala Lumpur urban authorities have also been blamed for urban sprawl due to their unrestricted growth and the construction of numerous interstate highways.

Table 4. List of highways/ expressways in Greater Kuala Lumpur

No	Name	Length	Connects	Completed
1	New Klang Valley Expressway (NKVE)	35	Bukit Raja (Klang) – Jalan Duta (Kuala Lumpur)	1993
2	Shah Alam Expressway (KESAS)	34.5	Pandamaran (Klang) - Seri Petaling (Kuala Lumpur)	1997
3	North-South Expressway Central Link (NSECL)	60	<u>Main Link</u> Sham Alam – Nilai North (Negeri Sembilan) <u>Putrajaya Link</u> Putrajaya Interchange - Putrajaya	1997 2000
4	Cheras - Kajang Expressway (CKE/ Grand Saga)	11.7	Cheras (Kuala Lumpur) – Saujana Putra (Kajang)	1999
5	Kuala Lumpur - Karak Expressway (Karak Expressway)	60	Gombak – Karak (Pahang)	1979
6	Besraya Expressway	28.3	<u>Main Link</u> UPM Interchange – MRR@ (North Interchange) <u>Eastern Extension Link</u> Shamelin (Kuala Lumpur) – Pandan Indah (Selangor)	2000 2014
7	New Pantai Expressway (NPE)	19.6	Shah Alam - Subang Jaya – Bangsar	2004
8	Damansara Puchong Expressway (LDP)	40	<u>Main Link</u> Damansara – Puchong <u>Extension Link</u> Subang Jaya South – Puchong Intan	1998 2005
9	Ampang – Kuala Lumpur Elevated Highway (AKLEH)	7.9	Kuala Lumpur – Ampang	2000
10	Kemuning – Shah Alam Highway (LKSA)	14.7	Kemuning – Shah Alam	2010
11	Kajang Dispersal Link Expressway (SILK)	37	Kajang – Mines – UPM	2004

No	Name	Length	Connects	Completed
12	Sungai Besi – Ulu Klang Elevated Expressway (Suke)	31.8	Sungai Besi – Ulu Klang	On-going
13	Maju Expressway (MEX)	42	Kuala Lumpur - Putrajaya	2007
14	Kajang –Seremban Highway (LEKAS)	44.3	Kajang – Seremban	2009
15	Sprint Expressway	26.5	Mont Kiara – Kayu Ara – Jalan Duta – Semantan – Penchala	2004
16	Kuala Lumpur – Kuala Selangor Expressway (LATAR)	32	Templer Park (Selayang) – Ijok – Assam Jawa (Kuala Selangor)	2011
17	South Klang Valley Expressway (SKVE)	51.7	Uniten (Serdang) – Pulau Indah (Klang)	2010-2013
18	East Klang Expressway (EKVE)	39	Kajang - Hulu Klang – Gombak	Ongoing
19	Guthrie Corridor Expressway (GCE)	25	Rawang – Shah Alam	2005
20	Kuala Lumpur – Seremban Expressway	8.3	Kuala Lumpur – Sungai Besi	1982
21	New North Klang Straits Bypass (Shapadu)	17.5	Sungai Rasau - Klang	1998
22	Duta – Ulu Kelang Expressway (DUKE)	18	Jalan Duta - Ulu Klang Greenwood – Sentul Pasar DUKE Extension Expressway	2009 2015
23	Setiawangsa Pantai Expressway	29.8	Segambut- Bandar Manjalara Wangsa Maju – Setiawangsa – Maluri – Bandar Malaysia – Pantai Rawang Shah Alam	On-going
24	Guthrie Corridor Expressway (GCE)	25	Rawang Shah Alam	
25	East – West Link Expressway (Salak Expressway)	2.5	Seputeh – Cheras	1995
26	Storm water Management and Road Tunnel (SMART)	4	8.3 Kuala Lumpur – Sungai Besi Sungai Besi – Bulatan Kg Pandan	2007

Source: Malaysian Highway Authority, 2019

As shown in Table 3, Greater Kuala Lumpur's roadway network is rapidly expanding. Prior to 1990, Greater Kuala Lumpur had only two motorways and expressways, the Kuala Lumpur-Karak and Kuala Lumpur-Seremban Expressways. Between 1990 and 2000, there were a total of 12. The number of highways and expressways increased until it reached 20 in 2010. As of 2019, the Greater Kuala Lumpur area had 26 motorways and expressways totaling 754.4 kilometers (some are still under construction). The total length will exceed 2,500 miles with the addition of new federal and state highways (4,000 kilometers). Greater Kuala Lumpur has grown into a sprawling metropolis as a result of the development and construction of interstate roads and expressways connecting the city's various enclaves, towns, and suburbs. Major thoroughfares, highways, and expressways have facilitated travel and contributed significantly to the city's rapid urbanization.

Urbanization and urban growth management issues

During this part, the function of planning institutions, development plans, and development visions for economic corridors, the administrative capital, and the study region itself are explored in relation to urbanization. There have been concerns with sustainability, even though all the places mentioned are in Greater Kuala Lumpur, which has historically been the focus of growth and wealth. The city's growth border is the most pressing concern. There is also an invasion of farmland, overurbanization due to the motorway network, and environmental changes as a result of national economic undertakings.

The Growth Boundary of Greater Kuala Lumpur

The Third National Physical Plan (NPP-3) makes a compelling case for sustainable development and planning as a guiding principle for creating a country that is both livable and resilient. The NPP-3 proposed to govern national growth in an orderly manner, from the national conurbation to small town and rural growth centers, as part of its National Spatial Growth Framework. More than a quarter of Malaysia's population lives in the Greater Kuala Lumpur conurbation, which has been named the most populous, most important economic area and one that has made the most contribution to the country's competitiveness. Greater Kuala Lumpur is made up of ten municipalities, but it has not been planned as a single urban area with physical connections. Conurbations with economic ties and population growth have the potential to develop into a continuously developed built-up area but instead have grown in unexpected ways, resulting in haphazard growth. Effective urban planning, on the other hand, necessitates the spatial extent of urban expansion as well as the demarcation of the urban growth boundary (Jia et al. 2019). Among other benefits, defining an urban growth boundary aid in orderly growth expansion optimizes spatial development, and reduces the risk of environmental degradation. Greater Kuala Lumpur's rapid expansion of built-up areas, with lower densities filling in, has resulted in a lack of sustainable urban growth management in this case. The majority of growth-related issues are fundamentally regional rather than local in scope. The most obvious example is the urban growth boundary, which can only be addressed through regional coordination and mutual policy adoption.

Urbanization, land use change, and rural encroachment

A conurbation, according to the NPP-3, is made up of urban areas that are physically connected, have economic and population ties, and form a continuous built-up area. As a result of its designation as a national conurbation, the region's population has been unevenly distributed, urbanization has been massive, and agricultural and cropland in the central region has been severely reduced. Since 2002, the amount of farmland and cropland in the greater Kuala Lumpur area has steadily decreased, as shown in Table 3 from 2002 to 2012.

Table 5. Agricultural and cropland 2002 – 2012 in Greater Kuala Lumpur

District (hectares)	2002	2012	Differences (%)
Petaling (Shah Alam, Petaling Jaya, Subang Jaya)	8449.93	2539.75	5910.18 (69.9%)
Klang	22198.60	14997.04	7201.56 (32.4%)
Hulu Langat (Kajang)	25664.07	21354.40	4309.67 (16.8%)
Selangor	22575.39	19579.65	2995.74 (13.3%)
Gombak (Selayang)	11883.70	11782.94	100.76 (0.8%)
Total	68196.3	500674.13	17522.1 (22.6%)

Source: Selangor State Structure Plan 2035

Between 2002 and 2012, more than two-thirds of the agricultural and cropland in the Petaling district was lost (including Shah Alam, Petaling Jaya, and Subang Jaya). Klang has lost a significant amount of agricultural and cropland, with one-third of its land converted to built-up areas, followed by Hulu Langat (13%) and Sepang (16%). Crop loss and degradation can have serious consequences for agricultural productivity (labor and yield), food security, and land quality. Non-agricultural land, such as residential and commercial developed land, has impervious surfaces that alter developed land's weather-absorbing ability (i.e., rainwater). These issues are significant in terms of hazard-resilient planning because they are linked to flood risk and sustainable growth.

In Malaysia, especially in Greater Kuala Lumpur, urban land expansion is outpacing population growth. Using Table 3.3 (Hasan and Nair 2014), we can see that the average urbanization rate increased from 726 square kilometers to 1980 square kilometers over a 40-year period from 1970 to 2010. The average population growth rate of 4.65 percent per decade indicates that land has become an important factor in economic growth and urbanization. Another issue with Greater Kuala Lumpur's urban expansion is that it is unbalanced regionally, even though it is still one of Malaysia's most important national development goals (Hassan 2017, Hutchinson 2017). When population growth outpaces urbanization, the phenomenon of urban sprawl emerges.

Nonetheless, some efforts have been made in the NPP-3 to address the negative effects of urbanization and rapid land use change on natural resources and the environment. The NPP-3 now has a spatial management plan in place to ensure balanced growth while also increasing the area's long-term viability. The report emphasizes the importance of preserving biodiversity, open spaces, rivers, and agricultural production land. However, no information about the precise location of the spatial management plan has been provided.

Highways and expressways cause development concentration and create new suburban areas.

Greater Kuala Lumpur's dense network of highways and expressways, particularly the trans-district and regional expressways that connect rural settlements to urban centers, has

accelerated migration to the city's outskirts. At first glance, this appears to provide commuters with an alternative mode of transportation; however, it ultimately has the effect of converting rural and agricultural land into built-up and developed land, resulting in overcrowding and, eventually, accelerating urban sprawl. Over the last 30 years, Greater Kuala Lumpur has constructed 25 highways and expressways, demonstrating how road networks have aided economic growth and social reorganization. Apart from their goal of reducing travel time, urban highways such as Lebuhraya Damansara Puchong (LDP), Sprint Highway, Ampang-Kuala Lumpur Elevated Highway (AKLEH), and Damansara Ulu Kelang (Duke) have all boosted land use, property values, and proximity. Trans-district highways have the potential to raise the urban horizon in the same way that urban highways have done by transforming underutilized land into commercial growth centers, affordable and spacious residences, and recreational facilities. Many rural areas in Malaysia have become sprawling new suburbs as a result of highways and expressways such as the Shah Alam Expressway (KESAS), the New Klang Valley Expressway (NKVE), the Kemuning-Shah Alam Highway (LKSA), and the Kuala Lumpur-Kuala Selangor Expressway (LATAR). Highways and expressways do more than just connect people and places; they also hasten urban growth and exacerbate rural sprawl.

The height of environmental change and degradation

Significant environmental changes have occurred because of the rapid and persistent growth of urbanization (Mandal et al. 2019, Willie et al. 2019, Liu and Ma 2020). Massive urban growth is usually associated with an increase in the burden on rural and agricultural land due to constant use of energy, exhausting air and water, noise pollution, loss of agricultural productivity, and encroachment of natural land on natural land. Farmland is common in the outlying areas of Greater Kuala Lumpur, such as Gombak, Klang, and Sepang. As a result of population growth and urbanization, many new opportunities have emerged, resulting in widespread rural-to-urban emigration. As a result of the growth pattern, land use and land cover have changed dramatically, resulting in a steady decline in arable land. The long-term degradation of environmentally sensitive land caused by urbanization harms the natural ecosystem. Impervious surfaces increase as land use changes from natural to built-up development, causing storm water velocity (volume, speed, and direction) to change (pollution). Because of the high speed of the water, flash floods are extremely dangerous. Impervious surfaces also transport grease, sediment, and other harmful contaminants to stormwater, which ends up in reservoirs as raw water. The quality of groundwater resources is also harmed by dense development (Kolandhavel and Ramamoorthy 2019, Zhang et al. 2020).

National economic project and its urban expansion

In order to achieve full development by 2020, the government has launched a number of national economic projects and development corridors. A project of this type was launched in 1996 to assist the country's high-tech digital and information sector in

growing faster and creating an industry that is competitive with other countries in terms of multimedia innovation and communication technologies. MSC Malaysia's mission, according to the company's headquarters in Cyberjaya, is to use information and communications technology (ICT) to transform Malaysian society into a knowledge-based economy. Cyberjaya, a fully integrated innovation park in Sepang, spans 2,800 acres of land. In the area, there are over 500 MSC-certified companies, as well as studio residences, boutique hotels, commercial and retail establishments, and academic institutions. The Sepang Municipal Council can also be found in Cyberjaya.

Because of its proximity to Cyberjaya and the development corridor there, it was decided that Putrajaya would serve as the government's new administrative capital. Putrajaya, Malaysia's capital since 1999, houses the majority of the country's federal departments and ministries. When construction began in October 1996, there were 60,000 people living there; by the end of the decade, it was well-developed. Putrajaya has come a long way since then. About 90% of the city's 3184.7 hectares have already been developed, primarily for government offices and residences, with the remaining 10% still in the works. The federal government-owned 83% of the homes in the central precinct. In residential areas, fenceless yards and integrated pedestrian facilities are standard features. High-density residential areas are less common than low-density residential areas.

For more than 20 years, Putrajaya and Cyberjaya have played an important role in Malaysia's economy and workforce, with a large number of professionals and support staff working in both cities. The populations of Cyberjaya and Putrajaya, on the other hand, vary greatly throughout the day and night. The estimated daytime population of Cyberjaya and Putrajaya is 50% greater than the actual population (Yuen et al., 2006). The daytime population is an important consideration for transportation and housing planners, such as how and why people commute rather than living in their employment areas. Many factors contribute to an increase in daytime population, including (i) a well-functioning transportation system that allows people to get to and from work; (ii) a lack of housing options for area workers; (iii) a high cost of living; and (iv) suburban sprawl. Each of these indicators has significant implications for the long-term development of neighboring areas or districts. Based on the foregoing considerations, we make the following recommendations:

Impose urban growth boundary

An urban growth boundary, in addition to being a spatial planning concept for limiting urban growth to the periphery, serves as an important barrier for clearly defining administrative boundaries. Increasing urban built-up patterns and densities appear to indicate that the method is effective in limiting suburban sprawl in their respective communities (Bing et al., 2018, Robinson, 2019). The shape and scale of development determine the sizeable impact; it is more effective when applied to the entire urban perimeter. According to studies, the use of urban growth boundaries, particularly outward

extension, demonstrates the overall effects of urban development (Chakraborti et al., 2018, He et al., 2018). By establishing an urban growth boundary, it is possible to limit urban growth while preventing the encroachment of rural areas.

Regulating land use change

Limiting or regulating land use change is an important tool for implementing thrift development within a statutory framework. Bovet et al. (2018) investigated how land use regulations in five European countries successfully prevent urban sprawl. The study's overall success rate was determined by open space consumption, coordination, monitoring, and effective participation. According to the study's findings, regulating land use change can benefit from a well-developed framework. This is because stakeholders can be effectively included, and all parties involved can agree on sustainability goals. Regional coordination is necessary due to the difficulty in coordinating regionally while implementing locally with the tools of this method (Brueckner et al., 2017; Fregolent and Vettoreto, 2018).

Advocate transit-oriented development (TOD)

TOD is a sustainable urban concept that combines urban spaces, residences, and activities with easy access and walking distance to any public transportation station in the city. The concept clashes with the typical American city, which relies heavily on private automobiles for most of its daily errands. TOD has widely been perceived as gentrification and a loss of community in the neighborhood it serves (He et al., 2021). The potential for TOD was investigated in 50 Chinese cities (Xu et al. 2017). The issues stem from both the economy's rapid expansion and the increasing number of vehicles on the road. Some cities have grown and expanded to the suburbs, while others are overcrowded and have a high population density in the city center. The study simulates TOD implementations in various city growth patterns to achieve the best possible transit alignments and planning. According to the findings, all cities have TOD potential, even if their regulatory frameworks differ.

Enhance conservation and preservation

In the context of urban development, conservation refers to avoiding wasteful resource use, whereas preservation refers to the act of protecting a specific area or landscape from encroachment. Conservation and preservation can be viewed as a means of managing critical aspects of the city's growth in a sustainable manner. Cecchini et al. investigated olive grove conservation and preservation in Attica, Greece (2019). The olive has long been a culturally significant plant in Mediterranean peri-urban areas. Olive groves are being devoured at an alarming rate by urban sprawl, and conservationists are attempting to capitalize on this. After many years of economic hardship, there is finally hope that olive groves can be protected while limiting urban expansion. Olive groves

simultaneously reduce a traditional and sustainable socio-environmental appreciation for rural landscapes.

Promote economic dynamism and productivity

Sprawl has traditionally been linked to social isolation, a lack of social capital, and a lack of social interaction (Zambon et al., 2017). As a result, urban areas will continue to grow in population, attracting some people to the outskirts of the city in search of better economic opportunities and vice versa. To reduce movement, the urban population must be included in economic growth, which is associated with labor productivity and employment growth. It has been demonstrated that there is a globally comparable relationship between the sectoral composition of economic vitality and rural-urban productivity (Benfica and Henderson, 2021). To summarize, the study discovered that urban populations are highly responsive to increases in non-agricultural productivity, rural populations are highly responsive to increases in agricultural productivity, structural transformation reduces poverty, and increasing productivity is a viable strategy for poverty reduction. As a result, worker migration to new areas would be limited, and urban sprawl would be reduced.

Conclusion

Malaysia's rapid urbanization since the country's transition to an industrial economy in the 1960s has been driven by a lack of economic growth, not social segregation, contrary to popular belief. Manufacturing and domestic production, on the other hand, are driving the long-term economic transformation that will lead to long-term national growth and urbanization. Since the country's shift to service industries and high-tech services, urbanization has accelerated. The continuation of MSC Malaysia and other knowledge-based economy initiatives has had a positive impact on R&D and human capital. Malaysia has developed a competitive advantage through FDI based on its skilled workforce, sound infrastructure, and a wide range of support services. All of these factors contributed to the Greater Kuala Lumpur metropolitan area, and others like it, becoming so densely populated.

The rapid urbanization and growth of Greater Kuala Lumpur have been fueled by a confluence of social, economic, industrial, and technological factors. It is on track to become a global hub as one of Asia's premier cities. Greater Kuala Lumpur has ten different local governments, so the polarization is uneven. To put it another way, this is because each city has different financial and governance capabilities. Greater Kuala Lumpur, for example, has experienced development outside of the intended planning due to its complex economic relationships and population growth to form a continuously developed area. Because there is no urban growth boundary, growth has spread beyond the city's boundaries, resulting in sprawl. Many other developments will take place outside of the city's boundaries if sustainable urban growth management is not implemented,

regardless of economic and development achievements or well-written development plans.

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