



# **URBAN SUSTAINABILITY AND GROWTH MANAGEMENT IN SOUTH-EAST ASIAN CITY- REGIONS: THE CASE OF KUALA LUMPUR AND HONG KONG**

**Suharto Teriman<sup>1</sup>, Tan Yigitcanlar<sup>2</sup> and Severine Mayere<sup>3</sup>**

*School of Urban Development*

*QUEENSLAND UNIVERSITY OF TECHNOLOGY, AUSTRALIA*

## **Abstract**

Major South-East Asian city-regions have experienced considerable physical, economic and social transformations during the past three decades. The rapid pace of globalisation and economic restructuring has resulted in these city-regions receiving the full impact of urbanisation pressures. In an attempt to ease these pressures, city-regions such as Bangkok, Seoul, Tokyo, Taipei, Hong Kong, Singapore and Kuala Lumpur have advocate growth management approaches giving particular interest to urban sustainability. These approaches promote efforts to achieve the triple bottom line sustainability by balancing economic and social development, and environmental protection, and putting more emphasis on compact and optimum development of urban forms. This paper evaluates the case of two South-East Asian city-regions, Kuala Lumpur and Hong Kong, and assesses their experiences in managing their urban forms whilst promoting sustainable patterns of urban development. The findings show that sustainable urban development initiatives employing a top down approach has yielded encouraging results in these case study city-regions. However the need for a more concerted effort towards the overall sustainability agenda still remains vital.

**Keywords:** Sustainable urban development, growth management, compact urbanisation, city-regions, Kuala Lumpur, Hong Kong, South-East Asia

## **INTRODUCTION**

For about three decades ago the green agenda of sustainable development started to garner interest from almost every corner of the world. This agenda was initiated by the World Commission on Environment and Development

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<sup>1</sup> Email: suharto.teriman@gmail.com

<sup>2</sup> Email: tan.yigitcanlar@qut.edu.au

<sup>3</sup> Email: severine.mayere@qut.edu.my

(WCED), with its much quoted definition of sustainable development as the “development that meets the need for the present without compromising the ability of future generations to meet their own needs” (WCED, 1987, 43). Although this rather vaguely descriptive statement raises some questions, so far it remains the most adequate definition of sustainable development (Jepson, 2004). Since early 1980s, policy-makers have been looking for ways to move city-regions towards more sustainable forms (Sorensen, Marcotullio, & Grant, 2004). The continued expansion of city-regions makes sustainability an issue of significant concern because of scarce world resources (Lindsey, 2003). This continued growth, both in population and consumption, is now putting our ability to a test in managing urban regions more sustainable and effective ways.

This paper explores the implementation of growth management efforts in the South-East Asia city-regions of Kuala Lumpur and Hong Kong. The methodology employed in this paper is a thorough policy evaluation with a comparative analysis of selected indicators of both city-regions. The paper first reviews the concept of urban sustainability, focusing on the nature and trends of urban development, and its consequences. The second section looks at solutions for addressing problems of urban growth by introducing concepts and strategies for promoting urban sustainability through compact urbanisation. The third section explores the experiences of two fast-growing South-East Asia city-regions, Kuala Lumpur and Hong Kong, and analyses their approaches in dealing with problems related to promoting compact urbanisation. For each case study, the research identifies the development pressures affecting their urban environments and the strategies adopted towards achieving sustainable urban growth management. The final section summarises the findings from the case city-regions and discusses the implications of growth management strategies for the South-East Asia region.

## **URBANISATION, SUSTAINABILITY AND GROWTH MANAGEMENT**

For the past three decades, the notion of sustainable urban development has become central in planning and managing urban areas in Europe and North America. This notion was promoted in response to the problems associated with urban sprawl that has plagued cities in these continents during the past decades. Intense urbanisation has transformed cities in Europe and North America into mega-cities and metropolises. The associated economic development and prosperity experienced by these European and North American cities have prompted Asian cities to emulate these achievements. The industrial revolution that swept through the Asian continent has resulted in a rapid urbanisation process, fuelled largely by unprecedented population growth.

There is a strong belief that urbanisation is crucial to the process of development, and an inevitable process of creating a modern state (McGhee, 2008). Indeed, the rapid urbanisation of Asian cities in general has brought about rising income and living standards to the cities' population. The world development indicators data compiled by the World Bank, for example, shows that developing countries in South-East Asia have been experiencing a significant growth of their GDP over the last 10 years and their share of the global economy has risen from 13 percent in 1995 to 19 percent in 2005 (World Bank, 2007). However, Asian cities, cities in South-East Asia in particular, are struggling to keep up with the rapid urbanisation pressures caused by rapid population increase and expanding city sizes. These pressures have created what is generally known as urban sprawl, characterised by low density suburban development patterns. Urban sprawl takes three main forms: suburban expansion into the countryside, commercial expansion along arterial roads, and residential sprawl outside existing settlements (Daniels, 1999).

The consequences of sprawl have been viewed differently by planning scholars. Benefits of sprawl include private and social benefits to new residents and the community, for example in terms of housing costs (Kahn, 2001), potential for population growth accommodation (Brueckner, 2000), and symbol of economic prosperity (Nelson & Duncan, 1995). However, this phenomenon has also been associated with an array of undesirable physical and socio-economic effects (Nelson & Duncan, 1995; Boyle & Mohamed, 2007). These include: scattered development, excessive commuting and transportation costs, infrastructure and services provision costs, socio-economic segregation through inequitable land and housing markets, increasing consumption of natural open space, and other 'quality of life' problems (Nelson & Duncan, 1995; Brueckner, 2000; Carruthers & Ulfarsson, 2001; Carruthers, 2002).

## **URBAN MANAGEMENT STRATEGY OPTIONS**

The problems associated with rapid urbanisation have prompted city governments to introduce a variety of approaches to control sprawl and limit further damage to the limited resources that they have. These measures have been extensively explored in scholarly research (Nelson & Duncan, 1995; Brueckner, 2000; De Roo & Miller, 2000; Choguill, 2008). The term urban management or urban growth management has been used interchangeably to reflect these efforts, and a variety of growth management techniques have also been introduced to apply growth management concepts into practice. The reason for adopting growth management approaches in cities was coming from the need to achieve a balanced and sustained urban development. Urban

sustainability has long and flourishing roots in Europe and North America, where urban sprawl was first identified. Calls for adoption of sustainable urban development and management were at its height at the Rio Summit in 1992 following the World Commission on Environment and Development report on sustainable development.

While it is widely agreed that no single approaches can solve the problems of urban sprawl (Nelson & Dawkins, 2004), many believe that compact urban development contributes to urban sustainability, which is one of the key aims of growth management initiatives (De Roo & Miller, 2000; Wassamer, 2006). A number of strategies have been developed and employed to achieve compact urban development (Nelson & Duncan, 1995). Containment-based management supported by sustainable urban transport has been one of the most successful compact urbanisation strategies (Nelson & Dawkins, 2004; Yigitcanlar et al., 2007). This strategy attempts to promote the following: compact and contagious urban development patterns with easy access to public services; travel-self containment with reliable public transport options and integrated land use and transport planning, and; preservation of rural and agricultural land and natural resources (Nelson & Duncan, 1995; Duvarci & Yigitcanlar, 2007; Yigitcanlar et al., 2008). Compact urbanisation strategies determine the direction of public infrastructure investment, execute development regulation and shape the nature and intensity of development. Containment scales vary between sub-metropolitan (development shaped to take a specific form), unbounded (development within urban service boundary), bounded (development within a designated growth boundary), and natural containment (development restricted by geographical constraints) (Nelson et al., 2004). Around the world many cities implemented a variety of containment techniques that range from urban growth boundary to urban service area, and from land taxation to open space preservation. Successful implementation of containment techniques and experiences from North America and Europe provide invaluable insights to many city-regions seeking sustainable urban development.

The implementation of strict development regulations associated with containment techniques enables local authorities to encourage development in existing urban cores and dilapidated inner areas through infill and redevelopment projects, including not only prestigious but also affordable residential development. The promotion of higher residential densities in these infill areas helps to offset the high development costs resulting from urban containment and to minimise public infrastructure provision. Zoning is commonly used for such a purpose. It allows for higher density development on

the land used to accommodate low-rise dwelling units, hence making the properties more affordable to a majority of urban dwellers.

## **SUSTAINABILITY INDICATORS**

The increased environmental agenda has brought about the need to employ indicators as a key mechanism for assessing environmental impacts (Hemphill, 2004) and as policy instruments in the transition toward urban sustainability (Hezri, 2005). There is a common view that sustainability indicators can be meaningful provided they are applied at the appropriate level (Brownhill and Rao, 2002, cited in Hemphill, 2004). Such indicators can be crucial in developing an awareness of urban problems and advocating the need for the achievement of sustainable development (Stanners and Bourdeau, 1995). They can contribute to the assessment of the performance of individual agencies/interventions, and of the overall effectiveness of partnerships to improve economic, social and environmental wellbeing of urban settings. However, most indicator-based approaches only highlight issues; they do not provide answers as to why differences exist. Key indicators must be supplemented by qualitative and quantitative information on impact and performance from the perspectives of users and beneficiaries. In recent years, the best starting-point for assessing sustainable practices has been the Bellagio principles developed by the International Institute of Sustainable Development (IISD) (Hemphill, 2004). These principles serve as guidelines for the assessment process, including the choice and design of indicators, their interpretation, and the communication of results, to provide a link between theory and practice.

## **SUSTAINABLE URBAN DEVELOPMENT IN SOUTH-EAST ASIA**

The dynamic South-East Asia region is home to many fast growing city-regions. During the past three decades, cities in this region have undergone massive transformations (Marcotullio, 2004). Major cities experienced vibrant population growth, and major physical and functional urban transformations. The rapid pace of globalisation and economic restructuring has resulted in these city-regions receiving the full impact of urbanisation pressures. In an attempt to ease these pressures, major cities have advocated growth management approaches giving particular interest to balanced economic and environmental sustainability and put more emphasis on compact and optimum development of urban forms (DeGrove, 2005). This paper, therefore, evaluates the case of two South-East Asia city-regions, Kuala Lumpur and Hong Kong, and assesses their

experiences in managing their urban forms whilst promoting sustainable patterns of urban development.

### ***KUALA LUMPUR'S SUSTAINABLE URBAN GROWTH MANAGEMENT STRATEGIES***

Located midway along the west coast of Malaysia and within the rapidly growing central region of the Klang Valley, Kuala Lumpur is a federal territory and its whole area (243 square kilometres) is entirely urbanised (Figure 1). The capital city of Malaysia is home to around 1.6 million people, and with a density close to 5,700 persons per square kilometres, it is the most urbanised and densely populated area in the country (Government of Malaysia, 2005). Famous for its modest beginning as a tin-mining town in the mid 19<sup>th</sup> century, Kuala Lumpur has progressed itself into a commercial core and has become one of the most prominent, modern and sophisticated cities in South-East Asia. However, the continued suburbanisation process has inevitably led to sprawl of population and industries towards the southern part of Kuala Lumpur, leaving most parts of the city centre with employment and entertainment centres only. With increasing affluence and the changing lifestyle, the city has witnessed a reduction in its population base due to out-migration to the more prosperous environment and affordable residential districts of Gombak and Petaling, in the neighbouring State of Selangor (Syafie, 2004). In addition, the relatively lower living costs and the availability of a good road network and public transportation, in particular the LRT and the KTM commuter train services, have attracted city workers to live in areas outside the city in the neighbouring satellite townships of Petaling Jaya, Subang Jaya or even further afield in Klang or Seremban (Kuala Lumpur City Hall, 2003). These patterns of development have led to high travel demand and increasing transportation cost, worsening congestion and environmental degradation, inner city dilapidation and population decline, and lack of affordable housing. As the problems worsen, the City administration (Kuala Lumpur City Hall) had to carry the burden of providing for extra infrastructure and public facilities, and tackle the consequences of sprawl.

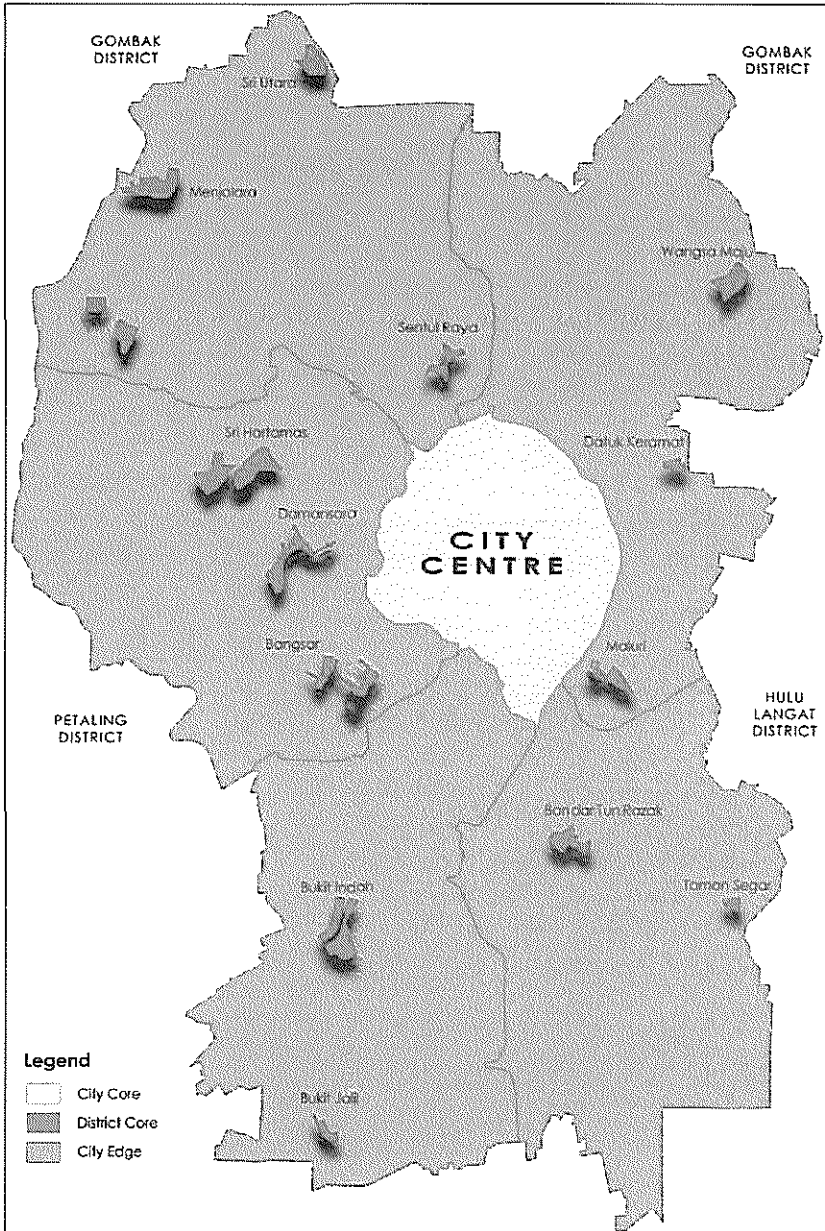


Figure 1: Kuala Lumpur city-regions and strategic zones  
(Kuala Lumpur City Hall, 2008)

Kuala Lumpur's urban management strategy follows a top-down approach, starting with the federal government's countrywide National Physical Plan (NPP), and the regional administrative policies envisioned in the National

Urbanisation Policy (NUP). The City administration (Kuala Lumpur City Hall), in collaboration with the Federal Town and Country Planning Department, reinforces these policy-based growth management strategies with statutory planning measures incorporated in the city's structure plan, the Kuala Lumpur Structure Plan 2020 (Kuala Lumpur City Hall, 2003) and the recently publicised draft local plan, the Kuala Lumpur City Plan 2020 (Kuala Lumpur City Hall, 2008). The NPP's primary goal is to create a sustainable national spatial framework to guide the country's overall development whilst its policies related to land use put an emphasis on the planning of sustainable economic activities based on the concept of 'selective concentration' for strategic urban centres. It also emphasises the concentration of urban growth in existing and planned conurbations. This includes the conurbation of Kuala Lumpur, which is to be planned and developed as an integrated region through the preparation of a regional plan (Government of Malaysia, 2007).

Kuala Lumpur benefited highly from the establishment of the NUP in 2006, which forms a fundamental framework for the Draft KL City Plan 2020. The NUP promotes liveable communities as well as sustainable urban development of the city by coordinating and guiding the planning and development in a more efficient and systematic way (Government of Malaysia, 2006). Greater emphasis is put into creating a balanced social, economic and physical development and encouraging racial integration and solidarity for those who will reside in urban areas over the next 20 years. The NUP emphasises six main directions that outlines strategies for the creation of a city that is safe, efficient, modern and attractive. These include the achievement of an efficient and sustainable urban development, provision for integrated and efficient urban transportation system, quality urban services, infrastructure and utility, and for the creation of effective urban governance structures, all of which will contribute to a more sustainable urban management for Kuala Lumpur.

At the local level, the Kuala Lumpur Structure Plan 2020 is the cornerstone of the urban management strategy envisaged by the City administration. This statutory plan spells out the vision, goals, policies and actions which will guide the development of Kuala Lumpur towards its goal of becoming a 'world class city' by the year 2020 (Kuala Lumpur City Hall, 2003, 2008). The Kuala Lumpur Structure Plan 2020 also provides the framework for another more detailed local development plan, the Kuala Lumpur City Plan (Kuala Lumpur City Hall, 2008). The local plan, which is divided into six strategic zones covering the entire city, further enhances urban sustainability efforts by emphasising liveability and quality of life for its local communities with quality urban services, provision of public housing, improved urban transportation, and environmental sustainability (Kuala Lumpur City Hall,



2008). Zoning remains the main mechanism to guide and contain development, with more room for mixed-development patterns, especially in inner city areas, to encourage liveability (Figure 2).

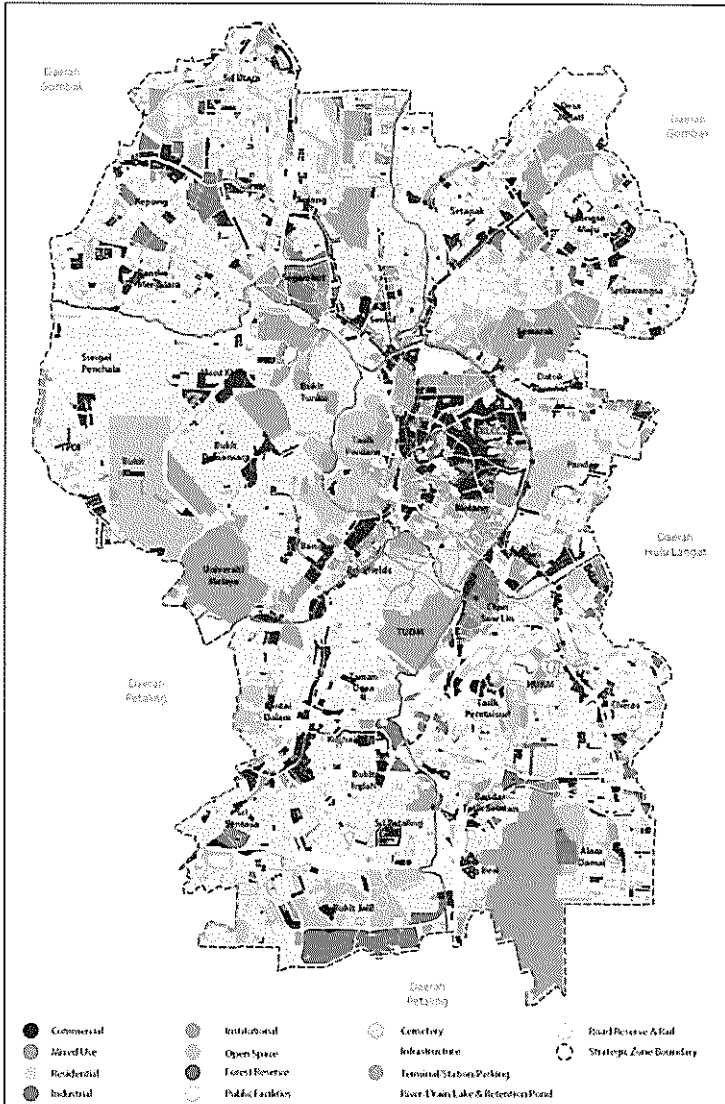


Figure 2: Kuala Lumpur 2020 Draft City Plan  
 (Kuala Lumpur City Hall, 2008)

The out-migration from the city centre which has created blight in core areas is partly due to the shortage of affordable housing (Kuala Lumpur City Hall, 2003). With emphasis on optimum and balanced land development, the

local plan gives priority for infill development in these areas. Developers are encouraged to redevelop dilapidated housing areas with high density and high quality residential development, and where possible, affordable housing. Mixed commercial and residential developments are also encouraged to regenerate urban blight areas to ensure that the city is safe, healthy and sustainable (Kuala Lumpur City Hall, 2008). Such infill development also helps containing urban growth within central areas and counter-balancing sprawl. One successful example is the Kuala Lumpur Sentral project (KL Sentral), a mixed residential, commercial and office development as well as a public transit hub.

The integration of land use with transport networks forms the backbone of the city's sustainable urban development framework. The urban and suburban rail network for example, has expanded since 1990 and now covers over 200 km of electrified double-tracked service connecting major districts of the city-region and many locations in between (Bunnell et al., 2002). Along these rail and road networks, 66 Transit Planning Zones locations have been proposed (Kuala Lumpur City Hall, 2008). These planning zones encourage intensification of development within a 400 metre radius of a transit station (Light Rail Transit or LRT, KTM Commuter, Monorail, or Bus Rapid Transit) to enhance public transport use by city workers and the general public.

Urbanisation pressures are also accommodated through the creation of new growth areas within the six strategic zones. These growth centres absorb most of the residential, commercial and industrial demand as a result of the suburbanisation process of Kuala Lumpur. However, earlier commercial strip sprawl along major roads leading towards and out of the city remains a legacy of earlier sprawl. This is also evident in other cities within the South-East Asia region (i.e. Bangkok, Manila and Jakarta). The Federal government took growth management initiative a step further by relocating the government's administrative centre from Kuala Lumpur to Putrajaya. The decision was made on the basis of decongesting the city centre (Bunnell et al., 2002), in order to relieve development pressures, especially in terms of affordable housing for middle classes. This decision, along with the relocation of the airport terminal for passenger services from the fringe of the city further away to Sepang, Selangor, have had a profound effect in reducing development pressures within and around the city.

In summary, growth management measures in Kuala Lumpur take the form of planning regulations as well as government interventions in key physical decisions. The policies outlined for promoting sustainable growth management in the metropolitan area appear to be incorporated into the central government's effort to achieve sustainable urban development and

management, including sustainable transport. However, as far as physical planning is concerned, the overall effectiveness of these efforts at the moment appears to depend on the limited opportunities provided by the statutory planning mechanisms. The zoning directives of the structure and local plans seem to be the only tools to direct and contain urban growth, and promote more compact patterns of development. Nevertheless, these measures illustrate efforts by the government and City administration to minimise the negative side effects of urbanisation and to enhance environmental quality, and livability of urban areas. It is a significant step towards a more concerted planning and implementation effort at all institutional levels. At the moment however, the need to ensure the realisation of all proposals envisaged in the development plan is all too obvious.

### ***HONG KONG'S SUSTAINABLE URBAN GROWTH MANAGEMENT STRATEGIES***

The former British colony of Hong Kong boasts a far more complex urban form that entails a delicate management approach. This city-state consists of three districts: the Hong Kong Island, Kowloon, and the New Territories on the mainland (Figure 3), which accommodates more than half of its population in the purposely-built new towns. During the last three decades, Hong Kong has seen rapid population growth (mainly due to immigration), which puts a great pressure on its urbanisation process. The pressures are imminent because unlike any other South-East Asian countries, with the exception of Singapore, planners in Hong Kong do not have the option of extending their ability to control urban growth over a large expanse of the countryside (Taylor, 1988). With a total area of 1,108 square kilometres and a current population of over 6.9 million (Census and Statistics Department, 2006; Hong Kong Planning Department, 2007), of which nearly 90 percent live in urban areas, Hong Kong has to accommodate all of its urban and suburban development inside the island and the new territories, with the mainland border to the north acting as a growth boundary. One notable consequence is that population densities in Hong Kong are among the highest in the world. Geographical constraints have made only 20 percent of the land developable, and this has resulted in densities of slightly over 30,000 people per square kilometre. Urban planners face difficulties not only in managing the city-state in terms of public housing and infrastructure provision, but also in addressing social and environmental challenges. The influx of immigrants during the 1960s has created acute shortages in housing stock, already depleted by the damage of the WWII. In Hong Kong infrastructure provision cannot cope with the demand, and with scarce land availability, it poses huge physical and economic challenges to the city-region and its planners and policy-makers.

towards building high density public housing in new towns to accommodate increasing urban population. Currently, 49 percent of the Hong Kong population live in public housing either as tenants or as subsidised owners (Hong Kong Housing Authority, 2007). However, the conditions of a number of older public housing schemes in inner areas in particular have been worsening. These areas are now subject to a new sustainable development strategy announced by the government in 2005, emphasising the importance to speed up improvements in the older urban environment. This metro development core, one of the four strategic zones in the city's spatial development planning, will transform these blighted areas into vibrant commercial and urban style residential zones (Hong Kong Planning Department, 2008a).

Equipped with the vision to become 'Asia's first world city', Hong Kong's sustainable urban development agenda will be fulfilled with the adoption of the much anticipated strategic planning study called Hong Kong 2030: Planning Vision and Strategy, or in short HK2030. The study, currently in its draft form, will be an update to the TDS and will showcase the future direction of the city state's development to the year 2030 under the overarching goal of sustainable urban development. Based on a strategy called 'the preferred option' (Figure 4), it will indicate how Hong Kong spatial environment should respond to various social, economic and environmental needs (triple bottom line sustainability) for the next two to three decades (Hong Kong Planning Department, 2008a).

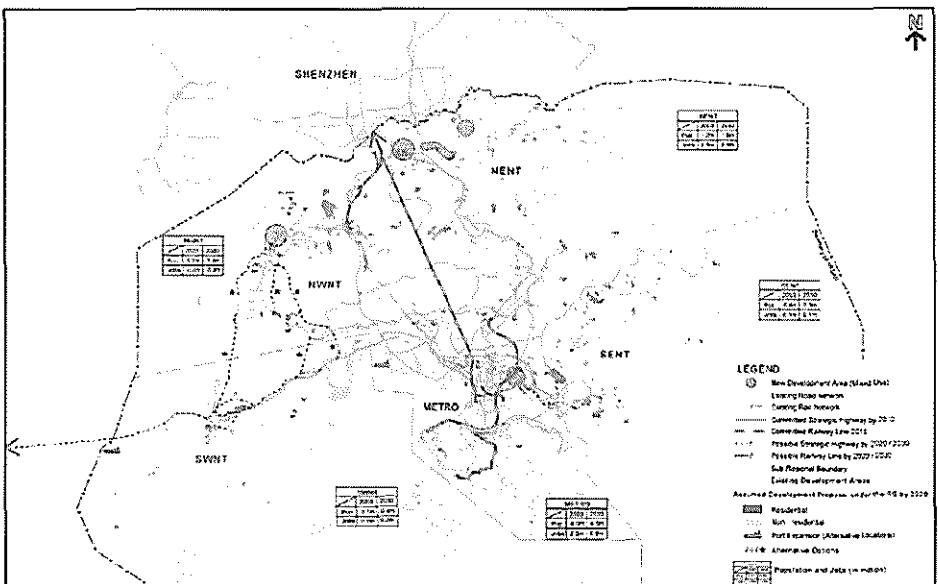


Figure 4: Hong Kong 2030 Draft Plan (Hong Kong Planning Department, 2008)

In summary, Hong Kong's experience in terms of growth management appears to have a strong foundation, backed by statutory planning regulations. The city-region's geographical constraints, acting as natural containment, combined with the concerted efforts towards promoting high frequency public transport, as well as the strict zoning regulations in place, have contributed to create a compact city-region with high density urban development. This is a desired result of sound planning by the central government, in pursuit of optimum land development in a constrained environment.

## **DISCUSSION AND CONCLUSION**

The sustainability argument for urban growth management is inclined towards safeguarding of scarce resources and promoting social equity and economic development (Lindsey, 2003). Both case studies of Kuala Lumpur and Hong Kong display their concerns and efforts towards a more sustainable use of their resources. A number of parallels and differences can be identified as to how these efforts translate in practice and can be best compared in terms of the environmental, social and economic achievements of both city-regions towards a more sustainable urban future (see Table 1).

Table 1: Comparison of the growth management strategies of Kuala Lumpur and Hong Kong (Teriman et al., 2008)

FACTS	KUALALUMPUR	HONG KONG
City Type	Capital City	City State
Area (sq km)	243	1,108
Population (million)	1.62 (2005)	6.92 (2007)
Density (person/sq km)	6,667	5,250
Population Growth Rate (%)	1.39 (Year 2000)	0.8 (Year 2006)
<b>OVERALL PLANNING FRAMEWORK</b>		
Planning Legislation	Federal Territory (Planning) Act, 1982	Town Planning Ordinance, 1984
Planning System	2-Tier: Federal (City administration)	3-Tier: Territorial, Sub-Region & District
Planning System Mechanism	National Physical Plan (NPP) National Urbanisation Policy (NUP) Structure Plan Local Plans Development Control Plan (Guidelines)	Territorial Development Strategy (TDS) Sub-Regional Development Strategy District Statutory Plan (OZP & DPA) Planning Regulations Planning Guidelines
Regional Planning Framework	Voluntary through the NPP & NUP	Statutory through TDS
Growth Management Framework	Urban Containment (generally, through zoning approaches, Infill development)	Urban Containment (statutory zoning, Infill & redevelopment, green belt & country parks designation)
Containment Scale	Regional Unbounded (development within designated zones, but proliferation still occurs outside zones)	Natural Containment (development limited due to geographical constraints)
<b>POLICY FEATURES</b>		
Physical Containment	Yes, land use zoning based containment boundary	Yes, strong land use zoning based containment boundary
Open space preserved	Yes (enhancement of natural and man-made green spaces)	Yes (country parks, green belt)
Low density outside boundary	Yes (suburban development of adjacent state)	Yes (restrictors through zoning control)
Development Accommodation	Exclusive (single use) zones, with increasing number of inclusive (mixed-use) zones	Single and mixed-use zones
Provision for Future Development	Provided in zoning-based Structure and local plans	Provided in zoning-based District Plans
Range of Housing Supply	Yes (private sector provision)	Yes (Limited)
Affordable Housing	Continued provision, albeit limited rented public housing Provision of affordable housing for middle income group	Yes (existing and proposed new public housing in new towns)
Rigorous urban infill, redevelopment	Large mixed-use development of brown field (eg. KL Sentral)	Inner city areas and redevelopment of old public housing
Transport Oriented Development	Developments incorporating 'Transit planning zone' approach	Rail services incorporated into existing and future new town developments
<b>SUSTAINABILITY INDICATORS</b>		
<b>ENVIRONMENTAL</b>		
Clean Energy Strategy	Limited (most of the city's energy are generated outside from coal and oil)	Gradual coal to gas power generation. Clean energy sources developed (eg. wind and solar power stations)
Waste reduction & recovery	Continual efforts with limited success, but is now given more emphasis, with green infrastructure agenda, including waste management	Pursued through Municipal Solid Waste Management Framework Policy and Waste Reduction Framework Plan
Biodiversity & Ecological Balance	Conserving natural environment & residual forest, Designation of environmentally sensitive areas	Conservation of flora, fauna and natural habitat, marine parks and reserves
<b>SOCIAL</b>		
Compact development	Limited to city centre commercial development and strategic zones' centres	Compact form of residential & commercial development, and the promotion of 'urban living space'
Sustainable Transportation Strategy	Promotion of green urban transportation via bus and rail based public transport	High frequency rail based public transport approach Development option through 'land use-transport optimisation' model
Social Infrastructure and Housing	Promotion of sufficient social infrastructure in development plan, Adequate social housing	Adequate provision through inclusion in development plans
<b>ECONOMICAL</b>		
Sustainable Economic Development	Enhancing the city's role as leading centre of the Knowledge-Based Economy, linkages with MSC	Enhancement of economic competitiveness, with a strong service sector
Land Use Optimisation	Policy encouragement through development plans	Maintaining efficient intensity of land use and safe level of development
<b>SUSTAINABLE URBAN DEVELOPMENT PERFORMANCE</b>		
Overall Sustainable Urban Development Performance	Fair to Good, but improving constantly since the adoption of the Structure Plan and completion of its local plans, the KL City Plans 2020	Good to Very Good, particularly in terms of sustainable urban transport provision and urban development control. It is expected that under the HK2030 strategic plan might slightly improve this rating.

In terms of 'environmental aspects', both Kuala Lumpur and Hong Kong have different geographical contexts, with Kuala Lumpur sitting on a rather flat

geography and having more available land for development, whereas Hong Kong development is constrained between the steep terrain and the sea. Both city-regions are highly urbanised, with no specific delineation of their urban footprint. Urbanisation is accommodated and, where necessary, controlled via the use of statutory zoning plans. However, in terms of urban form, Hong Kong is a good example of a compact city-region served by efficient and sustainable public transport services. Kuala Lumpur is less compact, as the development of the city-region is not entirely a government matter, but rather responsive to market forces. Kuala Lumpur has no specific containment strategy, except for the use of statutory development plans, which guide the development within a specific area over a stipulated period of time. The plans are mandated by the City administration; however actual development still rests with the market forces. Even with the existence of such plans, the prevention of urban sprawl is not guaranteed, whereas the geographical setting of Hong Kong in itself contains urban growth naturally.

Both city regions are experiencing the impact of climate change due to global warming from greenhouse effect of human activities including rapid urbanisation. The level of per capita CO<sub>2</sub> emission in Hong Kong for example stood at 5.2 metric tonne while Kuala Lumpur at 6.3 metric tonne (World Bank, 2006), with vehicles emissions remains the highest contributor. Even though Malaysia is moving towards sustainable energy production (electricity sources: 64% natural gas, 26% coal, 7% hydro, 3% oil), this is yet to reflect the true environment in Kuala Lumpur. The new master plan for the city, the Kuala Lumpur City 2020, is expected to contribute positively to climate change with better traffic management measures to reduce private motor-vehicle use in the city, and green infrastructure agenda which includes waste management. Similarly, although Hong Kong is actively exploring alternative energy sources including solar and wind-based energy, fossil fuel currently remains the main sources of electricity (63% coal, 37% natural gas, 1% oil) (World Bank, 2006). The fact that per capita energy consumption is one of the highest in South-East Asia (EIU, 2008) and poses a greater challenge to sustainable energy use in the country.

Looking at the 'social aspects', both city-regions have evolved into high rise and high density residential and commercial entities. Social infrastructure and housing are given high degree of attention with their inclusion in the respective development plans. Conventional planning however has also been exercised with a high degree of success in Hong Kong, with the achievement of high standards of public housing, infrastructure and services. What contributes to this huge success is that Hong Kong's status as a city-state permits the nation's substantial resources to be channelled into urban development,

including regenerating core inner areas. Kuala Lumpur on the other hand has to rely on funds sourced locally through rates and taxes, plus limited federal grant to finance most of its development and regeneration/renewal exercises. That is why provisions such as affordable housing and efficient public transport remain to be solved. It is only recently that the idea of transit oriented development started to gain recognition after its inclusion in the Kuala Lumpur Structure Plan and the draft Kuala Lumpur 2020 City Plan. Hong Kong, however, has had a very good track record with its efficient rail-based public transport system. Hong Kong residents also have realised that there is very limited land available for development, and therefore, are more willing to accept tougher controls over the land development/allocation. Hence, local authorities are able to manage the scarce resources effectively to ensure a sustainable development. In contrast, apart from expensive gated condominiums, a majority of the population in Kuala Lumpur still associated with high rise urban living with relatively low income. High rise living is still considered as 'have to' rather than 'sought after' phenomenon.

In terms of 'economic performance', Hong Kong adopted a strategy of enhancing its economic competitiveness through its strong service sector. Its superior economy thus makes urban management more effective. The fact that the government owning almost all the land in Hong Kong makes the formulation and implementation of (sustainable) development plans a much easier task. Land use optimisation has always been the key factor in its planning for development by maintaining an efficient intensity of land uses. Kuala Lumpur is also gearing itself towards the tertiary sector with a focus on enhancing its role as a knowledge-based economy, taking advantage of the Federal Government's Multimedia Super Corridor (MSC) project spanning over 50km from the city centre to Cyberjaya and then to Kuala Lumpur International Airport. In terms of land use optimisation, there seems to be limited success at the moment. However, the idea is being promoted in the Kuala Lumpur draft local plan. Whilst high density development is a must in the land-stricken city-state of Hong Kong, developers in Kuala Lumpur find low-rise suburban housing scheme very attractive, due to the low land prices and higher demand. This explains the reason of compact urbanisation being less successful in Kuala Lumpur compare to Hong Kong.

In conclusion, within the context of resource constraints, sustainable urban development has been a key factor in the adoption of urban growth management initiatives promoting viable use of scarce resources for urban expansion whilst at the same time minimising uncontrolled urban sprawl. Within this context, the use of a whole range of policies designed to control, guide, or mitigate the effects of urban growth is seen as a practical way to



promote compact development (i.e. see Nelson & Duncan, 1995). The rapid population growth and urbanisation in South-East Asia city-regions has indeed placed great pressures on their environments. Whilst a few cities in the region, as discussed in this paper, have adopted some form of urban management policies towards minimising or alleviating these pressures, many other cities within the region are still without suitable urban growth management strategies (i.e. Ho Chi Minh City, Bangkok, Manila, and Jakarta). In these cities, higher land consumption, expansive and discontinuous urban development will continue into the future. Local authorities and planners should, therefore, look into the possibilities of implementing sustainable urban growth/development management strategies for their cities. Both case studies investigated in this research display top-down approaches to ensure that planning at the district and local levels is properly guided to achieve state and regional standards and goals. In both Kuala Lumpur and Hong Kong cases, urban development is facilitated and governed by statutory planning legislation and flexible planning processes and approaches. This ensures that all development will have some degree of standardisation and will occur in harmony with existing development. It seems that from these cases, a top-down approach is a key factor to trigger sustainable urban management practices. However, these top-down approaches need to be balanced with bottom-up, collaborative strategies in order to provide a more transparent and democratic platform for citizen participation in the urban planning and development process.

## REFERENCES:

### *Books/Journals:*

- Boyle, R., & Mohamed, R., 2007. State growth management, smart growth and urban containment: a review of the US and a study of the heartland. *Journal of Environmental Planning and Management*, 50(5), 677-697.
- Brueckner, J., 2000. Urban sprawl: diagnosis and remedies. *International Regional Science Review*, 23(2), 160-171.
- Bunel, T., Barter, P., & Morshidi, S., 2002. Kuala Lumpur metropolitan area: a globalising city-region. *Cities*, 19(5), 357-370.
- Carruthers, J. 2002. The impacts of state growth management programmes: a comparative analysis. *Urban Studies*, 39(11), 1959-1982.
- Carruthers, J., & Ulfarsson, G., 2001. *Urban sprawl and the cost of public services*. Paper presented at the Pacific Regional Science Conference Organisation.
- Census and Statistics Department., 2006. *Hong Kong population and average annual growth rate*. Hong Kong: Hong Kong Government.

- Choguill, C. 2008. Developing sustainable neighbourhood. *Habitat International*, 32, pp. 41-48.
- Daniels, T., 1999. *What to do about rural sprawl?* Paper presented at the American Planning Association Conference.
- De Roo, G., & Miller, D. (Eds.), 2000. *Compact cities and sustainable urban development a critical assessment of policies and plans from an international perspective*. Aldershot: Ashgate.
- DeGrove, J., 2005. *Planning policy and politics: smart growth and the States*. Cambridge: Lincoln Institute of Land Policy.
- Duvarci, Y., & Yigitcanlar, T., 2007. Integrated modelling approach for the transportation disadvantaged. *Journal of Urban Planning and Development*, 133(3), pp. 188-200.
- EIU (Economist Intelligence Unit). (2008). *Country Profile: Hong Kong*: EIU: Economist Intelligence Unit
- Hemphill, L., Berry, J., & McGreal, S. (2004). An Indicator-based approach to Measuring Sustainable Urban Regeneration Performance: Part I, Conceptual Foundations and Methodological Framework. *Urban Studies*, 41(4), pp. 725-755.
- Hezri, A. A. (2005). Utilisation of Sustainability Indicators and Impact through Policy Learning in the Malaysian Policy Process. *Journal of Environmental Assessment Policy and Management*, 7(4), 575-595.
- Jepson, E., 2004. Human nature and sustainable development: a strategic challenge for planners. *Journal of Planning Literature*, 19(1), 3-15.
- Kahn, M., 2001. Does sprawl reduce the black/white housing consumption gap? *Housing Policy Debate*, 12(1), 77-86.
- Kuala Lumpur City Hall., 2003. *Kuala Lumpur Structure Plan (KLSP)*. Kuala Lumpur: Kuala Lumpur City Hall.
- Lindsey, G., 2003. Sustainability and urban greenways: indicators in Indianapolis. *Journal of the American Planning Association*, 69(2), 165-180.
- Marcotullio, P., 2004. Why the Asian urbanisation experience should make us think differently about planning approaches. In A. Sorensen, P. Marcotullio & J. Grant (Eds.), *Towards sustainable cities: East Asian, North American and European perspectives on managing urban regions* (pp. 38-58). Aldershot: Ashgate.
- McGhee, T., 2008. Managing the rural-urban transformation in East-Asia in the 21st century. *Sustainability Science* (3), 155-167.
- Nelson, A., & Dawkins, C., 2004. *Urban containment in the United States: history, models, and techniques for regional and metropolitan growth management*. Chicago: American Planning Association.

- Nelson, A., Dawkins, C., & Sanchez, T., 2004. Urban containment and residential segregation: a preliminary investigation. *Urban Studies*, 41(2), pp. 423-439.
- Nelson, A., & Duncan, J., 1995. *Growth management principles and practices* Chicago: American Planning Association.
- Sorensen, A., Marcotullio, P., & Grant, J., 2004. Towards Sustainable Cities. In A. Sorensen, P. Marcotullio & J. Grant (Eds.), *Towards sustainable cities: East Asian, North American and European perspectives on managing urban regions* (pp. 3-23). Aldershot: Ashgate.
- Stanners, D., & Bourdeau, P. (Eds.). (1995). *Europe's Environment: The Dobbris Assessment*. European Environment Agency. Copenhagen: European Environment Agency.
- Syafie, S., 2004. *Urbanisation and housing in Kuala Lumpur city centre*. Paper presented at the Earoph World Planning and Housing Congress.
- Taylor, B., 1988. Development by negotiation: Chinese territory and the development of Hong Kong and Macau. In W. Tietze (Ed.), *Urbanisation of the Earth* (pp. 165). Gebruder Borntraeger: Stuttgart.
- Teriman, S., Mayere, S, & Yigitcanlar, T., 2008. Promoting sustainable urban development in fast growing city-regions: practices from Kuala Lumpur and Hong Kong, In the proceedings of the Subtropical Cities 2008 Conference, 3-6 Sep 2008, Brisbane, Australia.
- Wassamer, R., 2006. The influence of local urban containment policies and state-wide growth management on the size of United States urban areas. *Journal of Regional Science*, 46(1), pp. 25-65.
- WCED., 1987. *Our common future*. Oxford: World Commission on Environment and Development.
- World Bank. (2006). *The Little Green Data Book 2006*. Washington D.C.
- Yigitcanlar, T., Dodson, J., Gleeson, B., & Sipe, N., 2007. Travel self containment in master planned estates: analysis of recent Australian Trends. *Urban Policy and Research*, 25(1), pp. 133-153.
- Yigitcanlar, T., Fabian, L. & Coiactetto, E., 2008. Challenges to urban transport sustainability and smart transport in a tourist city: The Gold Coast, Australia, *The Open Transportation Journal*, 2008(2), pp. 19-36.

**Internet:**

- Government of Malaysia., 2005. The Ninth Malaysia Plan 2006-2010. Retrieved on 28 April 2008, from <http://www.epu.jpm.my/RM9/html/english.htm>.
- Government of Malaysia., 2006. National Urbanisation Policy. Retrieved on 21 April 2008, from <http://www.townplan.gov.my/dpn/>.
- Government of Malaysia., 2007. National Physical Plan. Retrieved on 20 April 2008, from <http://www.npptownplan.gov.my/>.

- Hong Kong Housing Authority. 2007. Public Housing Statistics. Retrieved on 20 April 2008, from [www.housingauthority.gov.hk](http://www.housingauthority.gov.hk).
- Hong Kong Planning Department., 2007. Hong Kong Planning Standards and Guidelines. Retrieved on 8 April 2008, from [http://www.pland.gov.hk/tech\\_doc/hkpsg/english/index.htm](http://www.pland.gov.hk/tech_doc/hkpsg/english/index.htm).
- Hong Kong Planning Department., 2008a. Hong Kong 2030: Planning Vision and Strategy. Retrieved on 20 May 2008, from [http://www.pland.gov.hk/p\\_study/comp\\_s/hk2030/eng/finalreport](http://www.pland.gov.hk/p_study/comp_s/hk2030/eng/finalreport)
- Hong Kong Planning Department., 2008b. Schedule of Plans. Retrieved on 20 March 2008, from [http://www.pland.gov.hk/index\\_e.html](http://www.pland.gov.hk/index_e.html).
- Kuala Lumpur City Hall., 2008. Draft Kuala Lumpur 2020 City Plan. Retrieved 22 Jun 2008, from <http://klcityplan2020.dbkl.gov.my/eis/>.
- World Bank., 2007. World Development Indicators 2007. Retrieved on 5 July 2008, from <http://siteresources.worldbank.org/DATASTATISTICS/Resources/WDI07section4-intro.pdf>.

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