UNU-IAS Working Paper No. 161

The Spatiality of Urbanization:
The Policy Challenges of Mega-Urban and
Desakota Regions of Southeast Asia

Terry McGee
Professor Emeritus
University of British Columbia
Vancouver, Canada

<tmcgee@interchange.ubc.ca>

April 2009

> "It would something of a truism to say that social life is fundamentally scaled and issues of   geographic scale are central to how social life is structured and played out."
>
> Andrew Herold and Melissa Wright (2002)

INTRODUCTION

Four inescapable facts will govern our thinking about the prospects for urbanization in the 21st century.

First, statistically for the first time in global history the world will have the majority of its population living in urban places. [1]

Secondly, most of the world growth of urban population will occur in Africa and Asia that contain almost two thirds of the world's population within which at present in most countries the proportion of population living in urban places is well below 50 per cent. This has significant demographic implications for it means that the volume of increase in urban population will be unparalleled in human history. For example, in China alone it is estimated that the increase in urban population will average between 12 and 20 million annually; more than the size of most contemporary nations states in the world.

Thirdly, these new demographic realities together with the restructuring of economic, social and political activities will necessitate the rethinking of historically embedded concepts or urban and rural that have shaped the demographic, political, sociological and economic understanding of what is "urban" and "rural'.

Fourthly, the increasing economic integration of the world that has been labeled globalization is creating a greater potential for economic volatility and raising challenges for the sustainability of existing urban forms.

Of these four issues it may argue the issue of the changing nature of rural and urban are the most critical because this idea of the division between rural and urban is so embedded in the institutional, political and social understanding of most contemporary nations. Thus a rethinking of rural and urban is necessary because the location of rural and urban activities is changing. Thus urban activities defined as non-agricultural activities are spreading into areas that have previously been defined as rural. Technological advances in transportation and

communications have facilitated this process of regional, national and sub-national integration producing a new form of "transactional space" characterized by "space-time" collapse that facilitates spatial processes of decentralization and relocation in which the most ubiquitous type is the spatial spread of urban areas. This is occurring in both market economies and former socialist societies at various stages of the urban transition. [2]

In the developed countries suburbanization, industrial and service decentralization and urbanites demands for leisure space have dominated the process which also includes previously rural villages being taken over by week-ending urbanites. This often occurs in tandem with the development of the increasing diversification of specialized agricultural production both along industrial lines (chicken batteries) and intensive household operations growing many kinds of food.

In developing countries the spread of urban areas is much more regionally uneven and mixed in character. This reflects the fact that in the period since 1945 as modernization and development goals have been unevenly implemented between countries the intensity of changes in transactional space has varied. In countries that have been more centrally embedded into the post 1945 era of globalization such as the Asian NIC's these new "forms of transactional space" are well advanced while in others this process has been much slower. But no matter the pace of this transactional change the outward spread of urban activities into rural spaces is leading to a mixture of rural and urban activities. A final consequence of this revolution in "transactional space" is that it is leading to a reconfiguring of urban settlement systems in which large mega urban regions often form the nodes of large "urban corridors" of which the Tokyo – Osaka conurbation is an example.

This does not mean that rural activities at a national level have disappeared. There is still a spatial continuum from parts of the country that are dominantly rural to the urban cores in which urban activities dominate but it is the space between these two poles made –up of mixed rural and urban activities that is becoming increasingly important.

This paper analyzes these processes illustrated by a case study of the Southeast Asia region. [3] The paper is divided into five parts. Part one analyzes the forces that are driving the contemporary urbanization process. Part two investigates the need to create new definitions of rural and urban because of the changes introduced by new urbanization processes. The

third part looks at a case study of urbanization in Southeast Asia. This is divided into three sections (a) Southeast Asia in a global context, (b) the emergence of mega-urban Regions in Southeast Asia and (c) a discussion of the internal spatial formation of these mega-urban regions. Part four deals with the growing importance of the desakota zones in Southeast Asia urbanization and Part five focuses on the policy challenges of urban spread particularly in large urban regions.

PART 1 THE DRIVING FORCES OF URBANIZATION

I would like to begin by engaging some theoretical issues that underlie discussions of contemporary urbanization patterns both at the global level that have equal relevance to Southeast Asia. Most important in my view is the current obsession of researchers with globalization forces as the major causes of urbanization in the region. Contemporary policy positions on urbanization in Southeast Asian countries are largely being driven by assumptions that increased integration into the global economy is required necessity for development. Therefore it is necessary to encourage the growth of urban places that facilitate these processes thus creating urban trajectories that present wider challenges for the environment, energy demand, food security, regional inequality and are the location of other social and economic problems such as urban poverty.

Over the last thirty years, as a consequence of these beliefs, researchers and policy makers in many developing countries have favored development strategies that have placed increased emphasis on structural shifts in their national economies to industrial and service sector activities and increased integration into the global economy. This has occurred despite an ongoing rhetoric of many governments that supports rural development, food security and concerns with persistent rural poverty. The reasons for this urban focus are numerous but among them the conventional economic wisdom that investment in industry and services creates higher returns than agriculture is a powerful mantra. There is also a strong belief that urbanization is an inevitable part of the process of creating a modern state; indeed the economies of scale, the creation of mass markets and the higher productivity that occur in urban areas make cities, it is argued, absolutely crucial to the process of development (Lampard 1955, Scott J 1998, Scott 2001). The consequences of this approach are only too obvious in the developed East Asian countries such as Japan, Korea and Taiwan that have been characterized by rapid urbanization, increased industrial production and the increasing importance of the urban-based service sector. This structural change has occurred later in

3

Southeast Asian countries such as Malaysia, Indonesia, Thailand, the Philippines and Vietnam. However, Laos, Cambodia and Myanmar have barely embarked upon this trajectory and Singapore and Brunei as "city states" have followed an even faster urbanization trajectory. Of course, these developments have been heightened by the growing integration of Southeast Asia into the global economy in which city-states such as Hong Kong and Singapore continue to play an important role.[4] The restructuring of the economies of the economies of the developed world that is part of this much debated process of globalization is also an important part of the process and a new international division of global production systems has emerged. (Olds et al 1999. Mc Gee and Watters 1997,).

Another result of these urban-orientated development strategies in the more developed economies of Asia has been the decline in the proportion of the employed population in agriculture; the depopulation of rural areas, a sharp reduction in the number of family farms and a restructuring of agriculture with growing emphasis on capital intensity, off-farm employment, the employment of migrant farm labor and food imports and increased agricultural productivity This has often involved an increase in rural-urban income disparities that accentuates out-migration from the rural areas that takes various forms such as international migration, rural to urban migration and circulatory migration (Rigg 2001 Hugo 2006The policies that have driven these trends are based upon development theories that assume developing societies are passing through some kind of transition from underdevelopment to development. The pace and change of this process may vary greatly between countries and global sub-regions but it is a global trend. This idea is encapsulated with the idea of transition from tradition to modernity; the demographic transition that argues societies pass through stages of low population growth, high population growth into a phase of slow population growth; the environmental transition that suggests that as societies become more developed they become more sensitive to issues of sustainability in a situations where environmental problems abound. Finally, there is the urbanization transition that predicts an inevitable shift from low levels of urbanization to high levels of urbanization as countries become more developed.

These theories of transition are based on three assumptions. First, the assumption that these transitions, while they may vary between countries, are inevitable; countries must go through these transitions to become developed. Secondly that they are linear and go through a series of stages which although they may vary in their length between countries are necessary

prerequisites for development. Thirdly, that the rural and urban transition while linked in the overall process of development can be separated for policy purposes. Basic to this conception is the idea of division between rural and urban that is reflected in the spatial and administrative structures of societies. Thus the transition theory assumes a spatial reordering of countries is an important part of the process of development.

It is central to the argument of this paper that transition theory is flawed as a model to investigate urbanization. This is because, following Marcotullio and Lee, I would argue that the conditions of the transition are very different. First, because the pace of the transition that is occurring at a very much faster rate than that of early transitions. Marcotullio and Lee have argued with respect to the environmental transition that the "...unique feature of the present era is the compression of the time frame in which the transitions are occurring" (Marcotullio and Lee 2003:331.) This is well illustrated in Figure 1 that shows the changes in level of urbanization between England and Wales, Mexico and China. As is clear from the figure China will take only half the time to reach levels of urbanization that took one hundred years for the other two and of course the number of people involved in this shift to higher urban levels will be much larger. Marcotullio and Lee further argue that transitions are now overlapping "in a telescoping of the transition process in a much shorter time-frame than earlier." (Ibid.331)
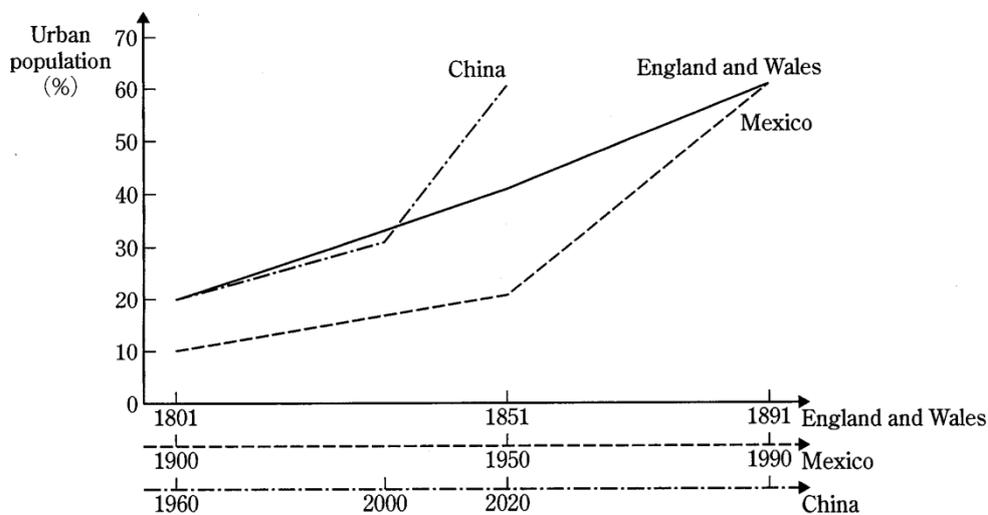

Figure 1: Telescoping transition. Increase in urbanization levels: England and Wales, Mexico and China

Fundamental to the idea of telescoping transitions is the fact that they are being driven by accelerated transactional flows of people, commodities, capital and information between, and within, countries. The international components of this transactional revolution are generally referred to as part of a new era of globalization in which foreign investment encouraged by national states is an important component. The different character of the transactional revolution places much more emphasis on the flows of people, commodities, information and capital within national space economies. (See Figure 2)

Thus development is seen as occurring in a dynamic sense as a process of transformation of national economic space in which interaction and linkage is a more accurate reflection of reality than the idea that rural and urban areas are undergoing somehow spatially separated transitions. In contemporary Asia a network of linkages that provides a dynamic spatial frame of flows of people, commodities, information and capital fundamentally drives the rural-urban transformation.
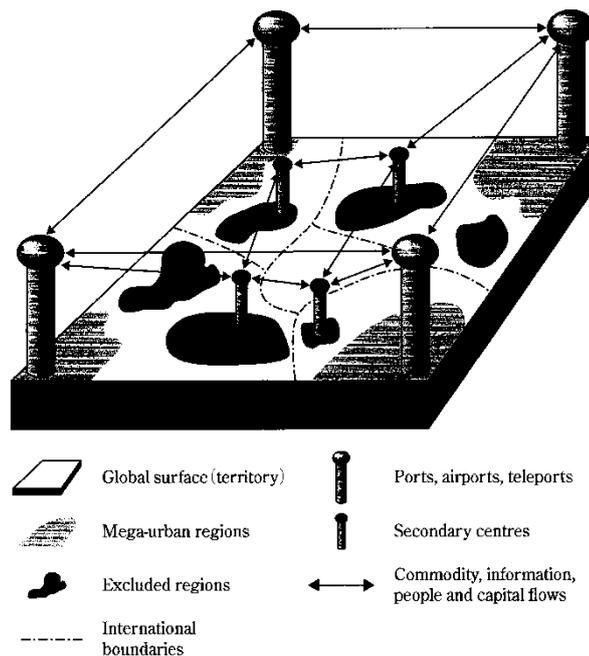

Figure 2: Globalization transactional space

This involves the recognition these "transcending networks" are restructuring urban space in a way that emphasizes the emergence of intense transaction networks particularly focused on mega-urban regions. This is leading to very rapid economic growth rates focused on these mega-urban regions but at the same time is creating many environmental and social problems and increasing disparities at the level of individual nations. In a number of publications Jones and Douglass has argued that how the involvement of large urban regions in various circuits of capital (local, national and international) have had a powerful influence on the morphology of these urban regions. He relates these developments to the four key phases modes of a capital formulation in the region. They are (1) a long period of commodity trade (primarily focused on agriculture and resource extraction) which characterized the colonial period, (2) a phase of industrial production (import substitution, export production 1970s and 1980s), (3) a phase in which franchising and global retailing dominate the flows of capital as these large urban regions increase their roles as consumption centres and finally (4) a phase of expansion of global financial capital from the mid 1990s that was channeled primarily into mega – projects and land development. (Jones and Douglass 2008) These periods relate closely to the discussion of the historical processes of Southeast Asian urbanization in Part 3.

One of the possible results of this "globalization perspective " is that large cities are represented less as an organic social entity embedded in its regional hinterland and more as a node in the matrix of global flows of commodities, capital and information. Another view of the urbanization process particularly as it plays out at the level of the large urban region, suggest that urbanization is a complex process occurring at many scales including at the spatial level at national, regional and local levels, in the social and economic and political perspectives. This argument is captured neatly by Forbes who argues that these macro-representations of globalization "… subsume the internal dynamics of urban development, the subtleties of local politics, the resilience of urban patterns of life, the tensions embedded in fractured social structures, the multiple strands of modernity and resistance to the imposition to change." (Forbes, 1997: 462) This is supported by the research by Leaf (1994, 1996) and Kusno (2000) that has argued that the growth of so-called "global spaces " such as the suburban developments in the fringe of Jabotabek and the creation of commercial business districts within the inner core represent the modernity and development upon which the legitimacy of the Soeharto New Order rested. So that "globalism" is embraced at the national level but acted on at the local level, In this way the urbanization process is made up the interaction between national scale, provincial scale, the urban scale and at the individual

scale of individuals and households of which they are part. (Kelly, 1997, 1998, 2000) It is therefore important to stress that the urbanization process as it works its way out in the mega-urban region is a complex array of social, economic and political processes that drive the urbanization process. Rather than simply reflecting the imprint of global capital what we see are processes of both "articulation" with global flows in certain urban spaces (and social groups) and "disarticulation" in others. Thus "global spaces" exist side by side with "local spaces". As the mega-urban regions of Southeast Asia have grown, urban space has been reconfigured into articulated networks of interaction between middle and upper class dwellers while excluding "much of the intervening or peripheral spaces from accessing networks, because the networks pass through the spaces without allowing local access" (Graham 1997:112). This is not to ignore the fact that at the level of everyday practice most notably at in the consumption practice there is a form of urban hybridity emerging. For example researchers have written about the manner in which shopping malls become spaces in which city populations of various socio-economic background use the mall space in different ways. In the remainder of the paper we shall attempt to show how this multi-scalar approach creates greater understanding of contemporary urbanization in Southeast Asia.

PART 2 REDEFINING RURAL AND URBAN SPACE [5]

If this argument that the current forces that are driving urbanization are convincing then it is clear that there needs to be a redefinition of the spatial patterns of these contemporary urbanization processes. First, current definitions of rural and urban need to be reexamined and redefined as urban activity spreads into rural areas. At a minimum this means that areas previously defined as rural in which a majority of activities are urban need to be reclassified Secondly, the architecture of the current urban settlement patterns countries that is characterized by the emergence of large urban regions such as Beijing-Tianjin corridor, that account for an increasing proportion of many nations' urban populations needs to be revised. Of course this phenomenon has been recognized for many years. Jean Gottman's pioneer study of Megalopolis in the corridor between Boston, New York and Washington published in 1960 (Gottman 1960) and Ginsburg, Koppel and Mc Gee (1991) applied these ideas to the formation of "Extended Metropolitan Regions" in Asia in the early 1990's.

Since then a growing literature has emerged focusing on the large urban regions leading to the introduction of new terms such as "global cities" (Sassen 1991) and "Mega-Urban Regions" (MURS) (Mc Gee and Robinson 1995) In this paper I have used the term " Mega-

Urban Region" interchangeably with "Extended Metropolitan Region"(EMRS). Thirdly, the internal spatial patterning of the MURS needs to be carefully examined and new spatial morphologies delineated. Not surprisingly the spread of urban regions has led to much research on the new spatial patterns that in the Asian has indicated the emergence of three major zones .A Core part of the mega-urban region that generally consists of the older core city but may also include other cities that are linked into the E.M.R. They are the parts of the urban region that are most linked globally, the foci of transportation linkages and undergoing rapid structural transformation to higher-order services. Surrounding the core city(s) are Peri-urban zones in which most of the activity is urban and the built environment is dominated by urban buildings. This region may have previously been characterized by agriculture and the early phases of labor –intensive industrialization but these activities have now been largely replaced by urban activities closely linked to the city core. Finally there is a region that can be described as an outer zone, which in this paper is labeled Desakota.

These three zones are shown in generalized diagrams of hypothetical national and urban region space in Figures 3 and 4.
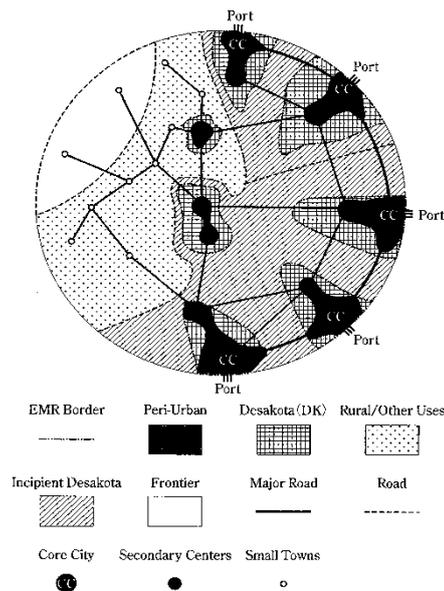

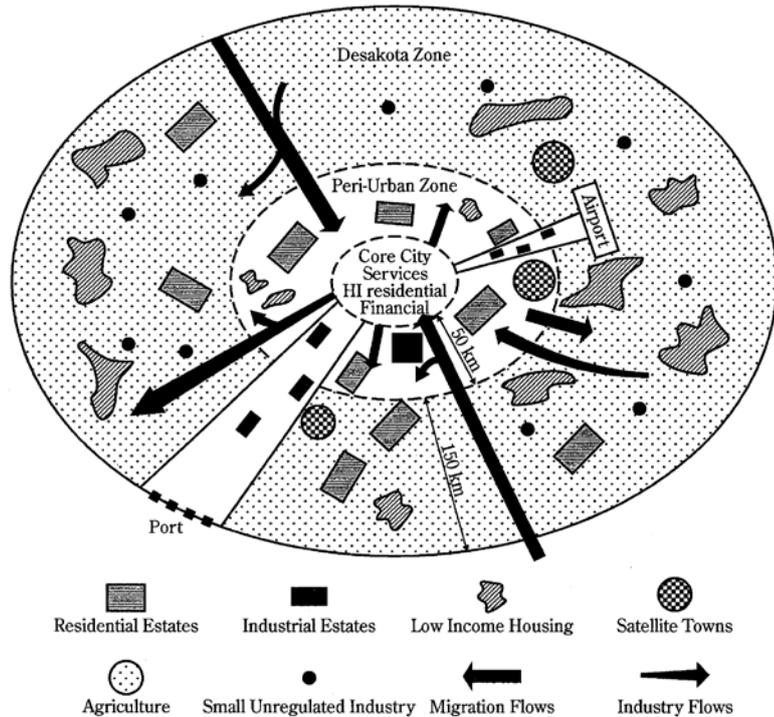Figure 3: Spatial Configuration of Hypothetical Asian State

Figure 4: Spatial configuration of Southeast Asian mega-urban region (circa 2000)

There is still much confusion over the use of these the correct terminology for these zones. Often writers use peri-urban to include the areas of the urban fringe which include both the areas of peri-urban and desakota in the diagrams. (Webster 2002, Webster, Cai, Muller Luo, 2003)) I would argue that while the contrast between the core and the fringe of cities recognizes urban realities the emergence of the desakota zone is of such importance that it has to be distinguished as different zone. In my earlier analysis of the urban fringe in the EMR, s (Mc Gee 1991) I argued that the distinctive historical, cultural and economic features of these urban fringe areas in Asia must be seen within the historical and ecological context of particular Asian countries which influenced the which influenced the zonal divisions in the urban First the countries that at time had already experienced a rapid transformation of the spatial economy in terms of the levels of urbanization and the shift from rural to urban activities the peri-urban zones of the urban fringe were more important although increasingly specialized agriculture occurred in desakota zones. Examples at that time could be found in Japanese, Korean and Taiwanese mega-urban regions. Secondly, EMRs in which the desakota zones of the urban fringe that was most ubiquitous in the densely crowded agricultural hinterlands of many of other mega-urban regions of Asia. These were labeled "desakota" utilizing a coined word from the Indonesian words for village (desa) and kota

(town) .In the early 1990's I argued it was important to distinguish between two types of desakota determined by the stage of urbanization and structural transformations of the economies of the mega-urban regions. First in those MURS such as the Hong Kong- Pearl River Delta region, the Jakarta- Bandung, the Bangkok and Calcutta certain common conditions and processes characterized what appeared to be diverse regions. First, all these regions were characterized by densely populated, small- holder agriculture, most commonly wet rice that involved careful water management and agronomic practices. Densities frequently approached 1000 persons per square kilometre and there was considerable underemployment, which provided surplus labor for non-agricultural activities as they expanded in to the regions.

Secondly, in virtually all these rice bowl areas there were large cities or clusters of cities such as Calcutta, Shanghai, Bangkok and Guangzhou – Hong Kong that acted as the nodes for the development of the regions. Thirdly these desakota regions were generally characterized by a well-developed infrastructure of roads and canals that created a highly integrated "transactive environment" that facilitated the movement of people and commodities. These special features provided a major attraction to the growth of urban activities attracted by cheaper land and labour and were facilitated by governments' investment in infrastructure such as roads and industrial estates that facilitated investment. In addition structural changes in the global economy were leading to a shift of industrial activity from developed countries to developing countries. However, the "governance" of these desakota areas was essentially still focused on rural activity rather than urban activity and this created "invisible" or "grey zones" of government administration. A major problem was created in the physical environments of these desakota zones where the competition between rural and urban activities led to great pressure on the resources as well as environmental deterioration, for example, of water and atmosphere pollution.

In the fifteen years since the idea of "desakota" was put forward it has generated considerable debate particularly in Asia. Neo-liberal critics essentially argue that the emergence of desakota regions is a transitory phenomenon that will disappear as development occurs. They see the co-existence of agriculture and non-agricultural activity as an inefficient use of land, a hindrance to the development of well functioning land markets and the rational use of space to create maximum economic returns. It is also a zone in which inadequate governance is unable to prevent environmental, housing and social problems. These critics also argue that

the idea of "desakota" places too much emphasis upon "localized responses" and paid too little attention to external forces such as globalization (Chan, 1993; Dick and Rimmer 1998; Rimmer, 2002). Another group of commentators are more supportive. These commentators who are more sympathetic to the concept find the concept useful to inform much there ideas of urban sustainability. They begin from a starting point that sees the "desakota zone as crucial part of the natural bio-system of the E.M.R. and argue that the preservation of the natural resources of the zone, land, soil, water, vegetation and fauna are crucial to the sustainability of the entire urban region which as economic growth occurs will place increasing demands on the fragile environments of the "desakota" areas. The processes of global climate change that affect the sustainability of what are largely "deltaic" environments further exacerbate this condition. Recent global volatility in the global financial and energy markets also cause concerns about the "fossil fuel" transportation that have facilitated the spread of urban activities from the city's core suggesting that other transportation mixes may effect the spread of urban activity. They also suggest that "desakota" zones can offer the possibility for increased urban food production at the local level and the development of policies that are guided by principles of sustainability (Hebbert 1994; Yokohari, Takeuchi, Watanabe and Yokota 2000).

PART 3 THE SOUTHEAST ASIAN CASE STUDY

   a) Southeast Asian Urbanization in a Global Context [6]

Long term United Nation's projections estimate that the world's population will grow from 6.06 billion in 2000 to 8.27 billion by 2030. The single aspect of these predictions that attracts the most attention is that most of this increase will occur in urban areas that will grow from 2.86 billion to 4.98 billion. Of equal importance is the fact that more than 90 per cent of all urban increase will occur in less-developed countries.

From the point of view of this paper that is focused on urbanization trends in Southeast Asia it is important to recognize that a major part of this urban increase will occur in Asia. Thus between 2000 and 2030 58 per cent (1.3 billion) of all global urban population increase will occur in this region most of it occurring in the population giants of China, India, Pakistan, Indonesia and Bangladesh. Southeast Asia will account for only 16 per cent of the Asian urban increase of which almost half will occur in its largest country, Indonesia. Therefore it is important to take into account the overall influence of Indonesia when discussing urbanization trends in the region.

The Southeast Asian region has long been recognized as a diverse region of many cultures, political systems and different levels of economic development. Thus the countries of Southeast Asia are on diverse urbanization trajectories. (Table 1)

Table 1. Southeast Asia Total Population,Urban Population, Percent Urban (2007)
Percent of Employed Population in Agriculture by Urbanization Trajectory

Type 1.	Total Population (millions)	Urban Population	Per Cent Urban	Per Cent Agriculture
Brunei	.3	.2	72.2	1.0
Singapore	4.3	4.3	100.0	-
Type 2				
Indonesia	226.0	112.0	48.1	44.0
Malaysia	25.7	16.0	67.3	15.0
Philippines	84.0	51.0	62.7	37.0
Thailand	63.0	20.0	31.1	43.0
Type 3.				
Vietnam	85.0	22.0	25.0	58.0
Myanmar	52.0	18.0	30.7	63.0
Laos	5.6	4.1	20.6	85.0

Source: World Bank (2008) World Development Report 2007
Urbanization Trajectory defined as
Type 1 High Level of Urbanization > 70 per cent
Type 2 Medium Level of Urbanization 30- 69 per cent
Type 3. Low Level of Urbanization < 30 per cent

There are ongoing debates as to how this urban increase will be distributed between urban places of different sizes. United Nations statistics show that in less-developed countries the proportion of urban residents in urban settlements of below 500,000 will decline slightly from 51.2 per cent in 2000 to 49.0 per cent by 2015. At the same time the percentage of population resident in urban settlements of above 5 million will grow from 14,5 to 16.8 per cent. The estimates for Southeast Asia suggest that the proportion of urban population living in settlements of below 500,000 will remain unchanged at 64 per cent while the urban population living in centres of more than 5 million will increase from 16 to 20 percent. This persistence of smaller urban places in the urban systems leads to perceptions that too much policy attention is being paid to mega-urban regions at the expense of secondary urban places and the advocacy of policies designed at big city decentralization. But the closer analysis of the realities of the mega-urban region discussed in the next section suggests the population living in them is substantially under-estimated in UN estimates and this suggests that the policy challenges they pose are still important importance. In other research reports I have published a detailed analysis of this reasons for this analysis suggesting that the term

extended metropolitan region might more accurately encompass the dimensions of the mega-urban region. (Mc Gee 1991, 1995a)

Therefore in order to discuss the challenges of mega-urban regions/EMRs it is necessary to define the major features of mega-urban regions.

The simplest definition is to define the formation of mega-urban regions in a much broader fashion. Thus their definition means an increasing proportion of a country's GDP and urban population are concentrated are concentrated in these areas. The only statistical database that enables the temporal measurement of these large urban regions is the UN Population Division's bi-yearly publication that provides data on urban areas of more than one million in size. But this database is not adequate for measuring MURS because it relies upon administrative definitions that are often limited to individual cities it does not always include all cities that are part of a network of integrated cities in MURs in its estimates. (See Montgomery et.al 2004 and Champion and Hugo 2004)

A more satisfactory definition is based upon the measurement of functional integration in MURS as measured by transport flows, economic linkages (industry, service and agriculture) labor markets and population movements that make-up the "transactional space" of the MUR. Because MURS usually have the most well developed "transactional space" within nations and the main concentrations of human, social and economic capital as well as a developed infrastructure they offer an environment that is attractive to both domestic and foreign capital and in-migration.

A major feature of MURs is the ongoing spread of urbanization from the urban nodes of the MURs that is the result of the improvement in transportation systems and economic growth. For most of the countries (with the exception of Japan) transportation systems in urban areas were dominated by automobile systems but now some of the more developed countries such as Korea, Hong Kong, Singapore have adopted the Tokyo model of subway systems linked to buses in the outer areas. This urban spread is also associated with a dispersion of industry into the urban margins and a restructuring of the urban cores to service functions. Residential decentralization is also important as the urban cores are restructured from industry to service functions displacing inner city populations. This has created major urban corridors such as those between Tokyo and Osaka, Seoul and Pusan and Taipei and Kaoshuing which are now

14

being duplicated in the Southeast Asia with the formation of the Jakarta-Bandung corridor in the island of Java, and developments on a smaller scale along the arterial routes from city cores to airports, industrial estates, ports and new residential areas in the MURs of Bangkok, Kuala Lumpur, Manila and Ho Chi Minh and Hanoi cities. If Southeast Asia were to follow this pattern of corridor development that has characterized the East Asian NICs it would not be unlikely that urban development corridors might emerge between the Hanoi-Haiphong and Ho Chi Minh MURs with a newly emerging Danang MUR as the central point. A potential urban corridor could also emerge between Bangkok MUR and Singapore passing through the Kuala Lumpur MUR.

At a global level there are also processes facilitating the emergence of mega-urban regions which forces them to become increasingly competitive so as to attract more investment and establish their branding image globally. While industrial investment has dominated much of this process of global integration as the global service economy becomes more integrated there is a need to attract part of these national and global transactions through the development of financial services, tourism and conferences. While this competition for "transactional capital" was initially led by individual cities it is increasingly being realized that it is necessary to develop marketing campaigns that reflect the opportunities of the wider region.

Because of these processes MURs are becoming the "engines" of economic development of their countries often contributing above 50 per cent of the national GDP. In part, because of their very success, MURs present policy challenges that are focused on three main areas.

(1) Developing effective governance and management systems for mega-urban regions

(2) Making mega-urban regions sustainable in the face of environmental deterioration and global economic competition

(3) Making MURs livable in terms of employment, services infrastructure and social policy.

(4) Making MURs more socially inclusive so that the poor and disadvantaged have access to employment and services such as health and education.

b) The Emergence of MUR's in Southeast Asia[7]

In this section I want to focus the analysis on the growth of selected MUR's in Southeast Asia. But first it is necessary to give an overall view of the urbanization process in the region. Historically it is important to stress that Southeast Asia has a rich urban tradition. (Askew and

Logan 1994) In the pre-western contact period there were extensive trading and cultural interaction with other parts of the world particularly China and India. Two main types of cities emerged; trading cities such as Malaka and Palembang based upon the rich inter-regional trade that had been built-up by indigenous empires and trade with China and India. The second type of city was the sacred city established as "a supreme symbol of the State within the unifying cosmology that links together heaven and earth" The most notable example was the Khmer city of Angkor Thom built during the twelfth century. It was, however, the Western powers that were largely responsible for establishing the contemporary urban network of the Southeast Asia. Initially between 1500-1800, they were generally content to establish ports such as Malaka, Batavia and Manila that could serve as naval bases and entrepots for their trading activities. From the end of the eighteenth century onwards the industrial revolution in Europe resulting in the need for markets and raw materials led to the control of land being as important as the control of the sea and the creation of a network of settlements as they expanded the territory of their colonies. Generally it is true to say that the dominant form of urban place that emerged were the large multi-functional port-towns such as Singapore, Batavia, Manila, Rangoon, Saigon-Cholon which came to assume a large proportion of the functions of the urban heirarchy. Bangkok assumed some of the same functions despite avoiding becoming a colony of the Western powers. A second rank of settlement quite diverse in character ranging from "royal cities" to mining, administrative and small service centres emerged ton facilitate the networks of colonial control and exploitation. Thus the colonial period after 1800 saw an emerging pattern of mega – urbanization.

Most of the largest cities possessed a large proportion of their colonies's population and were many times bigger than the next largest settlement. By the early 1840's Rangoon was three times as large as Mandalay and in Indo-China Saigon-Cholon was very much larger than Hanoi. The characteristic urban hierarchy of this colonial period just before 1940 was dominated by the large primate cities often more than a million in size dominated by trade and combining administrative and defense functions. There was little industry other than some processing of raw materials and the majority of the population was engaged in tertiary activities in which immigrant communities such as the Chinese and Indians played an important role.

In the post–war period after 1945 the urbanization patterns began to change radically with the growth of nationalism and the creation of independent states (Table 2).

Table 2. Southeast Asia. Levels of Urbanization 1950 -2000

Country	1950	1960	1970	1980	1990	2000
Brunei	43.4	42.8	44.0	49.7	n.a	n.a
Singapore	98.0	100.0	100.0	100.0	100.0	100.0
Indonesia	12.2	14.9	17.1	22.2	30.6	40.3
Malaysia	24.5	30.0	33.5	42.0	49.8	57.5
Philippines	19.8	21.4	33.3	37.5	48.8	59.0
Thailand	10.0	11.4	20.8	24.5	32.5	40.0
Vietnam	n.a	n.a	18.3	19.2	19.9	22.3
Myanmar	12.9	14.3	22.8	24.0	24.8	28.4

Source. Mc Gee 1967.1979 Jones 1999 and ESCAP 1992/

This period was characterized by the grafting on of national administrative functions to most of the mega-urban cities. So the political icons of the new states, parliament buildings, statues of nationalist political leaders were added to the urban landscape of these primate cities. The only exception was Hanoi in Vietnam. By 1960 only two countries (Singapore and Brunei) had reached levels of labeled city-states. Only Malays had experienced rapid urbanization increasing from 24 to 30 per cent. During this decade the levels of urbanization in the rest of Southeast Asia remained low as the rural populations continued to increase at a faster rate. The economic structures of the cities changed little and the growing influx of rural migrants placed pressures on the existing infrastructure of housing, roads water and power, may of the migrants moved in to squatter settlements on the fringes or empty spaces of the inner cities and crowded inner tenements. At the same time new housing for the emerging national elites was being built in suburban estates such as Kenny Hill in Kuala Lumpur and Makati City in the Philippines.

This pattern began to change radically in the period between 1960 and 1990. First as can be seen from Table 2 the levels of urbanization began to vary sharply between countries where the urbanization level remained at very low levels of urbanization (under 25 per cent), Cambodia, Laos, Myanmar and Vietnam, and those increasing their levels of urbanization to over 30 per cent. Indonesia, Thailand, Philippines Singapore and Brunei. There were three main conditions that contributed to these developments. First the geo-political conditions of Southeast Asia with the intensification of the Cold War established clear lines between the socialist states of the region (Vietnam, Laos,) and the pariah states of Cambodia and Myanmar and the remaining capitalist states. Singapore, Thailand, Malaysia, Philippines, Indonesia and Brunei. In the planned economies that had been devastated by war much of

their energies were spent on rebuilding their societies that were primarily rural and urbanization levels remained low. In the capitalist countries state policies directed to increasing agricultural productivity and import substitution-based industrial growth fueled by international investment led to urbanization rates accelerating.

A second factor was the growth of foreign and investment as the developed economies began to restructure their economies from the 1960's. Singapore, Philippines, Malaysia, Thailand and Indonesia became important sites for foreign investment in industrial activity either for internal consumption or export. The process led to the creation of industrial estates, free-export zones, air and container ports and other infrastructure facilities focused on the main mega-urban regions of these countries. Thus, for example, by 1985 almost 60 per cent of non-oil manufacturing was located in the Jabotabek mega-urban region. By 1989 industry had exceeded the contribution of agriculture to the GDP of the six capitalist countries in the region.

A third factor was the growth of tourism in the region. At the beginning of the 1960's most of the mega-urban regions of the market capitalist countries of the region received less than 100,000 tourists a year but by the end of the 1980's this exceeded one million. This was part of a general increase in the higher level services such as finance that led to the transformation of the cores of the mega-urban regions with the building of hotels and commercial buildings. There was also a rapid emergence of a growing middle class and the growth of residential housing to satisfy their demands for new housing. Struggling with their reconstruction and the rebuilding of their political and economic systems the socialist states did not share in this process at this time.

The consequence of these trends was to produce a fourfold pattern of urbanization in Southeast Asia in the late 1980's. First, Singapore emerged as the regional centre of the region as the Singapore government embarked upon on an ambitious programme to make their country the first post-industrial city in the region. Labour intensive industry was rapidly restructured and moved off shoe to South Johor in Malaysia and Batam island in the Riau province of Indonesia in a project designed to create a regional growth triangle utilizing the factors of mixed factors of production (Macleod and Mc Gee 1996).

A second group of countries carried out urbanization in much more volatile political and social conditions. In Malaysia the colonial legacy of a plural society of Malays, Chinese and Indian existed within a framework where political power was largely in the hands of the rural-based Malays while the economic power lay with the urban –based Chinese. Ethnic riots in the main urban centres in 1969 that were fostered by Malay dissatisfaction led to the creation of a New Economic policy that allowed Malay participation in the new industries that were rapidly growing at the time leading to an increase of Malays in urban areas. In the Philippines and Thailand persistent rural and urban inequality fueled a rapid movement of rural migrants to the cities but industrial growth was slower leading to a persistence of urban poverty.

Thirdly in Indonesia another pattern of urbanization developed particularly on the island of Java where the high population densities of rural populations encouraged patterns of circulatory migration where migrants returned to their homes two or three times a month and used income earned in the city to subsidise their rural households. Finally from the late 1970s the socialist states of Laos and Vietnam began to slowly liberalise their economies and urbanization began to increase particularly focused on the urban nodes of Hanoi, Ho Chi Minh and Vientiane.

Thus by 1990 the processes of urbanization were beginning to move create the conditions for an accelerated movement of many of the mega-urban regions of Southeast Asia towards increasing global integration particularly reflected in the creation of new "globally – orientated spaces. The urban centres began to see the emergence of tourist zones, export zones, multiple commercial centres and middle class housing estates. These "spaces" were increasingly linked by road systems of varying degrees of effectiveness. Thus these mega-urban regions were becoming increasing auto-dependent as this fueled a rapid expansion into the adjacent hinterlands.

Many of these processes that have been identified continued and intensified in the 1990s and first decade of the 21st century.[7] A major feature has been the accelerated incorporation of capital flows into the region of the region primarily into equity markets, financial institutions, manufacturing industries and property sectors focused on the mega-urban regions. At a policy level this encouraged this encouraged efforts by national and city governments to market their cities as sites for international investment. This also encouraged a major part of

infrastructure investment in the MURs resulting in public investment disproportionately concentrated in the region. However, one of the more important consequences of this global integration has been the exposure of Southeast Asian countries to volatility of global financial and commodity markets. The 1997 collapse of equity markets slowed down many of these trends particularly in the property market. Even by 2008 there are still some building developments that have not restarted in Bangkok Secondly as the financial crisis deepened it opened up long standing discontent with the existing governments among the poor, the students and even the middle class. In Indonesia it created the conditions that led to the collapse of the Soeharto government in 1998. Despite the recovery of the global economy in after 2001 recent increases in the price of energy and foodstuffs and the prospects of the increasing vulnerability of Southeast Asian mega cities to environmental change such as sea-level rise and water supply have added even further elements of volatility.

c) The Spatial Patterning of Mega-Urban Regions in Southeast Asia[8]

In this next section I want to outline the major features of the spatial structure of some selected mega-urban regions of Southeast Asia because in order to establish the importance of MUR in the Southeast Asian context it is necessary to construct a longitudinal picture of their demographic growth. This is not a straightforward task for the rapid population growth and spatial spread of MURs since 1950 has often occurred in administrative divisions and census districts that have been classified as rural and therefore not recorded as urban population. Therefore there is substantial under-bounding of MUR's in Southeast Asia.

In the analysis that follows I have used two data sets in an attempt to arrive at a more accurate picture. My earlier attempts to delineate MURs were applied in an analysis for an analysis presented in a book of essays on mega -urban regions in Southeast Asia published in 1995 using data provided by various population censuses between 1960 and 1990 (Mc Gee and Robinson eds 1995). This data essentially adopts what may be described as a functional definition that at time I called an extended metropolitan region (EMR) that assumes that the boundaries of the EMR are defined by the intensity of flows of commodities, people, information and capital that were occurring within an extended urban space essentially using the concept of "transactional space" that is discussed in section 1 of this paper. Therefore this data set generates a much larger EMR both in population and area than data using census definitions. (see Tables1.2 and 1.3 in McGee (1995a; 12-13 and Mc Gee 1995b) This formulation was adopted because there was increasing evidence from field studies that the

spread of urbanization outwards was associated with the growth of urban activity as evidenced by the proportion of population engaged in non-agricultural activities, the loss of agricultural land and the spread of industrial and residential estates. Using this data set does mean that many rural households on the outer zones of the EMRs were included in the EMR, but there was also ample evidence that many of these households were rapidly increasing the proportion of their total household income from non-rural sources such as off-farm labour, factory work and migration to cities. This first database also provides statistics for a much longer period of three decades between 1960 and 1990 that enables the recognition of earlier trends of outward urban expansion. This data provides data for four MURs of Jakarta, Bangkok, Manila and Ho Chi Minh for the period 1960-1990 indicating that while the city cores of all MUR (except Ho Chi Minh) grew in population their proportion of the total population fell as the inner and outer rings grew rapidly. By 1990 Bangkok, Jakarta and Manila all had a majority of their population living in the two outer rings. Ho Chi Minh continued to increase its population in the core city reflecting the slow development of the driving forces of urban expansion described earlier in the paper.

For the period 1990-2000 I have relied on a data set developed by Jones (See Jones 2002; 2006). In terms of the understanding of the spatial structure of the MUR the terms used by Mc Gee in the 1995 mega urban analysis, City, Metropolitan and EMR rings can be roughly equated with the terms core, inner zone and outer zone used by Jones. It should be stressed again that the Mc Gee data set because it is functionally derived creates outer zones that are much larger. Thus for example in 1990, the date at which the two data sets overlap the population assigned to the outer ring by Mc Gee is substantially larger. For example, in the Mc Gee data set the outer ring of Jakarta had a population of 4.8 million in 1990 compared to the figure of 3.4 million in Jones. (2006) The figures for the core and inner zones are much closer.

However, because Jones analysis is much more rigorously derived based on demographic criteria such as population density and percent employment in agriculture I have used this data for the decade of the 1990's

The major findings listed by Jones (2006) are as follows:

1. All the selected MURs increased their populations in the decade of the 1990s to make three of them among the largest urban agglomeration in the world With the exception of Ho Chi Minh all have experienced a slowing of population growth in the core areas but still retain very high population densities (Table 3)

21

Table 3. Basic data on Selected Southeast Asian MURS 1990-2000

	Area(skm)	Population (000s)		Density (pskm)	
		1990	2000	1990	2000
Jakarta					
Core	662	8,223	8,347	12,421	12,610
Inner Z	2,374	5,434	9,435	2,289	3,975
Outer Z	3,319	3,442	3,407	1,097	1,085
Total	6,175	17,098	21,190	2,769	3,432
Bangkok					
Core	876	5,455	5,876	6,215	6,709
InnerZ	1,907	1,596	2,380	837	1.248
OuterZ	4,465	1,593	2,163	348	472
Total	7,248	8,634	10,419	1,172	1,414
Manila					
Core	663	7,907	9,880	12,551	15,642
Inner Z	3,105	4,183	6,365	6,215	6,709
Outer Z	8,322	3,819	5,368	461	648
Total	12,061	15,909	21,613	1,324	1,641
Ho Chi Minh					
Core	170	2,320	3,230	13,647	18,841
InnerZ	617	904	1,078	1,465	1,747
OuterZ	1,308	700	756	535	578
Total	2,095	3,924	5,037	1,873	2.404

Source. Jones 2006. Note Ho Chi Minh populations are for 1989 and 1999.

2. The MURs continued to increase their share of their country's population (Table 4)
    that as Jones comments is "contrary to the conclusions reached by some observers
    who have used the population of the officially designated metropolitan area to
    conclude that many mega-cities have passed their period of rapid growth and are
    holding a declining share of national population" (Jones, 2006:262)

Table 4. Share of MURs in national population (%) 1990-2000

	Jakarta	Bangkok	Manila	Ho Chi Minh
1990	9.4	15.8	26.1	5.9
2000	10.0	16.6	28.6	6.4

Source Jones 2006

3. In general the rates of increase the outer zones (inner and outer zones) are greater
    than the core. Higher rates are recorded in the inner zone which represents the peri-
    urban zone and the extension of the built-up areas of the core cities. This is caused
    by out movement of the core population, differential rates of natural increase and
    the in- movement of migrants into outer zones from outside the MUR. (Table 5)

22

Table 5. Selected Southeast MURs. Proportion of population in outer zones; Contribution to total MUR population growth.(%) 1990-2000

	Jakarta	Bangkok	Manila	Ho Chi Minh
1990	51.9	36.9	50.3	40.9
% total MUR Increase	97.9	75.9	65.4	20.7
2000	60.6	43.6	54.3	36.4

Source; Jones 2006

4. All the MURs populations have been growing at rates well above those of the national population. (Table 6)

Table 6. Selected Southeast Asian Countries and MURs. Population Growth Rate (av. Ann.) (%) 1990-2000

%av ann	Jakarta	Bangkok	Manila	Ho Chi Minh
	2.1	1.9	3.1	2.8
	Indonesia	Thailand	Philippines	Vietnam
	1.5	1.4	2.1	1.7

From the point of view of the central argument of this paper the most important findings are shown in Table 5. These show the increasing importance of the outer zones in terms of urban growth. This shows that non-core zones are increasing their share of the EMR population although by 2000 only Jakarta and Manila had a majority of their EMR population living in the outer zones. In the case of Bangkok this finding is attributable to the under-bounding of the outer zone that had expanded greatly during the 1990s.

The most important finding of this analysis is that with the exception of Ho Chi Minh MUR is that the outer zones (defined as those zones outside the urban core that fall within the MUR) are growing in population. This trend is particularly marked in outer zones and will certainly continue over the next decades. During this period the population of Southeast Asia is predicted to increase by approximately 37 per cent while the urban population will more than double (107 per cent) and the rural population will remains about the same in size. (UN World Urbanization Prospects 2003) This will involve a shift in the urbanization level from 37 per cent in 2000 to 56 per cent in 2030. Thus, if the spatial trends driven by auto-dependent transport technology of the last few decades were to continue most of the urban growth will be occurring in the urban fringe of Southeast Asian urban areas accounting for an estimated increase of 156 million (75 per cent of all projected urban increase) over the next

30 years. Of course this prediction will be affected by demographic trends in mortality, fertility and migration that have been carefully analyzed by Hugo in a number of publications (Hugo 2003, 2006) which suggest that fertility rates in large urban areas were much lower than those of their countries in the early twenty-first century. There is also some evidence that fertility rates are higher in the fringe areas because of a greater proportion of females in the child-bearing cohorts. His analysis further suggests that migration and urban reclassification may contribute up to 60 per cent of this urban increase during the first decade of the 21st century. If our argument that much of the urban growth will occur in the outer zones of urban areas in Southeast Asia is valid these demographic trends suggest that policy makers will have to devote considerable attention to these areas. While a considerable proportion of that increase will occur in Indonesia, countries such as Vietnam and the Philippines that will reach over 100 million by 2030 will have to absorb a sizeable proportion of their urban populations into outer zones.

PART 4 REPOSITIONING THE DESAKOTA ZONES OF SOUTHEAST ASIAN MUR's

The implications of the proceeding analysis suggest that the "desakota" zones of Southeast Asian MUR's will be a major focus of urban growth in the 21st century. Three points need to be emphasized with respect to this argument. First placing emphasis on the desakota zone does not mean that its interaction with the rest of the urban region should be ignored as development occurs. Thus more precise definitions of the desakota zones as part of an expanding urban fringe will have to be worked out in the case of each MUR. Secondly implicit in this definition is the idea of rural-urban interaction within the eco-system of the MUR. Thirdly, it is important to stress, that unlike administrative divisions, these spatial zones are not frozen in geographic space. City cores are taking over the inner zones of their MURs through boundary expansion and administrative reclassification, as is the case for example with the expansion of the urban boundaries of Hanoi and Ho Chi Minh in 2008.[9] The outer zone is constantly being expanded outwards and the invasion of urban activities often leapfrogs through the rural areas. Thus while the social and economic forces operating in these MUR fringes have some similarities there are often sharp differences between the MURs that reflect the level of economic development, political economy and culture of the countries of which these MURs are part.

This suggests that "desakota" zones of Southeast Asia's mega-urban regions should be a focus of ongoing research that can be used as a basis for policy formulation. For, as we have

argued is this area where the environmental, jurisdictional, social and economic challenges are most marked. It can be further argued that this repositioning of urban policy is made even more urgent because of the vulnerability of many of these mega-urban regions to the effects of global change and fluctuations in global energy, food prices, This emphasis on the repositioning of urban policy needs to be based upon an understanding of the key components of the urban transition in Southeast Asia over the fifty years.

First most MUR's have expanded outwards very rapidly beyond the limits of the city core but this is also a process that is occurring throughout the urban system at the level of secondary cities.

Secondly the pace of development and features of the fringe areas show considerable variation between MURs, which reflect the different eco-systems, land-use practices, and urban and national policies of the various levels of government and the level and pace of integration into the global system.

Thirdly, there are universal driving forces that are leading to the development of these urban fringe zones. Perhaps most important is that this expansion has been driven by transport systems that have encouraged the increasing use of auto-centered transport systems including private motor cars, motor bikes and various forms of public transport such as buses and minibuses. Barter, (1999) have all shown that while most Southeast Asian countries still have lower vehicle/population ratios than the developed countries their ratios have been increasing rapidly. Most countries have embarked on what may be labeled auto-dependent trajectories that will lead to an increase in the number of motor vehicles over the next twenty years. This development will be further reinforced by the growth of national road systems and ongoing mega-urban based policies of freeway development. From the point of view of the earlier argument concerning the forces that create urban regions these auto-centered trends encourage the outward spread of urban activities (residential, work, leisure) in these mega-urban regions. What distinguishes the automobile from most other types of consumer goods is that it requires a great deal of space. These auto-centered activities include "an extensive material infrastructure of roadways, service and repair facilities, storage spaces, and an extensive social infrastructure of elaborate bureaucracies" (Freud and Martin 1999.) The automobile dependent mega-urban region is also supported by a culture of "automobility" that is encouraged by the automobile industry through advertising and the creating the desire

to own automobiles. The development strategy of the more rapidly industrializing countries of Southeast Asia is also supporting this concept of automobility though the fostering of growth of national automobile industries often in joint ventures with foreign companies

Another common feature of this expansion has involved these urban "hinterlands" acting as a resource frontier providing, inputs such as water, food, building materials, labour which for the urban core as well as land to be used for urban activities such as industry, commerce, residential and recreational activities. Atkinson points out that this "functional analysis of cities and their hinterlands focuses attention on resources which significant as a serious issue in ecological sustainability" (Atkinson 1999).

Another common feature is that urban expansion is characterized by extensive land conversion that in the Southeast Asian region ranges from state monopoly over the process (Myanmar) to unregulated private sector conversion." In between these two extremes are situations in which the operation of the private sector is regulated and dual land markets operate, as is the case in Vietnam. (World Bank 2007: 66, Geertman 2007, Leaf 2008) These land conversion practices lead to rapid changes in land-use from agriculture to non-agricultural activities. They may be described as most intense at the local level where the urban landscapes become increasingly fragmented into a mosaic of different land uses. Particularly in the context of urban expansion where there is an ongoing unregulated growth of urban activity in the urban fringes a form of "invisible urbanization" (De Gregorio, et.al 2003) or " urbanization by stealth" is occurring.

This process of urban expansion has also involved an uneven allocation of both government and private capital. The major part of government and private investment has been directed to investments in infrastructure and built environment that is being constructed to facilitate the growth of industry, residential complexes, new towns, freeways, international airports, container ports that are directed to integrating the mega- urban region and making it more attractive to global capital. Much of this investment (public and private) is focused on the core cities and inner zones of the mega-urban regions thus causing contradictory processes of greater involvement of the city cores with global transactions and at the same time separating many parts of the urban fringe from this process.

Finally, in the Southeast Asia context this process of expansion varies greatly according to the ecological features, history and political economy of the local region into which the urban expansion is occurring. Broadly I would suggest in the Southeast Asia there are three types of mega-urban region defined in terms of core- hinterland interaction.

1) Those mega-urban regions in which urban expansion has been primarily into high density rice growing areas characterized by high rural densities such as Bangkok, Manila, Jakarta and Hanoi

2) Those mega-urban regions that were expanding into areas where agriculture was more mixed including the production of non-food crops where population densities were much lower. Examples are Kuala Lumpur, Ho Chi Minh

3) Finally there is the example of the Sijori mega-urban region in which the expansion of the core area has occurred over international boundaries into parts of South Johor (Malaysia) and Batam and Bintang in the Riau Province of Indonesia which ecologically has some similarities to type 2, but has involved international collaboration. (Macleod and Mc Gee 1996)

Thus the processes of urban expansion are developing in diverse ways and the mix of policy challenges that are occurring vary from country to country. However the desakota zones still remain places of intense competition for resources and threats to eco – systems. Thus these outer zones become the very centre of the local – global nexus and the rejigging of regional urban space in which policy interventions are urgently needed.

PART 5 POLICY CHALLENGES OF SOUTHEAST ASIAN URBANIZATION

This preceding discussion of the urban transformation in Southeast Asia raises many policy challenges concerning the most effective way to manage urbanization Despite policy positions that emphasize the importance of smaller urban places in the urban systems it can be argued that the crucial areas for policy formation are the mega-urban regions because of their economic importance and the challenges they pose to sustainability and livability. There are three policy assumptions that underlie my discussion here. First there is a need to recognize that the urban transformation process in the mega-urban regions Southeast Asia poses serious challenges to the eco-systems of these countries and in particular mega-urban regions. Secondly there is a need to accept the fact that urban development is occurring so rapidly that existing management and governance systems are often unable to cope with the problems because of fragmentation of responsibility and limited capacity. Thirdly there is a need to break down prevailing beliefs in rural and urban differences particularly in the mega-urban regions and rethink the spatial categories that they represent.

In the contemporary context of Southeast Asia it would be futile to ignore the fact that it is the mega-urban regions that have become the most important cores of national space. But governments have been slow to understand the nature of these mega-urban regions particularly the new spatial zones of spreading urban activity that we have discussed in Part One

Within Southeast Asia most of the mega-urban regions are located in coastal regions. Even Hanoi and Kuala Lumpur some distance from the coast are linked with the ports that form part of the extended metropolitan region. But in Southeast Asia as we have indicated the historical, ecological and cultural differentiation between mega-urban regions is diverse. It is important in developing policies for mega-urban regions that these takes account of this diversity as well as spatial differentiation between the urban cores and the peri-urban and fringe zones This is important, in part, because it is the margins of the mega-urban regions that will be the focus of most urban-orientated growth absorbing up to 75 per cent of all urban increase over the next decades; in part, because the restructuring of urban cores and their increasing orientation to the global economy is creating fiscal imbalances between the core cities and the margins. The policy solutions for such regions are not easy for unlike the urban cores that are not generally in Southeast Asia governed by a single government the margins are politically fragmented and there are sub-regional variations in the eco-systems that create great difficulty for policy makers. These developments create a complex managerial environment in which a myriad of decisions at the local level come into conflict with the transformative elements of higher level government, business etc resulting in a decisional congestion of management in these fringe areas. (See Figure 5).
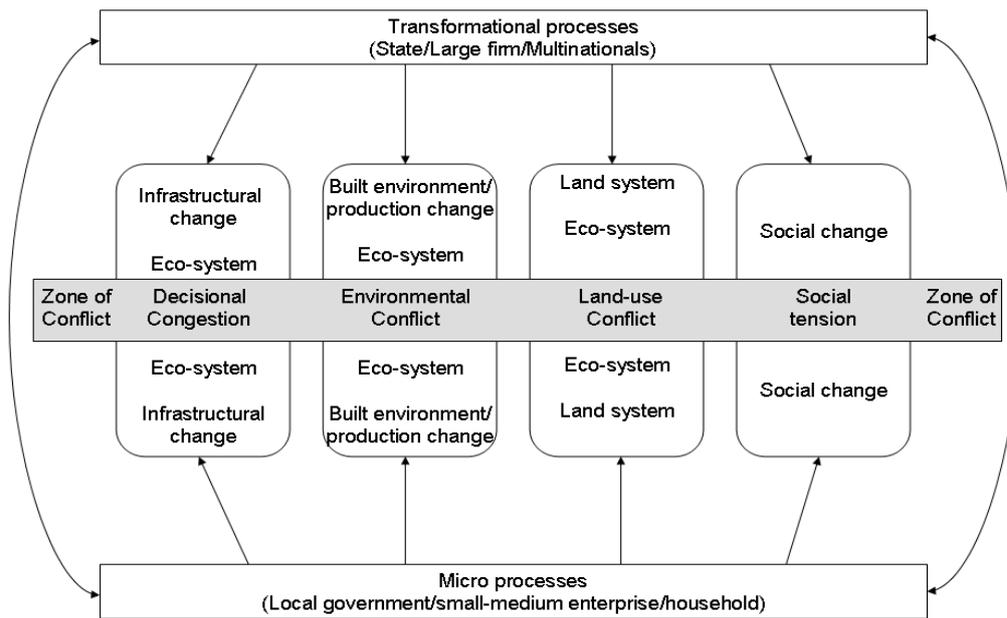
Figure 5: Model of decision processes in outer zones of Southeast Asian MURs

Thus in Southeast Asia the rethinking of the governance policies that this division between the urban margins and the urban cores of mega-urban regions raises is very challenging. Some countries in Southeast Asia have already adopted administrative reorganization strategies. These vary considerably ranging from the establishment of Metropolitan governments with limited control over local political units as is the case in Manila, or administrative expansion that involve the amalgamation of adjacent political units with municipalities that has occurred in Hanoi and is proposed for Ho Chi Minh Municipality in 2008. Such measures enable more centralized urban governance and allow more comprehensive planning and particularly infrastructure and urban development at a much larger spatial level. The advantages of such regional responses can be listed as follows:

(1) Regional responses can enable a more rational allocation of resources.

(2) Regional management can lead to more efficient delivery of services and avoid costly duplication

(3) Regional management must be developed at the level of the eco-system so as to introduce policies of environmental sustainability and reduce environmental problems that preserve the eco-system,

(4) Regional policies can deliver more effective infrastructure services such as water and sewerage and increase the livability of the mega-urban region and

(5) Regional responses need to be devoted to the promotion and marketing of the region so that it can be more attractive to investment and become more competitive.

29

The implementation of these policies involves a fourfold commitment. First at the level of the MUR there must be a twofold interpretation of governance as incorporating the exercise of political will and power within MURs as well as the involvement of civil society. It should be emphasized that the implementation of policies at the level of the mega-urban region does not necessarily involve the creation of new levels of government, as is the case when municipalities are elevated to the status of provinces that has occurred in Vietnam or in the case of Kuala Lumpur which became a Federal territory in 1972. In some cases such as Metropolitan Manila Metropolitan Authority lower levels of urban government have not lost political power, For large urban regions that encompass many political jurisdictions there are various models based upon collaborative arrangements. These can be at the level of various units of political administration (e.g. cities, regional authorities) and are designed to create co-operation in planning to overcome policy challenges These institutional arrangements need not always be made –up of networks of cities but they could also involve sector co-operation within a mega-urban region through regional transportation authorities, regional environmental agencies etc. It also possible to develop policies that develop co-operation at a more local level of two or three cities within a mega-urban region.

Secondly, the management of these mega-urban regions must be directed to ensuring livability and sustainability as well as increasing the economic growth and competitive edge of the region. This must be seen as part of a strategy that enhances the economic attractiveness of the mega-urban region which can be carried out in a multi-layered manner involving all levels of government. Such a vision does not exclude the possibility of city region, public-private partnerships, and government-civil society coalitions being formed. Central to this process will be the ability to develop systems of regional governance that are based upon the collaboration of existing political units and the development of more inclusive systems of governance.[10] Indeed the administrative spread of Southeast Asian cities that we have referred to earlier offers the institutional possibilities to be make flexible and innovative management decisions. This, of course, requires the continuation of the regional visioning of MUR space is beginning to slowly develop in the MURs of Southeast Asia. In this respect Brenner's carefully articulated review of metropolitan regionalism in the USA and Europe has some relevance. He describes metropolitan regionalism as "including all strategies to establish institutions, policies or governance mechanisms at a geographical scale which approximates that of existing socio-economic interdependencies within an urban agglomeration" (Brenner 1999).

Thirdly there must be a commitment to the preservation of the eco-systems of which these EMRs are part. In this discussion I want to emphasize first that the local features of the eco system must be taken into account particularly in Southeast Asia where the diversity of mega-urban eco-systems demands locally- derived responses. The policy implications of regarding the MURs as an integral part of national ecosystems does demand further clarification of the concept. While there are many definitions of eco-systems the simplest is the idea of an eco–system that includes the dynamic interaction between people and the environment mediated through institutional structures. In the simplest iteration of this idea the eco-system provides the resources (water, food energy and land) that provide the necessities of livability. This vision of ecosystems sees large urban regions as functioning as partial eco-systems that are generally supported by biophysical processes from outside the peri-urban and core parts of the urban region Generally these mega-urban regions because they are significant users of energy, material transformation and consumption are more demanding of local and non-local energy systems than non-urban places. These demands can often affect the quality of air, the availability of air, the production of local food, waste disposal and other aspects of the ambient environment and are well documented in the Southeast Asian context. (Greer and Perry eds. 2003)

The crucial part of this approach is to recognize not only the importance of protecting eco-systems as part of policy but to build the concept of "spatiality" into the policy process. In 1995 Mc Gee and Robinson had argued that the central imperative for the large mega-urban regions of Southeast Asia was the need to create a response at a regional level that we discussed earlier in this section. But in the decade since this argument was presented the idea that regional planning can provide some rational response to the policy requirements of MURs has become less popular as neo-liberal thinking of has developed an agenda of deregulation, privatization and decentralization. These neo-liberal ideas have become part of the policy agenda of developing Southeast Asian counties and often made the prerequisite of loans by international agencies. In some cases these agendas clash with the top-down agendas of the modernising states of Southeast Asia and there is a fragmentation of policy responses particularly in the fringe areas of the mega-urban regions of Southeast Asia. Thus policy solutions for the mega-urban regions of Southeast Asia will need some way to combine regional vision that is needed to preserve the ecosystems, sub-regional intervention at the level of the city core, inner and outer margins and contingent solutions at the local level.[10]

Fourthly, as various policies are introduced for mega-urban regions it is important to respond to the issues of vulnerability that are being created by global warming, (De Sherbinen, Schiller and Pulsiper (2007) and what seems likely to be long term increases in the prices of fossil fuel and food prices. As we have already indicated the mega-urban regions of Southeast Asia have been shaped by the ready access to fossil-fuel as the major source of transportation and are becoming increasingly dependent on imported food. Many are also located on low-lying coastal plains that could be vulnerable to projected sea-level rise that is likely to affect the cores cities much more than the urban fringes. The effects of such developments have been already begun to be seen in riots that occurred in Jakarta as a result of increasing oil prices but they have the potential to create even greater social discontent and as the competition for scarce resources increases. One policy response being advocated in developed countries is to plan for higher density cores (compact cities) that that penalize the use of the automobile and develop public transport systems (see Marcotullio 1991) but in the Southeast Asian context many of the mega-urban regions already have high density cores that are well in excess of western cities (where the idea has developed most traction) so that the possibilities for this type of policy response are limited. Some spatial policies have also advocated the development of poly-nucleated form of development in the urban fringes with development of high-density cores in a number of urban nodes within MURs (Robinson 1995), which is also seen as attractive by many Southeast Asian governments such as Malaysia and the Philippines. Another response which would involve efforts to preserve existing eco-systems emphasize increases in the use of alternative energy sources, water conservation and place a major priority on the development of public transportation. Although orthodox planners do not regard it as a viable policy another policy may be to increase the production of food for these mega-urban regions in the outer margins. At least in the case of the densely populated rice growing hinterlands of Manila, Jakarta and Bangkok this would be a return to a historical relationship between these cities and their hinterland that had existed for centuries. But it would also involve a sustained investment in the margins of the mega-urban regions that at present is in conflict with the priorities of creating internationally competitive urban regions. Obviously these policies will have to be embedded in the local context of each mega-urban region but they should contain the following components: (1) effectiveness in contributing to economic growth (2) effectiveness in contributing to local and global sustainability (3) effectiveness in promoting eco-systems approach (4) effectiveness in contributing to social inclusion, increasing employment and

reducing urban poverty (5) effectiveness in producing a livable environment by increasing the provision of services such as health, education, access to housing, care for the old age etc.[11]

CONCLUSION

In this paper I have tried to pose the major challenges that the current growth of mega-urban regions in Southeast Asia present for the future sustainability for Southeast Asian societies. I have been centrally concerned to emphasize the challenges that are posed by the historical evolution of outer zones of these mega-urban regions, the importance of using a multi-scale approach to investigate the processes that have created them and the need spatially deconstruct the internal spatial features of MUR's. In particular I have drawn attention to the importance of the desakota zones in the future growth of these regions and their important role in future urbanization. I have also chosen to downgrade the popular interpretation of "globalization" as the prime determinant in the growth of these urban regions suggesting that local actions at the national, regional and sub-regional scale are of more importance in the formation of urban regions. Finally I have stressed the increasing vulnerability of mega-urban regions to global trends such as global warming and increases in fossil fuel and energy and food prices. The main policy challenges for Southeast Asian governments at all scales will be how to develop locally derived adaptive strategies that create resilient urban regions in the 21st century. This may well lead to mega-urban regions that are internally decentralized and place urban sustainability as major goal. This may also mean that urban spread may assume a different form in which the desakota regions play an increasingly important role as the preservation of the eco-system upon which the entire urban regions relies.

This also returns us to the assertion in the beginning of the paper that we need to rethink the ideas of rural and urban in the 21st century and stress the importance of urban policy taking into various urban scales. Governments and international agencies have policy agendas that are driven by assumptions about rural and urban difference at a macro scale that does not take enough account of the scaler differences between rural and urban, or the increasing inter-mixture of rural and urban activities. For example an important aspect of state developmental policy has been directed to reducing rural poverty. But as rural populations decline in size urban poverty and the complicated dimensions of this phenomenon become more important they will need to focus more on this challenge.[10] Another example is the fact that many environmental agendas are driven by the belief that activities in urban places are the major cause of environmental problems which leads to a vigorous anti – urbanism and a desire to

preserve the rural. A new realization that a new form of rural-urban relationship has developed in the 21st century most implicitly in the desakota zones of Southeast Asia that is central to the sustainability of the bio-systems of these mega-urban regions. This should become a new ideology that replaces the ideas of rural and urban division in the century to come.

Endnotes

1. In fact in 2007 the United Nations estimated that by 2008 the world will reach "an invisible but momentous milestone" For the first time in human history more than half its human population, 3.3 billion people will be living in urban areas" UNFPA (2007): 1

2. See Champion and Hugo (2004) and Montgomery, Stren, Cohen and Reed (2003) for valuable discussions of the breakdown of rural and urban divisions.

3. The Southeast Asian region is made-up of the following countries: Vietnam, Laos, Cambodia, Thailand, Myanmar, Malaysia, Singapore, Indonesia, Brunei, Philippines and Timor Leste.

4. The inclusion of Hong Kong and Southeast Asia is problematic since Hong Kong is now been reincorporated into the PRC in 1997. But historically Hong Kong always played an important role as one of the nodes of the overseas Chinese economic networks. These networks continue until the present day.

5. This section is based on Mc Gee, 1967, 1991, 1997, 2002. Mc Gee and Robinson (1995) and Mc Gee et.al. (2007)

6. The data used in this section is taken from United Nations 2002, 2003 and UNFPA 2007

7. This section is based on Kelly and Mc Gee 2003 and Mc Gee 1967,1991, 1997 and 2002

8. In this section I have concentrated on the demographic features of the spatial growth of MURs of Southeast Asia. For an overview of the economic and social features of these changing MURs see Jones and Douglass 2008 For more specific case studies see, Kelly (2003) Spretzhofer (2002) Gainsborough (2003) Nakagawa (2004) Lysaga (2006) and Waibel (2006) Leaf (2008)

9. We will have to await the results of the next census to find out how the extension of urban boundaries in Hanoi and Ho Chi Minh Metropolitan areas will affect the official levels of urbanization in Vietnam but we do know that in Hanoi's case the annexation of adjacent provinces that was approved on April 1 tripled its land area and increased its population to an estimated 5 million. The June 2008 request to the national government for expansion by Ho Chi Minh City, if approved would incorporate several adjacent provinces and increase the population to between 18-20 million, which would make it the third largest metropolitan region in Southeast Asia. This will lead to a substantial increase in the official urbanization level of Vietnam. Information provided by various Vietnam News Agency Reports in 2008. See <http://Vietnamnews.vnagency.com.vn>

10. For an excellent case study of the challenges of creating collaborative governance in mega-urban regions see Maneepong and Webster (2008)

11. There is an increasing recognition of the need to adopt sustainability as one of the major goals of urban management policy by international agencies. See Asian Development Bank (2008)

REFERENCES

Asian Development Bank (2008) Managing Asian Cities. Asian Development Bank .Manila

Askew, M and Logan W.S. (1994) Cultural Identity and Urban Change in Southeast Asia, Interpretative Essays. Geelong. Deakin University Press.

Atkinson, A.(1999) Principles and Components of Strategic Environmental Planning and Management for the Peri-Urban Interface. Discussion Paper of the Peri-Urban Research Project Team. London. Development Planning Unit. University College. London.

Barter,T. (1999) An International Comparative Perspective on Urban Transport and Urban Form in Pacific Asia: Challenges of Rapid Modernization in Dense Cities. Institute for Sustainability and Technology Policy. Murdoch University. Perth.

Brenner N (1999) Globalization as reterritorialism: the rescaling of urban governance in the European Union. Urban Studies, 36(3): 431-435

Champion, T and Hugo G. (eds.) (2004) New Forms of Urbanization. Beyond the Rural-Urban Dichotomy. Aldershot. Ashgate.

Chan, K.Y. (1993) Review of "The Extended Metropolis: settlement transition in Asia' Urban Geography 14(2): 205-208

Curtis, F. (2004) "Eco-localism and sustainability" Ecological Economics: 83-102

De Gregorio, M, Leisz, S.J. and Vogler, J (2003) "The Invisible Urbanization Transition: Rural Urbanization in the Red River Delta" Paper presented at the 7th International Congress of the Asian Planning Schools Association. Hanoi 12-14 September 2003.

De Sherbinin, A, Schiller, A and Pulsipher A (2007) The vulnerability of global cities to climate hazards. Environment and Urbanization, 19(1): 39-64

Dick, H.W. and Rimmer, P.J (1998) "Beyond the third world city: the new urban geography." Urban Studies (35 (12): 2303-21.

Forbes, D (1997) Metropolis and Megaurban Region in Pacific Asia" Tidschrift voor Economische en Social Geographie 88(5): 457-468

Freud P, Martin G (1999) Driving South. The globalization of auto-consumption and its social organization of space. http://www.montclair.edu/hadish/drivessouthhtml. Accessed 14/09/04

Gainsborough, M. (2003) Changing Political Economy of Vietnam. The Case of Ho Chi Minh City. Routledge.London

Geertman, Stephanie (2007) The Self-Organizing City in Vietnam. Processes of Change and Transformation in Hanoi. Bouwstenen Publicatieburo. Eindhoven.

Gottman, J (1961) Megalopolis: The Urbanized Northeast Seaboard of the United States. The Twentieth Century Fund. New York.

Ginsburg,N., Koppel B. and Mc Gee T.G. (eds.) (1991) The Extended Metropolis. Settlement Transition in Asia" University of Hawaii Press, Honolulu.

Graham, S. (1997) "Cities in a Real Time Age: The Paradigm Challenge of Telecommunications to the Conception and Planning of Urban Space" Environment and Planning. (29): 105-127.

Greer, T and Perry M. (2003) Environment and Natural Resources in Chia, L.S. (ed.) Southeast Asia Transformed. A Geography of Change. Institute of Southeast Asian Studies. Singapore: 143-190

Hebbert, M. (1994) "Sen-biki amidst Desakota: Urban Sprawl and Urban Planning in Japan" in Shapira, P. Masser, I and Edgington D.W. Planning for Cities and Regions in Japan. Liverpool University Press, Liverpool.

Herod, A and Wright, M. (eds) (2002) Geographies of Power: Placing Scale.Oxford. Blackwell.

Hugo, G (2004) Demographic Change and Implications. In Chia, L.S. Southeast Asia Transformed. A Geography of Change. Institute of Southeast Asian Studies. Singapore: 95-142

Hugo G. (2006) Population Development and Urban Outlook for Southeast Asia. In Wong T-C, Shaw B.J. and Goh K.C. (eds.) Challenging Sustainability.Urban Development and Change in Southeast Asia. Marshall Cavendish International. Singapore: 268-298

Jones, G.W (2002) Southeast Asia Urbanization and the Growth of Mega-Urban Regions. Journal of Population Research, 19(2) 119-136.

Jones, G. W (2006) Urbanization in Southeast Asia. In: Wong T-C. Shaw, B.J and Goh K-C. (eds) Challenging Sustainability. Urban Development and Change in Southeast Asia. Singapore. Marshall Cavendish International.; 247-265.

Jones, G.W and Douglass M. (eds.)(2008) The Rise of Mega-Urban Regions in Pacific Asia- Urban Dynamics in a Global Era. Singapore University Press. Singapore

Kelly, P.F. and Mc Gee, T.G. (2003) Changing Spaces: Southeast Asian Urbanization in an era of Volatile Globalization in Chia, L. S. Southeast Asia Transformed. A Geography of Change. Institute of Southeast Asian Studies.Singapore: 257-286

Kelly, P.F. (1997) Globalization.Power and the Politics of Scale in the Philippines" Geoforum.28 (2): 151-171

Kelly P.F. (1998) The Politics of Urban-Rural Relations: Land Use Conversion in the Philippines Environment and Urbanization 10 (1): 35-54

Kelly, P.F. (2000) Landscapes of Globalization.Human Geographies of economic change in the Philippines. London Routledge.

Kelly, P.F. (2003) Urbanization and the Politics of Land in the Manila Region"

Annals of the American Academy of Political and Social Science, 590: 170-187

Kusno, A. (2000) Beyond the postcolonial: Architecture, urban space and political cultures in Indonesia. London. Routledge.

Lampard EE (1965) Historical aspects of urbanization. In: Hauser PM, Schnore LF (eds) The Study of the Urbanization Process. The Free Press Glencoe Illinois

Leaf, M (1994) "The suburbanization of Jakarta: A Concurrence of Economics and Ideology" Third World Planning Review, 16(4): 341-356

Leaf, M. (1996) "Building the Road for the BMW Culture, Vision and the Extended Metropolitan Region of Jakarta" Environment and Planning A 28: 1617-1635.

Leaf, M (2008) "New Urban Frontiers: Periurbanization and (re) territorialization in Southeast Asia. Paper presented to a conference on Urbanization Trends in Southeast Asia. Ho Chi Minh City .Dec 7-9

Lysaga, A.A. (2006) The Manila Mega-Urban Region.In Search of a Model

SERP (Socio-Economic Research Portal for the Philippines. Manila

Macleod, S and Mc Gee, T.G. (1996) The Singapore- Johor-Riau Growth Triangle: An Emerging Extended Metropolitan Region in Lo. F-C and Yeung Y-M (eds) Emerging World Cities in Pacific Asia. Tokyo United Nations University Press.

Mc Gee, T.G. (1967) The Southeast Asian City. A social geography of the primate cities of Southeast Asia. G Bell & Sons. London.

Mc Gee T.G. (1991) The Emergence of Desakota Regions in Asia. Expanding a Hypothesis. In: Ginsburg NJ, Koppel B, Mc Gee TG (eds) The Extended Metropolis. Settlement Transition in Asia. University of Hawaii Press, Honolulu: 3-26

Mc Gee, T.G. (1995a) Metrofitting the Emerging Mega-Urban Regions of ASEAN: An Overview" in T.G. Mc Gee and I.M. Robinson (eds) The Mega-Urban Regions of Southeast Asia. UBC. Press, Vancouver.: 3-26

Mc Gee, T.G. (1995 b) The urban future of Vietnam. Third World Planning Review. (17) 3:353-277

Mc Gee T.G and Robinson (eds)(1995) The Mega-Urban Regions of Southeast Asia. UBC Press, Vancouver.

Mc Gee, T.G. (1997a) Five decades of urbanization in Southeast Asia" Institute of Asia- Pacific Studies. Chinese University of Hong Kong. Hong Kong.

Mc Gee, T.G. (1995) The Urban Future of Vietnam. Third World Planning Review. (17) 3: 253- 267.

Mc Gee, T.G. (1997a) Five decades of urbanization in Southeast Asia" Institute of Asia- Pacific Studies. Chinese University of Hong Kong. Hong Kong.

Mc Gee TG, Watters RF (eds) (1997b) Geographies of the Asia-Pacific Region. Hurst, London

Mc Gee, T.G. (2000) The Urban Future of Vietnam Reconsidered. Ritsumeikan Journal of Geography 12: 1-18

Mc Gee, 2002. Reconstructing the Southeast Asian city in an era of volatile globalization. In Bunnell, T, Drummond, L.B.W and Ho, K.C. "Critical Reflections on Cities in Southeast Asia. Brill/ Times Academic Press. Leiden and Singapore.

Mc Gee, T. G, Lin, G.C.S, Marton, AM, Wang, M.Y, Wu, W. (2007) China's Urban Space. Development under Market Socialism. Routledge, London and New York

Maneepong, C and Webster, D. (2008) "Governance responses to emerging peri-urban issues at the global-local nexus: the case of Ayuthaya, Thailand" International Development and planning Review. 30(2): 133-154

Marcotullio, P.J. (1991) "The compact city, environmental transition theory and Asia- Pacific sustainable development". Paper presented at an International Workshop, " New Approaches to Land Management for Sustainable Urban Regions 29-30th October 1991" Department of Urban Engineering, University of Tokyo.

Marcotullio PJ, Lee YS (2003) Environmental transitions and urban transportation systems. A comparison of Asian and North American Experience. International Development Review. 25(4); 325-354

Montgomery, M.R, Stren, R, Cohen, B and Reed, H.E. Cities Transformed. Demographic Change and the Implications for the Developing World. Earthscan London.

Nakagawa, S. (2004) "Changes in the Residential, Occupational and Gender Structure of Greater Bangkok in the Globalization Process. DELA.21 205-212

Olds K, Dicken P, Kelly P, Kong LE, Yeung HCW (eds) (1999) Globalization and the Asia Pacific: Contested Territories. Routledge, London

Rigg J (2001) More than the Soil. Prentice Hall, Singapore

Rimmer, P. J. (2002) "Overview: Restructuring Chinese Space in the new millennium. Asia Pacific Viewpoint, 43,(1):1-8

Robinson, I.M. "Emerging Spatial Patterns in ASEAN Mega-Urban Regions. Alternative Strategies. In Mc Gee, T.G and Robinson, I.M. The Mega-Urban Regions of Southeast Asia. UBC Press, Vancouver: 78-108

Sassen, S. (1991) The Global City: New York, London, Tokyo. Princeton University Press.Princeton

Santos, M. (1979) The Shared Space.The Two Circuits of the Urban Economy in Underdeveloped Countries. Methuen London.

Scott AJ (ed) (2001) Global City Regions. Trends, Theory, Policy. Oxford University Press, Oxford and New York

Scott JC (1998) Seeing Like a State. How Certain Schemes to Improve the Human Condition Have Failed. Yale University Press, New Haven and London.

Spreitzhofer, G (2002) From Farming to Franchising: Current aspects of transformation in post-crisis Metro-Jakarta" ASIEN, 87(8): 52-64

UN. Department of Economic and Social Affairs. Population Division (2002) World Urbanization Prospects: The 2001 Revision. Data tables and Highlights. United Nations, New York

UN Department of Economic and Department of Social Affairs.Population Division (2004) World Urbanization Prospects. 2003. United Nations. New York

United Nations Population Fund (2007) State of the World Population 2007. United Nations. Unleashing the Potential for Urban Growth. United Nations. New York.

Waibel, M (2006) " The Production of Urban Space in Vietnam's Metropolis in the course of the transition. Internationalization, Polarization and Newly Emerging Lifestyles in Vietnamese Society. TRALOG. A Journal for Planning and Building in the Third World. 89(2): 43-48

Webster, D (2002) " On the Edge: Shaping the Future of Peri-Urban East Asia"

Discussion Paper. The Urban Dynamics of East Asia Project. Asia Pacific Research Center. Stanford University.

Webster D, Cai J, Muller L, Luo B (2003) Emerging Third Stage Peri-urbanization. Functional Specialization in the Hangzhou Peri-Urban Region. Working Paper. Asia Pacific Research Center, Stanford University.

World Bank. (2007) " Special Focus. Sustainable Development in East Asia's Urban Fringe" East Asia Update April 2007. http//siteresources.worldbank.org/INTEAPHALFYEARLYUPDATE/Resources/550192-1175629375/EAP-Update-April 2007-sp-focus.pdf. Accessed 3 August 2008.

Yokohari, M. K., Takeuchi,T., Watanabe, S and Yokota, T. (2000)" Beyond greenbelts and zoning. A new concept for the environment of Asian megacities" Landscape and Urban Planning 47(3/4): 159-171

The United Nations University Institute of Advanced Studies (UNU-IAS) is a global think tank whose mission is "to advance knowledge and promote learning for policy-making to meet the challenges of sustainable development." UNU-IAS undertakes research and postgraduate education to identify and address strategic issues of concern for all humankind, for governments, decision makers and, particularly, for developing countries.

The Institute convenes expertise from disciplines such as economics, law, social and natural sciences to better understand and contribute creative solutions to pressing global concerns, with research focused on the following areas:

• Biodiplomacy
• Sustainable Development Governance
• Science and Technology for Sustainable Societies
• Education for Sustainable Development
• Sustainable Urban Futures
• Traditional Knowledge

UNITED NATIONS UNIVERSITY

UNU-IAS

Institute of Advanced Studies