REGION BASED URBANIZATION IN BANGKOK'S EXTENDED PERIPHERY

by

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ABSTRACT

Bangkok’s expansion and population increase are both causes and consequences of rapid economic transformation and growth. In this light, the study examines the synergic conditions that are operating in the Bangkok region, that define the relationship between economic growth and spatial expansion. What is emerging is a chaotic tapestry of an urban and rural landscape which reflects a bonanza form of development and has accelerated in the last ten years.

Moreover, there is evidence supporting an urban form that is emerging at Bangkok’s edge, extending up to 100 kilometres from the central city, which is neither city nor countryside. It is a settlement system characterised by an intense land use mix, where agriculture, industry, housing, and recreation all inflect upon each other. Within this region there has been a shift of labour from farm to off-farm sectors within the strictly defined rural areas.

The dissertation argues for a new set of definitions to account for an extended urban settlement pattern which is sensitive to the prevailing heterogeneous space economy. The term Region Based Urbanization (RBU) is introduced to describe the phenomena in a region with 14 million people, now known as the Extended Bangkok Metropolitan Region (EBMR).

Aside from affirming RBU as the predominant settlement form in the EBMR, there are three notable conclusions to this study:

(i) Since the mid-nineteenth century diverse and disparate forms of dominant capital have contributed to outer city development.

(ii) As the region diversifies, and further affirms its economic primacy within Thailand there is indication of increasing disparities and uneven development among socio-economic classes.
(iii) There is empirical support to challenge traditional rural-urban transition models. Outer areas of the EBMR, which are defined as 'rural', are not only 'holding' population, but are the destination of a large migration from peripheral regions of the Kingdom.
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PART I

NEW URBAN FORMS IN ASIA

CHAPTER ONE:

INTRODUCTION

February, 1985:

A four day lay over in Bangkok seemed the perfect prelude to a five month research and field trip to Bangladesh. Although it was not my first visit to Thailand it was my first time in Bangkok, and predictably, within a few days I was yearning to escape the overcrowded and polluted city for the countryside. Before leaving Winnipeg, a Thai classmate from the University of Manitoba had offered me his family's address in a village "very near to Bangkok"; it was to be my ticket out of the city. I received directions from dozens of people, figured out the bus routes and schedules, and was set to embark on a journey to meet Songsan's family. After three buses, and a 'songtaew' (small pickup with benches, regarded as a rural mode of conveyance) ride, on a muggy and sultry morning, I landed in a bustling market town and soon realized it was not my intended destination, and moreover, I was told, I was "at least" two districts off. There was no shortage of people to help me get back on track, and within 30 minutes I was in another songtaew headed for another town, where I would catch yet another songtaew to the village. One and half hours maximum, I was told, it would take to reach my location. I made an easy connection at the second town, but it was becoming late in the day, and I was concerned I would reach the village after sunset and not locate the family.

Sure enough dusk had set in when I eventually reached the village. After nearly a full day of travel, I imagined I was much further from Bangkok then the 50 kilometers I had travelled. Perceptually, the tangible landscape was as far from Bangkok as travel allows. The village was a linear assemblage of traditional houses, on stilts, lining a meandering canal. There was a tranquil and nonaggressive attractiveness, in complete contrast to Bangkok's bedlam. To the north and east, endless paddy fields reached the horizons, reminding me that the Central Plain of Thailand in February looked strikingly similar to the Canadian prairies in September. Chickens and ducks scurried about their business, oblivious of a mammoth water buffalo (that nearly stomped them to pulp), being dragged from the fields by an old leather faced man in a tightly wrapped sarong, naked from the waist up except for an intricate and overflowing tattoo on the chest and back. This was the countryside I left Bangkok for this morning!

I approached a small shop near to where the songtaew left me and for a moment watched a group of kids playing with spinning tops. I asked the shopkeeper the location of Songsan's family's home, and was told to have a seat while one of the children was sent to the house to announce my arrival. Within minutes I was regretfully informed that the family was away on business to Khon Khaen. Over a Singha beer I ruminated over the long and exhausting day of travel, (with no payoff), and began to consider the journey back to my hotel in Bangkok. Just then from the same dusty road that my songtaew arrived, appeared a shining silver Toyota LX Minivan. At first, I took little notice of it but thought it seemed out of place in the village; to me it was a vehicle that was more suited to shuttle tourists back and forth from airport to hotel.

The minivan stopped in front of the shop, and as the four passengers climbed out, I watched curiously and intently. First to emerge was a woman, thirtyish, immaculately dressed in what appeared to be a fine Alfred Sung suit, and a pair of expensive Italian pumps. The second passenger was a man, about the same age, dressed equally 'downtown-style' in a tailored suit, crisp windsor knot on his silk tie, carrying a leather attache and a Central Department store bag. The third commuter was younger, probably a teen, dressed in Guess blue jeans, a Miami Dolphins t-shirt (ugh), and Nike high tops. The last passenger to file out was a
woman in a grey skirt with matching jacket and the Thai Military Bank logo below the left lapel. She had in her arms a large rectangular Sanyo stereo box. The minivan then pulled away.

The two women and the Dolphins' booster scurried off towards the village, but the man entered the shop, sat down at a table adjacent to me, and ordered a Momma noodle and Pepsi. "You all work in Bangkok?", I asked as I took my Singha and sat with him. Over the next 20 minutes he explained to me that about 50 residents of the village work in or around Bangkok. He was a corporate executive with Kodak, and is provided with the van and a driver. Other commuters, who work near the Kodak office on Phetchaburi Road pay him a small monthly fee for the 75 minute return trip, six days a week. He had lived all his life in the village, except for four years at Chiang Mai University, and saw no reason to live in Bangkok. His parents owned and cultivated 60 rai of land (30 under paddy, 20 under tapioca, and 10 for a garden).

I wondered if he perceived the unlikely juxtaposition in his life as I did. Perhaps he was too close to notice. Because of the minivan and road network, the city does not have to sprawl to the village, the village can be transported to the city, and at the same time the city sends its quintessence to the village. The city and village are not as detached as I had expected, but are melded in a curious amalgamation. One day, I thought, I would like to explore this theme further. Little did I know then, that this day trip in 1985, was to be the 'seed of the research' for my doctoral dissertation six years later.

The songtaew back to the market town pulled up to the shop. It was now completely dark. I thanked my new friend for the insightful conversation and handed him a picture of Songsan and I ice skating in a hockey arena in Winnipeg. I asked him to pass it on to Songsan's family when they return from Khon Khaen. I climbed into the songtaew and as it sped away I looked over and waved to my friend. He looked down at the picture, then up to me. It was all over his face; he and Songsan, were best friends.
1.1 Goals and Objectives:

The process of urbanization, the result of age old practices and division of labour has endowed Thailand with unique ways of life and diverging land uses. The urban fabric has developed an influence in economics, politics and culture that has induced change not only in the city, but areas nearby. Within the last several decades the New International Division of Labour (NIDL) has augmented the urban process in ways that call for profound revisions of urban theories and even the concepts that have been used to describe the process in Thailand.

Theories of regional growth, development and land use transformation must account for these changes. Theories must go further, and suggest plausible explanations why these changes have occurred, and why at particular times and places. This dissertation will propose an explanatory framework to understand the processes of urbanization that are relevant to Bangkok and its environs. Although this project will focus on the extended urban region of Bangkok it will offer pertinent examples and warnings for other urban regions in Asia, and elsewhere.

Extended urbanization emerges in what is referred to in this dissertation as an extended urban region. This implies a non-agricultural economic and demographic growth process that is occurring as an enlargement and continuation of the growth processes of the primate city. There is a spatial distension of an 'urbanism' contingent upon behavioral social changes, economic transformation, and in many instances, capitalist industrialization.1

Extended urbanization is becoming the norm over much of Asia, and Bangkok is not immune.

Unprecedented change since the end of World War II, particularly in the 1980s, and most notably since the

end of the 1980s, has rapidly restructured the extended Bangkok region into a fragmented collage of land uses and functions.

In this light, the goals and objectives are five fold:

1. to explain why at this time, and in this region of Thailand, extended urbanization emerges.

2. to characterize the landscape of the Bangkok urban region in a graphic and detailed manner, in a way that goes beyond the concrete and visual landscape, and which also accounts for symbolic and abstract representations.

3. to interpret the role of capitalism in the Thai context, as a 'space forming' urban process, and to account for its unprecedented acceleration in the last decade.

4. to account for, and interpret levels of spatial inequality in the growth processes of extended urbanization in the study region.

5. to impart theoretical models of urban growth that rationalize and delineate the processes transpiring in the Bangkok urban region.

2. This goal and objective was not intended to be a central theme of the project. As the work of data collection and analysis progressed it became evident that hidden beneath the vitality of economic growth and rampant industrialization was a comparatively invisible process of pauperization emerging among the agriculture and working class populations. The unevenness of development became an unavoidable and critical theme of this project.
1.2 France: Late 19th Century Outer City Development:

Extended urbanization, in a historical sense, is not without precedent. In fact the larger discourse surrounding the outer city, whether referring to the large urban regions of Asia, or the edge cities of America, have parallel antecedents rooted in 19th century industrial expansion in Europe.\(^3\) At the time, with the industrial revolution in full progress, the outer city was under a transformation not so dissimilar to the processes that will be described in this study. We will begin this dissertation with a look at the environs of Paris in the 1870s and 1880s, through the work of two French artists of the time. There are lessons to be realized from 19th century outer city Paris that are applicable and informative to Bangkok's extended urbanization process. By temporarily focusing on art history as an alternative discipline to geography, there exists an opportunity for fresh and explanatory insight into the forthcoming theoretical rationalization of the Bangkok urban region.

Impressionist painting, particularly early impressionism is a "discovery of a constantly changing phenomenal outdoor world...".\(^4\) Moreover it is an underlying critique of the symbolic social and political formalities of a landscape. As the bourgeois proceeded to build a landscape away from the increasingly polluted and teeming cities of France, particularly Paris, Impressionist artists, such as Claude Monet and George Seurat were able to portray a new landscape in their art, "in which the environs of Paris are recognized to be a specific form of life: not the countryside, not the city, not a degenerated form of either."\(^5\) What emerged, as an early

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The movement in French painting, originating in the 1860s, was named for one of Claude Monet's pictures -Soleil levant, or Impressionism (in English) that was displayed at an 1874 exhibition. Aesthetically, Impressionism is known for its concern with fleeting effects of light and motion, its disregard of outlines, and distaste for gloomy and somber colors. The subject matter is normally open air landscapes. The movement's impact in art has been extraordinary, in that virtually all development in 20th century art is traceable to its principles. Two important readings are: Rewald, J. (1973) THE HISTORY OF IMPRESSIONISM, NY: NY Graphic Society., and Pool, P. (1979) IMPRESSIONISM, Toronto: Oxford University Press.
Monet's work suggests productivity at economies of scale. It speaks to a highly developed and prolific industrial economy on the periphery of Paris. The dominance and strength of the railway in this painting may be a metaphor for a rapidly developing transportation system. It is clear that the factories are producing for more then local markets. Circulation of commodities (and presumably capital, people, ideas, technology, etc..) is implied in this painting, and moreover, there is the insinuation that the outer city has taken on a regional significance as a centre of capitalist enterprise. This location is recognized, perhaps less as an outer city 'nature' landscape, as an outer city 'production' landscape. A final observation is the three people in the lower centre of the canvas, strolling towards the town, frivolously twirling parasols. As in Seurat's work, there is a casual and composed attitude emanating from the three figures. There is a sense of aloof consent and indifference towards the contradictions of the landscape.

Plate 1.3, "Une Baignade à Asnières" (in English; A Swim at Asnieres), 1883-1884, by Seurat plays on another outer city theme, that being the juxtaposition of production and recreation. Visitors from Paris, on a weekend "outing" are attempting to escape the congestion and pollution of the city. The irony is that the subjects appear oblivious to the belching smoke from factory chimneys behind them. A second theme portrayed by Une Baignade à Asnières, is the sense that the undeveloped or 'natural' spaces of the outer city has been claimed by the city. The countryside was being made part of Paris, for its parks, greenery, and clean air. Even industrial Argenteuil was overrun by weekend pleasure seekers. The appropriation of outer city space by the city is consistent with the true spirit of urban bias. Residents of the city are the recipients, and local residents, particularly farmers, are the benefactors.

9. Up until 1878, Monet lived in Argenteuil, a small town 25 kilometres west of Paris, along the Seine River, (or 15 kilometres as the crow flies northwest of the Cathedral de Notre Dame). Clark (ibid, pg.186) describes Argenteuil as "a factory, with nature produced as its best commodity." Through the 1860s and 1870s, Argenteuil became increasingly industrial. By the early decades of the 20th century it was an industrial and transportation suburb of Paris. Monet lived in Argenteuil from 1871 to 1878, and the rapidly changing landscape was the inspiration for his series of outer city paintings, including Le Convoi du Chemin de Fer.

10. The term "outing" came about only in the 1860s to describe outer city day trips. Clark (ibid, pg.198) writes, "the word (outing) and the activity were suddenly indispensable." The term in the 1990s takes on a new meaning. It refers to gay people who reveal their sexuality.
PLATE 1.1 Personnage assis étude pour Une Baignade à Asnières
PLATE 1.2 Le Convoy du Chemin de fer
PLATE 1.3 Une Baignade à Asnières
The ironies and inconsistencies in all three paintings are in fact the existent realities of outer city metamorphosis. Clark alludes to the indetermination of classifying the landscape:

This landscape can not fairly be described as suburban, for there is too much space still remaining between the weekend retreats; but it can hardly be called countryside, in Monet's terms. It is too empty to deserve the name; too ragged and indiscriminate, lacking in incident and demarcation apart from that provided by the houses (which does not amount to much); too formless, too perfunctory and bleak. These negatives add up, it seems to me, to a specific kind of composition, one appropriate to the things in hand: they are Monet's way of giving form to the elusiveness of Argenteuil's surroundings, their slow dissolution into something else.

Monet's textualization of landscape through art offers an insightful discourse of interpretation. In the environs of 19th century Paris and in the late 20th century Bangkok, the very elusive formlessness and lack of identity and demarcation that Monet focuses on are the essence of defining the landscape. It is not a city, and should not be measured against one. Certain political and economic forces coalesced under a particular set of ecological and historical preconditions to give rise to a distinctive settlement. In the Bangkok outer city, it is an 'urban' region, but certainly not a city. In the Paris region, perhaps due to the lack of residential development, there is a resistance to use the term urban. Notwithstanding, it is clearly neither city nor countryside. There is no attempt to suggest a rigid analogy between Bangkok and Paris; however, despite profoundly dissimilar environments and histories, salient resemblances in the morphology (at different times; in different centuries) should not be ignored.

An interesting parallel between the (outer city) Impressionists and many academics currently writing on the large Asian urban regions is the political critique of industrial capitalism. Specifically, the environmental degradation, appropriation of agricultural land, and class conflict are dealt with by both sets of commentators. These critiques and explanations will be expounded upon throughout the dissertation.

1.3 The New Regional Geography:

A distinguishing characteristic of the Bangkok urban region is rapid and continuing change. The resulting chaotic tapestry of rural and urban landscape is emerging so rapidly that conventional means of urban analysis such as land use mapping are out-dated before they are even completed. After several visits to field sites I realized it was inconceivable to collect even reasonable land use data. Any published document concerning the region was at least partially dated before it even went to print. Village headmen and district officers were often not up to date on new projects and other similar land use changes in their jurisdiction. Planners and academics in Bangkok were even further outdated with their information regarding the changes to the landscape. Similarly, business leaders and industrial managers were unable to keep their information current. The 1990 census data from the National Statistics Office (NSO) was only partly released in 1993, rendering it largely historical information. Generally, tangible published data was not the most effective way to interpret the Bangkok urban region.

Another consequence of the changing quality of the data was that not all topics could be covered, and those that are dealt with are not always covered completely. The major effort of the thesis is to attempt to capture the elusive synthesis of the changing landscape of the Bangkok region. This has certainly not been attempted before, perhaps because of its intrinsic difficulty.

In this light I chose Rapid Rural Appraisal (RRA) as a methodology. It is applicable to a rapidly transforming region as it is multidisciplinary, based on triangulation, and 'fast' and responsive systems of data collection. It is a technique that involves selective field checking of maps and statistical data whenever possible, considering time and money limitations. RRA is explained in detail in Appendix I, and in Appendix II is a record of all fieldwork interviews and visits to field sites.
Another aspect of the technique of RRA involves gaining familiarity with the region under investigation. As part of this research, I spent 13 months travelling through the Bangkok urban region using public transport, and any form of conveyance that was available. This enabled me to develop a sense of how various processes acting on Bangkok's periphery were spatially differentiated through the region.

Throughout the research period, 'fieldwork' was the fundamental tool for discovering the economic, social, and cultural bedrock of the Bangkok urban region. I travelled thousands of kilometres throughout the region visiting numerous villages, towns, industrial estates, farms, factories, and temples. More importantly, I met and spoke with hundreds of residents of the study region; from aquaculturalists to factory workers, district officers to nomadic duck herders. Fieldwork was the hallmark of this research. and it would be apt to state, that rather than studying people, I was learning from them (see Appendix I for Research Plan and Methods).

The local printed media also proved to be a valuable asset for data collection. Not only were media obviously the most current source of information, but journalists and news gatherers working for both Thai language and English daily newspapers possessed a refreshing sensitivity to the outer city landscape. Through the media as well, advertising and promotional literature were significant methods to obtain information. For example, the only way to learn of a new golf course being developed in a small district west of Bangkok was often by reading promotional advertising literature selling memberships. 12

The swift pace of transformation in the urban regions, and the tenuous quality of current data has induced, and is reflected in, a trend in geography to move away from regional quantification, and a move to understanding the sense or symbolism of place. It returns to the geographer a credibility that may have been

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lost with the problems of sampling and the lack of reliable data. Also, it creates a need to pursue the less tangible images on the landscape, which is part of a fundamental shift taking place in regional geography.\textsuperscript{13}

There is an assumption in the discipline that the world is more homogenous, and that the process of modernization has activated a convergence of lifestyles. Regional differences are said to be fading, which in some ways explains the end of "chorology\textsuperscript{14}" as a foundation for practicing geography. The 'new' regional geography, or what Thrift called "reconstructed" regional geography\textsuperscript{15} posits that regional diversity could not be seen as vanishing, as society is in constant transformation and reconstruction. It is the persistence of transformation of landscape that nurtures the recent developments in regional geography.

An important feature distinguishing traditional regional geography from the new regional geography is the way space is observed. Sauer's regional geography, for example, was based on the virtue of observable material elements.\textsuperscript{16} In contrast, the new regional geography focuses on the less physical and material landscape; symbols, social relations, class, power, perception of nature, and adaptation to nature. Moreover, description of landscape is being supplanted by the need to describe processes behind the production or formation of the landscape. The shift from observation to 'formation' is described by Massey, (as cited in Pudup, 1988):

> It is important to get away from discussions of apparently simple 'objects', and to conceptualize processes and relations. Objects are not simply given to analysis, but are themselves products, and must be conceptualized in such a way as to incorporate, not just


\textsuperscript{14} Chorology is the study of areal differentiation. The term is often attributed to Varenius, the 17th century German geographer, who in his renown work entitled "Geographia", introduced formalized regional geography, which was synonymous with chorology. See Sack, R.D. (1974) "Chorology and Spatial Analysis", ANNALS ASSOCIATION OF AMERICAN GEOGRAPHERS, vol.64, pg.439-452.


their descriptive characteristics, but also the process of their production, the larger dynamic of which they are part.\footnote{17}

The new regional geography, with an indiscriminating scale, focuses on the inflection of the global on the local. In the study region the diverse forces emanating from TNCs, the Thai state, and local capital have contributed a vitality and dynamic change at the local level. Decisions being made in Tokyo and Singapore have epochal impact on villagers and factory workers in the extended Bangkok region. Localities in the region are being transformed by exogenous processes such as intra-regional and international trade, foreign direct investment (FDI), global banking surges, and strategic alliances with offshore high-technology corporations. Case studies in Chapter 8 focus on this new regionalism in geography. The new regional geography is an ontological base of this project.

1.4 The Extended Bangkok Metropolitan Region:

The focus of this dissertation will be the Extended Bangkok Metropolitan Region (EBMR) consisting of the Bangkok Metropolitan Administration (BMA) and thirteen adjacent provinces; five in the inner ring and eight in the outer ring. The region is loosely contained in a circle 100 kilometers around the center of Bangkok (Greenberg, 1989), covering approximately 54,000 square kilometers, one tenth of the total land area of the whole kingdom, roughly the size of Nova Scotia (see Figures 1.1-1.5).\footnote{18} This is the most rapidly urbanizing region of Thailand measured by such indices as increasing levels of urbanization, growth of non-agricultural labour force, and growth of non-agricultural economic activity.


\footnote{18. Throughout the dissertation, maps that are unsourced have been generated with information off Government of Thailand maps, at various scales. I am grateful to Andrew Marton for an earlier draft of Figure 8.7.
Figure 1.1: Southeast Asia.
Figure 1.2

Bangkok’s
Ring of Access

Scale:

0 250km

Southeast Asia
Thailand
Figure 1.3: Thailand and the E.B.M.R.
It is important to describe the region by *changwat*, and establish a range and demarcation.\(^{19}\) The inner ring *changwats*, Samut Prakan, Pathum Thani, Nakhon Pathom, Samut Sakhon, and Nonthaburi, with Bangkok (BMA) are collectively referred to as the Bangkok Metropolitan Region (BMR). The outer ring *changwats* of Ayutthaya, Chachoengsao, Chonburi, Samut Songkram, Ratchaburi, Kanchanaburi, Saraburi, and Suphanburi combined with the BMR comprise the EBMR.\(^{20}\)

Industry is highly concentrated in the inner ring, and dispersed throughout the outer ring, particularly along the east coast. Also, it is important to note that industrial locations are not necessarily near large urban areas; a reflection of a region based urbanization. Aside from Bangkok, the EBMR has only 6 cities with over 50,000 people; Nonthaburi, Samut Prakan, Saraburi, Pattaya, Ayutthaya, and Samut Sakhon. There are also two sanitary districts, which by official definition are not 'urban', however both Pak Ret and Phra Phadeng have over 100,000 people (see Chapter 2).\(^{21}\)

Table 1.1 highlights some economic and demographic data of the EBMR. There are several points of importance. The 'official' population (1990) of 12.7 million\(^{22}\) is an underestimation. There are hundreds of thousands of workers, some seasonal, many children, that are not included in surveys, or the national

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19. *Changwats* are the principle administrative division in Thailand, comparable to a state or province. There are 72 in Thailand. The capital region, or BMA is not considered one.

20. An argument can be sustained for including several other *changwats* in the EBMR. For example some areas of Phetchaburi, Prachinburi, Nakhon Nayok and Ang Thong may fall within the 100 kilometer ring of Bangkok. At the same time parts of EBMR changwats included in the study are outside the ring. The most notable example is Chonburi's Eastern Seaboard which is 125 kilometers from Bangkok. The National Economic and Social Development Board (NESDB) appears to consider the EBMR as only the BMR and the three *changwats* of Chachoengsao, Ayutthaya, and Chonburi. They do confess that a handful of adjacent changwats could just as well be included. See National Economic and Social Development Board (1991) National Urban Development Policy Framework, Recommended Development Strategies and Investment Programs for the Seventh Plan (1992-1996), pg.iii. It is important to realize that the EBMR is a new and arbitrary region (creation) without definite boundaries. Although this study includes thirteen *changwats*, analysis will be limited to inner ring regions of the EBMR, in particular Samut Prakan, Pathum Thani, and the eastern outskirt of the BMA. It is beyond the scope of this study to cover all 'possible' areas (eastern, western and Central Plain) that could justifiably be included in an EBMR region.

21. Also, the primacy of the region in Thailand is apparent, when considering that the inner ring alone now accounts for 50 per cent of national GDP and 77 per cent of manufacturing output, ibid.

census. The statistical yearbooks use registration data that are incomplete. Further, there are reputed to be many informal unregistered economic activities, such as prostitution and contract labour, that do not report, or accurately account for their workers. A universal shortcoming of national census data is its tendency to

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<table>
<thead>
<tr>
<th></th>
<th>Area (sq. km)</th>
<th>Pop. density (1990)</th>
<th>Pop. (000's) 1981</th>
<th>Pop. (000's) 1990</th>
<th>Pop. growth % / annum 1981-90</th>
<th>Per Capita GDP 1981 (Baih)</th>
<th>Per Capita GDP 1986 (Baih)</th>
<th>GDP Growth % / annum 1981-86</th>
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<td>404</td>
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<td>48302000</td>
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</tr>
</tbody>
</table>

Source: JICA (1990a).
Thailand Government (1990) Population and Housing Census, NSO.

Note: In 1993 approximately 25 Baht equals 1 U.S. Dollar.
over-count village population and under-count urban population. In industrial zones of the EBMR, workers from peripheral regions of the Kingdom are not always counted as local residents, yet their permanency can be measured in years.

It is also of critical importance to the theme of this dissertation to note that both Gross Domestic Product (GDP) and population grow quicker in the EBMR then in the Kingdom as a whole. Thus, primacy of the larger region continues to increase at the same time the actual primacy of the more spatially constrained Bangkok (BMA) is declining; the GDP and population are increasing at a decreasing rate, a clear confirmation of the rise of the 'region', (as opposed to the city). This is covered in more detail later in this thesis.

1.5 Outline of the Dissertation:

This study is presented in four parts covering 10 chapters. In Part I, entitled, New Urban Forms in Asia, aside from this Chapter (1), Chapter 2, is a literature review of current urban models and theories, with an emphasis on the recent body of literature dealing with extended metropolitan development. Although this Chapter is largely a review it can not avoid raising some new questions and proposing a rationality to abandon old thinking, particularly that 'urban' is a tightly settled and organized morphology.

23. An example of the type of errors that can occur in counting population in certain areas of Thailand was told to me by a western scholar who has worked in Thailand for many years. A small district in the inner ring, according to the statistical yearbook had an absurdly large population. A ground check confirmed that there was only a fraction of the reported number of people. The problem, eventually solved, was that a hospital in the area registered all new births as residents of that district, (personal communication, D. Kammier, July, 1991).
Part II, entitled The EBMR: History and Present Conditions, begins with Chapter 3 which presents a sketch of the synergic conditions that interplay, in terms of the region's history and geography. In particular this chapter highlights the role of various rounds of dominant capital in shaping the urban landscape.

Chapter 4 presents a tripartition of factors acting as a base of change. Firstly, economic change in the region is described, with emphasis on data derived from the five national censuses since the end of World War II; 1947, and the preceding four decennial censuses (1960, 1970, 1980, and 1990). The second and third factors are population and transportation. This is a rich empirical chapter emphasizing the tidal movements of change involved in reshaping the outer city landscape.

Part III, Revolution in the Outer Fringe landscape: 1986-1991, contains four chapters. Chapter 5 examines the larger process of land use metamorphose in terms of factors of change, and in particular land values. Chapters 6 and 7 describes forms that are emerging on the new landscape; industry, agriculture, housing, and recreation. Generally it sketches the diverse consumption of space in terms of activities. Chapter 8 contains two regional case studies, which balance the empirical thrust of the preceding two chapters. It establishes the density of activities in two outer city regions.

Part IV, Conclusions, begins with Chapter 9, explaining the role of the various brands of capitalism operating in the EBMR. In this chapter a greater understanding is gained of the prominent impact capitalism has on shaping the landscape.

Finally, Chapter 10 comes to a resolution on the direction urban geography must follow in the future, which is sensitive to understanding settlement systems within large extended urban regions. The chapter concludes with seven pertinent questions that act as both a summary of the dissertation, and a mandate for further research.
CHAPTER TWO:

REVIEW OF URBAN THEORY: FOCUS ON MEGA-URBANIZATION

Increasingly, in the market economies of developing countries\(^1\), urban and rural transformations should be seen as products of structural change in society, instead of processes in themselves. The two terms (urban and rural) must be analyzed simultaneously in order to appreciate significant transition and change. When an economic system is under the domination of capitalism, the landscape, articulating industry and agriculture, become fused and linked; the distinctions are reduced.\(^2\) Moreover, when commercial enterprises become widespread in a relatively rapid time period, as is the case in the Central Plain of Thailand, the social and economic landscapes take on an urban facade without the morphological attributes of a city. The blurring of rural and urban boundaries become an obvious characteristic of the settlement system.

The spatial imprint of capitalism in Thailand, more specifically, late flexible capitalism\(^3\) reduces the traditional divide between rural and urban, yet it has been this division which has acted as the basis of settlement planning strategies since early industrial periods in almost all societies. As Koppell points out, the two processes - urban change and rural change - have been largely studied autonomously, "but (they are)

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1. Market economies are characterized by the domination of three main capitalist groups: the local state, global capitalists (TNCs), and local capitalists.


3. Flexible capitalism (or flexible accumulation/production) is a production regime that is argued by Harvey (1989) to have followed 'fordism'. Employers exercise enhanced powers of mobility and flexibility, resulting in increased levels of labour control on a workforce that remains largely unskilled and impermanent. See Harvey, David (1989) THE CONDITION OF POST MODERNITY, Cambridge: Blackwell, pg.147. Harvey (1989) describes flexible accumulation as follows:

It rests on flexibility with respect to labour processes, labour markets, products and patterns of consumption. It is characterized by the emergence of entirely new sectors of production, new ways of providing financial services, new markets, and above all, greatly intensified rates of commercial technological and organizational innovation.
tacitly recognized to be linked if not always correlated". But when urban-like ecologies spring up throughout the countryside, industrial modes of production permeate villages and distinctly 'rural' regions, and when nearly an entire cohort of a young non-urban population find their employment in non-agricultural activities, we must join Koppel in asking, "does a rural-urban appellation offer the most incisive appreciation of what is going on?"

Nearly 125 years ago, Marx (1867) wrote the following:

> The irrational old fashioned methods of agriculture are replaced by scientific ones. Capitalist production completely tears asunder the old union which held together agriculture and manufacturing in their infancy. But at the same time it creates the material conditions for a higher synthesis in the future.

This prediction underpins the process whereby the changing market economy will eventually lead to new settlement hierarchies. Urban-rural fusion as a process, has occurred in the west in varying forms and degrees. Referring to the USA, Lang (1986) states, "the apparent characteristics that distinguished urban from rural in earlier times have either largely disappeared or have become more difficult to identify and measure." Taking this point further, Oberlander (1989), referring to Canada said, "The dichotomy which is sometimes assumed between rural and urban is no longer there. Canada today is 22 million urban people, regardless of where they live." This is not to suggest, Thailand, for example, is 60 million urban people,


5. Ibid, pg.49.


but official statistics of urban population are dramatically underestimated. Certainly, living in a city is not the only qualification for urbanization, and 'city' is not the only settlement form to be labelled 'urban'.

Although, the dichotomy is beginning to be dismantled, one place where it persists is in urban transition theory. The process of rural-urban migration seems to be generally accepted as a precondition for modernization and development. Urbanization and industrialization are often synonymous terms, where economic development is closely associated, and in fact often defined in terms of the movement of labour from rural to urban areas. It has been generally understood that the rural sector is dominated by agricultural activities, and the urban sector focused on industrialization. This has led to an assumption that economic development occurs by the gradual reallocation of labour away from agriculture and into industry through rural-urban migration. The urban transition model, then, endorses an analogous association of urbanization and industrialization. Furthermore, there exists a presumption of a rigid settlement dualism; rural and urban.

Here it is argued the validity of this dualistic perspective, needs to be challenged and critiqued in light of extended and mega-urbanization. This chapter, using two common discourses of urban theory, the urban transition model and the settlement dichotomy, will embrace a new direction for inquiry in urban development, a finer conceptualization of Asian urbanization, specifically a working theoretical application for Thailand's urban framework. A new frontier of urban morphology that will act as a framework is here called Region Based Urbanization (RBU), an extended urban form that includes surrounding regions of a city core, that have taken on many characteristics without all the features of a core city's morphology.

Knox (1990) believes that outer-city urbanization is an area of urban geography that is under-represented in the literature. "The cupboard is bare", he writes, yet the significance of, "these changes amount to nothing less than a new urban geography." Clearly, a settlement transition is emerging which reflects the new

9. According to the 1990 Population and Housing Census the official level of urbanization in Thailand was 18.7 percent.

forms of industrialization located in traditional rural districts adjoining large city regions that are now common throughout Association of Southeast Asian Nations (ASEAN) countries, and particularly in Thailand. This chapter will first review the urban transition model, then examine the settlement dichotomy. Following a critique of both models, an innovative approach will be suggested centered around RBU.

2.1 Rural-Urban Shift and Urban Transition Models:

Rural to urban migration was an expected, almost timeless, universal movement. It was a widespread phenomenon in developed countries, and a process either occurring or eventually to occur in the post-colonial world. There is debate over its timing and extent, but it is generally recognized as an inevitable process. A voluminous amount of literature has been published on this phenomena, and several good reviews of the literature are available.11

The conceptual model of internal migration, presented by Lee (1966), focused on migration decision making and influences effecting the decisions.12 Generally, Lee argued that in every region there are a number of factors acting to repel movement, as well certain factors act as an adducement to possible migrants. These


two polarized set of elements may be thought of as "push" and "pull" forces. The multifarious range of factors can be reduced to four categories.

*Origin factors* are the "push" forces, such as rural poverty that have acted as a universal cornerstone for rural-urban migration. *Destination factors*, such as the 'bright lights' of the city are obviously an example of a "pull" force, drawing migrants into an act of migration. The third factor, *intervening obstacles* are forces that divert or prolong a rural to urban migration. Distance is the most common obstacle. Finally, *personal factors*, such as class, ethnicity, and education are further considerations determining migration.

Economic models are also commonly used to explain rural-urban migration. The most prevalent of this genre is *Todaro's expected income model*, which attempted to address the seemingly paradoxical act of migrating to a city with few jobs or economic opportunities. He hypothesized that internal migration is decided upon by perceptions in the value of expected earnings, as opposed to certain or actual income. The model still stands as an important contribution to migration theory, but is essentially urban biased and orientated, and does not address the determinants of rural income, nor the social system of the rural area.

A second economic model, more workable in mega-urbanization situations, is the *inter-sectoral linkage model*. Hirschman (1958), Mellor (1976), and others argued that by concentrating on the linkages and flows between cities and the rural areas, a more comprehensive grasp of rural-urban migration may be achieved. An extensive series of backward and forward linkages interconnect the city and village. The industrialization of the countryside and agri-business are two processes that stimulate interaction through communication and transportation. Within this highly integrated model, rural incomes are expected to rise creating a proliferation in rural consumption and a subsequent increase in urban production. Newly created employment opportunities in the city will induce rural-urban migration.


These models and the many others attempting to explain rural-urban migration share the same overriding characteristic of categorizing settlement systems into either rural or urban; an unwarranted dichotomization of settlement. Urban transition theories as well, are infamous for not acknowledging an intermediate settlement, distinctly separate from city and village. However, RBU and Mega-urbanization models can play a role in rectifying this shortcoming.

The shift of population from rural to urban areas is effected by a plethora of factors. Hence, the urban transition model seeks to delineate a paradigm for population movement to cities. Since western nations experienced a rural-urban transition in the late nineteenth and early twentieth century, it provides a convenient backdrop from which to draw from for the post colonial countries. However, it is this appropriation which activates contention and discrepancy. Reissman (1964) has analyzed urbanization in post colonial countries as a replication, albeit, in a more concentrated and uneven form, of the urbanization experiences of the European nations a century ago. He states:

...that industrial urban development in the west and in the underdeveloped countries today is the same process although greatly separated in time and space.  

Reissman creates a typology of change reflected in stages through which a society passes. He included industrial development, urban growth, and nationalism; all accurate representations of Europe's transition. However, is post colonial urban transition merely a repeat of Europe at a different time and space?

McGee (1967) developed the position that the Post Colonial countries would not experience a 'true' urban revolution in the same milieu as western countries. He coined the term "psuedo-urbanization" to describe the

At the time, Post Colonial countries were economically orientated to the export of primary commodities, and the import of finished manufactured goods, suggesting the unlikely chance of developing a vibrant industrial base, as was the case that contributed to urban growth in the west.\(^\text{17}\)

The settlement revolution was ill-timed. It did not occur as a response to the growth of urban employment opportunities as in the European experience, where industrial revolution technology was still relatively innovative and at the pioneering stages of development. In the Post Colonial countries, expansion of the manufacturing sector lagged behind urban growth, and the limited investment in manufacturing that did occur tended to be capital rather than labour intensive. The early urban transition of the European model of economic growth was labour intensive, providing abundant opportunities for factory employment. Roberts (1978) describes the need for labour in nineteenth century Britain:

\[
\text{England had developed a substantial network of small but thriving market centers. Some of these were already centers of important manufacturing activity carried out by rural migrants who were now spinners and weavers. Particular attention was drawn to the greatest industrial region in the area forty miles around Manchester as one of the greatest industrial regions of the day.}^{18}\]

Moreover, industrial employment in Europe was the base of a much wider market than has been available to countries that urbanized subsequently. This macro growth financed more investment and industry which in turn absorbed more rural labour. A similar precondition has not greeted urban migrants in the Post Colonial economies, resulting in an inflated informal economy.

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17. This resulted in a proliferating informal economy, particularly within the service sector. McGee later referred to this as "urban involution". Some scholars believe this to be the nourishment needed for a revolutionary force. See de Sota, Hernando, (1987) THE OTHER PATH: THE INVISIBLE REVOLUTION IN THE THIRD WORLD New York: Harper and Row.

While rapid economic development coincided with urban transition in Europe, the Post Colonial countries in contrast, experienced a more hurried pace of urban growth, even in countries with low levels of development, such as South Asian and central African nations.  

In other words, accelerated urbanization began in the west only as part of a process of rapid industrial and economic growth according to the conventional models. Yet, urban growth in the Post Colonial countries has taken place at much earlier stages of economic development and now involves a much greater population at a faster rate. Finally, the safety valve of emigration that characterized late 19th century Europe does not exist for most Post Colonial societies.

Returning to Hirschman-Mellor Rostowian urban economic growth theories, within an urban transition framework, a much heard critique was levelled by a school of theorists known as the Dependistas. The criticism was most eloquently forwarded by Frank (1967), using a neo-marxist approach, who attacked diffusionist growth theories that relied on the city as being the leading sector of economic growth and a source of social change. The position essentially maintains that decay is ultimately rooted in industrial capitalism, hence, urban centres are not a stimulus for development. Foreign and industrial capital (and technology) tended to concentrate in a few urban based sectors rendering an inequitable income distribution. Within this view, the western experience will not be repeated. The city is thus, parasitical on the populations in the periphery, as well as on the "urban-peasants" outside of, or marginalized by the urban capitalist mode of production.


Interestingly, the Rostowian camp of development theorists enjoyed a resurgence in the late 1970's (and later). This coincided with the popular school of urban economic thought that emerged to defend World Bank-international monetized development and export orientated industry. The argument states that ideally, offshore and state capital are brought together to develop indigenous entrepreneurial activities, and the 'tigers of Asia' are a shining example of this form of development. Notwithstanding, due to complex intricacies of the new international economic order, it cannot be considered a replication of the earlier European experience.

Since the mid 1980's the urban transition model has once again been disputed. This time the whole preconceived separation of rural and urban have been discredited. The United Nations Center for Human Settlements forecast that by the year 2020, 50 per cent of the world's population will reside in urban places. This prediction adopts a rigid division between two spatial settlement patterns - urban and rural. In the last twenty years, many countries in Asia, while experiencing rapid urban growth, have also developed regions adjacent to the large metropolises, characterized by an intensive mixture of agricultural and non-agricultural activities occurring side by side. These regions are neither urban or rural, but possess features of both.


23. Industrial capitalism with a foreign led export orientation appears to have had success in Singapore, Hong Kong, Taiwan, and S. Korea. A second view, however, argues that environmental degradation and harsh societal inequities have been the costs of this economic growth. See Bello, W. and S. Rosenfeld (1990) DRAGONS IN DISTRESS, San Francisco: Food and Development Policy.

24. The traditional western model of urban transition for Post Colonial socialist countries has also received attention from many scholars. Eliminating the wide contrast between urban and rural has been a classical objective of Marxism. Reducing the rate of urban growth through the strict control of migration has been a routine practice in countries such as Tanzania, Vietnam, Cuba, and North Korea. See Slater, D. (1978) "Towards a Political Economy of Urbanization in Peripheral Capitalist Societies: Problems of Theory and Method with Illustrations from Latin America", INTERNATIONAL JOURNAL OF URBAN AND REGIONAL RESEARCH, vol.2, no. 1, pg.26-52.

McGee has conceptualized such regions as *desakota*, a word coined by joining two Indonesian Bahasa words - Desa (village) and Kota (town).  

In this light, the urban transition model needs to be reevaluated. McGee (1989) highlights two inadequacies of the model which *desakota* addresses. First the model is too limiting by assuming that the spatial separation of rural and urban activities will persist as urbanization continues. Secondly, it is inadequate in its position which suggests "agglomeration economies" are an urban phenomena acting to spur the concentration of population at the scale of the city area. Due to space-time convergence, facilitated by advances in intermediate transportation and communication technology, agglomeration and concentration is no longer as important, and is encouraging the dispersal of urban activity. At the same time, the accelerating prices and growing costs in the core of these regions is encouraging dispersal. In Thailand for example, industrial firms are locating 70 kilometers or more from Bangkok, yet due to transportation and communication technologies are economically part of the metropolitan area. The case of Bangkok (and many other Asian metropolises) justifies the need to position urban transition in a broader framework, sensitive to the active space economy that has emerged in the *desakota*.

The splintering of the urban transition paradigm for Asia is consistent with Hackenberg’s (1980) "diffuse urbanization" model, where he argues, "rural areas are being penetrated by urban-type forms of production, infrastructure, and administration". These "spread effects" create large metropolitan regions, which serve to alleviate and constrain rural out-migration from the region. Also, and perhaps more important, rural migrants from further areas of the hinterland are more apt to migrate to the extended areas of the mega-urban

26. Desakota was formed after McGee observed the spatial process emerging in Java. By using non western words, it partially evades Eurocentrism, so prevalent in much of the development literature on Asia.


region, which are becoming crowded with industrial estates and housing projects. In fact he argues that these regions are the most productive industrial zones in their countries, when considering industrial output value. Moreover, from a public policy perspective it is a viable alternative to the overcrowded cities.

In Thailand, past migration from the Northeast and other peripheral regions, traditionally targeted the BMA as the major destination. This trend is no longer valid, as migrants from rural regions now overwhelmingly choose the five provinces of the BMR, or the outer ring of the EBMR. The migrants settling in these historically developed rural areas, will for the most part reside in modern housing estates and be employed in non-agricultural labour sectors (manufacturing, service, commerce, or construction). The consequence is an intriguing blur of rural and urban features, that make urban transition models superfluous. Since Thailand now has the capacity to industrialize without transferring large numbers of people into the strictly defined cities, we must question the validity of any settlement model that does not focus specifically on the extended and mega-urban regions adjacent to the large metropolises, for it is here, that industry and settlement prosper. This study, by examining the extended urban region of Bangkok is set to challenge the traditional approaches to urban theory, and interpolate RBU as a viable alternative.

2.2 Settlement Dichotomy:

Thailand is among a large number of countries for which the rural-urban dichotomy in settlement patterns presents significant obstacles for policy makers and planners. Current thinking and policy planning concerning the dichotomy is far from satisfactory, as it has exaggerated the rural-urban separation.

30. In later chapters, detailed evidence and a full description of this process will be offered.

31. The United Nations and nearly every country collects detailed statistical data concerning their population's settlement status; either urban or rural. It should be noted that there is a political ideology supporting rural-urban separation in light of efforts directed at 'rural development'. Non-Government Organization (NGO) and state sanctioned
definition of rural and urban was presumed to have universal application for the representation of settlement. 'Rural' was associated with agriculture, and 'urban' with industry. Eventually, as Marx had predicted, agriculture was to be supplanted by industrialization, and developed industrial societies, as has emerged in the West, would be the universal precedent. In this light, with the predominance of urbanization, rural-urban distinctions would disappear. Mega-urbanization and desakota models, on the other hand would lead us to believe that the distinction will not disappear, but will be significantly reduced and blurred.32 Along this line, writers have been overly skeptical of standard presumptions of rural and urban, and the amorphous nature of prevailing definitions. Reiss (1955) maintains that, "empirically at least, 'urban' can be independent of size and density."33 Moreover, various socioeconomic criteria that are regarded as 'urban' benchmarks, quite simply do not correlate closely with settlement variation in size of population or density; income, mobility of population, extent of formal schooling, women workers, housing type, to name only a few.34 Expanding this point, Dewey (1960) writes:

Evidence abounds to show that many of the things which are uncritically taken as part and parcel of urbanism do not depend on cities for their existence. History reveals that creativity in the form of invention and discovery is not limited to cities, that literacy is not tied to urbanization, and that sacred ties are stronger in rural development schemes are based on a critical distinction and separation between rural and urban. see Lipton, M. (1977) WHY POOR PEOPLE STAY POOR: URBAN BIAS IN WORLD DEVELOPMENT, Canberra: ANU Press.

32. Pierce Lewis draws our attention to an interesting event in American history. After the 1890 census tapes were tabulated, the United States Census Bureau decided it would no longer delineate a "settlement frontier". The Bureau's rationale was based on the inability to demarcate a boundary between settled and unsettled land. Lewis refers to the closing of the American frontier as an "epochal event". This marked the first time there was an acknowledgment of an inadequacy in the settlement dichotomy. Seventy years later, Gottman capitalized on this theme in the formulation of his study on the American Northeastern Seaboard, Megalopolis (see footnote 44 in this chapter). Lewis, Pierce (1983) "The Galactic Metropolis", in BEYOND THE URBAN FRINGE: LAND USES OF NONMETROPOLITAN AMERICA, (eds) Rutherford Platt and George Macinko, Minneapolis: University of Minnesota Press.


some cities than in many small towns and farming areas.\(^35\)

In fact, the root of the distinction is largely a subjective categorization that is becoming increasingly narrow in scope. Over time, acculturation, transportation technology, electronic media, and the convergence of consumption patterns will work to obliterate even further the differences between rural and urban. The convergence of the countryside and city through transportation innovations is explained by Jones (1983),

> The late-comers in the development process can take advantage of the most up-to-date technologies. Developments in transport mean that many people even in poor countries can commute up to 50 miles to work... Transport developments facilitate patterns of circular mobility that do not require continuous residence in the city.\(^36\)

An example of the complexity and unsuitability of the settlement framework currently adhered to in Thailand would be useful. Figure 2.1 illustrates the various categories of settlement in the Thai urban hierarchy. Inherent contradictions and paradoxes are built into this hierarchy. For instance, large tracts of eastern BMA are unmistakably rural, and could be considered 'village'.\(^37\) Also, within the last decade, hundreds of factories and housing estates have sprung up among the villages of the Central Plain and Eastern Seaboard, emphatically giving rise to a distinct rural-based 'urbanism'. Sanitary Districts (SD) are the most controversial settlements within the hierarchy, and have been the subject of several studies attempting to

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37. There are large areas of intensive agriculture, mostly paddy, in the districts of Minburi and Nong Chok within the Bangkok Metropolitan Area.
Figure 2.1 SETTLEMENT HIERARCHY IN THAILAND

METROPOLIS
(Only Bangkok has been designated as metropolis since 1972)

NAKHON MUNICIPALITY
(Places with Population of at least 50,000 and population density of at least 3,000 per km sq.)

MUANG MUNICIPALITY
(Places with population of at least 10,000 and population density of at least 3,000 per km sq.)

TAMBON MUNICIPALITY
(No specific numerical criterion)

URBAN SANITARY DISTRICT
(SDs with population more than 5,000)

RURAL SANITARY DISTRICT
(SDs with population not more than 5,000)

VILLAGE

Source: Romm (1972).
grapple with their ambiguity. Kammier's (1986) attempt to revise the urbanization level of Thailand proved revealing. His study examined 25 towns and the BMA to measure levels of underboundedness. His results show most cities are considerably underbounded, and the actual urbanization level may be as much as 50 per cent above the conventionally defined figure. This suggests Bangkok's primacy is fairly exaggerated, and more importantly, it confirmed the need for a more applicable and accurate urban-rural classification, with less emphasis on politically construed margins.

So, by eliminating the boundaries between rural and urban, planners and decision makers should be better prepared to regard the whole extended mega-urban region as a single territorial unit. It is, however, not always that simple. Koppel states:

... it is the failure to seriously engage the middle ground that has yielded the most debilitating conceptualization; rural conceived as peasant agriculture

38. Sanitary Districts are a confusing settlement type, that are too dense and populated for 'village' level, but are clearly not a municipality. Many SD's should be classified as 'urban' but have not received the added amenities and services that are considered municipal standards. There are also political reasons not to shift SD's classification to 'urban'. For more discussion on SD's see Romm, Jeff (1972) URBANIZATION IN THAILAND, Working paper for the International Urbanization Survey. N.Y.: Ford Foundation, Santhat Semsri (1980) "Differentials in Urban-Rural Demographic Behavior and Events in Thailand" PhD dissertation, Brown University.

39. Romm, op cit. Since the 1980 census SD's are divided into rural and urban, with the 5,000 population mark as the differentiating threshold. However, it is important to realize that an urban SD is NOT a municipality, and not calculated into the national level of urbanization statistics, despite contributing a total of nearly 5 million people. Phra Phadeng, in fact is larger than Chiang Mai and Hat Yai.

40. Kammier, Detlef, (1986) "Thailand's Small Towns: Exploring Facts and Figures Beyond the Population Statistics", BEITRAGZE ZUR BEVOLKERSPOSCHUNG Band 1, Wien. Bounding refers to how well the administrative area matches the urban aggregate. There is rarely a case of a 'true bounded' city. The BMA is critically overbounded in some areas (such as the eastern reaches), but in the north and southeast is largely underbounded. For actual statistics see Kammier (1986).
It seems that many of the large metropolitan areas of Asia will continue to develop in a form, which not only blurs the distinctions between rural and urban, but which also extends the ambit of urbanity as far as 100 kilometers from the central core. It is a function of a multitude of conditions that are intrinsically geared to spatial forms of capitalist production, and reproduction, procuring waves of urban morphology to the periphery. As Yeung (1990) says, "The Asian Landscape is becoming an urban landscape", which leads to a discussion on Region-Based Urbanization.

2.3 A Region Based Urbanization:

The discussion in this chapter has revealed inadequacies and deficiencies in the current language and perspectives commonly used to describe and analyze emerging Asian settlement systems. If, in the past there has been a tendency to ignore new region-based urbanization, then the future course of metropolitan change in Asia is likely to amend this neglect, as the urban region becomes the formal scale of analysis for demographic and economic growth processes.

An overriding feature of the extended urban regions is that certain urban functions, such as residential development, industry, and even tertiary sector activities, traditionally associated with only the "inner-city", have become widely dispersed. Ginsburg (1991) compares Asian urbanization with what Gottmann, in

42. Beginning with the next chapter, the synergic conditions that interplay to create extended urban development will be discussed.
43. Yeung, Yue-Man (1990) CHANGING CITIES OF PACIFIC ASIA, Hong Kong: Chinese University Press, Pg.xvii.
44. Chapter 10 deals with alternative terminologies for extended urban regions.
1961, referred to as "megalopolis". Gottmann was describing the large multi-metropolitan region evolving in the 1950s along the Northeastern Seaboard of the United States, from Boston, Massachusetts, to Richmond, Virginia. Particularly revealing to Gottmann was the concentration of population in suburbs and exurbs, interspersed with areas of low population density, and the efficient transactive transportation networks that weave the region together. The comparison is an effective one, but demographic densities are much higher in the Asian urban regions, where rice cultivation has been the traditional form of subsistence for many centuries. With very few exceptions, rice growing correlates positively with high population densities. In fact, the densities of the extended areas of the urban regions are frequently much higher than the suburban areas of the west. Nevertheless, the Gottmann paradigm is an interesting model to build upon for the Asian urban regions.

A morphological lesson that should be recognized from Gottmann's conceptualization, is that the form and shape of an urbanized landscape need not conform with conventional spatial configurations and constructions, largely associated with built up high density agglomerative concentrations. A city-based landscape is not the lone urban form. Urbanization patterns can be dispersed, linear, or interspersed with rural activities.

As global market forces operate ever more freely and effectively, infrastructural investment catering to these processes will dictate the nature of urban form, and increasingly that form has been linear development corridors. The internationalization of the urban space economy and the complexity of technological change has created an urban environment in much of Southeast Asia where investors, are participating in a rapid acquisition of large tracts of land pushing further away from the city core with forceful intensity. It appears to be a shopping spree by investors, resulting in the rise of the outer city. In order to be accommodated


46. Oshima, Harry (1986) "The Transition From an Agricultural to an Industrial Economy in East Asia" ECONOMIC DEVELOPMENT AND CULTURAL CHANGE, vol. 34, no. 4, pg.783 810.
efficiently by the existing (but stressed) infrastructure, much of the development is laid out in a ribbon-like corridor along the main roads and rail lines. In the Bangkok extended urban region, it will be argued that the linear urban form is a major type of regional growth. It is important to note that the 'urbanized rays', which are built up linear extensions of the city, generate 'growth impulses' which 'urbanize' areas alongside. As it transcends a region, it draws a larger spatial extent into the urban orbit.

Almost thirty years ago Blumenfeld (1965) predicted a world-wide metropolitan form, called, "stellar" or "finger" metropolis, which he argued would be a linear city connected to a much larger concentrated agglomerated city.47 His prophecy was accurate and insightful. Linear development in the 1990s is the response to a political and economic decentralization, fragmentation and deregulation of the private business sectors. Manufacturing today, with flexible technologies, reliance on communication and transportation, transactive in nature, find corridors an effective and practical urban form. The role of corridors in developing Asian regions is well documented, particularly in Taiwan and Japan.48 Also, Gottmann points out the extensive network of corridor development in the Northeastern American Seaboard.49

Corridors also serve nationally exogenous development as well. There are well established road, rail, and air corridors linking, for example, the countries of ASEAN. Rimmer (1991) refers to a "Southeast Asian corridor", linking other Asian corridors, forming what he calls a "Supra-Region", which in turn are connected to North America, Australia, and Europe.50


49. An exemplary case of corridor development is U.S.A's Interstate-85. It is the fastest growing industrial region in the U.S.A., and is a linear ribbon of development along I-85, from Durham N.C. to Atlanta Georgia. It is referred to as the "Boom Belt Mega-corridor". See "The Boom Belt" (1993) BUSINESS WEEK, September, 27, pg.98.

Although some previous urban theory has identified alternative urban patterns to tight concentrated agglomerations, this dissertation will extend the line of thought by suggesting that RBU is not just an alternative or substitute urban form, but is becoming a dominant pattern. This is prevalent in parts of Asia, and particularly in the high density rice bowl delta of Thailand’s lower Central Plain. 51

Finally, we must be prepared to embrace a new thinking in urban development, to distinguish between what may be called 'city-based urbanization' (CBU) and 'region-based urbanization' (RBU). CBU is what we have traditionally known as built up concentrated urban nodes. This is contrasted with RBU, which can be characterized as regions adjacent to large metropolitan cities that take on urban-like infrastructure, are comprised of an urban-like economic base, possess fluid links and interaction with the central city, without becoming urbanized in its customary form. This is precisely the direction of the future course of Asian urbanization; a type of mega-urbanization that can be described as an urban civilization that for the first time is spatially independent from the city. This is not to suggest the 'city' core is not part of the larger urban region, but the outer city is much more dispersed and characterized by 'polynucleation' - a series of small urban patches in a region of urbanization. This leads to a structural deconcentration of power from the city core. 52

As is often the case these developments are recognized in the indigenous language. Thus the amalgamation of city and countryside embodied in a single settlement system is captured by the Thai word "chonmuang". Although it is not used often, and largely unknown as a concept to most people, it is occasionally heard by those attempting to characterize regions away from Bangkok's pollution and congestion, but near enough to


52. Although decision-makers, parliaments, corporate headquarters, and other elites are still located in the inner-city, there is an important division of spatial activities over the extended metropolitan region, which has important ramifications for transportation, community, control of land use, distribution of economic and social infrastructure, and regional tax bases.
interact regularly with the city. The term is the result of a merging of two Thai words, 'chonobat', meaning countryside, and "muang" meaning city. 53

53. Although the term is not widely used, and may not catch on, it is used by planners and administrators. A parallel term used in Japan is konjuku, meaning 'melting' of housing and countryside. Hebbert, Michael (1986) "Urban Sprawl and Urban Planning in Japan" TOWN PLANNING REVIEW, vol. 57, no.2, pg.141-158. Casinader (after Issac, 1986) tells us that in Kerala, the Malayalam term gragaram is used to describe urban-rural fusion. The word is derived from 'gra' (gramam or rural), and 'garam' (nagaram or urban). Casinader, Rex (1992) DESAKOTA IN KERALA: SPACE AND POLITICAL ECONOMY IN SOUTHWEST INDIA, PhD Dissertation, University of British Columbia, Geography Department.
PART II

THE EXTENDED BANGKOK METROPOLITAN REGION: HISTORY AND PRESENT CONDITIONS

CHAPTER THREE:

PRECONDITIONS OF REGION BASED URBANIZATION IN THE EBMR: THE PHYSICAL GEOGRAPHY, HISTORY AND POLITICAL ECONOMY OF THE CENTRAL PLAIN

The aim of this chapter is to show the synergic conditions that interplay in terms of the region's historical preconditions, and physiographic features. The central theme is how Bangkok's contiguous periphery came to be an important high density zone of economic production, within the formation of RBU.

Geographers contextualize a landscape through its varied social constructions and institutions. This process becomes decidedly complex and revealing through enhanced periods of rapid transformation and spatial transition. The articulation of landscape is characterized by Lefebvre (1976) as "second nature", which is distinguished from Nature. Soja (1989) explains Lefebvre's 'second nature' as; "...the transformed and socially concretized spatiality arising from the application of purposeful human labor". Taking this concept further, it is apparent that Lefebvre's 'human labor' embraces an ideological agenda, which would then permit geographers to analyze disparate political forms on the landscape. Spatial restructuring under a capitalist mode of production constructs a conspicuous landscape form, only to be reconstructed when economic conditions dictate a need for change. As Harvey (1978) explains:

1. Lefebvre, H. (1976) "Reflections on the Politics of Space", translated by M. Enders, ANTIPODE, vol. 8, pg.30-37. The term "second nature" actually comes from Cicero, the 1st century B.C. Roman philosopher and thinker who was describing humanly made nature. It exists in balance with "first nature" which is the natural environment.

Capital represents itself in the form of a physical landscape created in its own image, created as use values to enhance the progressive accumulation of capital... Under capitalism, there is then a perpetual struggle in which capital builds a physical landscape appropriate to its own condition at a particular moment in time, only to have to destroy it, usually in the course of crisis, at a subsequent point of time.  

The Central Plain of Thailand, as a landscape, has been the target of numerous constructions and reconstructions from various layers of dominant capital. This chapter examines the region adjacent to Bangkok, and highlights the transformations of an inaccessible wasteland, to a heavily capitalized, ebullient, extended urban region.

First though, it is necessary to give a sketch of the physical geography of the lower Central Plain for this is the distinctive stage upon which urbanization is being played out.

3.1 Physical Geography:

The Central Region, (an officially recognized sub-division of Thailand, which is more of an administrative or political area, then a physical region), is comprised of four subregions: (see Figure 3.1).

1. Bangkok Region, comprising the BMA and the five adjacent provinces of Pathum Thani, Samut Prakran, Samut Sakhon, Nakhon Pathom, and Nonthaburi.

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3. Harvey (1978) op.cit. pg.105.

4. This is from Massey's geologic metaphor. See Massey (1984) op.cit. Also see chapter 10 of this dissertation.

Source: Donner (1978).
2. The upper Central Region made up of 6 provinces of the Central Plain rice bowl, namely, Ayutthaya, Angthong, Singburi, Lopburi, Saraburi, and Chainat.

3. The west Central Region made up of Samut Songkram, Suphanburi, Ratchaburi, Petchaburi, Kanchanaburi and Pratchab Khirian.

4. The east Central Region made up of Nakorn Nayok, Chachoengsao, Chonburi, Prachinburi, Rayong, Chanataburi, and Trat.

When contrasted with Figure 1.4 (EBMR) it is realized that the Central Region is a larger territory than the EBMR, and that the EBMR is geographically positioned within the larger region. The west Central subregion is wholly excluded from the boundaries of the EBMR.

Since the majority of analysis in this project is focussed on the areas immediately adjacent to the BMA, there will be an overview of the physical environment of the Bangkok region, which in this discussion is a synonymous term for BMR, and/or lower Central Plain.

The lower Central Plain is situated at the southern reaches of the Chao Phraya River system, and encloses the lower 60 kilometers of the delta. Bangkok is positioned at 13 degrees 35’ north latitude (same level as Acapulco, Mexico) and 100 degrees 29’ east longitude.

This geographical situation has provided the opportunity for the growth of this region, at the mouth of the main artery of the country’s largest river, the Chao Phraya. By the 1800s this economically strategic location in terms of transshipment of goods and people via the Gulf of Siam and Indian Ocean proved to be a key factor stimulating growth and development.
The topography of the lower Central Plain is a mostly flat, slightly undulating relief, formed by silting of the Chao Phraya and its tributaries. The subregion is a low lying deltaic plain with an imperceptible slope. The average elevation is 1.1 meters above sea level, and much of the subregion is sinking.

Silting has pushed the coast further into the Gulf of Siam, and synchronously formed natural levees along the river banks. These levees normally reach above the average flood level, and hence, have developed into locations for agriculture, temple sites, and village settlement. Insofar as the extending coast on the Gulf, Donner writes; "If the river continues to transport silt down to the gulf- and there is no reason why it should not- Bangkok may lie in another 1500 years as far from the coast as Ayutthaya does today." 7

The most important natural phenomena in the subregion is hydrology. The lower Central Plain is shaped by water; the proximity of the sea, the life giving Chao Phraya, and thousands of kilometers of human made channels. The meandering Chao Phraya is between 150 and 1500 meters in width and nearly encircles Bangkok and the western BMA community of Thonburi. The most dramatic bend is at Phra Phadeng in Samut Prakran, south of Bangkok, where the lower bank comes within 600 meters of the more southern upper course. The development and history of canals in the lower Central Plain is legendary and is dealt with at some length in other parts of this chapter, and has contributed to the various constructions and reconstructions of the space economy (see Figure 3.2).

Being part of a monsoon country, the subregion receives periodic heavy rains, particularly in the two wettest months of September and October. During this time of the year flood waters peak, and since the drainage capacity of the Chao Phraya is limited, the region, particularly along the tributaries is inundated.

6. The lower Central Plain slopes at 0.004 per cent which is equivalent to one meter in height for every 25,000 meters horizontally. See Donner, Wolf (1978) THE FIVE FACES OF THAILAND: AN ECONOMIC GEOGRAPHY, London: C. Hurst and Co., pg.763.

7. Ibid, pg.766.
FIGURE 3.2
CANAL EXCAVATION

Source: Donner (1978)
The mean annual precipitation is 1,413 millimeters (in comparison, Vancouver receives about 1500 mm. annually).  

Two problems with the subregion's groundwater have interested hydrologists for the last three decades. First, there is a gradual increase of salinity in the groundwater pumped through the artesian aquifers which serve the city's growing need for household water. This problem is directly related and partially caused by the second concern, which is land subsidence. The Bangkok region is sinking below sea level because of the increasing weight from buildings of heavy construction, and because of the large amount of water that is pumped from the ground. Bangkok's very low elevation (sea-level) and vulnerability to flooding certainly compounds the mounting concern of land subsidence. Water shortages have led to groundwater extraction causing seawater to seep into wells up to 20 kilometres from the coast, and land subsidence of 5-10 centimetres per year. Some areas of the EBMR are below sea level, while flood damage due to land sinking has been costly. Prevention and mitigation costs are also high. The government has vowed to absolutely phase out groundwater extraction by 1998.  

Aside from rainfall, climatologically, the lower Central Plain is fairly consistent throughout the year. Temperatures and humidity are high year round with remarkably insignificant deviation. Temperatures are highest in April with a mean of 25.6 degrees centigrade, and at the low end, January has a mean of 20.5 degrees centigrade. Humidity deviates less; high: September: 84.5 per cent, low: January: 72.7 per cent.  

The geological foundation of the lower Central Plain is uniformly a layer of solid granite rock at a depth of a minimum of 400 meters. The soil pattern is therefore relatively simple, when compared to other regions of

8. Within the region there is consistently higher precipitation values on the eastern side of the Chao Phraya; Samut Prakarn, for example, typically receives approximately 200 millimeters a year more of rain then Thonburi which is west of the river, ibid, pg.773.  


the country. The soils are classified as alluvial with some variation in chemical composition depending on proximity to the river. The active tidal flats at the lowest coastal reaches of the Chao Phraya, which are naturally covered with mangrove vegetation, are suitable for limited cultivation; coconut palms, aquaculture, and salt pans. In and around the BMA, the more fertile silty clays with former marine and brackish water deposits, are a suitable soil, rich in iron-oxide, for market gardening, orchards, and some rice. The subregion is mostly covered, however, by acid sulfate soils used for growing rice. van der Kevie has identified 20 different soils in the lower Central Plain, of which 14 are suitable for paddy cultivation.  

3.2 Ayutthaya Period:

Before 1850, aside from the small city of Bangkok, the lower, (and younger) southern deltaic plains of the Chao Phraya were mostly vacant or sparsely populated. In fact, Bangkok-Thanburi was only established after the Burmese sacked the old capital of Ayutthaya in 1767. A small group of Kha hunters who settled inland from the river, were the only regular inhabitants of the lower Central Plain. However, areas surrounding Ayutthaya have been the site of wet rice cultivation since the sixth century, and have been


12. At that time the capital was shifted southward down the river to its present site. By 1850 Bangkok probably had between 300,000 and 500,000 people, and the whole Kingdom, was less then 6 million. Aside from a concentration of people in the city, the population was sparsely spread in a ribbon-like fashion along the river between the old and new capitals. See Ingram, James C. (1971) ECONOMIC CHANGE IN THAILAND, 1850-1970, Stanford: Stanford University Press.

13. The Kha are the tribal or indigenous people of the region, mostly animists, nomadically occupying parts of Thailand, Laos, and Cambodia.
occupied by fairly dense rice growing populations since the eleventh century. Only after the eighteenth century did population spread to the site that is currently the BMR.  

Reports of an isolated and secluded Kingdom, absolutely self sufficient and inward-looking are incorrect. The Ayutthaya Kingdom, that emerged in 1350, was known as an established merchant and trading power with world-wide links, that would make proud, even today’s export orientated capitalist leaders. One report on trade in Siam in 1678, refers to Ayutthaya as the granary of neighboring countries. During the reign of King Narai (1656-1688), the Kingdom was known to be actively trading with Persia, Arabia, Japan, China, England, Netherlands and France. The outward looking character at the time is further demonstrated by the fact that the privileged class were largely made up of, and even favoured to be foreigners. It should be mentioned that, although pre-Bowring Treaty Siam, and more specifically, the Ayutthaya Kingdom, were involved in foreign trade, the typical peasant and village community were largely self-sufficient, producing most of what they consumed, and engaged in only a limited amount of trade with the wider economy. Jacobs (1971) reports that the Ayutthaya Kingdom exacted a tax of no more then 10 per cent of production, to be used for nobility consumption and trade. 


17. Ishii reports that the King of Ayutthaya favoured foreigners in the bureaucratic courts, and a 'Mohammedan' was the official in charge of commercial affairs in the late seventeenth century. See, Yoneo Ishii, "History and Rice Growing" in Ishii op.cit.

18. Villagers were also obligated to "pay" in military service or labor, for one quarter of each year. See Jacobs, N. (1971) MODERNIZATION WITHOUT DEVELOPMENT: THAILAND AS AN ASIAN CASE STUDY, N.Y.: Praeger.
3.3 The 1855 Bowring Treaty and the Integration of the Central Plain into the World Economy:

In the mid-nineteenth century, Southeast Asia found itself confronted with a rapidly growing demand for its primary products, especially rice. By the 1600's, European countries had not only begun to consume large quantities of rice as an inexpensive staple grain, but had started using rice in various other functions and forms (starch in sizing textiles, cattle feed, brewing whiskey and beer). Siok Hwa (1968) describes rice-hungry European consumers looking abroad to satisfy their needs. Much of the supply originally came from the southern United States, but with the outbreak of the American Civil War in 1861, Burma, Vietnam, and Siam became important alternate trading targets. Furthermore, Europe had been seeking new (and populous) markets for products developed and mass produced by the industrial revolution, and was on the verge of entering a new phase of capitalist distension and mercantilism. Also as important, all land east of Egypt could be tapped more readily and efficiently by the 1869 opening of the Suez Canal, which cut the distance between London and Singapore by one-third, to about 13,000 kilometers.

Thailand was not to be excluded from the European economic invasion. In the same decade that the British captured Rangoon, the French fortified their stance in Indo-china, and the Dutch extended their reign of the Dutch East Indies into Sumatra, the Thai entered into a treaty that was to change the shape of Thailand's political economy and history. In 1855 King Mongkut (Rama IV) signed the Bowring treaty with Great Britain, in which Thailand allowed free trade in almost all products, and maintained damaging low export duties. It was a remarkable surrender of sovereignty and fiscal authority. The treaty orchestrated by Sir John Bowring was signed voluntarily, in part, to ward off the even greater threat of British colonial rule, and the King earnestly assumed that Thailand's economic future depended on its relations with the west. Bowring himself remarked, "(the treaty) involved a total revolution in all the financial machinery of the


20. For the King's position on the treaty see Ingram op.cit, pg.33. Also, it is worth mentioning that it is not the first treaty Thailand entered with Britain. In 1826, the Burney Treaty was signed mostly involving trade and border issues.
government".21 As pointed out earlier, Thailand was already partially integrated into international trade, but this treaty created dramatic alterations to village production regimes, unparalleled in all preceding dynasties. Ingram claims that Thailand went from exporting no more than five per cent of its total rice production in 1850, to 50 per cent in 1907. By the 1930s the Thai share comprised 30 per cent of the world trade in rice.22

The treaty also gave unprecedented privileges to British subjects in particular, allowing them to trade directly with the Thai. The importance of European trading houses is explained later. The British demanded tin, teak, and later, rubber, but rice was the main focus of the treaty. It presented a situation of extraordinary change for the Thai peasantry who were almost exclusively specialized in subsistence rice cultivation. Thailand, and notably the Central Plain were integrated into the capitalist world economic system; a primitive introduction to what would become one of the most dependent economies in Asia.23

The mostly unoccupied lands surrounding the capital were to become the new granary which would satisfy treaty quotas. Before these areas could be cultivated they had to be well settled. Hence, canals had to be cut through the harsh natural landscape. The canals enabled farmers to invade the frontier and eventually deliver the paddy to market. The excavation project was an important and controversial period of modern Thai history. The extensive network of canals, built in the nineteenth century for defense, irrigation, and to pry open the hinterland, interestingly act as a significant water resource for today’s factories and golf courses.24


22. Ingram op.cit. pg.37.

23. The term 'dependent' refers to a reliance on foreign capital, investment, management and technology that has characterized the present economy.

24. Another significant use for the canals is aesthetic residential waterways. New housing estates that straddle canals are touted as modern marina property, and fetch a considerable price. This will be discussed at greater length in Chapter 7.
The nineteenth century canal project can be seen as a continuation of excavation works carried out during the Ayutthaya period. Figure 3.3 shows the extent of canals that were carved out prior to 1767. These canals were constructed by an army of corvee laborers for military purposes, trade, and short-cut routes straightening the meandering Chao Phraya River. The early canals constructed in the Bangkok period, prior to the treaty, were mostly for defense. For example, in the 1830s a perilous threat from the unified Vietnamese greatly concerned the young Bangkok Kingdom, who believed a connecting canal between the Chao Phraya and Bang Pa Kong Rivers would facilitate troop movement to possible battle sites such as Siemreap. The canal, which was dug almost from the Palace in Bangkok through the eastern plains, was known as Saen Saeb canal, and was more instrumental in opening up a productive rice economy in an elephant infested periphery, than a passage to eastern battles.

A handful of other canals dug during that time period were also projects of defense. In the 1860s, however, Phasi Charoen Canal, running westward from Bangkok to the Tha Chin River, was the first canal constructed solely for purposes of trade and commerce. The success of Phasi Charoen gave rise to a substantial feeder canal, Damnoen Saduak, built to facilitate the sugar industry, which was the region's most substantial economic stronghold up to the 1870s. Rice quickly took over. By 1880, Thais recognized a

25. Corvee was a pervasive form of indentured labor. From the early Ayutthaya period to the first decade of the twentieth century, "...each able-bodied male between 18-60 (was required to) be registered with one of the government agencies and be obligated to the state for three to six months of labor per year or pay a fee in lieu of service." Johnston, D. (1975) RURAL SOCIETY AND THE RICE ECONOMY IN THAILAND: 1880-1930, PhD Dissertation, Yale University. pg.9. Labor was used for calvary, canal building, elephant herding, cultivating royal lands, and mill work. According to Johnston, the standard greeting in Thailand of "where are you going?", (bai nai) originated from the time of corvee, when citizens would routinely ask men, are you on the way, or returning (from corvee)? By the early twentieth century, corvee was on the decline as peasants were required to be producing rice for overseas markets. Elephants were also driven away from the deltaic plains, and canal work was complete. Concerning the Ayutthayan canals, it is interesting that modern day Phra Phadeng was an estuary garrison port town, overseeing all incoming riverine traffic. See Ishii op.cit.

26. Translated, Saen Saeb, is '100,000 stings', suggesting the harshness of an area infested with scorpions and mosquitos. Describing the emergence of the canal, Sharp and Hanks wrote, "Every basket of clay carried up from the oozing pit on the back of a Chinese coolie and dumped upon the dyke was accompanied by the bites, nips, and stings of the myriad creatures living along the way. The pain of some five thousand hired Chinese transformed the wasteland of the 100,000 Stings into a land for living." Sharp, Lauriston, and Lucien Hanks, (1978) BANG CHAN: SOCIAL HISTORY OF A RURAL COMMUNITY IN THAILAND Ithaca: Cornell University Press. pg.39. From the waters on Saen Saeb sprang the excavation project of Bang Chan canal, which lead to the village by the same name. The economy and landscape of modern day Bang Chan will be discussed in subsequent chapters.
potential economic wealth in the desolate plains of the Chao Phraya River basin. Canal construction took on a new and hurried pace, rushing to open the region and cash in.

For the next three decades, canal excavation surged, forming the lattice work of waterways, that opened up one of the most prosperous rice bowls in Southeast Asia (Figure 3.4). Officials, nobility, royal family members, and occasionally commoners claimed large sections of land along the new banks. An unsatisfied appetite for more and more land, led to the privatization of canal excavating corporations, European engineers, and state of the art dredging and excavating machinery. The most ambitious project was the Rangsit system, linking the Chao Phraya and Bang Pa Kon Rivers, north of Saen Saeb. The spine of the system, the Rangsit Canal was to have forty smaller canals to its north and south; over 1700 kilometers in all. Upon completion, in 1905, some 2 million rai were accessible for cultivation through the Rangsit system.27

In the first decade of the new century, a Dutch engineer, Homan Van der Heide, drew up the plans for an immense hydrology project, involving the entire Central Plain, and an extensive expansion of the canal network. It would develop an enormous region, enhance communications and provide agricultural benefits to a whole generation of farmers. The project was debated for several years with high strung emotion and convincing evidence, however, it was ultimately rejected. At the time government funds were being channeled into railway construction, which was a development scheme promising revolutionary changes to transportation and communication. Feeny (1979) cites another reason;

The other major reason for the Thai government's rejection of a proposal in 1902 to irrigate the Central Plains was that the project would have been detrimental to the interests of Bangkok elite absentee landlords, many of whom were important government officials or members of the royal family. Had the project been

27. For a detailed account of the project, from start to completion, see Chapter 2 of Johnston, op.cit.
Figure 3.4: Canals of the Central Plain
pursued, the landlords at Rangsit might have lost their tenants.\(^2\)

The whole theme of agricultural underdevelopment will be discussed later. Notwithstanding, Van der Heide departed Thailand to resume his post on the island of Java.

As rice production levels spiraled upwards, several industries developed in connection with export growth; rice milling, finance investment, marine transportation, and marine insurance. However, many long established local industries and handicrafts suffered grim consequences from the influx of imported manufactured goods. Local sugar production, for example, was almost totally phased out, as cheap high grade European sugar pervaded local markets.\(^{29}\) The textile industry also experienced a damaging decline, as imported products saturated local markets. Ingram writes:

\[
\text{It is quite likely that it was cheaper to ship a ton of cloth from England to Bangkok than from Chiang Mai to Bangkok. The textile producing regions of Thailand simply could not compete with the textile centers of Europe.}\(^{30}\)
\]

Furthermore, lands that formerly produced locally consumed products, such as betel, cotton, tobacco, and sugar cane, were turned into paddy. Generally, the entire economic regime was altered.

An interesting observation is that throughout the post-Bowring period, rice production was increased through expanding land, as opposed to improving techniques of production. In 1931, Zimmerman discerned that the Rangsit Canal irrigation schemes, "...could support triply its present population, and have higher average income..." if tilling techniques were advanced.\(^{31}\) Poorly developed agricultural methods, Feeny would

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30. Ingram, op.cit. pg.114.

argue, are the result of the Bangkok elites demanding the status quo, which of course, keep their positions and income secure. Absentee landowners had little motivation to invest in mechanization as the existing mode of cultivation drew considerable profits.

A powerful landlord from the royal family, Prince Narathip, was a wealthy rentier, who was known to advise fellow nobility, that the most successful landowners never farmed themselves. He owned huge tracts of land, particularly in the Rangsit area, and later expanded his empire into teak forests, tramways, rail lines, rice mills, and a market place in the Rangsit district. The accumulation of large landholdings by members of the royal family was common in the areas adjacent to Bangkok, and led to the entrenchment of patron-client relationships, which were largely a continuation of the Sakdina, from centuries earlier. Sakdina is a strongly centralized form of semi-feudalism, between the aristocratic nobles and commoners. In a sense, patron-client relationships individualizes the commoner. Keyes describes the relationship:

Underlying the practice of patronage is the idea that each individual is situated, however temporarily, in a particular position in a hierarchy of relative power. Those higher up in the hierarchy seek validation of their power from among those below them, and in return, those lower down expect tangible benefits from their superiors.

Na Luang, or royal ricelands are lands that the king or royal household administered directly. In the Central Plain, they were acquired during the canal excavation period and offer an understanding of the patrimonial elements in the current land tenure system. Na Luang still exist today, and more than half of the most fertile lands in the BMR are still controlled by royal family lineage.

32. For more on the Prince's capitalist activities see Johnston, Chapters 2 and 9, op.cit.

33. Sakdina means control or power of the fields.


35. op.cit, Johnston (1975).
The result of such tenure patterns led to an increasing land concentration in the hands of few, mostly absentee landlords. Comparing tenure regimes between land-abundant northern villages, and denser land-scarce villages of the Central Plain, Moerman (1968), concludes that commercialization creates labor commodification and land concentration. Since the turn of the century, the Central Plain has been characterized by large scale landlessness; a trend that is prevalent today, and acts to facilitate the labor shift to non-agricultural economic sectors. Douglass (1984) confirms this trend, claiming that 94 per cent of landowners lived in their tambon in the northern changwat of Chiang Mai, while in the Central Plain changwat of Ayutthaya, the corresponding figure was 40 per cent. In the 1920s Zimmerman observed that tenure contracts were usually for one year periods resulting in the injurious situation where peasants were compelled to move often, incurring large debts to Chinese merchants and their landlord. The high incidence of tenancy, as Zimmerman explains, often leads to indebtedness, a predicament that has characterized Central Plain farming for over a century. Douglass maintains that throughout the post-Bowring era, the Plain has experienced "exceptional" levels of indebtedness, three to five times higher than other regions of the Kingdom. La Nuang, and commercialized tenancy patterns that sprung from it, gave rise to two important systems of exploitation; a decrease in power for clients within Sakdina, and landrent.

36. Moerman, M. (1968) AGRICULTURAL CHANGE AND PEASANT CHOICE IN A THAI VILLAGE, Berkeley: University of California Press, pg.113

37. Douglass, Mike (1984) REGIONAL INTEGRATION ON THE CAPITALIST PERIPHERY: THE CENTRAL PLAINS OF THAILAND, The Hague: Institute of Social Studies, Research Report Series No.15. pg.52. A tambon is an administration area two levels below the changwat. It is parallel to a sub-district.

38. Zimmerman explains the problem of short term tenancy with an example, "...a farmer improved a farm by bunding, thinking that he would make the money back if undisturbed for ten years. In three years the land was sold and the rent raised, so that particular tenant lost and became discouraged." op.cit pg.307. Moreover, conventional wisdom would suggest that cultivators with secure legal ownership, have higher variable inputs and consistently harvest larger yields per land unit. This, of course is partially why the Central Plain faces relatively low yields compared to other Asian ricebowls. In particular see Feder, Gershon, (1988), "Land Ownership Security and Farm Productivity: Evidence From Thailand" JOURNAL OF DEVELOPMENT STUDIES, vol.24, pg.16-30.
A spatial trend characteristic of the EBMR today is the large scale migration of labor from the labor glut regions of the Northeast (Isan) to the factories and industrial estates adjacent to Bangkok. This pattern has its roots in late nineteenth century Central Plain agriculture. When the lands became accessible and settled, a critical labor shortage was evident, and was first alleviated by utilizing the cheap labour of prisoners. When lands further expanded, migrant workers from impoverished Isan were brought to the Plains. In 1906, King Chulalongkorn (Rama V) was believed to have said, "...(this migration is) of benefit to both parties." It was indeed an insightful remark, for the process of Isan to Bangkok migration, would later constitute one of the largest and most unlimited labor flows in Southeast Asia. Cultivators in need of labor would often go to Khorat to collect additional labor from nearby villages, and later, after 1900, when trains would ply to and from Isan (Northeast Thailand), anxious workers could always be found at railway stations in Saraburi or Rangsit, a practice still found today. As to the number of Isan workers that sold their labor in the Central Plain in the early years of this century, it is hard to ascertain. Johnston's research in Thanyaburi district, Pathum Thani province, however suggests that at least "several thousand" migrated each year.

Buoyant foreign demand for rice was the salient feature that first created, and then shaped the landscape of the Central Plain. The main trend that characterized the nascent period of commercialization was increased rice production, carried out in a way, that never disturbed the delicate balance of Sakdina. Levels of inequity and social stratification that were part of the commercial baggage, foreshadowed similar structural injustices that would be characteristic of the foreign influenced corporate landscape emerging 75-100 years later. Tanabe refers to this time period as a process of transition from "medieval" to "modern" state. We will now examine some of the forms and directions of early industrial capitalism in the outer city.


40. As cited in Johnston (1975), op.cit, pg.226.

41. Ibid, pg.226-233. Labor migration will be discussed in the following chapter.

42. Tanabe (1978), op.cit, pg.40.
3.4 Pre-World War II Political Economy:

A critical feature of the economy, was the absence of Thai people as significant players in commercial and industrial activities after the Bowring Treaty. European and Chinese capital dominated the economic landscape from the second half of the nineteenth century. Transnational corporations (TNCs) became common throughout Bangkok immediately following the treaty. By the turn of the century, several British firms such as the Borneo Company Ltd., the Bombay Burmah Trading Corporation, and the Anglo Siam Corporation were granted exclusive concessions to various resources, such as teak. Overseas Chinese also had important roles in rice, rubber and teak exports, and the importing of manufactured goods. The European trading houses were prominent and influential because of their linkages with the United Kingdom, the heart of the world capitalist economy.

Another distinguished group of early capitalists were the royal family, nobility, and faithful aristocrats, collectively termed the Privy Purse. Their power stemmed from their vast landholdings, accumulated during the canal excavation period. This form of capital consistently seeks protection from foreign competition, acquires special licenses and subsidies, and is largely ignorant of technological aspects, and generally deals in what Yoshihara (1988) refers to as "ersatz capital", or capital that is 'unproductive'. Yoshihara highlights various forms of 'ersatz' capital in Southeast Asia, particularly crony capital, royal capital, and military bureaucratic capital. These are comprised of rent seekers, bureaucrats, speculators, political leaders, and political leaders, and


44. For more about the three categories of dominant capital; Sino-Thai, European, and Privy Purse, see Suehiro, op.cit, pg.2-9 to 2:14.
TNCs. These players are important figures for the capitalist environment, but too often they are after quick profits with short time horizons. 45

The manufacturing era began in the 1930s. Suehiro notes that in 1919, there were only seven factories in Bangkok, excluding rice and saw milling. 46 When the government began setting up state owned factories in the 1930s, seventeen manufacturing firms existed, of which only two were owned and operated by Thai capital, one of which was the Singha-Boonrawd Brewery. Ten were European, and the remaining five were Sino-Thai. It was this decade that Thailand entered the 'industrial' era. Textile factories, paper mills, cotton factories, and imported European machinery were part of the government's new industrial policy of economic nationalism. The government also entered rice milling and marine transportation, which up to this point was almost exclusively controlled by Chinese capital.

As a state industrial policy was formed and promoted, the Sino-Thai were able to improve their position. Companies owned and operated by Sino-Thai adjusted well to the depression, beginning in 1929. They operate with few professional managers, low overhead, and are more flexible then state run firms. At this time, for example, Sino-Thai traders joined the Privy Purse and established national banking institutions. 47 Chinese success in the economic theaters of Thailand, according to Yoshihara, is partially due to the leniency and abiding nature of Thai Buddhism, (unlike Islam in Malaysia and Indonesia). 48

Ethnic Chinese have in no small way contributed to the nascent development of commercial and industrial interests in areas outside and adjacent to Bangkok. Since the second half of the nineteenth century the Thai


46. These were: a cement factory, leather factory, cigarette plant, three aerated water factories, and a soap plant. See Suehiro, op.cit, pg.2-7.

47. Yoshihara offers three examples; Wanglee Bank, Tan Pen Choon Bank, and Thye San Bank. All were liquidated by the start of World War II. op.cit, pg.47.

The economy has been characterized by economic specialization along ethnic lines. The Thai have been stereotyped as languid in economic dealings, and invariably concentrated in agriculture, while Sino-Thai have shown an inclination towards a broad range of non-agricultural activities, from finance to overseas trade. Skinner (1957) summarizes the contrasts:

The Chinese were characterized as displaying extreme industriousness, willingness to labor long and hard, steadiness of purpose, ambition, desire for wealth and economic advancement, innovativeness, venturesomeness, and independence. The Thai, by comparison, were generally said to be indolent, unwilling to labor for more than immediate needs, contented with their lot, uninterested in money or economic advancement, conservative, and satisfied with a dependent status.\(^{49}\)

An ecological explanation for this discerning distinction is that ethnic Chinese had migrated from high population density regions of southeastern China, mostly Fujian and Kwangtung provinces. In such a "grimly Malthusian setting", there emerges among the population a survival ethic reflected in resourcefulness and industriousness which over centuries is manifested in cultural and economic traits. In contrast, the Thai have lived in a relatively sparsely populated environment, amongst fertile land, and livelihood came much easier.\(^{50}\)

The position of the Sino-Thai was also enhanced by Sakdina which institutionalized the stature of the Thai as peasantry with limited opportunity for mobility and enterprise in non-agricultural activities. The Sino-Thai, who were excluded from Sakdina, found there was a lacunae in commerce, trade, and finance, they were able to fill, contributing to the development and emergence of non-agricultural activities within and outside of Bangkok.

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50. Ibid, pg.92. Skinner contrasts a number of Thai and Chinese proverbs pertaining to wealth and accumulation. Chinese: "Money can do all things" and "With money you can get the devil himself to push your cart". For the Thai, the proverbs reflect a perilous attitude to materialism; "Do not long for more than your own share" and "Sacrifice wealth rather than honor." pg.95.
There were a number of activities the Sino-Thai have been involved with since the nineteenth century which allowed control of areas outside of the capital, and directly contributed to outer city development. As mentioned earlier, rice was an important export commodity after the Bowring Treaty, and the major foreign markets, aside from Europe, were Singapore, Hong Kong, and southern China, giving the Chinese in Siam a vital advantage in trade negotiations and deals. Moreover, the output for export came almost exclusively from Sino-Thai owned rice mills, which by the second decade of the twentieth century were nearly ubiquitous in the lower Central Plain provinces of Pathum Thani, Ayutthaya, Chachoengsao, and Samut Prakan. The milling, marketing, and trading of rice was made possible by the provision of travel, which was not possible for immobile Thai peasantry. Between 1890 and 1910 highways and railroads radiated from Bangkok, further facilitating itinerant travel by the Sino-Thai, and greatly improving on traditional waterway transport methods.\(^{51}\)

Sugar was another important export crop that the Sino-Thai dominated from production to trade. By the end of the 1860s, the largest sugar plantations and refineries were adjacent to Bangkok in the provinces of Chonburi, Chachoengsao, and Nakhon Pathom. Although the sugar industry all but collapsed by the end of the century, a post World War I revival, again controlled by the Sino-Thai, was focused in Chonburi.\(^{52}\)

Two other outer city activities in Sino-Thai hands were market gardening and salt production. As Bangkok's population expanded through the twentieth century, the Sino-Thai responded by providing fresh vegetables to the city, grown on farms at the city's fringe.\(^ {53}\) Salt produced along coastal areas of Samut Prakan and

\(^{51}\) Ibid, pg.205-220. During the Great Depression (1929-1935), Central Plain rice farmers were severely effected, and hostility and blame were targeted at the Chinese rice merchants, who through money lending activities went unscathed during the difficult years. By the end of the 1930s, a high ranking Thai Minister (Phra Boripan Yuthakit) in cabinet led a zealous anti Chinese campaign to commandeer the rice trade and give it over to Thai interests. In a 1939 radio speech, the Minister said, "So it looks as though the government will have to help from beginning to end to free the growers from these aliens. That is, it must help from the time the rice is planted in the ground until it is put in the stomach of the final buyer." Landon, Kenneth Perry (1941) THE CHINESE IN THAILAND, NY: Russell and Russell, pg.245. It is worth noting that in the 1990s, rice milling and trading is an enterprise still dominated by Chinese Thai.

\(^{52}\) Op.cit (1957), Skinner, pg.112 and 217. In the 1990s sugar remains Chonburi's most important agricultural product.
Samut Sakhon were not only for local consumption, but were significant export commodities, particularly destined for Hong Kong and Malaya. In a controversial move, the government, in 1939 introduced the Salt and Tobacco Act which essentially drove Sino-Thai salt farmers into bankruptcy.\(^5^4\)

Since Sino-Thai activities, including those connected to agriculture, have traditionally been city based, very few urban centres outside of Bangkok had concentrations of Chinese population large enough to support their economic activities. In the whole Kingdom, at least half the Sino-Thai population resided within 100 kilometres of Bangkok. And as the economic thrust of the Thai economy shifted to industrial non-agricultural activities beginning in the late 1950s with the Sarit regime, Sino-Thai commercial interests, with reactive resiliency, were able to respond. Although the average size of Sino-Thai industrial firms was relatively small, their influence was broad in scope. Sino-Thai commercial interests were and still are largely concentrated in the hands of a few large industrial capitalists.\(^5^5\) Today, large scale industrial estates, and heavily capitalized foreign TNCs lie alongside the Chinese operated plants, and have done little to weaken their wealth (and even expansion)! Clan based Chinese families operate with no boundaries and no politics. They have a penchant for insider dealings in private networks, and rely heavily on guanxi (Mandarin Chinese meaning 'connections').

Anti-Chinese policies, which reached a peak in the early part of this century were largely abandoned following World War II, and in the 1960s, Chinese became full-fledged members of Thai society. Today, many of the smaller privately owned industrial firms throughout the EBMR are still Sino-Thai owned.

The decade of the 1930s was momentous for the development of Thai capitalism. It was at this time that a new and Promethean player entered the ring; the military. The origins of Thailand's military-orientated

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53. Ibid, pg.217.


political and economic structure were consolidated in 1932, when an eclectic group of dissatisfied soldiers, academics, and upscale bureaucrats joined together and overthrew the absolute monarchy, and replaced it with a European-influenced constitutional monarchy based on Parliamentary supremacy. Within a year the military rose to control the coalition, and has held various forms of power since. Their accumulation of assets are now enormous, and they have come to control the crucial and sensitive high-tech areas that are essential in the region’s future development and competitiveness. Thus, Transport and Communications, Telephone Organization of Thailand, State Railways, Thai Airways International, Communications Authority, and Ports Authority, are core intrinsic structures for Thailand’s rapidly developing economy, and are all operated by the military.56

Thailand’s modern experience with economic nationalism, was however only partially successful. The nationalization of industry and resources never materialized as envisioned, due to the military-bureaucratic elite, royal capitalists, and Chinese "compradores" maintaining a secure and rigid clasp on most assets and capital, creating irregularities in the development of the economy, (ie. no or little formation of indigenous Thai capital).57 Also, Bangkok significantly increased its primacy, as the Central Plain, and the other more distant regions were essentially left to develop with little assistance. Incessant poverty and disinvestment in the hinterland resulted in a narrow domestic market for Bangkok’s industrial production.

56. Today the rank and file of the army numbers 160,000. Also, there are 32,200 in the navy, and 43,100 in the air force. They have a well established presence in almost all forms of business, including banking, and sit on almost every state enterprise board. They also control extensive logging concessions, and command access for international and local logging firms entering sensitive border areas along the Cambodian and Burmese frontiers. Their power also extends to the media, where they own 210 radio stations and two of the five national television channels. Field Marshal Sarit Thanarit, who will be discussed later, came to power in 1957, owned Bangkok International Trading Co., one of the largest exporters of rice. It is also worth mentioning that the military, have certainly not ruled continuously since 1932, as there has been short periods of democratic government, amongst the 22 coups (since 1932). For a fair treatment of the military’s power see McKinnon, John (1992) "Can the Military be Sidelined?", PACIFIC VIEWPOINT, vol.33, no.2, pg.128-134.

57. Through the years leading to the War, Thailand became increasingly close with Japan, to the extent of declaring war on the U.S.A. in 1942. Japanese capital was beginning to form another distinct form of investment. After the War however, an anti-Japanese movement called for by a number of revolutionary ideologues, such as Pridi Phanomyong and his Free Thai Movement resulted, ironically leading Thailand closer to the U.S.A. Notwithstanding, by the late 1950s Thailand’s economic relationship with Japan was reestablished and grew to unprecedented dimensions. This will be dealt with both in this and subsequent chapters. Akira (1985), op.cit.
3.5 Post War Capitalism: Soi Ratchu Khru to the 1980s Boom:

Following the War, there was a dramatic rise of the economic role played by bureaucratic military capital. The "Soi Ratchu Khru", a group of officers, some of their relatives, and a police general, carried out the 1947 coup, and ushered in a new era of military dominated capitalism.\(^{58}\)

Two additional events after the War, were the communist victory in China, and the partition and decolonization of India, which meant that hundreds of businesses changed their status to Thai, and thousands of business people became Thai citizens. Much of the profits generated by both Indian and Sino-Thai businesses that had previously leaked out of the country now remained in the local economy. A friendlier business environment enhanced capital circulation. There was greater flexibility for expanding and enlarging their business operations, and this in turn opened up new opportunities for real estate holdings. It was a boon to the industrial economy.\(^{59}\)

A new national industrial strategy, beginning in the 1950s was launched to build up the manufacturing sector. New investments in irrigation and transportation brought greater wealth and profits from the agricultural sector. Steep tax premiums on rice production also provided a one way rural to urban flow of capital, which conveniently was used to build up the industrial sector. It was a development scheme designed by successive waves of military leaders, the most prominent being Field Marshal Sarit Thanarit, coming to 'absolute power' after a 1957 coup. Sarit encouraged private investment, abolished labor unions, and in

\(^{58}\) Soi Ratchu Khru, led by Field Marshal Phibun Songkram, was named for Phibun’s residence, Soi Ratchu Khru, Paholyothin Road.

\(^{59}\) op.cit (1989), Business in Thailand, pg.38.
1959 formed the Board of Investment (BOI). It was an industrial strategy augmented by the arrival of the World Bank and the United States as major economic players (stakeholders) leading to a massive capital penetration that was as much of a military operation as a development scheme.

One of the most debilitating government programs for the Central Plain, as mentioned above, was the rice premium tax policy, which lowered the domestic rice price to transfer peasant's income to the urban elite. As tenant cultivators were forced to surrender their output to the government at prices below the market level, Bangkokian consumers enjoyed heavily subsidized rice. Rozental (1970) has shown that in the late 1960s branches of provincial banks in the Plain, collected rural savings and channeled them to the capital; only a quarter of the funds deposited in the provinces were being retained. It was an urban bias that, between 1962 and 1972, was estimated to absorb 25 per cent of rural income. Furthermore, newly introduced imported fertilizers, pesticides, and herbicides were forced on the peasants at prices, up to 70 per cent above international market values. There was an undeniable intensification in the process of proletarianisation and pauperisation of the Plain peasantry. Survival strategies were often bent on abandoning agriculture, and migrating to Bangkok. Chiengkal is forthright; "Now they have to send their sons and daughters to be directly exploited in the industrial and services sector. The monopoly capitalists now could take surplus from both ends."  

With an expanded tax base, an ample supply of labor, and another military leader at the helm, Thailand by the 1960s built up an impressive import substitution industrial program. The U.S. influence became even


63. Chiengkal (1983), op.cit, pg.349.

64. When Sarit died in 1963, he was succeeded by Field Marshal Thanom Kittikatchorn, ibid.
more pervasive, as the Vietnam war began, pumping more than a $1 billion in economic and military aid into the national reserves, not to mention service sector receipts from U.S. soldiers on 'rest and relaxation' leave in Thailand.

It was not long after the Free Thai anti-Japanese campaign, when investment from Japan surged into the Thai economy. In the late 1950s, Japanese investment commenced with exceedingly liberal and generous flexibility from the Thai government, including 100 percent ownership, tax exemptions on the import of industrial machinery, and unprecedented five year tax holidays. It was the start of what would become one of the most exploitive economic relationships in Asia. Today, Japanese export orientated industrialization dominates the landscape of the EBMR, and Japan's economic reign has expanded into housing estates, theme parks and golf courses. Also at this time, TNCs started operation in large numbers. Between 1957 and 1972, 92 TNC firms entered Thailand, of which 80 per cent were from the U.S. and Japan. These matters (Japanese investment and TNCs) will be dealt with at length in subsequent chapters.

By the early 1970s the investment incentive laws were being amended to offer further enticement to export industries. From this point on, the industrial economy would become increasingly geared to offshore markets. Although foreign investment increased, the 1970s and the first half of the 1980s were onerous times for the Thai economy, with two oil shocks, the withdrawal of U.S. troops from the region, and a pair of civil uprisings. Inflation rose sharply, as did the external debt.65

Prosperity was reestablished, and by the mid 1980s there was evidence of a significant sectorial restructuring. The proportion of the labor force in agriculture fell, as did the value of agricultural output. The economy became focused on the manufacturing and service sectors. Thailand's resource extraction industries became a decreasingly important factor in development. By 1991, Thailand's traditional resource-

65. 1973 was a particularly difficult year, with the Yom Kippur War driving up the price of oil, and in the same month (October), army tanks rolled through the streets of Bangkok killing about 100 unarmed demonstrators demanding a constitution.
based exports of rice, sugar, tin, etc. comprised a paltry 16 per cent of exports.\footnote{Handley, Paul (1992) "Wired for Export", FAR EASTERN ECONOMIC REVIEW (FEER), 30, January, pg.46.} The Plain's rice bowl was becoming a large industrial park.

Since 1986, Thailand has enjoyed an economic boom, envied by developing countries throughout the world, highlighted by annual GDP growth rates of 11 per cent. Manufacturing output has not only soared, but has diversified, and tourism has proven to be an effective income earner as well. The EBMR has been the primary target of much of this growth, and between 1985 and 1989, over 2000 new factories opened in the five provinces adjacent to Bangkok, averaging one per day. There are now over 7000 factories in the area; the industrial heartland has clearly been extended out of the capital city.\footnote{THE NATION (1991) October 20, "Quo Vadis, Bangkok?", pg.B4, Charles Greenberg.}

The Central Plain has been an economic 'playland' for the various forms of Bangkok based dominant capital over the last 150 years. Since the 1855 Bowring Treaty the Plain peasantry have been impelled to almost surrender their economic autonomy for capitalist expansion, first by the Privy Purse, then the European trading houses and Chinese merchants. After the 1932 revolution, the oppression continued, as the military furthered their interests in a most counterproductive way, leaving very little surplus for the people. The Sarit regime (1957-1963) marked a new era for capitalist development, opening the door, wider then ever, inviting the Japanese, American, and TNCs in to operate nearly at will. As attention focused on industrial development, first import substitution industrialization (ISI), then later export orientated industrialization (EOI), the Plain peasantry were being taxed to the hilt to support urban development.\footnote{Feeny (1979), op.cit.} By 1980 wealth and income were more unequally distributed than ever before, and indebtedness levels were dangerously high, leaving the peasants of the Central plain more dependent on the dominant capital than peasants in any other region at any other time. The low wage levels, the frustrated farmer, and the iron will of Bangkok capital,
were the precise combination needed to expediently turn the Plains into the ultimate urban industrial landscape, for a population as economically fragmented as the landscape.

3.6 The Fringe to the Fore:

The historical context in which a region-based urban landscape emerged in the Plain is grounded in what Korff refers to as, "the decomposition of the rural society." Lands adjacent to Bangkok, owned largely by absentee aristocrats, were heavily integrated into market production, leading to dislocation of the peasants in the form of circular migration. 69 This eventually became permanent migration, as Bangkok’s population grew rapidly. Yet, morphologically the city spread outwards, to the Plain, spilling into the nearby provinces. Then, when bureaucratic and foreign led industrialization policies were formed, beginning in the 1960s, new factories were located in the fringe, on land that was often owned by Sakdina lords. The factories provided jobs for former dislocated peasants, who set up housing and markets nearby. 70

From its founding, Bangkok was destined to be a sprawling city. The underlying political economy combined with modern space-time compression technologies of transportation and communication, have pushed boundaries outward towards the Plain (Figure 3.5). Its earliest spatial form adhered to a pattern of concentric rings radiating from the Royal Palace, dissected by perpendicular canal routes heading towards the periphery.

70. Ibid.
FIGURE 3.5
HISTORICAL GROWTH AND EXPANSION OF BANGKOK
SOURCE: JICA (1990b)
A feature of Bangkok’s incipient morphology that contributed to its outward expansion was that it has been a multi-functional city. McGee has described Bangkok as a "dual city", where an older indigenous pre-industrial city was juxtaposed and coexisting with a newer commercial city.\textsuperscript{71} The inner city, within the district of the walled Grand Palace, was the quintessential Sjobergian pre-industrial centre, fulfilling the administrative, religious, and cultural wants of the city and Kingdom.\textsuperscript{72} Bangkok has been described as a city blanketed by more "than a hundred wats, occupying all the best locations. As some of them embrace several acres, they cover no small part of the site of the city."\textsuperscript{73} By the turn of the century Bangkok was in transition, as a significant commercial city emerged to accompany the pre-industrial center. However, with the inner city dominated by pre-industrial functions, much of the new commercial growth, and residential expansion was destined for the city’s fringe. Ginsburg describes one such effort:

A new city appeared on the Northern outskirts of the old, a planned creation built in (1910-1925)... with broad boulevards and buildings ranging from shocking Victorian variations on Italian Renaissance to more recent battleship modern. The contrast between the facade of modern buildings fronting these boulevards and the stilted bamboo, thatch, and tin-roofed houses behind them is one of the most striking demonstrations of cultural dualism in Southeast Asia.\textsuperscript{74}

Second, since the decade of the 1930s an expansive military element in the landscape has covered Bangkok. Within the BMA are the spacious headquarters for the navy and airforce, and the usual spatial paraphernalia catering to this type of land use; military stadiums, airfields, training colleges, barracks, and golf courses. Particularly in the northern reaches of Bangkok, this landscape is extensive.

\textsuperscript{71} McGee, (1967), op.cit, pg.72-74.

\textsuperscript{72} Sjoberg, Gideon (1964) \textit{THE PRE-INDUSTRIAL CITY,} Glencoe, Ill.: Free Press.

\textsuperscript{73} Sternstein, Larry (1976) \textit{THAILAND: THE ENVIRONMENT OF MODERNIZATION,} Auckland: McGraw Hill, pg.96. It should be noted that these are not Sternstein’s words, but are part of a historical anthology he has assembled to analyze Bangkok under the reign of Rama IV.

The fact that the city elite had vested interest in the ricelands outside the city, insured that a series of travel routes to the hinterland were always available. Sternstein describes one of the earlier (and 'efficient') links to the fringe;

Electrified tramways were introduced in Bangkok in 1894 when horse drawn trams still served many European capitals. Cheap, efficient, well patronized and exceptionally profitable tramways reached out to provide access to most parts of the rapidly expanding city; indeed the tramways encouraged the city to sprawl into the surrounding countryside.  

Into the early years of the new century, it was clear that Bangkok was extending along "two legs"; one along the Chao Phraya river towards the north, the other towards Samut Prakarn in the southeast. Later, this became much more complex as villages were integrated into the city and the legs began their own outward expansion. By the 1960s several outlying towns had become larger nodes of economic influence; Bang Khen, Rangsit, Nonthaburi, Phra Phadeng, Samut Prakarn, Minburi, and Prakhanong. The tidal process of urban extension over the last decade will be empirically sketched in the following chapter, and characterized in terms of consumption of space in Chapters 6 and 7. By the 1980s, a time-space convergence, cheaper rural land values, and state sanctioned start-up grants extended the zone of urban industrialization, beyond the BMR, to the outer ring areas of Chonburi, Ayutthaya, Chachoengsao, and Saraburi (see Figure 1.3). Figure 3.6, as a summary of this Chapter sketches the historical preconditions which acted to extend Bangkok's space economy.

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75. Sternstein, Larry (1982) PORTRAIT OF BANGKOK, Bangkok: Published to Commemorate the Bicentennial of the Capital of Thailand, pg.32.

FIGURE 3.6 - Historical Forces Operating to Extend Bangkok's Space Economy

(On time continuum)

1750 1800 1850 1900 1950 2000

Ayutthaya Period

Canal Excavation

Bangkok Dynasty

Expansive Pre-Industrial Inner City

Bowring Treaty and Commercialization of Central Plain

Economic and Spatial Mobility of Chinese

Sakdina and Na Luang Land Tenure

Steep Rice Premium Tax Policy

Field Marshal Sarit*

TNC Space Economy

Migration from Peripheral Regions of Kingdom

* Field Marshal Sarit's Liberalization of Economy and Formation of BOI
CHAPTER FOUR:

DIMENSIONS OF CHANGE: THE AMPLITUDE OF TRANSITION IN THE EBMR:

The aim of this chapter is to show aggregate and quantifiable changes in the EBMR. The following Chapters (5-8) give a qualitative description of the rapid transition documented in this chapter.

Thailand's economic success focused on the EBMR is the envy of not only ASEAN neighbors, but also the recession-laden western world. GDP growth rates have had consecutive years of double digit increment (see Table 4.1), while several European countries and Canada during the same period have witnessed negative economic growth. 1

TABLE 4.1

GDP GROWTH RATE

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>RATE (%)</td>
<td>3.5</td>
<td>4.9</td>
<td>9.5</td>
<td>13.2</td>
<td>12.0</td>
<td>10.0</td>
<td>9.0</td>
</tr>
</tbody>
</table>

Note: Based on 1972 Prices.
Source: Adapted from FEER (1991), 18 July, pg.31.

Any society subject to rapid and extensive economic growth, experiences consequent levels of change, and it is the nature of change that is the central theme of this chapter. In this light the chapter will be an empirical examination of a range of indices that indicate a rapidly restructured space economy. Unprecedented change since the end of World War II, particularly in the 1980s, and most notably in the early 1990s has transformed the EBMR into one of the premier industrial export regions in Asia. This transformation is manifested in many ways. This chapter will describe the change of the space economy in three significant

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directives - namely, population, economic, and space-time collapse - a reductionist approach which will be referred to here as a 'tripartition of change' (see Figure 4.1).

Figure 4.1 Contours of Change Within the Space Economy of the Extended Bangkok Metropolitan Region: Tripartition of Change
The transformation rests on a tripartition of factors, which together constitute the base of change. Firstly, 'economic transformation' essentially dictates the economy and spatial layout of the landscape. It reflects land use as constructed through new patterns of the built environment, employment opportunities, and occupational structure. Secondly, the changing features of 'population' are salient factors, as the economy evolves to a non-agricultural base. Migration from other regions of the country becomes a critical measure of change. If it were not for successive waves of migrants from the labour glutted periphery, the EBMR space economy would remain static and immobile. Moreover, as the population density increases, agriculture declines, and industry concentrates, causing the structure of landscape and settlement to take on new forms and constructions. Finally, it can be reasonably argued that the process of change is largely facilitated by innovations in transportation, information, and diffusion technologies. 'Space-time compression' will be examined through the changes in trip and traffic flows in the region.

4.1 Economic Transformation:

This component of the tripartition represents a new thrust in the economic development of the country. The first trend in the EBMR is that agriculture is giving way to other types of land use. The land of the EBMR, since the turn of the century has been a fertile rice bowl allowing Thailand to have been one of the few net exporters of food, and for many years, the world's premier rice exporter. This is all rapidly changing as farmland in the EBMR is being lost to other uses. Real estate speculators, industrialists, the tourist industry, and golf course development are combining to create an irreversible trend, ...unless Thailand encouraged immigration or contract labour from other countries, which is occurring only in the cases of technical and managerial labour.

2. Thailand (1990) Statistical Yearbook, NSO.
causing people to ask if the 1990s will bring about the total demise of agriculture in the region. Table 4.2 shows that among selected changwats of similar population, for the years 1970, 1983, and 1989, agriculture in the EBMR experienced significant declines in overall percentage of Gross Provincial Product (GPP). Yet, for the non-EBMR changwats, the decline was marginal at best, and in one selected changwat (Pattani) in the south, between 1983 and 1989 there was essentially no decrease. Several other observations can be made from Table 4.2:

**TABLE 4.2**

**PER CENT DISTRIBUTION BY SECTOR OF GPP; 1970, 1983, 1989**

<table>
<thead>
<tr>
<th>EBMR</th>
<th>AGRI.</th>
<th>MANUF.</th>
<th>OTHER</th>
<th>GPP</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMA (5576)</td>
<td>1.4</td>
<td>2.4</td>
<td>1.0</td>
<td>28.3</td>
</tr>
<tr>
<td>S.P. (779)</td>
<td>13.5</td>
<td>4.7</td>
<td>3.3</td>
<td>49.6</td>
</tr>
<tr>
<td>P.T. (411)</td>
<td>33.8</td>
<td>8.8</td>
<td>5.2</td>
<td>47.1</td>
</tr>
<tr>
<td>NONTH (575)</td>
<td>37.9</td>
<td>6.8</td>
<td>3.9</td>
<td>22.4</td>
</tr>
<tr>
<td>S.S. (501)</td>
<td>52.3</td>
<td>23.4</td>
<td>18.0</td>
<td>17.5</td>
</tr>
<tr>
<td>N.P. (629)</td>
<td>30.6</td>
<td>28.6</td>
<td>17.9</td>
<td>15.1</td>
</tr>
<tr>
<td>CHONB (851)</td>
<td>12.3</td>
<td>6.8</td>
<td>43.7</td>
<td>37.5</td>
</tr>
<tr>
<td>AYUT (701)</td>
<td>21.5</td>
<td>17.7</td>
<td>19.0</td>
<td>13.8</td>
</tr>
<tr>
<td>CHACH (552)</td>
<td>30.6</td>
<td>14.7</td>
<td>8.7</td>
<td>27.8</td>
</tr>
<tr>
<td>NON-EBMR</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHRAE (483) (N)</td>
<td>31.0</td>
<td>22.5</td>
<td>3.0</td>
<td>2.3</td>
</tr>
<tr>
<td>CHAITY (995) (S)</td>
<td>46.5</td>
<td>34.4</td>
<td>7.2</td>
<td>12.0</td>
</tr>
<tr>
<td>PATT (516) (S)</td>
<td>28.5</td>
<td>27.7</td>
<td>2.8</td>
<td>2.5</td>
</tr>
</tbody>
</table>

Notes: 1. Brackets indicate population in thousands.
2. GPP is in 100,000's of Baht at current market price.
3. Blank cells mean data is unavailable.

Source: NESDB (1986)
Thailand Government (1990), Population and Housing Census, NSO
(i) In all three non-EBMR changwats (Pattani, Chaiyapum, and Phrae) in 1989, at least 20 percent of GPP is still obtained from agriculture,

(ii) the EBMR has a strong manufacturing component in its economy, contrasted to the mostly service and agriculturally driven economies of the rest of the country.

(iii) Total GPP is considerably larger in all EBMR changwats then in non-EBMR (particularly in Samut Prakarn and Chonburi).

(iv) In the EBMR, manufacturing growth is lowest in the BMA, suggesting that the focus of industrial growth is away from the city.

(v) In the three key industrial changwats of Chonburi, Samut Prakarn, and Pathum Thani, manufacturing is beginning to level off, as the service sector accelerates. All three changwats are seen to be several decades away from becoming fully developed post-industrial economies.

Table 4.3 shows per capita gross regional product for EBMR changwats. A striking fact is that all changwats in the period 1981-1989 have outperformed the BMA. This again is an indication of economic vitality in the outer city. Also of note are the actual growth rates. All provinces more than doubled their per capita GPP. Pathum Thani, Nonthaburi and Chachoengsao in particular had very high increases.

The previous five post World War II national censuses; 1990, 1980, 1970, 1960, and 1947, provide data on occupation of all economically active population 11 years of age and older (see Appendix III).

Tables 4.4 and 4.5, for Pathum Thani and Samut Prakarn respectively, document the evolving demise of agriculture, concurrent with a rapid expansion of all types of off-farm employment, primarily manufacturing.

4. These two changwats have been selected because they have experienced the most rapid change of all provinces in the EBMR, and are emphasized in the analysis of Chapters 5-8. They are also the most industrialized and 'urbanized'.
### TABLE 4.3
PER CAPITA GROSS REGIONAL PROVINCIAL PRODUCT OF SELECTED EBMR CHANGWATS FOR 1981, 1985, 1989 (IN BAHT)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>BMA</td>
<td>54,207</td>
<td>68,532</td>
<td>105,357</td>
<td>94.4</td>
</tr>
<tr>
<td>PATHUM THANI</td>
<td>29,046</td>
<td>47,809</td>
<td>100,293</td>
<td>245</td>
</tr>
<tr>
<td>SAMUT PRAKRAN</td>
<td>56,893</td>
<td>85,525</td>
<td>119,309</td>
<td>110</td>
</tr>
<tr>
<td>BMR</td>
<td>46,891</td>
<td>59,003</td>
<td>99,557</td>
<td>112</td>
</tr>
<tr>
<td>CHONBURI</td>
<td>39,633</td>
<td>60,363</td>
<td>87,781</td>
<td>121</td>
</tr>
<tr>
<td>SAMUT SAKHON</td>
<td>26,452</td>
<td>42,743</td>
<td>69,036</td>
<td>161</td>
</tr>
<tr>
<td>NONTHABURI</td>
<td>12,353</td>
<td>18,911</td>
<td>58,783</td>
<td>376</td>
</tr>
<tr>
<td>CHACHOENGSAO</td>
<td>14,356</td>
<td>31,505</td>
<td>55,603</td>
<td>287</td>
</tr>
<tr>
<td>NAKHON PATHOM</td>
<td>14,027</td>
<td>19,373</td>
<td>31,631</td>
<td>126</td>
</tr>
<tr>
<td>AYUTTHAYA</td>
<td>10,989</td>
<td>14,474</td>
<td>24,062</td>
<td>119</td>
</tr>
</tbody>
</table>

TABLE 4.4

PATHUM THANI: ECONOMICALLY ACTIVE POPULATION, 11 YEARS OF AGE AND OLDER, BY OCCUPATION, OVER 5 CENSUS PERIODS

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>POP.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. PROF. TECH.</td>
<td>774</td>
<td>1204</td>
<td>1901</td>
<td>4551</td>
<td>11,449</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>2. ADMIN., MGR.</td>
<td>10,433</td>
<td>144</td>
<td>1297</td>
<td>3148</td>
<td>5780</td>
</tr>
<tr>
<td></td>
<td>15</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>3. CLERICAL SALES</td>
<td>377</td>
<td>10,472</td>
<td>10,521</td>
<td>24,376</td>
<td>36,776</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>11</td>
<td>10</td>
<td>14</td>
<td>16</td>
</tr>
<tr>
<td>4. AGRICULTURE</td>
<td>54,338</td>
<td>73,764</td>
<td>70,993</td>
<td>80,472</td>
<td>64,024</td>
</tr>
<tr>
<td></td>
<td>78</td>
<td>76</td>
<td>66</td>
<td>47</td>
<td>28</td>
</tr>
<tr>
<td>5. LABOR, UNSKILLED</td>
<td>3726</td>
<td>9347</td>
<td>18,074</td>
<td>51,209</td>
<td>100,874</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>10</td>
<td>17</td>
<td>30</td>
<td>44</td>
</tr>
<tr>
<td>6. SERVICE SECTOR</td>
<td>277</td>
<td>2253</td>
<td>4095</td>
<td>6819</td>
<td>11,363</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>2</td>
<td>4</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>TOTAL</td>
<td>69,925</td>
<td>97,184</td>
<td>106,881</td>
<td>170,575</td>
<td>230,266</td>
</tr>
<tr>
<td></td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

Note: 1. PROFESSIONAL TECHNICAL consists of: doctors, nurses, vets, paraprofessionals, judges, engineers, accountants, surveyors, technical workers, teachers, midwives, actors, musicians.
2. ADMINISTRATORS, MANAGERS consists of: executives, business owners, government officials, directors.
3. CLERICAL SALES consists of: shop assistants, wholesale and retail workers, hawkers, peddlers, vendors.
4. AGRICULTURE consists of: fishers, aquaculturalists, miners, foresters.
5. LABOR UNSKILLED consists of: transportation workers, drivers, boatmen, conductors, spinners, dyers, knitters, machinists, metal and woodworkers, painters, food processors, construction workers, factory workers.
6. SERVICE SECTOR consists of: police, guards, cleaners, barbers.
- Percentages are rounded off. Totals may not equal 100.

## Table 4.5

**Samut Prakan: Economically Active Population, 11 Years of Age and Older, by Occupation, Over 5 Census Periods**

<table>
<thead>
<tr>
<th>Year</th>
<th>POP.</th>
<th>%</th>
<th>POP.</th>
<th>%</th>
<th>POP.</th>
<th>%</th>
<th>POP.</th>
<th>%</th>
<th>POP.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1947</td>
<td>798</td>
<td>1</td>
<td>1634</td>
<td>2</td>
<td>3363</td>
<td>3</td>
<td>9701</td>
<td>4</td>
<td>21,889</td>
<td>5</td>
</tr>
<tr>
<td>1960</td>
<td>14,413</td>
<td>19</td>
<td>177</td>
<td>0</td>
<td>3384</td>
<td>3</td>
<td>8296</td>
<td>4</td>
<td>9847</td>
<td>2</td>
</tr>
<tr>
<td>1970</td>
<td>725</td>
<td>1</td>
<td>13,699</td>
<td>13</td>
<td>17,483</td>
<td>13</td>
<td>39,322</td>
<td>18</td>
<td>90,161</td>
<td>22</td>
</tr>
<tr>
<td>1980</td>
<td>50,752</td>
<td>67</td>
<td>76,182</td>
<td>70</td>
<td>50,244</td>
<td>38</td>
<td>42,394</td>
<td>19</td>
<td>48,441</td>
<td>12</td>
</tr>
<tr>
<td>1990</td>
<td>8948</td>
<td>12</td>
<td>13,248</td>
<td>12</td>
<td>48,535</td>
<td>37</td>
<td>107,591</td>
<td>49</td>
<td>222,414</td>
<td>54</td>
</tr>
</tbody>
</table>

Note: 1. PROFESSIONAL TECHNICAL consists of: doctors, nurses, vets, paraprofessionals, judges, engineers, accountants, surveyors, technical workers, teachers, midwives, actors, musicians.

2. ADMINISTRATORS, MANAGERS consists of: executives, business owners, government officials, directors.

3. CLERICAL SALES consists of: shop assistants, wholesale and retail workers, hawkers, peddlars, vendors.

4. AGRICULTURE consists of: fishers, aquaculturalists, miners, foresters.

5. LABOR UNSKILLED consists of: transportation workers, drivers, boatmen, conductors, spinners, dyers, knitters, machinists, metal and woodworkers, painters, food processors, construction workers, factory workers.

6. SERVICE SECTOR consists of: police, guards, cleaners, barbers.

- Percentages are rounded off. Totals may not equal 100.

based labour. The current economic structure of both *changwats*, particularly Samut Prakarn, is more indicative of an urban population than rural, and the transition that is occurring has been over a relatively short period of time; as late as 1980 nearly half the labour force in Pathum Thani was engaged in agriculture. The 1980s however, were the landmark decade for Pathum Thani. For the first time the non-agricultural labour force (category 5) surpassed agriculture. Interestingly, that same landmark sectorial change occurred in Samut Prakarn in the 1960s. There are several observations from the census data:

(1) On the basis of the data presented in Tables 4.4 and 4.5, industrial sector GPP has been levelling off in Samut Prakan and Pathum Thani. The census data also indicates that labour inputs remain high and are increasing rapidly. This would suggest that the production process is becoming increasingly labour intensive, utilizing largely unskilled female workers. The Central Plain is still a source of cheap labour, and this is evident by data showing (that aside from 1947-1960 in Samut Prakarn), that labour sector (category 5) doubled in population through each census period.

(2) The professional and technical category is now 5 per cent of the total labour force in both *changwats*. Although this is a modest level it has undergone a steady rise, doubling in size every 10 years since 1970. Considering the content of production output (a trend towards high technological and electrical appliances), one would expect a slightly higher level for category one. However, a high proportion of the professional and technical labour force are expatriates, many of whom are based outside the country (see footnote 2).

(3) The clerical and sales category also is rising steadily, and combined with the service sector (category 6), comprised over one-fifth of the total labour force in 1990. This is up considerably in both *changwats* from the previous census period.

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5. For notes on Thai census data, and a description of the Thai census, see Appendix III.
Although agriculture, as a percentage of total labor levels is declining, the actual population in agriculture is still significant. Thus, in Samut Prakarn, there was an increase between 1980 and 1990, attributed mostly to agri-business and aquaculture. Agriculture, particularly in Pathum Thani, is far from extinct. In the following chapter there will be a discussion on agriculture and its restructured cropping patterns.

Another view on the descent of agriculture in the same two changwats, would be to disaggregate data by ampoe.6 Tables 4.6 and 4.7 examine the number and percentage of population that are entirely dependant on agriculture. There are three pertinent observations from these tables.

(1) The importance of breaking changwats down into smaller administrative units for analysis is obvious; the difference in the proportion in agriculture in Pathum Thani (1990) is considerable; 57 per cent in Nong Sua and 5 per cent in Thanyaburi. In Samut Prakarn, during the same year, there is also a wide range. Ampur Muang is 2 per cent, and Bang Po is 27. This suggests that changwat level data, such as Tables 4.4 and 4.5, provide a surface level of analysis only. Some areas (ampoes Nong Sua, Lam Luk Ka) of inner ring EBMR provinces remain largely dependent on agriculture.7

(2) Both changwats experienced a rapid, almost abrupt decline in agriculture, however, the timing was different. As the data indicate, Samut Prakarn underwent 'revolutionary' changes between 1960 and 1970, unparalleled anywhere in the Kingdom. Ampoe Muang dropped from 40 to 10 percent, while the total for all Samut Prakarn decreased to 21 percent from 55. Samut Prakarn was the first important target for Field Marshal Sarit Thanarit’s World Bank supported campaign of industrial and foreign investment. A similar,
but not as expeditious ‘revolution’ occurred in the following decade in Pathum Thani. The 1980 and 1990 data indicate that Pathum Thani is now industrializing and ‘de-agrarianizing’ very rapidly, indeed, for the

**TABLE 4.6**

**PATHUM THANI: AGRICULTURE POPULATION**

<table>
<thead>
<tr>
<th>AMPOE</th>
<th>TOTAL POP.</th>
<th>AGRI POP</th>
<th>% IN AGRI</th>
<th>TOTAL POP.</th>
<th>AGRI POP</th>
<th>% IN AGRI</th>
<th>TOTAL POP.</th>
<th>AGRI POP</th>
<th>% IN AGRI</th>
<th>TOTAL POP.</th>
<th>AGRI POP</th>
<th>% IN AGRI</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUANG</td>
<td>38400</td>
<td>24400</td>
<td>64</td>
<td>46104</td>
<td>18315</td>
<td>40</td>
<td>59238</td>
<td>15439</td>
<td>26</td>
<td>80016</td>
<td>7177</td>
<td>9</td>
</tr>
<tr>
<td>KLONG LUANG</td>
<td>26616</td>
<td>21438</td>
<td>59</td>
<td>37271</td>
<td>21508</td>
<td>58</td>
<td>66849</td>
<td>21933</td>
<td>33</td>
<td>86375</td>
<td>12510</td>
<td>15</td>
</tr>
<tr>
<td>THANAYABURI</td>
<td>26490</td>
<td>9496</td>
<td>39</td>
<td>38358</td>
<td>7762</td>
<td>20</td>
<td>57657</td>
<td>6630</td>
<td>12</td>
<td>76219</td>
<td>3868</td>
<td>5</td>
</tr>
<tr>
<td>LAT LUM KA</td>
<td>20435</td>
<td>17949</td>
<td>88</td>
<td>23500</td>
<td>18154</td>
<td>77</td>
<td>27672</td>
<td>17566</td>
<td>64</td>
<td>30084</td>
<td>14724</td>
<td>49</td>
</tr>
<tr>
<td>LAM LUK KA</td>
<td>32990</td>
<td>23352</td>
<td>74</td>
<td>37141</td>
<td>23696</td>
<td>64</td>
<td>48381</td>
<td>23157</td>
<td>48</td>
<td>75604</td>
<td>15785</td>
<td>21</td>
</tr>
<tr>
<td>SAM KOK</td>
<td>25774</td>
<td>13112</td>
<td>51</td>
<td>26235</td>
<td>11073</td>
<td>42</td>
<td>28910</td>
<td>11514</td>
<td>40</td>
<td>30751</td>
<td>7206</td>
<td>23</td>
</tr>
<tr>
<td>NONG SUA</td>
<td>20390</td>
<td>17444</td>
<td>86</td>
<td>25252</td>
<td>19127</td>
<td>76</td>
<td>30967</td>
<td>22066</td>
<td>71</td>
<td>33353</td>
<td>18938</td>
<td>57</td>
</tr>
<tr>
<td>TOTAL</td>
<td>189881</td>
<td>127191</td>
<td>67</td>
<td>233841</td>
<td>119645</td>
<td>51</td>
<td>315647</td>
<td>118345</td>
<td>37</td>
<td>413402</td>
<td>88289</td>
<td>17.4</td>
</tr>
</tbody>
</table>


**TABLE 4.7**

**SAMUT PRAKARN: AGRICULTURE POPULATION**

<table>
<thead>
<tr>
<th>AMPOE</th>
<th>TOTAL POP.</th>
<th>AGRI POP</th>
<th>% IN AGRI</th>
<th>TOTAL POP.</th>
<th>AGRI POP</th>
<th>% IN AGRI</th>
<th>TOTAL POP.</th>
<th>AGRI POP</th>
<th>% IN AGRI</th>
<th>TOTAL POP.</th>
<th>AGRI POP</th>
<th>% IN AGRI</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUANG</td>
<td>84878</td>
<td>33619</td>
<td>40</td>
<td>137184</td>
<td>14074</td>
<td>10</td>
<td>227590</td>
<td>4766</td>
<td>3</td>
<td>346347</td>
<td>5327</td>
<td>2</td>
</tr>
<tr>
<td>PHRA PHADENG</td>
<td>48777</td>
<td>26913</td>
<td>55</td>
<td>87240</td>
<td>14477</td>
<td>17</td>
<td>143329</td>
<td>9654</td>
<td>7</td>
<td>181584</td>
<td>4270</td>
<td>2</td>
</tr>
<tr>
<td>BANG PO</td>
<td>48028</td>
<td>27747</td>
<td>57</td>
<td>47911</td>
<td>11972</td>
<td>25</td>
<td>44706</td>
<td>11263</td>
<td>25</td>
<td>79593</td>
<td>21206</td>
<td>27</td>
</tr>
<tr>
<td>BANG PEE</td>
<td>53022</td>
<td>40139</td>
<td>76</td>
<td>57149</td>
<td>28030</td>
<td>49</td>
<td>69294</td>
<td>20439</td>
<td>29</td>
<td>132271</td>
<td>22641</td>
<td>17</td>
</tr>
<tr>
<td>TOTAL</td>
<td>234765</td>
<td>128145</td>
<td>55</td>
<td>352844</td>
<td>48813</td>
<td>21</td>
<td>494829</td>
<td>40123</td>
<td>10</td>
<td>459797</td>
<td>53444</td>
<td>8</td>
</tr>
</tbody>
</table>

first time, at a faster pace than Samut Prakarn. Several areas of Samut Prakarn, particularly Muang, Phra Phadeng, and Bang Plee are very densely developed with industry creating numerous environmental problems. Pathum Thani is losing agricultural land quicker than any other changwat, averaging 10 per cent per annum since 1987. Many observers see Pathum Thani becoming the EBMR industrial heartland in the coming decade.

(3) Finally the two Tables when accompanied with Figures 4.2 and 4.3 offer a spatial dimension to agriculture decline. The importance of transportation and proximity to Bangkok are key determining factors. Thanyaburi, Phra Phadeng, and ampo Muang (Samut Prakarn) are evidence of this spatial trend. Klong Luang, part of Pathum Thani’s Northern Corridor (which will be the subject of a case study in the next chapter), more then doubled its population between 1970 and 1990, and cut its agricultural labour level fourfold. Its position, strung along the main super-highway, brought a wealth of new investment and industry in the 1970’s when the road was widened. Between 1980 and 1990 there was a rapid proliferation of informal modes of transportation, such as; motorcycle taxis, small trucks with benches, and privately owned changwat based public transport. This contributed in no small way to opening up peripheral areas of all EBMR provinces. Nong Sua and Bang Po in particular benefitted from this development.

Over time, as an increasing number and assortment of non-agricultural opportunities become accessible, the amount of land and labour invested in agriculture decreases. If one crop is affected more than others, it is rice. The EBMR, as a classic Asian rice bowl, was traditionally dominated by rice making up to 95 percent of all cultivated land. One yardstick which can be used to measure an expected or anticipated economic

---


9. Residents of Nong Sua now routinely work in factories along the Northern Corridor by travelling with 3 or 4 different modes of transportation. For example a motorcycle taxi shows up at the village each morning at a prearranged time. The factory worker travels on the back of the motorcycle until the end of the road, at which time along the perpendicular road, a privately owned pickup truck with seats (a private bus company) takes the worker to the main highway (Northern Corridor). From there a transit bus is taken to the place of employment. In less then one hour the worker has travelled from village to factory. See Appendix II (April 22, 1991).
Figure 4.3: Ampoes of Samut Prakan
'revolution', is to gauge a region's proportion of land under paddy. As early as the late 1940s and 1950s, Pathum Thani and Samut Prakan were beginning to exhibit a reduction of land allotment to rice. This was naturally tied into higher yields per rai, but as Tables 4.4 - 4.7 indicate, the emerging encroachment of non-agricultural activities was beginning. Table 4.8 provides data showing, among four selected rice growing changwats, two EBMR, one peripheral EBMR, and one non-EBMR, the time period of plateau, or when it reached its highest level before decline, for land under rice is quite varied.

**TABLE 4.8**

**NUMBER OF RAIS PLANTED BY YEAR IN SELECTED CHANGWATS (TIME PERIOD OF PLATEAU SHADEd), in 1000s of rai**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Pathum Thani</td>
<td>731</td>
<td>448</td>
<td>400</td>
<td>688</td>
<td>648</td>
<td>999</td>
<td>857</td>
<td>749</td>
<td>806</td>
<td>820</td>
</tr>
<tr>
<td>Samut Prakan</td>
<td>195</td>
<td>142</td>
<td>410</td>
<td>234</td>
<td>264</td>
<td>323</td>
<td>311</td>
<td>239</td>
<td>204</td>
<td></td>
</tr>
<tr>
<td>Chainat</td>
<td>3161</td>
<td>891</td>
<td>500</td>
<td>770</td>
<td>737</td>
<td>575</td>
<td>562</td>
<td>396</td>
<td>328</td>
<td>320</td>
</tr>
<tr>
<td>Kanchanaburi</td>
<td>512</td>
<td>462</td>
<td>320</td>
<td>408</td>
<td>273</td>
<td>174</td>
<td>113</td>
<td>192</td>
<td>79</td>
<td>30</td>
</tr>
</tbody>
</table>

Source: Thailand Statistical Yearbook, various years.

In Pathum Thani and Samut Prakan, the plateau was reached 25-30 years ago, while it is just beginning to decline in the peripheral EBMR changwat (Kanchanaburi), and shows no indication of slow down in the non-EBMR changwat of Chainat. From the data in these two figures, there exists an inverse relationship between rice cultivation and emerging industrial enterprise.

---

10. 1 rai = 1600 square metres  
1 hectare = 2.47 acres = 6.25 rai.

11. These four changwats display a wide range of industrial development and are spatially diverse within the Central Plain space economy. Chainat is non EBMR, but part of the Central Plain. Kanchanaburi is at the northwest periphery of the EBMR, and Samut Prakan and Pathum Thani make up the core of the outer city EBMR.

12. This should not be confused with yield productivity, which normally is increased during the nascent years of economic transition.
The eastern areas of the BMA, which have only begun to develop in the last decade are also zones under transition. Table 4.9 presents data showing that the outer eastern areas of the BMA, such as Nong Chok, Minburi, Bang Khen, Ladkrabeng etc., have experienced a rapid and profound change in land use, (see Figure 4.4).

TABLE 4.9

URBAN LAND USE, BMA OUTER AREAS (IN RAI): NONG CHOK, MINBURI, THONBURI, BANGKHEN

<table>
<thead>
<tr>
<th>DISTANCE FROM CITY CENTRE (KM)</th>
<th>1974</th>
<th>1984</th>
<th>1988</th>
</tr>
</thead>
<tbody>
<tr>
<td>11-20</td>
<td>126,150</td>
<td>221,913</td>
<td>269,088</td>
</tr>
<tr>
<td>21-30</td>
<td>44,394</td>
<td>84,619</td>
<td>128,675</td>
</tr>
<tr>
<td>OVER 30</td>
<td>27,781</td>
<td>79,106</td>
<td>162,781</td>
</tr>
</tbody>
</table>

Source: Adapted from PADCO (1990), pg.25.

Moreover, the most sensational changes occurred furthest from the city center, suggesting the emphasis of growth and development is the outer city. Table 4.10 reveals growth rates of urban land use, of over 25 percent per annum in the outer areas (30 kilometers from city center and further), between 1984 and 1988.

TABLE 4.10

INCREASE IN URBAN LAND USE OVER 10 AND 4 YEARS, FROM FIGURE 4.9

<table>
<thead>
<tr>
<th></th>
<th>11-20 KM</th>
<th>21-30 KM</th>
<th>OVER 30 KM</th>
</tr>
</thead>
<tbody>
<tr>
<td>% INCREASE IN 10 YEARS (1974-1984)</td>
<td>76</td>
<td>91</td>
<td>185</td>
</tr>
<tr>
<td>% INCREASE IN 4 YEARS (1984-1988)</td>
<td>21</td>
<td>52</td>
<td>106</td>
</tr>
</tbody>
</table>

Source: Adapted from PADCO (1990), pg.25.

13. There are still considerable tracts of land that are largely under non-urban land uses in the outer reaches of the BMA; Nong Chok and Minburi in particular. Urban land use refers to non-agricultural built environment, i.e. housing, industry, and golf courses. See Appendix II, (December 9, 1992).
Figure 4.4: Eastern Districts of BMA
Achieving conversion rates of this scale suggests constant, intensive construction, and development, which leads to rolling farms into factories at an unprecedented pace! The next chapter focuses entirely on land use change.

A comment on the role international capital plays in inducing change is apposite at this time. The EBMR is a landscape deeply influenced by international capitalism and foreign led industrialization. Export orientated growth and the increasingly open and free economy is the foundation of strident advice offered by the World Bank (IBRD) during the early years of the General Prem leadership. Through the 1980s, each successive year was marked with new 'levels of openness' as previous regulations of tariffs designed to induce import substitution industries were gradually dismantled.14

Foreign Direct Investment (FDI), as seen in Figure 4.5, except during a global oil-based recession, has been subject to a steady climb. Since 1985, Thailand has outperformed all ASEAN nations in securing Japanese investment. The large Japanese presence, and a consistent, reliable group of investors from Korea, Hong Kong, Taiwan, Singapore, and the West, has insured that the industrial base has increased in size and diversity, and are mainly orientated to overseas markets.15 Thailand's Board of investment (BOI), a government agency founded in 1959, chaired by the Prime Minister, and responsible for encouraging investment in Thailand, approved 230 foreign and indigenous investment firms in 1986.16 The following year the number increased to 550, and from 1988 to 1990, the BOI was averaging over 1000 approvals a year.

15. Daniere, Amrita (1991) Review of the Recent Economic Boom and the Accelerated "Internationalization" of the Thai Economy, Bangkok: Thailand Development Research Institute. See data for Figure 4.5 in Appendix IV.
16. The BOI offers a wide range of investment services, start up grants, and tax breaks to its approved projects. In particular, the BOI permits import duty reductions on imported technologies and raw materials. In some instances, the BOI has authority to exempt income taxes and royalties for up to 5 years.
Figure 4.5 FOREIGN DIRECT INVESTMENT (Millions of Baht)

Source: Ichikawa (1990), Pg. 16.
Between December 1989, and August 1991, I conducted a survey of 682 BOI approved projects. Of that total, 455, or 67 per cent of all projects located in one of the 13 EBMR changwats, or Bangkok.

Approximately 75 per cent had at least some foreign ownership. 17

Table 4.11 ranks in order of frequency, the location of the 455 BOI approved projects (also see Figure 4.6). The three provinces of Chonburi, Samut Prakarn, and Pathum Thani, aggregately account for nearly one-third of all approvals. Chonburi's Eastern Seaboard development project explains the 72 BOI firms located there. Three Central Plain outer ring changwats combined, Chachoengsao, Saraburi, and Ayutthaya, attracted 13 per cent of the national total of this survey. Up until very recently, these three changwats in particular, were known as outstanding contributors to rice bowl production only. Their rapid surge in non-agricultural development epitomizes the region based industrial and urban development that is central to this project. 18 These figures show that foreign investment was an important force behind EBMR social and economic transformation.

17. One venture, Namchao Co. Ltd., destined for Ratchaburi, was approved to produce for export 120 million packages of instant noodles per year. The Baht 268.3 million investment is 99.99999 percent Taiwanese, and 0.000001 percent Thai holding.

The following countries, from the survey were represented as foreign investors; Sweden, Australia, Taiwan, China, Canada, USA, Liberia, Korea, Japan, Denmark, Italy, Singapore, Malaysia, IJK, India, Belgium, Luxembourg, Panama, Norway, Holland, England, Portugal, and France.

The range of services and products that were to be offered and produced were diverse; garments, transistors, tourism-hotels, resorts, packing boxes, automobile tires and headlights, moulds of electronic equipment, electron guns, baseball gloves, imitation crab, hair dryers, stronium ferrite, footwear, CD's, several hospitals, golf clubs, granite blocks, ring gears, precious stones, acid dye, skateboards, mosaic tiles, thermal relays, canned fruits and vegetables, electronic toys, elastic bands, chopsticks, washing machines, cartoon films, floppy disc drives, plastic sacks, leather clothing, greeting cards, ice hockey gloves (a Canadian led joint venture), binoculars, chili sauce, children's books, kidney cleaning tubes, and synthetic eggs. See BOI statistical reports, 1989, 1990, 1991.

18. In the mid 1980s Chachoengsao's economy was nearly all agriculture. By 1991, there were approximately 600 factories, mostly producing electronic parts and components. There were also two industrial estates, Gateway City, and Well Grow, combined, on 9000 rai of land. Chachoengsao is also the site of a handful of new golf course projects. All the new opportunities, in this changwat of just over a half million people, are creating a labour shortage. Tens of thousand of workers are being imported from neighboring Samut Prakarn, and the Northeast. State Governor Tavee Padungrat has established, what may be the first 'labour bank' in the Kingdom. The bank's labour reserves, which are known villages in the Northeast with 'labour prosperity', assures investors an ample labour supply. Krissana Parnsoonthorn (1991) , THE NATION (1991) May 10, "Chachoengsao in Transition" pg.F1.
<table>
<thead>
<tr>
<th>Changwat</th>
<th>Number</th>
<th>% of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bangkok</td>
<td>94</td>
<td>14</td>
</tr>
<tr>
<td>Chonburi</td>
<td>72</td>
<td>11</td>
</tr>
<tr>
<td>Samut Prakarn</td>
<td>71</td>
<td>11</td>
</tr>
<tr>
<td>Pathum Thani</td>
<td>59</td>
<td>9</td>
</tr>
<tr>
<td>Ayutthaya</td>
<td>42</td>
<td>6</td>
</tr>
<tr>
<td>Chachoengsao</td>
<td>37</td>
<td>5</td>
</tr>
<tr>
<td>Samut Sakhon</td>
<td>36</td>
<td>5</td>
</tr>
<tr>
<td>Saraburi</td>
<td>13</td>
<td>2</td>
</tr>
<tr>
<td>Nakhon Pathom</td>
<td>11</td>
<td>2</td>
</tr>
<tr>
<td>Ratchaburi</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>Kanchanaburi</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Nonthaburi</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Samut Songkram</td>
<td>2</td>
<td>-</td>
</tr>
<tr>
<td>Suphanburi</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>All Other Changwats</td>
<td>227</td>
<td>33</td>
</tr>
</tbody>
</table>
Figure 4.6: Percentage of Total BOI Approved Projects in EBMR
Approximately 50 per cent of approved factories were located in the BMR. Table 4.12 shows change in distribution of all (BOI and non-BOI) manufacturing establishments in the BMR, for the period 1985-1989. Although this data does not indicate size of firm, most factories located in the BMA and Nonthaburi are small operations, often with less than 10 workers. Nevertheless the data (Table 4.12) reveals that over the four year period, in the five provinces alone, 2,136 new establishments were created, an average of more then one new factory a day. Presently, industry occupies approximately 33,000 rai, or 0.7 per cent of total BMR land area. If current trends continue, by the year 2011, 233,700 rai, or 5 per cent of the land will be required for industrial use.\(^{19}\) If this is true it translates into a serious need for new sources of labour over the next few decades. The labour vacuum will be filled, not by an increased birthrate, or by the in-situ population, but by interregional migration, which is the focus of the next section.

**TABLE 4.12**

<table>
<thead>
<tr>
<th>Changwat</th>
<th>Number of Factories</th>
<th>Average Annual Growth Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMA</td>
<td>17,022</td>
<td>17,754</td>
</tr>
<tr>
<td>Nakhon Pathom</td>
<td>516</td>
<td>638</td>
</tr>
<tr>
<td>Nonthaburi</td>
<td>518</td>
<td>611</td>
</tr>
<tr>
<td>Pathum Thani</td>
<td>358</td>
<td>469</td>
</tr>
<tr>
<td>Samut Prakan</td>
<td>2,086</td>
<td>2,547</td>
</tr>
<tr>
<td>Samut Sakon</td>
<td>658</td>
<td>795</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>21,158</strong></td>
<td><strong>22,614</strong></td>
</tr>
</tbody>
</table>


---

19. NESDB, Area #7, op.cit, pg.84.
4.2 Population Change:

The second component of the 'triplartition of change', in the spatial revolution occurring in the EBMR is population growth. Migration from the peripheral changwats in particular forms a cornerstone of the region's rapid development. The density of industrial enterprises in several pockets of the EBMR, requires a labour force that exceeds the prevailing supply, resulting in significant workforce shifts, both large in number, and diverse in destination. For example, several changwats in the EBMR which have habitually been the source of migrants, are presently migrant destinations. The traditional destination since the turn of the century, Bangkok, is rapidly becoming known as a point of origin. Not only is migration causing demographic restructuring in the region, but it is a migration that is building urban districts in the region's outer rim.

For over a century, Thailand's dominant migration pattern remained very steady; it was simply a case of peasants from predominantly 'rural' locations moving to Bangkok. As late as 1980, Bangkok was receiving 95 per cent of national net interregional migration.\(^\text{20}\) This major flow of in-migration fueled numerous social problems, such as urban housing shortages, overcrowding, under and unemployment, crime, and traffic congestion. The situation is currently changing, as the new migration pattern is predominantly a 'rural' to EBMR flow, and changwats such as Pathum Thani, Saraburi, Chachoengsao, and Ayutthaya are the new destinations, offering wage labour opportunities, and a wider selection of urban amenities.

Sternstein (1976) notes that in the 1960s "droves of migrants" left Samut Prakara to work in the factories of Bangkok.\(^\text{21}\) Similarly, the Institute of Population Studies at Chulalongkorn University (1974) reported that in the 1955-1960 migration survey, Pathum Thani was the seventh highest province in terms of out-

\(^{20}\) National Economic and Social Development Board (1986) Recommended Development Strategies and Investment Programmes for the Sixth Plan, Bangkok.

migration, with 60.8 out-migrants per 1000 population, at a time when the national mean was 37.5. In fact the whole Central Plain contributed to the growth and development of Bangkok. Chapman and Allen (1965), using the term "social fluviology" to refer to migration streams, noted that the expected trend of a reduced stream from areas of high paddy production, was not always true. Pathum Thani, with traditionally some of the largest rice yields per rai in the country, was, as noted above, largely characterized by high out-migration.

The migrant catchment of Bangkok was not only restricted to the Central Plain, but included the whole country. Every changwat had contributed to Bangkok's growth. The most notable region, the Northeast (Isan), with a population of over 20 million (1990), on a largely sterile rocky plateau, has consistently contributed to the capital's growth. Between 1975 and 1980, an average of more than 25,000 migrants per year from the Northeast alone, arrived in Bangkok. This trend is declining however, not because Isan is less of a sending region, but because the destination regions were being extended outwards (from Bangkok) to the BMR and outer ring changwats.

Table 4.13 reveals the gradual change of net in-migration in the BMR, from Bangkok to the five inner ring provinces. It shows that by 1990, for the first time, the five provinces aggregately began receiving more migrants than Bangkok. This data, affirms the shift of demographic and economic emphasis away from the BMA. By the year 2000, it is predicted the inner ring provinces will be receiving 70 per cent more migrants than Bangkok; this can be compared with the situation only two decades previous, when they received half as many! This is consistent with data that show through the 1980s, the BMR's 3.3 per cent population growth


25. Ibid.
Table 4.13

FIVE YEAR REGIONAL NET MIGRATION, 1975-2000 (population in 1000s)

<table>
<thead>
<tr>
<th>Year</th>
<th>5 PROVINCES</th>
<th>BANGKOK (BMA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1975-80</td>
<td>96</td>
<td>190</td>
</tr>
<tr>
<td>1980-85</td>
<td>122</td>
<td>184</td>
</tr>
<tr>
<td>1985-90</td>
<td>151</td>
<td>149</td>
</tr>
<tr>
<td>1990-95</td>
<td>181</td>
<td>124</td>
</tr>
<tr>
<td>1995-2000</td>
<td>195</td>
<td>115</td>
</tr>
</tbody>
</table>

Source: NESDB 7th Five Year Plan (1992).

rate was a full two per cent higher than the BMA's. Taking this discussion one step further, by the turn of the century, for the first time since inception at least one source speculated, the BMA may experience a decline in population.  

Table 4.14 shows the increase of migrants into selected EBMR *changwats*, over three survey periods. The accelerating rate, shows a high correlation with growth in non-agricultural employment opportunities. Also, noteworthy is the increasingly significant role of Isan migrants, comprising almost 20 per cent of the total in Pathum Thani, and over one-quarter of the total in Chachoenfsao in the 1985-1990 census period.

The decentralization of the point of origin for net interregional migration is not a new trend. Since the 1970s, migrants began leaving Bangkok for adjacent areas that offered urban employment. Also migrants from peripheral regions, such as the upper Central Plain, Isan, and the North began targeting the *changwats* of Pathum Thani, Nonthaburi, and Samut Prakarn. It was an expected response to the early stages of a reconcentration of industry in a decentralized fashion. Sternstein, influenced by the work of the Department  

26. National Econometric and Social Development Board (1991), National Urban Development Policy Framework, GLOBAL AND NATIONAL ISSUES IN THAILAND'S URBAN DEVELOPMENT, Area #1, pg.16. Bangkok would certainly not be the first Asian mega-city, to have reached a point of population reduction. Calcutta has had no population growth for at least 10 years. The Calcutta urban region, however continues to grow. Also see National Economic and Social Development Board, (1991) National Urban Development Policy Framework, URBAN POPULATION, EMPLOYMENT DISTRIBUTION AND SETTLEMENT PATTERNS, Area #2.
TABLE 4.14

MIGRATION OF POPULATION INTO SELECTED EBMR CHANGWATS

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>PATHUM THANI</td>
<td>17,071</td>
<td>32,570</td>
<td>58,455</td>
</tr>
<tr>
<td>(1349)</td>
<td>(3993)</td>
<td>(10,978)</td>
<td></td>
</tr>
<tr>
<td>SAMUT PRAKARN</td>
<td>49,395</td>
<td>61,992</td>
<td>NO DATA</td>
</tr>
<tr>
<td>(4171)</td>
<td>(10,891)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AYUTTHAYA</td>
<td>11,289</td>
<td>19,248</td>
<td>21,764</td>
</tr>
<tr>
<td>(930)</td>
<td>(2304) *</td>
<td>(2707)</td>
<td></td>
</tr>
<tr>
<td>CHONBURI</td>
<td>19,683</td>
<td>53,122</td>
<td>NO DATA</td>
</tr>
<tr>
<td>(8492)</td>
<td>(10,829)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHACHOENGSAO</td>
<td>5247</td>
<td>16,787</td>
<td>28,504</td>
</tr>
<tr>
<td>(908)</td>
<td>(4,018)</td>
<td>(7473)</td>
<td></td>
</tr>
</tbody>
</table>

Note: Values in bracket are for Isan only.
* Based on 11 of 17 Isan Changwats only.


of Town and Country Planning (DTCP), and perhaps slightly influenced by Gottmann's 1961 Megalopolis thesis, devised the "Bangkok Mini-Megalopolis". Figure 4.7 is Sternstein's creation, which is strikingly comparable to the EBMR. The Mini-Megalopolis is divided into "outermost", "intermediate", and "innermost" parts, not unlike the inner and outer rings of the EBMR. The model was based on infrastructural availability, transportation access, and was proposed as a grand plan to deflect demographic pressure from Bangkok. It was an insightful representation of future development of the region, which, as Sternstein emphasized, was largely influenced spatially by transportation corridors. He concludes one of his published articles, with the following astute statement, "within a comparatively short time, certainly by the year 2000, a wide ribbon of land bordering the Bight of Bangkok will be built up and will house a
Source: Sternstein (1971).
population of at least 15 million.\textsuperscript{27} This form of 'regional urbanization' is creating a non-agricultural landscape, without large cities.

An example of the effects of population growth in the EBMR through migration is revealed in Table 4.15. The forecasted data suggests, the emergence of a large region, anywhere from 50 to almost 100 per cent urbanized, in a spatially scattered fashion.\textsuperscript{28} By the end of the first decade in the next century according to the table, Nonthaburi will be almost fully urbanized. Chonburi, Samut Prakan, and Pathum Thani will all be over four-fifths urbanized. In fact it is probable the whole EBMR will take on a 'new' landscape; the urbanization of the rice bowl. Table 4.15 offers two important lessons which are crucial to this dissertation. Firstly, there is a serious shortcoming in the traditional administrative definition of 'urban', and secondly, the EBMR is under an urban 'assault', without cities.

The above analysis has implications for the \textit{desakota} literature. McGee (as discussed in Chapter 2) maintains that high demographic densities are necessary preconditions for the emergence of \textit{desakota}. Table 4.16 shows densities for the BMR and BMA. The BMR has the highest population densities in the Kingdom. The highest densities in Samut Prakan and Nonthaburi reflect large areas that are built up and are 'suburban sprawl' of Bangkok. This is not the case for the other inner ring \textit{changwats}. The point here is that in situ labour of the higher population density areas of the BMR was not sufficient to match the high demand for labour brought about by rapid industrialization in the BMR in the 1980s. When we consider the empirical evidence of the Samut Prakan and Pathum Thani cases, it appears that some of the surplus labour that was

\begin{footnotesize}

\textsuperscript{28} The two definitions are as follows: 1. Administrative- Municipal areas designated by the Ministry of the Interior. It is old, and never updated, resulting in a considerable underestimation. 2. Geographical- Much more 'actual' and accurate then the administrative definition, taking into account land use and density. It contributes to solve the problem of underbounding. See Chapter 2 for more discussion of the rural-urban dichotomy. The data for figure 4.15 was collected by field workers for the TDR. See NESDB, National Urban Development Policy Framework, URBAN POPULATION, EMPLOYMENT DISTRIBUTION AND SETTLEMENT PATTERNS, Area #2, 1991, pg.33.
\end{footnotesize}
TABLE 4.15

URBANIZATION LEVEL (%) OF SELECTED EBMR CHANGWATS USING ADMINISTRATIVE DEFINITION AND GEOGRAPHICAL DEFINITION (FOR THE YEARS 1990 AND 2010)

<table>
<thead>
<tr>
<th></th>
<th>1990 ADMIN.</th>
<th>1990 GEOG.</th>
<th>2010 ADMIN.</th>
<th>2010 GEOG.</th>
</tr>
</thead>
<tbody>
<tr>
<td>NONTHABURI</td>
<td>67</td>
<td>81</td>
<td>84</td>
<td>95</td>
</tr>
<tr>
<td>SAMUT PRAKARN</td>
<td>56</td>
<td>67</td>
<td>66</td>
<td>87</td>
</tr>
<tr>
<td>PATHUM THANI</td>
<td>45</td>
<td>53</td>
<td>69</td>
<td>82</td>
</tr>
<tr>
<td>SAMUT SAKHON</td>
<td>38</td>
<td>41</td>
<td>43</td>
<td>56</td>
</tr>
<tr>
<td>AYUTTHAYA</td>
<td>31</td>
<td>36</td>
<td>38</td>
<td>54</td>
</tr>
<tr>
<td>CHACHOENGSAO</td>
<td>20</td>
<td>22</td>
<td>37</td>
<td>46</td>
</tr>
<tr>
<td>CHONBURI</td>
<td>48</td>
<td>62</td>
<td>56</td>
<td>82</td>
</tr>
<tr>
<td>RATCHABURI</td>
<td>32</td>
<td>36</td>
<td>42</td>
<td>50</td>
</tr>
<tr>
<td>SARABURI</td>
<td>39</td>
<td>43</td>
<td>58</td>
<td>65</td>
</tr>
</tbody>
</table>

Source: adapted from NESDB (1991), Area #2, pg. 33.

TABLE 4.16

AVERAGE BMR POPULATION DENSITIES (PERSONS PER SQ. KM.)

<table>
<thead>
<tr>
<th></th>
<th>1980</th>
<th>1986</th>
<th>1990</th>
</tr>
</thead>
<tbody>
<tr>
<td>BANGKOK (BMA)</td>
<td>3,285</td>
<td>3,680</td>
<td>3,754</td>
</tr>
<tr>
<td>SATURATED URBAN</td>
<td>33,654</td>
<td>32,261</td>
<td>no data</td>
</tr>
<tr>
<td>TRANSITIONAL URBAN</td>
<td>965</td>
<td>1,234</td>
<td>no data</td>
</tr>
<tr>
<td>SAMUT PRAKARN</td>
<td>560</td>
<td>697</td>
<td>767</td>
</tr>
<tr>
<td>PATHUM THANI</td>
<td>218</td>
<td>266</td>
<td>270</td>
</tr>
<tr>
<td>NONTHABURI</td>
<td>585</td>
<td>723</td>
<td>924</td>
</tr>
<tr>
<td>SAMUT SAKHON</td>
<td>315</td>
<td>362</td>
<td>368</td>
</tr>
<tr>
<td>NAKHON PATHOM</td>
<td>252</td>
<td>285</td>
<td>290</td>
</tr>
</tbody>
</table>

Source: NESDB (1986)

Thailand Government (1990), Population and Housing Census, NSO.
already recruited to Bangkok in the 1960s, returned to the outer city through the 1980s and early 1990s. Along with migration from other parts of the Kingdom, population densities increased quickly. McGee's assertion of a high population density being a precondition to desakota is not valid in the BMR. The industrial labour force has largely been recruited from other regions of the Kingdom to fill consequent labour demands. Current high population densities are based on recent migration flows into the region.

4.3 Space-Time Compression:

The primary focus of this chapter has been the spatial dimension of change, and the resulting constructions of the 'urbanized' geo-economic landscape. Within this approach, the role of transportation and communication are of central importance; they are processes that have facilitated spatial restructuring in the EBMR and have enhanced the spread effects. Amid the framework considered here, space-time compression stands as the final, but most influential and compelling component of the 'tripartition of change'. Brunn and Williams (1983) define 'time-space' convergence as "the rate at which places are moving closer together measured by travel time and communication time." 29 It is a concept that has taken up a central position in the recent literature on urban restructuring and transformation, particularly the rise of the extended outer city. McGee and Lin (1993) suggest that the relative prosperity of the Asian Tigers is due in part to a successful process of 'time-space' compression. 30


Contributing to the understanding of this phenomena, Pred (Figure 4.8), has linked two separate models; time-space compression and cumulative causation. Despite its western bias, the construct is a fairly relevant representation of the spiralling transactive linkages that are expanding in the EBMR. The two processes are mutually reinforcing, particularly at times of rapid growth and development. Generally, the model moves through several stages as follows:

- New industrial activity (and local demand) stimulates innovation in transportation and communication.
- This leads to new construction activity, and amenities, creating the compression of time-space.
- Growing economy, and subsequent forward and backward linkages, create a new "regional threshold".
- Population is increased, economy becomes spatially concentrated and centralized.
- The infrastructural base is extended and broadened to ease aggregation and interaction, forming a peripheral spatial economy.
- It is a circular cycle, which, as it proceeds creates space through phases of time-space compression.

This model acts as a historical record, and future direction for EBMR development. The linkages to create new thresholds are largely products of public roads and highways. Gottman, referring to the northeastern U.S.A. megalopolis, wrote, "the future course of Megapolitan development appears to depend to a large extent upon the quality of the transportation services the region will be able to offer its inhabitants and visitors." Within the EBMR, highways and freeways are the essential transportation system. It is a costly endeavor, but provides the most cost efficient form of transportation system at present. The type of landscape being produced (for better or worse) can not survive without highways and automobiles. The


Figure 4.8  Spiralling Transactive Linkages

1. New industry and demand

2. New transportation and communication technology

3. Time-Space convergence

4. Increased interaction

5. New regional demand

6. Infrastructure base is extended

7. Peripheral space economy

Source: Adapted from Pred (1966)
spatial economy is already overly dependent on vehicle arteries, which is largely a reflection of poor urban
and transportation planning decades ago. The outer city sprawl, and extended industrial growth would have
never occurred, if not for a good network of regional all-weather highways that were constructed starting in
the 1950s. Rail networks and river transportation were the nascent transportation systems that initially
opened up the region over one century ago. They were efficient and practical for the time, but with the
delinarization and scattering of the space economy, their effectiveness were curtailed. Until the 1980s, road
development throughout the Kingdom, aimed primarily at improving connections and access to Bangkok
along major routes. Little has been done to develop the distribution of secondary road networks.33

The EBMR, and notably the inner ring have recently experienced growing traffic. Hurdles of this nature
must be overcome before additional development and prosperity takes root. For example, a proposed mass
rapid transit system has been finally (1992) given federal level consent to commence construction. A new
rail line to the Eastern Seaboard (ESB) has been laid, including a new route linking Laem Chabang (ESB)
with the Northeast, eliminating the need of traversing already congested Bangkok. There are currently
(1992) a number of ongoing highway construction projects in the EBMR, all strategically aimed at easing the
traffic congestion expected in the next few years.34

Access to, and mobility within the changwats of the EBMR will be decisive in determining the success of
further development. The present pattern is characterized by large portions of land close to main arterial
routes being held idle by speculators. Partial blame is due to the lack of access roads discouraging

Purposes, Unpublished manuscript, Graduate Program in Urban and Regional Planning, University of California,
Irvine.

34. Some of the projects undertaken by the Department of Highways to curb congestion problems are; several projects
at Rangsit, a major commuting hub in Pathum Thani, a 150 kilometer road opening more of Saraburi to the Northeast, a
183 kilometer highway is being built linking the industrial estates of Ayutthaya to the Northern city of Nakhon Sawan,
another urgently needed highway between Pattaya and Chonburi, and a 62 kilometer road joining Samut Prakarn and
Ayuthaya. This highway is of particular significance, as it skirts, the expected route through highly congested
Bangkok. These projects are expected to be completed between 1992 and 1994. See Halcrow Fox and Associates and
Asian Engineering Consultants Ltd., (1992) SEVENTH PLAN URBAN AND REGIONAL TRANSPORT (SPURT),
National Economic and Social Economic Board, Bangkok.
development between main arterial highways. The Sixth NESDB Development Plan called for improving the interstitial road networks to pry open new areas, and eliminate the impenetrable 'super blocks'. Such development will further integrate the nearby changwats with the conurbation, and provide for greater inter-

changwat linkages.35

The internationalization of the economy has created a demand for increased travel and communication. The demand is just as prevalent in the villages of the Central Plain, as the central areas of Bangkok. Travel time and accessibility are determining factors for villagers who are employed in EBMR factories, as well as cellular-phone-toting executives in the office towers of Silom Road. Although both economic 'players' are ultimately linked, and a necessary element of the larger picture, this dissertation is concerned with outer city transportation challenges. There are two issues of inquiry; first, there is a need for more inter-changwat roads in the EBMR. The Department of Highways have begun to address this concern. It is an urgent matter, as the congested areas extend up to 50 kilometers concentrically outward from the CBD, and the 'jam session' is in both directions.36 Secondly, there is a requirement to continue encouraging and developing cost efficient, informal modes of transportation. As mentioned earlier, motorcycle taxis, songtaews (pickup trucks with benches), privately owned minibuses, and minivans are instrumental in escalating population fluidity in the changwats of the EBMR. Also, small capital projects, such as erecting a short span bridge across a canal, is conducive to alleviating seclusion and economic isolation (see case studies). At the inter-village level, gains have been made to enhance circulation and mobility. Nearly every village in the region has at least one bus connection daily to nearby market towns, and the towns are all connected with fluid regular bus service to various areas of Bangkok. Privately owned minibuses service a wide concentric range.


36. One estimation is that GDP could be 10 per cent higher in the BMR without the appalling traffic congestion. The same source contends that 36 million Baht per day (13 billion Baht annually) of fuel is wasted by vehicles idling in traffic jams. The typical motorist spends 44 days a year in these 'linear parking lots'...enormous opportunity loss. BANGKOK POST (1990), August 15 "High Cost of Bangkok's Traffic Jams", excerpts of an article from the Singapore Straits Time.
around the capital, often up to 40 kilometers. Even the Transit Authority run regular routes deep into the extended region.

There are several ways to measure the increasing transactivity of the region. Figure 4.9 shows the forecasted trip demand increases in the core of the EBMR (Nonthaburi, Pathum Thani, Samut Prakan, Samut Sakhon, BMA), between the years 1989 and 2006. An apparent observation is not just the thickening of the spider network, indicating a large increase in person trips per day, but the inflated and expanded breadth of the network. Notably, areas in the eastern BMA, Nonthaburi, and Pathum Thani will rise the most.

Figure 4.10 indicates 1989 traffic volumes on the Asian Highway leading north and southwest out of Bangkok.37 The stretch of the super highway immediately north of Bangkok with 82,700 vehicles recorded passing per day is the heaviest used highway between Singapore and Vientiane.38 Much of the traffic is transport trucks travelling to the many factories that line the road, and also shipping produce from the North. However, by weight, 53 per cent of total tonnage (41.4 million tons) shipped by truck in 1988, was construction materials, such as gravel, cement, wood etc...39 Trucking has recently surpassed rail, becoming the major mode of shipping materials and goods throughout the Kingdom. Between 1982 and 1988 truck freight tonnage increased an average of 12.5 per cent per annum.40 Almost all goods that are hauled in Thailand, at some point in the trip, pass through the extended metropolitan region.

Finally, Figure 4.11 portrays the forecasted changes in vehicle ownership. As the illustration shows, the greatest increase is predicted to be in the outer areas of the region, particularly in the adjacent inner ring

37. The Asian Highway stretches from Singapore to Vientiane.
38. Ibid.
39. NESDB, Area #1 (1991), op cit pg 18
40. Ibid.
FIGURE 4.9
TRIP DEMAND INCREASE

Source: JICA (1990b).
FIGURE 4.10

TRAFFIC VOLUME: ASIAN HIGHWAY
(Numbers in boxes indicate 1,000s per day)

FIGURE 4.11

INCREASING DEMAND FOR ROAD SPACE

THE EXPLOSION IN CAR / MOTORCYCLE OWNERSHIP (thousands of vehicles)

INNER BANGKOK (excl. Central Area)

1989 1997 2001
260 400 580

CENTRAL AREA

1989 1997 2001
190 270 390

OUTER BANGKOK (excl. Inner Bangkok)

1989 1997 2001
470 840 1390

BANGKOK REGION (excl. Bangkok)

1989 1997 2001
110 200 340

THE INCREASE IN TRAFFIC IN GREATER BANGKOK

TRIPS PER DAY (millions)

1989 1997 2001
10 23 29

MORNING PEAK HOUR TRAFFIC (thousand PCUs)

1989 1997 2001
220 370 460

changwats, where in the 12 year period, the forecasted growth will be 196 per cent, or 16 per cent per annum.

This is precisely the area where an explosion of wage labor in the industrial sector is expected to occur in the coming decade. However, a paradox of success is the 'motorization' of society, and nowhere is this more apparent than in the EBMR. The environmental consequences are severe, and the pollution generated from this 'measure of success' is critical. People in the region will not give up their cars no matter how severe the jams become.

This chapter has shown that the EBMR, and particularly the BMR, have undergone change and restructuring. Data clearly point to an 'urbanized' pattern of development where agriculture is rapidly being supplanted by industry and service sector activities. The region (EBMR) has usurped the city (BMA) as a larger node of influence and production. This chapter complements the theoretical perspectives reviewed in Chapter 2 by providing the empirical evidence of a RBU. The following chapter sketches the process of land use change and describes the forms and functions found on the landscape.
PART III


CHAPTER FIVE:

LAND USE AND LAND PRICES:

This chapter moves beyond the accessible and quantifiable data on changes in the EBMR. It examines the process of land use metamorphose in terms of factors of change and land values. Land pricing mechanisms and its spatial distribution and variance are also central to this chapter.

Growing far beyond the city limits, the new forms of land use and socio-economic reorganization in the EBMR constitute revolutionary change and a consequent necessity to shed old ideas and perceptions acquired from former urban-rural orthodox thinking. Referring to the Megalopolis in the Northeastern U.S. seaboard, more then three decades ago, Gottmann wrote: "The major 'revolution' takes place in our understanding of how society is organized, how land is occupied, and how the various professions actually function."¹ The 'revolution' this dissertation addresses, is twofold; first, as mentioned above, it is a revolution in theoretical interpretation and comprehension of what urbanization and urban regions are. Second, there is an unmistakable revolution in land use resulting from the symbiosis of rural and urban. The two are irrefutably linked. This chapter will examine the second of the two 'revolutions' (land use), leaving the more theoretical of the two for Chapter 10 (New Models: Theoretical Refinement of Settlement and Urban Geographies).

¹. Gottmann (1961), op.cit. pg.216.
Thailand’s rapidly changing society, uprooted by the unbinding power of technology is altering its landscape socially, economically, and spatially. Bangkok and its extended environs have exploded into a boundless urban region of contiguous settlement invariably characterized by a rich mix of land use. It is this 'land use' which will be the focus of Chapters 6 and 7.

5.1 Land Prices:

The rising cost of land in Bangkok city is a major contribution to the growth of non-agricultural activity on the periphery of the EBMR. A recent world wide survey of the cost of inner city office rents in major urban centers revealed that Bangkok’s office space ranks as the 23rd most expensive. Within the Asia-Pacific region, it is in the seventh position. The steep prices cause finance and commercial enterprises, which are mostly comprised of offices, to conglomerate in skyscrapers in the overpriced city center, forcing spatially expansive, less capital intensive tertiary sector activities, manufacturing, and housing to the outer city. The prohibitive costs of central city 'space', combined with the economic boom, according to Chulalongkorn urban planner Khwansuang Atibodi, are precisely the causes of dispersed urbanization that "has already eaten into much of the surrounding provinces."

Inner city office rents are only a small part of the bigger picture. The fact is that land prices in Thailand have generally soared. In Bangkok’s metro district for example, from 1977 until the mid 1980s land prices

2. The survey conducted by Colliers International with cooperation and assistance from Colliers Jardine Thailand Ltd. established Bangkok’s office space cost at Baht650 (US$26) per square foot. Tokyo’s exorbitant US$216 per square foot was (again) ranked first. The cheapest city to rent office space from was Memphis (US$12 per square foot). The survey results were reported in The Nation, August 30, 1991.

increased 50 per cent per annum, and between 1987 and 1990 the increase was in the order of 3.75 times. In 1987, land costs accounted for approximately one-quarter of total building costs, and rose to nearly one half in 1990.\(^4\) Rising land prices combined with transportation and communication conveniences have driven all kinds of urban land users to the outer city.

A recent study compared Bangkok residential land prices to those in Karachi and Jakarta. Not only do Bangkok’s land price values far exceed those in the other two Asian metropolises, but the differences, according to the authors (PADCO, 1990) are "startling". The study notes, that since the mid 1980s land prices have leaped significantly, bypassing even the rapid GDP per capita growth rate. The study reports, "...
the 1990 pattern of residential land prices in Bangkok is far different than that found in 1986."\(^5\)

Land price increases will continue through the 1990s creating an active and volatile land market in the extended urban areas. A handful of large infrastructure developments in the eastern BMA, Eastern Seaboard, Pathum Thani, and Samut Prakan will further bolster a demand for land, making it likely that prices will continue to rise. The nature of the demand seems to indicate an emphasis on large industrial projects, and expensive residential development, again pointing to escalating prices. Furthermore, foreign investors are reacting to the government’s recent financial and investment liberalization policies forcing land demand and prices to increase further.

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\(^5\) The ‘difference’ between 1986 and 1990 is an important one, as the real estate landscape changed dramatically during those years. The pace of change will be discussed later. The study found that in Jakarta and Karachi, 9 and 13 per cent respectively of GDP per capita would be required to purchase one square meter of residential land 10 kilometres from the city center. In Bangkok, a similarly positioned piece of land would amount to 29 percent of GDP per capita, reflecting a much higher land to GDP ratio. See Planning and Development Collaborative International (PADCO) (1990) Washington D.C. and Land Institute Foundation (LIF-Bangkok) BANGKOK LAND AND HOUSING MARKET, A report prepared for the NESDB, Royal Thai Government, and Regional Housing and Urban Development Office for Asia, Bangkok.
A sure indication of soaring land values is the rapid increase in the number of land transfers. In 1987 the government collected Baht5500 million from land transaction fees. The estimated earnings in 1990 were Baht22,000 million, or a 300 per cent increase in only three years. 6

To provide further empirical evidence of these general trends, land values for 180 different locations in the EBMR were obtained from a survey conducted by Japan International Cooperation Agency. They were divided into four groups:

1. roadside agriculture
2. off road agriculture
3. roadside non-agriculture
4. off road non-agriculture

Distances of the sites ranged from 10-125 kilometres from Bangkok city centre (which are shown in Figures 5.1a - 5.1d). The price ranges are broad; from Baht10 million per rai at Baan Klong Ta Cham (in Nonthaburi) to only Baht2,000 per rai. The differences between roadside and off-road are quite pronounced, yet for all four of the graphs, which are aggregate groupings, the average land price curves are fairly smooth and unilinear. Actual land value curves shown in Appendix V are erratic and variable, but still point to an inverse correlation between land price and distance from the city centre. The emergence of nodes of uneven land values at varying distance from the centre of Bangkok reflect the development of nodes of industry, residential or recreation land use. The chaotic tapestry of land development leads to an erratic distance decay from the centre. An important message here is that as land values rise the incentive to shift the land to a different function rises. Moreover, theoretically we would expect that, as time passes, and infrastructure is

6. Although these amounts are for the whole Kingdom, three-quarters or more of it is in the EBMR. See BANGKOK POST. (1990) July 21, "Increase in Land Prices to Continue for 3 Years"
Average Land Prices
Agricultural area - road side

Average Land Price in Baht (000s)

Distance from BMA (kms.)

0-20 21-40 41-60 61-80 81-100 101-120 121-140
Average Land Prices
Agricultural area - off road

Average Land Price in Baht (000s)

Distance from BMA (kms.)
Figure 5.1c
Average Land Prices
Non-agricultural area - road side
Average Land Prices

Non-agricultural area - off road

Figure 5.1d
extended to the outer city, an increasing proportion of the land becomes roadside-non-agricultural, and the land use metamorphose escalates. All raw data in which the analysis is based is reported in Appendix V.

Another salient characteristic of the EBMR land market is the considerably higher increase of land values in the outer city. This differentiation holds true for both serviced and unserviced plots. Table 5.1, in constant 1990 prices, demonstrates that the compound increase of land values is nearly four times higher in the urban fringe (over 30 kilometres from the core) than in the center. Between 1988 and 1990, a serviced wah of land in the urban core increased in value by 8.2 per cent. At the urban fringe a wah of land over the same two year period increased in value over 36 per cent. The differential costs between city and outer city is a critical

**TABLE 5.1**

**PRICE TRENDS FOR SERVICED AND UNSERVICED RESIDENTIAL PLOTS, 1988, 1989, 1990 BY DISTANCE FROM CITY CENTRE, IN CONSTANT 1990 PRICES (BAHT PER SQUARE WAH)**

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>0-5</td>
<td>63,930</td>
<td>67,313</td>
<td>74,812</td>
<td>8.2</td>
<td>15,712</td>
<td>17,038</td>
<td>20,393</td>
<td>13.9</td>
</tr>
<tr>
<td>6-10</td>
<td>32,209</td>
<td>37,201</td>
<td>43,898</td>
<td>16.7</td>
<td>5,146</td>
<td>6,634</td>
<td>9,419</td>
<td>31.9</td>
</tr>
<tr>
<td>11-20</td>
<td>14,633</td>
<td>17,465</td>
<td>21,684</td>
<td>21.7</td>
<td>3,123</td>
<td>4,235</td>
<td>5,920</td>
<td>37.7</td>
</tr>
<tr>
<td>21-30</td>
<td>9,553</td>
<td>13,083</td>
<td>15,356</td>
<td>26.8</td>
<td>2,103</td>
<td>3,342</td>
<td>5,191</td>
<td>46.7</td>
</tr>
<tr>
<td>OVER 30</td>
<td>4,081</td>
<td>5,464</td>
<td>7,582</td>
<td>36.3</td>
<td>1,553</td>
<td>2,103</td>
<td>3,342</td>
<td>46.7</td>
</tr>
<tr>
<td>OVERALL</td>
<td>23,348</td>
<td>27,566</td>
<td>34,129</td>
<td>20.9</td>
<td>4,898</td>
<td>5,622</td>
<td>9,191</td>
<td>37.0</td>
</tr>
</tbody>
</table>

Source: PADCO (1990), pg.74.

7. Appendix V shows the land value data for each of the four situations, accompanied with graphs depicting actual land values (as opposed to average) and distance from BMA-CBD. The data was obtained from JICA (1990b).

8. One wah = four square metres; 400 wah = 1 rai
point. This trend is typical of most rural areas under an urban assault. The higher income that will potentially be realized from urban use triggers the hefty jump in value.⁹

All the data and figures are not able to depict the dynamic nature of the skyrocketing land prices. Each ampoe and even tambon has undergone dramatic land value increases. Landowners, peasants, tenants, and even factory workers all have a story to tell concerning a parcel of land which has astronomically risen in value. Newspapers are full of anecdotal reports of foreign land grabbing and near-ludicrous land inflation cases, and district officials are bewildered and frustrated by runaway land prices in the outer city. For example, one woman working at a hobby farm along Ram Intra Road near Safari World in the eastern BMA ecstatically claimed that the land along the road is now worth no less than Baht16 million per rai. A cartographer in the Pathum Thani land office maintained that the property on which his office sits was valued at Baht100,000 per rai in 1987; in 1991, the price of the same land with no additional infrastructure was greater then Baht1 million. He also claimed that a new road from Bangkok to the Northeast was planned in the same vicinity. The precise location is secret, for if disclosed, land prices would shoot up 300 per cent causing a scramble of buying and selling. An industrial estate manager in Bang Plee, Samut Prakarn reported that land adjacent to the estate has increased in value to Baht 4million (in 1991) from Baht450,000 in 1984. A landowning farmer-village headman, along a canal in off-road Pathum Thani boasted he has been offered Baht62,500,000 for his 50 rai. A resident along Bangna-Trad Highway in Samut Prakran recalled that only a decade past, land along the highway was Baht 40,000 per rai. With the recent development of Samut Prakarn, Chonburi, and the ESB, in 1992 nowhere along the road is the land less then Baht1 million per rai.¹⁰

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⁹ See PADCO (1990), op.cit, pg.72. Dowall, participating in the PADCO study showed similar land pricing data for an earlier time, suggesting a trend that is not unprecedented. Between 1977 and 1986 land prices increased 4.3 per cent per annum at a distance of 20 kilometres from the CBD. At 10 kilometres, land values increased only at a rate of 1.8 per cent per annum. It also suggests that extra road infrastructure contributes to a rise in land value. Dowall, David (1989) "Bangkok: A Profile of an Efficiently Performing Housing Market", URBAN STUDIES, vol. 26, pg.336, pg.327-339.

¹⁰ These figures were never verified, but it is apparent a few values were embellished. In land sales, perception of the value of land is more important than market value assigned by governmental authorities or market mechanisms.
The next section will address and describe the process of land change from agriculture to non-agriculture uses. At this point though, it is worth mentioning that competition between urban land uses and agricultural interests have contributed significantly to the soaring land prices. As illustrated, prices of Baht 1-5 million per rai are routine, yet even a conservatively high estimate of the actual value of agricultural land is no greater then Baht 60-70,000 per rai. From a landowner’s point of view, selling is much more economically attractive and viable then renting out or cultivating by him/herself. For tenant farmers, the incentive for abandoning agriculture is even more pronounced. Not only is there an absence of a social attachment to the land, but tenant farmers can earn nearly twice as much from industrial or service sector work than from farming.

The aberrant and inflated land values in the outer city has caused a precarious speculative bubble. The rise in investment real estate and the numerous tracts of idle land suggests developers are earning considerable profits from land transfers. Korff (1986) is one of many observers who has argued that low and middle class consumers are invariably squeezed out of the housing market due to land speculation. Land hoarding has been prevalent in this region. This is problematic due to: i) as agricultural villages are engulfed by industrial development, the people are forced to opt for alternative occupations and housing, leading to a changing lifestyle and altered social patterns, ii) as agricultural land is replaced by scattered settlements, golf courses, and factories, some landless people have been forced to encroach on forests causing environmental problems, and iii) there are numerous reports of smallholders who have sold their land for millions of Baht, only to

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11. Actual value refers to profit bearing productivity, negating land as speculative investment.
squander it quickly and irresponsibly, culminating in poverty, landlessness and unemployment. This section has shown how rising land prices have reduced the incentives for rice cultivation. Land speculation is a growing trend in the EBMR contributing to land use change and the decentralization of non-agricultural activities.

5.2 Land Use Metamorphose:

Geographers have long been concerned with spatial restructuring of the forms and functions on the landscape; perhaps none is more evident than the expansion of metropolitan regions. The nature and extent of urban growth has been the subject of much writing and research. One helpful essay, written by Gottmann, 21 years after he published "Megalopolis", is worth examining. Writing theoretically, and universally (as opposed to dealing strictly with highly developed societies), Gottmann contends that "the deep metamorphosis of the metropolis" is explained by two agents; human and geographical.

The "human problem" reflects an interplay of various factors. Technology has given choices never before imagined to many people in both urban and rural areas. People have been unlocked from their limited space, leading to expanded circulation and migration. A proliferating urban population, escalating freedom, and broadened forms of commerce demanded additional city space, opening up adjacent urban peripheral lands.

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14. This sad and unfortunate experience is occurring regularly, with no recourse to prevent it being repeated. The District Officer of Ampoe Lam Luk Ka in Pathum Thani described this event as one of the three main problems effecting people in his district. As a related side note one of the other problems he mentioned was the increasing proportion of unused (speculative) land hoarding. See Appendix II (interview on April 22, 1991).

15. Gottmann, Jean (1982), "The Metamorphosis of the Modern Metropolis" EKISTICS, Jan-Feb. This is a particularly useful piece to examine because much of the theoretical foundation of the current dissertation is adopted from Gottman’s seminal study, "Megalopolis". This later article follows a similar theoretical line.
The "geographical problem" that Gottmann describes is largely connected to space time collapse (see previous chapter). Contemporary transportation and communication technologies have led to substantial increases in flows of traffic and migration. Place of work and residence are not confined to close proximity any more, and understandably residence and commerce scatter. Land speculation has contributed to an even greater expansive sprawl.

The stressful land requirements of the metamorphosis is the focus of this section. Gottman's contention is credible for Thailand, but the process has been enhanced and precipitated by an interplay of distinctive geographical and political forces.

As noted earlier, metropolitan Bangkok was developed on an alluvial coastal plain surrounded by fertile agricultural lands. The adjacent areas have always been characterized by the highest population densities in the Kingdom. In this sense, it is hardly surprising that land use change in the outer city was a continuous and vigorous process since the early years of this century. Furthermore, the seasonal nature of paddy contributed to a flourishing variety of non-agricultural activities, increasing the propensity for land metamorphosis.

An even more important factor provoking a gradual, but persistent land use shift, is the political decision making that has surrounded development expenditures. Since the Bowring Treaty of 1855, the administrative regime never invested equitably in agriculture, and particularly after the end of World War II, aid funding and local development schemes were orientated principally towards insurgency problems. There has been a bias in favour of the manufacturing sector manifested in high rates of protection for industrial activity concurrent with heavy agricultural export taxes. In sum, net capital transfers flowed from rural rice lands to urban Bangkok. Over the decades since the war, there were no respectable increases in real per capita income in the agricultural sector. This negligence acted to keep the cost of food low and in no small way to subsidize urban and industrial land uses. 16

16. For an interesting discussion of Thai 'under' development policy see Feeny (1979), op.cit. Of particular relevance in the Feeny article is how investments to increase agricultural productivity occurred only when the elite were to benefit. Irrigation expenditure for example, proven as an effective investment to increase yields occurred only seldom. Roads and railways were the favoured infrastructural investments as it was more apt to support manufacturing and infiltrate communist outposts. For a thorough treatment of Thailand's development policy prior to WWII see his (unpublished)
Figure 3.5 illustrates the expansive and rapid spatial swell of Bangkok since the turn of the century. Specifically, note the rapid growth that occurred since 1971. The agricultural lands were overrun by extending urbanization, the corridors were lengthened and thickened, development increased significantly away from the Chao Phraya River, Pathum Thani to the north and Samut Prakarn to the south became mostly urbanized, and undeveloped 'blocks' emerged as conspicuous barren blotches on the urban landscape.

Despite the dramatic visual impact of Figure 3.5, the average annual conversion rate in the BMR since 1971 (until 1990) has been a very modest one per cent.\(^{17}\) However, when considering the previous few years, these moderate conversion rates have dissipated, and replaced by considerably higher figures for the changwats of Pathum Thani, Samut Prakarn, and Nonthaburi. The steep increases correspond with rapid population growth and recent increases in the growth rate of the economy.

It is not only relevant to note conversion rates of agricultural land to non-agricultural uses in the BMR, but it is equally important to examine land use change within the agricultural sector. A cropping pattern has appeared suggesting a radical break from the traditional Central Plain rice bowl landscape where 90 per cent or more of land cover had been paddy. Figure 5.2 highlights these dramatic changes and will be discussed later in this chapter. As seen in Table 5.2, between 1981 and 1988, paddy land decreased almost 18 per cent, representing (in 1988) only 37 per cent of total land and 55 per cent of total agricultural land. Substantial increases for land cover in vegetables and flowers (29 per cent), grasslands (211,051 per cent), and idle lands (1,360 per cent) are apparent. These 'agricultural' land uses are in fact more akin to an 'urban' landscape then rural. This region traditionally was based largely on a monoculture cropping system of

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17. It should be noted that one of the five BMR provinces, Nonthaburi, has experienced a higher conversion rate then the others over the same time period (1.57 per cent).
FIGURE 5.2
BMR LAND CONVERSION RATES: 1974-1984

Source: Dowall (1989), pg. 333
**TABLE 5.2**

**AGRICULTURAL LAND USE IN THE BMR FOR SELECTED YEARS**

<table>
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</thead>
<tbody>
<tr>
<td>TOTAL LAND</td>
<td>4,848,841</td>
<td>4,848,841</td>
<td>4,848,841</td>
<td>4,848,841</td>
<td></td>
</tr>
<tr>
<td>TOTAL AGRICULTURAL LAND</td>
<td>3,004,221</td>
<td>2,878,968</td>
<td>2,813,379</td>
<td>3,267,544</td>
<td>8.77</td>
</tr>
<tr>
<td>AVG. FARM SIZE</td>
<td>23.93</td>
<td>24.09</td>
<td>23.60</td>
<td>26.75</td>
<td>11.75</td>
</tr>
<tr>
<td>NUMBER OF FARMS</td>
<td>125,518</td>
<td>119,517</td>
<td>119,224</td>
<td>122,168</td>
<td>-2.67</td>
</tr>
<tr>
<td>HOUSING AREA</td>
<td>82,807</td>
<td>84,536</td>
<td>96,144</td>
<td>90,635</td>
<td>9.45</td>
</tr>
<tr>
<td>PADDY LAND</td>
<td>2,163,463</td>
<td>2,048,228</td>
<td>1,899,669</td>
<td>1,779,513</td>
<td>-17.75</td>
</tr>
<tr>
<td>FIELD CROPS</td>
<td>296,165</td>
<td>302,515</td>
<td>239,843</td>
<td>184,726</td>
<td>-37.63</td>
</tr>
<tr>
<td>FRUIT &amp; TREE CROP</td>
<td>300,394</td>
<td>303,250</td>
<td>409,775</td>
<td>478,136</td>
<td>-59.17</td>
</tr>
<tr>
<td>VEGETABLES &amp; FLOWERS</td>
<td>59,188</td>
<td>74,979</td>
<td>90,940</td>
<td>76,523</td>
<td>29.29</td>
</tr>
<tr>
<td>GRASS LAND</td>
<td>200</td>
<td>3,934</td>
<td>3,385</td>
<td>422,301</td>
<td>211,050.50</td>
</tr>
<tr>
<td>OTHER LAND</td>
<td>100,367</td>
<td>44,199</td>
<td>51,093</td>
<td>211,805</td>
<td>111.03</td>
</tr>
<tr>
<td>UNCLASSIFIED LAND</td>
<td>1,844,620</td>
<td>1,969,873</td>
<td>2,035,462</td>
<td>1,581,297</td>
<td>-14.28</td>
</tr>
</tbody>
</table>

Note: All land values in rai.

paddy. The changes within the agricultural sector are consistent with the central theme of this chapter, land use conversion.

Disaggregating the data from the BMR (Table 5.2) into the individual changwats reveals some dramatic trends. To the west of Bangkok, Nakhon Pathom has undergone a substantial restructuring of its cropping pattern. In 1981, 56 per cent of total agricultural land cover was taken up by paddy, and seven years later, this figure had dropped to 39 per cent. The main point is that the area consumed by fruit and orchard crops, grass lands, and idle lands under speculation, together add up to slightly more land cover (40 per cent) than paddy in 1988. In 1981, the three combined represented less then 1 per cent of the total agricultural land. Although Nakhon Pathom has not been recognized for high land conversion rates or industrial development, its agricultural land cover has undergone significant changes suggesting a commercialization process with a reduced role from traditional paddy.

Pathum Thani, formally, a steadfast rice bowl province, and recently an important industrial locus of the EBMR, offers another vital example of land use change within the agricultural sector. Between 1981 and 1988, paddy land has decreased by 25 per cent while orchard crops have increased by 239 per cent. In 1981 orchards covered one-sixteenth of the land area that rice did; by 1988, the ratio was one-third. Grass and idle lands have seen remarkable increases as well, again endorsing the trend towards the speculative capitalization of the landscape. 18

Land conversion from agricultural land use to non-agricultural in many ways is much more noticeable than cropping pattern changes, and certainly more talked about in the EBMR. The causes of conversion to industrial or residential land use from agricultural are not altogether distinct from factors that motivate cropping pattern changes. Land owners, in a free market economy, when offered choices respond to

economic incentives, and this often means converting land to alternative crops, or entirely different land uses. Despite a strong spiritual attachment to the land, many landowners when seeking options for the highest potential return, are finding that selling is the obvious recourse.

Although economic incentives are the overriding cause of land conversion, a number of related factors need to be considered. Throughout the world, and certainly Thailand is no exception, pollution is harming farmland and reducing potential productivity. Emissions from a growing number of automobiles and omnipresent factories have damaging effects on grain crops such as rice, fruit trees, and livestock. Also, brackish toxic waste water from aquaculture (especially prawn farming) and golf courses contaminate agricultural lands in the fertile low lying drainage divides. There is no specific estimate of the amount of agricultural land that has been converted to other uses due to various forms of 'urban' pollution, but farmers (and fishers) throughout the region complain vociferously about insufficient and ineffective environmental protection. As one report stated, "...it is obvious that failure to require reasonable environmental controls acts primarily as a subsidy to urban and industrial uses and as a penalty to agricultural uses." 20

Another factor that 'subsidizes' non-agricultural land use is the low property tax rates. Not only are rates among the lowest in Southeast Asia, but according to the Land Institute Foundation (LIF) of Thailand, as reported by Barasopit Mekvichai et al, only half of the assessed taxes are collected. Hence, landowners are not fiscally discouraged from tying up large parcels of land unproductively, contributing to the speculative bubble encasing the region. 21

19. Studies indicate that carbon derived pollution not only affects the health of humans but also animals. Vegetation is also harmed. The exact level of impact is not known, however an increasing number of studies mostly in the United States confirm the assertion. Data from the Food Control Division of the Thai Ministry of Health show harmful levels of lead, cadmium, and mercury are present in food marketed in the BMR. See Barasopit Mekvichai et al (1990), op.cit, pg.51.

20. Ibid.

21. Ibid, pg.52.
Although, mentioned earlier in this chapter, it is worth reiterating that the unprecedented growth of the Thai economy is a key factor in the land conversion process. Few countries have been able to save its most fertile agricultural land during expansive industrial development.22 As inner city land and property prices become prohibitive, horizontal suburbanization is the obvious response. The land grab for industrial and residential development has gone beyond the BMR, and outer ring changwats such as Chachoengsao, Saraburi, and Ayutthaya are experiencing land conversion rates similar to BMR provinces in the mid 1980s. Landowners are faced with powerful incentives to sell, as the market price is at least 50 times higher than expected revenue from agricultural production.23

A contentious issue in the EBMR is distinguishing between urban and rural. As the landscape becomes homogenized, and city and countryside bond, the differences are blurred. So it is difficult to identify precise boundaries of the 'urbanized' area in the Bangkok region. For instance, does a modern housing or industrial estate that comes to dominate a small ampoe cause a shift of the area to 'urban'? Is a small village in Pathum Thani where all economically active population work in non-agricultural activities considered 'urban'? And how does one account for ribbon development?; how far off the main corridor are the adjacent lands considered 'urban'? Notwithstanding, the National Housing Authority (NHA) and Asian Development Bank (ADB), in conjunction with PADCO, in a report entitled, "The Bangkok Land Management Study" attempted to track the "urbanized" area of the BMR, and its changing scope, based on land use. The study contends that between 1974 and 1984, on average 32 square kilometres of land were converted to urban use each year in the BMR, bringing total urban land area up to 1304 square kilometres from 984. The total area of the BMR is slightly greater than 7600 square kilometres. The study projected that by the year 2000, the total urban area of the BMR would rise to 1816 square kilometres, nearly twice the 1974 figure.24

22. Japan has enacted legislation to preserve farming land, but in the process has spuriously driven land prices up at exorbitant inflationary levels. Barasopit Mekvichai reports that this inflation has also driven the price of Japanese rice up to seven times the world market level. See Barasopit Mekvichai, pg.53.


In the 10 years between 1974 and 1984, 42 per cent of the total land conversion occurred in a thin zone that rings the BMA, 11 to 20 kilometres from the central business district. The areas beyond 20 kilometres accounted for 46 per cent of the total converted land. Figure 5.2 illustrates land conversion rates for the BMR between 1974 and 1984. The areas with noticeably high rates of land use change are the eastern BMA, Pathum Thani and Samut Prakran. The change along the "Northern Corridor" of Pathum Thani, just east of the Chao Phraya River is particularly noticeable. This area will be the subject of a case study later in this chapter. Since 1984, there are sufficient reasons to believe conversion in the 'outer' zone (beyond 20 kilometres) has accounted for more then half of the total converted land in the BMR, shifting the 'conversion' center of gravity at least 10 kilometres outward.25

It is difficult to distinguish between 'urban' and 'non-urban' in this region. The Bangkok Land Management Study offers an effective attempt at pulling urban and rural apart (for quantitative convenience), but the true essence of this region, from a settlement perspective should only be seen through the blurring coalescence of rural and urban. Studies dealing with rural-urban differences are useful only to gauge land use conversion, and should not be considered as instruments for explaining and defining settlement systems as opposed to settlement processes.

One of the significant findings of the Bangkok Land Management Study was that roughly 33-40 per cent of the total land conversion was directly attributable to residential development, both formal and informal. Although formal large scale housing estate development devours sizable tracts of land, smaller, more frequent informal housing activities are just as responsible for the land conversion process. Landowners in the outer city frequently demarcate their land into numerous small plots and rent or sell their land to newly

25. Ibid, pg.18. Since the Bangkok Land Management Study, rapid industrial and residential expansion in the changwats of Pathum Thani and Samut Prakan have converted enormous tracts of land from agricultural to non-agricultural uses. Suggesting that conversion of lands further then 20 kilometres from the CBD represents more then 50 per cent of total conversion would be a fairly safe presumption. Furthermore, as already mentioned land conversion is already becoming noticeable in outer ring changwats.
arrived migrants, or families from Bangkok who have been evicted from a slum settlement, or have moved outwards for employment. The plots often lack proper drainage, water supply, electricity, and surely evade government’s residential development standards. Angel and Pornchokchai believe that 10-15 thousand informally established plots are sold each year.26 Many are informally subdivided and are akin to slum settlements. Housing will be dealt with specifically in Chapter 7.

An example of an informal land use shift elucidates the conversion process. Gaed Pairoh, in Samut Prakarn, is a typical fringe industrial zone, and former fish pond area that was subject to land use change. In 1980, the landowner began renting out his land, probably because it was spoiled by an aquaculture waste product. Although the land was undeveloped, with poor accessibility, within three months there were 112 individual plots covering the 20 rai. The landowner provided electricity and water, but not drainage. There was a Baht5500 entry fee, and monthly rents were approximately Baht150.27 Small scale residential projects such as this, are common throughout the area, enhancing the land conversion process, and at the same time gradually filling the gap in the low income housing market. Furthermore, the individual plots eventually become fully serviced, and often shift from tenancy to ownership situations. Considering the highly capitalized speculative bubble surrounding residential development, the smaller informal route may be a viable alternative when the formal sector is not preempting the stock of accessible land.

Figure 5.3 demonstrates the pressures operating simultaneously to induce outer city land use metamorphose. It not only stands as a summary of this chapter, but illustrates the linkages between the various factors acting on the outer city landscape. For example, the low tax rate leads to land speculation, which in turn, contributes to a decline in rice farming. Yet, at the same time, both the low tax rate and land speculation,

26. Angel, Shlomo and Sopon Pornchokchai (1987) "The Informal Land Subdivision Market in Bangkok" in BANGKOK LAND MANAGEMENT STUDY, PADCO in conjunction with NHA & ADB.

27. Informal developers such as this one in Gaed Pairoh make use of a loophole in the land subdivision regulations which stipulates that 10 or more plots in a single subdivision are subject to official standards. By subdividing the land into parcels of nine plots at a time, developers simply sidestep the regulations. For additional case studies of informal residential land subdivisions see Economic and Social Commission for Asia and the Pacific (ESCAP) (1990) CASE STUDIES ON METROPOLITAN FRINGE DEVELOPMENT, WITH FOCUS ON INFORMAL SETTLEMENTS.
independently lead to a decrease in land under paddy. Finally, it is useful to view this Figure jointly with Figures 3.6 and 4.8 showing the historical preconditions to appreciate the synergic conditions of outer city change.

Figure 5.3 Factors Operating in Outer City
Land Use Metamorphose
CHAPTER SIX:

THE NEW LANDSCAPE I: INDUSTRY AND AGRICULTURE

This chapter is divided into two parts; (i) industry, (ii) agriculture. The purpose of the chapter is to show that both industry and agriculture have separately undergone a metamorphose in terms of production, labour, and even ownership. By combining this chapter with housing and recreation (Chapter 7) the resulting 'mixing pot' depicts the NEW landscape of the EBMR.

6.1 INDUSTRY

6.1.1 Land use:

Throughout Asia and abroad, Thailand has been recognized as an 'emerging NIC' (Newly Industrializing Country), or 'the next tiger'. The International Monetary Fund (IMF) and the World Bank (IBRD) have recently commended Thailand for its open and free export orientated economy, and hinted that Thailand is a 'model' for Third World development.¹ Neo-classical economists point to Thailand as a modern day validation of the archaic linear stages-of-growth model. As the accolades pour in, this achievement (and development?) is fueled by an industrial growth process. The growth of the industrial sector in Thailand has been concentrated almost exclusively in the EBMR.

¹. THE NATION (1991) October 12, "World Bank Makes the Poorer Become Poorer".
The increase of industrialization in the EBMR and in Thailand is revealed best through the restructuring of merchandise exports. In 1960, a full 98 per cent of all exported products were traditional primary sector commodities (rice, minerals, rubber, etc.), yet in 1987, this sector accounted for only 26 percent of all exports, and in 1991, a mere 16 percent. This data is also reflected in the changing distribution of GDP since 1960 (see Table 6.1).

**FIGURE 6.1**

**PERCENTAGE DISTRIBUTION OF GROSS DOMESTIC PRODUCT IN THAILAND (1980-1990)**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>MANUFACTURING</td>
<td>21.7</td>
<td>20.7</td>
<td>23.0</td>
<td>24.2</td>
<td>25.0</td>
</tr>
<tr>
<td>AGRICULTURE</td>
<td>20.6</td>
<td>20.0</td>
<td>17.0</td>
<td>15.9</td>
<td>14.9</td>
</tr>
</tbody>
</table>


Even in recent years there has been a dramatic rise in industrial activity as reflected in the number and growth rate of registered factories. Between 1987 and 1989, in eight EBMR provinces, the number of factories rose from 6,312 to 7,867, nearly a 25 per cent increase (see Table 6.2). This translates into more than two new factories per day in these 8 provinces. Also evident is the 'decreasing' growth of BMA's industrial role; between 1987 and 1989 it only increased at a rate parallel to the whole Kingdom.

In a few of the EBMR provinces, the total number of employees per factory is very high. For instance, in Pathum Thani (1989), nearly a third of the 645 factories have more than 50 employees, and 34 have over 500. Similarly, in Samut Prakarn, 77 factories have more than 500 workers, and one quarter of the total have more the 50. In Bangkok however, this certainly is not the case; of nearly 19,000 factories in 1989, 95
<table>
<thead>
<tr>
<th></th>
<th>1987</th>
<th>1989</th>
<th>2 YR. GROWTH RATE (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAKHON PATHOM</td>
<td>619</td>
<td>761</td>
<td>22.9</td>
</tr>
<tr>
<td>NONTH-ABURI</td>
<td>588</td>
<td>704</td>
<td>19.7</td>
</tr>
<tr>
<td>PATHUM THANI</td>
<td>456</td>
<td>645</td>
<td>41.1</td>
</tr>
<tr>
<td>SAMUT PRAKARN</td>
<td>2348</td>
<td>2955</td>
<td>26.8</td>
</tr>
<tr>
<td>SAMUT SAKHON</td>
<td>698</td>
<td>886</td>
<td>25.8</td>
</tr>
<tr>
<td>AYUTTHAYA</td>
<td>272</td>
<td>344</td>
<td>26.5</td>
</tr>
<tr>
<td>CHACHOENGSAO</td>
<td>298</td>
<td>383</td>
<td>28.5</td>
</tr>
<tr>
<td>CHONBURI</td>
<td>1033</td>
<td>1189</td>
<td>15.1</td>
</tr>
<tr>
<td>TOTAL</td>
<td>6312</td>
<td>7867</td>
<td>24.6</td>
</tr>
<tr>
<td>BANGKOK (BMA)</td>
<td>16316</td>
<td>18977</td>
<td>16.3</td>
</tr>
</tbody>
</table>

Source: Yonguth Chalamwong (1990), pg.52.
per cent had fewer then 50 employees and 64 per cent had 9 or less. Table 6.3 illustrates factory size data for the BMR, 1989.2

A study by TDRI projected total employment by region to the year 2000. The highest rate of growth for the decade of 1990 to year 2000, in the country, at 35 per cent, is in the five inner ring provinces of the EBMR (Table 6.4). Almost all of this growth will occur in the manufacturing and service sectors. Agricultural employment will increase by a nominal 12 per cent, mostly in agribusiness. By disaggregating the regional data, it is hardly surprising that the provinces with the highest rate of total employment growth are in order: Nonthaburi, Samut Prakarn, Pathum Thani, Krabi, Chonburi, and Chachoengsao; except Krabi; all are part of the EBMR.3

It is worth noting that during the short reign (1991-1992) of Prime Minister Anand Panyaratrun’s caretaker administration, unprecedented policy changes were instituted. Dr. Sippanondha Ketudat, appointed as Minister of Industry, initiated an overhauling of the bureaucratic and administrative system. He presented policies ushering in new levels of flexibility and ease of entry for both local and offshore private investors (see Plate 6.1). Further, industrial protectionist policies were dismantled to encourage fiercer competition. In several industries, such as concrete and steel, the Minister announced an easing of controls and restrictions.4 Other industries were deshackled from regulations and the impediments of start up bureaucracy. This was the beginning of Thai industry responding to the opening of investment opportunities in Russia and Eastern

2. The largest factories are textile producers. In 1989, there were 53 textile factories with over 500 employees, 21 in Samut Prakarn alone. Much of this data comes from the Thailand Department of Industrial Works (1990) Ministry of Industry (in Thai language).

3. Krabi’s dynamic employment growth is associated with the expected growth and development of the Southern Seaboard in the mid 1990s. The projection methodology is based on a severral step process; see NEDB (1991) Area #2.

4. Rapid economic growth in Thailand has led to unprecedented consumption of steel, a product that is almost entirely imported from South Korea and Japan. It is believed that local supplies are now imperative. As a result several large scale steel foundry projects are being promoted including a massive US$800 million Thai-Italian joint venture. Although Thailand’s consumption is moderate in relative terms (60 kg per head, compared to 500 kg. per head in South Korea, based on 1988 data), projected demand will nearly double between 1990 and 2000. See “Steel is Hot” (1991) FEER, May 30, (cover story).
### TABLE 6.3

FACTORY SIZE IN BMR, BY TOTAL EMPLOYEES (%), 1989

<table>
<thead>
<tr>
<th></th>
<th>9 OR LESS</th>
<th>10-49</th>
<th>50-499</th>
<th>500+</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>BANGKOK (BMA)</td>
<td>63.69</td>
<td>30.99</td>
<td>4.96</td>
<td>0.36</td>
<td>100</td>
</tr>
<tr>
<td>NAKHON PATHOM</td>
<td>46.11</td>
<td>36.30</td>
<td>15.37</td>
<td>2.22</td>
<td>100</td>
</tr>
<tr>
<td>NONTH-ABURI</td>
<td>65.58</td>
<td>26.92</td>
<td>6.85</td>
<td>0.65</td>
<td>100</td>
</tr>
<tr>
<td>PATHUM THANI</td>
<td>35.11</td>
<td>35.70</td>
<td>24.06</td>
<td>5.13</td>
<td>100</td>
</tr>
<tr>
<td>SAMUT SAKHON</td>
<td>46.07</td>
<td>32.18</td>
<td>20.85</td>
<td>0.91</td>
<td>100</td>
</tr>
<tr>
<td>SAMUT FRAKARN</td>
<td>39.98</td>
<td>39.98</td>
<td>22.44</td>
<td>2.60</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Dept. of Industrial Works (DIW) (1990).

---

### TABLE 6.4

PROJECTION OF TOTAL EMPLOYMENT BY REGION (000s)

<table>
<thead>
<tr>
<th></th>
<th>1990</th>
<th>2000</th>
<th>% GROWTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 PROVINCES</td>
<td>1533</td>
<td>2063</td>
<td>34.6</td>
</tr>
<tr>
<td>CENTRAL</td>
<td>5526</td>
<td>6407</td>
<td>16.0</td>
</tr>
<tr>
<td>NORTH</td>
<td>6805</td>
<td>7546</td>
<td>10.9</td>
</tr>
<tr>
<td>NORTHEAST</td>
<td>12061</td>
<td>13580</td>
<td>12.6</td>
</tr>
<tr>
<td>SOUTH</td>
<td>3910</td>
<td>4866</td>
<td>25.5</td>
</tr>
<tr>
<td>BMA</td>
<td>3184</td>
<td>3771</td>
<td>18.4</td>
</tr>
</tbody>
</table>

Source: Adapted from NESDB (1991) Area #2
PLATE 6.1 Flexible Production Along the Northern Corridor
Europe. At the same time there was an effort to 'ride the wave' of industrialization in Thailand; stay with the momentum. The contribution these policies made to land use change in the EBMR was monumental.

Despite new liberalization policies for industry, and the proliferation and rapid growth of the industrial sector, land requirements for expansion in the BMR are quite moderate. Two studies have projected industrial land use requirements in the BMR. The more conservative estimates by the Thailand Development Research Institute (TDRI) indicate that nearly 72,000 rai will be needed by 1996, and approximately 234,000 rai by 2011 (see Table 6.5). Although, this amounts to greater than 600 per cent increase in the 23 year period, total allocation of land for the whole BMR will still be under 5 per cent in 2011.5

<table>
<thead>
<tr>
<th>TABLE 6.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESTIMATE OF INDUSTRIAL LAND USE IN BMR, (RAI) BY TDRI</td>
</tr>
<tr>
<td>(EXPECTED) LAND USE</td>
</tr>
<tr>
<td>TOTAL BMR</td>
</tr>
<tr>
<td>% OF TOTAL BMR</td>
</tr>
</tbody>
</table>

Source: Adapted from Barasopit Mekivachai et al (1990), pg.83-84.

The second assessment carried out by the Department of Land Development (DLD) reveals drastically higher land requirements, but again, even in 2011 less than 10 per cent of the region's land area is expected to be needed for industry (Table 6.6). Between 1988 and 2011, the growth rate is projected to be in the order of 400 per cent.6

5. Industrial area was calculated using the MOI (Ministry of Industry) classification which parcels factories into 4 groupings according to labour levels. A small factory with less than 9 workers would have a maximum area of 0.5 rai. A factory with 10-50 employees is up to 2 rai, 50-500 employees is less than 6 rai, and 500 or more workers is over 6 rai. Normally, the maximum size for the 4 categories is used to prevent underestimation.

6. The difference between TDRI and DLD values can be attributed to the number of factories, mostly small household units that are not registered with the MOI (Ministry of Industry). TDRI draws their information from MOI data tapes.
**TABLE 6.6**

**ESTIMATE OF INDUSTRIAL LAND USE IN BMR, (RAI) BY DLD**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>(EXPECTED) LAND USE</strong></td>
<td>97,000</td>
<td>140,000-150,000</td>
<td>470,000-480,000</td>
<td>395</td>
</tr>
<tr>
<td><strong>TOTAL BMR</strong></td>
<td>4,848,841</td>
<td>4,848,841</td>
<td>4,848,841</td>
<td></td>
</tr>
<tr>
<td><strong>% OF TOTAL BMR</strong></td>
<td>2.0</td>
<td>2.8-3.1</td>
<td>9.7-9.9</td>
<td></td>
</tr>
</tbody>
</table>

Source: Adapted from Barasopit Mekivachai et al (1990), pg.83-84.

Five important inferences can be made from the projections:

1. There is no indication that demand for new land for industry will slacken off.

2. There is no indication to believe that an increased efficiency of land use will occur over the next couple of decades. Table 6.7 indicates that the increase of industrial GDP over the 23 year time period will be less than 600 per cent while TDRI's projection for land use requirement is 618 per cent. Therefore, any increase in production over the two decades will require an equivalent increase in land. However, it is reasonable to expect that land use will become more prudent and efficient as land prices inevitably rise.

**TABLE 6.7**

**INDUSTRIAL GDP (in Baht)**

<table>
<thead>
<tr>
<th></th>
<th>2011</th>
<th>% INCREASE (1988-2011)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1988</td>
<td>88,203</td>
<td></td>
</tr>
<tr>
<td>2011</td>
<td>605,579</td>
<td>587</td>
</tr>
</tbody>
</table>

Source: Adapted from Barasopit Mekivachai et al (1990), pg.83-86.

3. Land availability is not the real issue, however. Based on current industrial location, the real problem is how to concentrate industrial activity in areas where their impact on the environment can be moderated. Present trends suggest there is an urgent need to control industrial pollution and waste disposal.
(4) The projections do not, nor are they able to indicate the extent to which future development will be directed to the numerous industrial estates throughout the region. Well located industrial parks are viable solutions to scattered industrial development, as infrastructure costs and provisions can be reduced substantially. Also, industrial pollution can be better monitored and confined.\textsuperscript{7}

(5) Finally, it would be prudent to keep in mind that the data in Table 6.5 and 6.6 (5-10 per cent of the total BMR is projected to be under industrial land cover in 2011) do not reflect possible spin off land use. For instance, residential development associated with workers' housing should be factored into the sum. Expansion of the transportation network and consequent land required for other infrastructure and services can also be expected, and thus, is functionally tied to industrial growth.

6.1.2 Multinational Corporations:

As seen in Chapter three, from the late 1950s, multinational corporations (MNCs), began to play a critical role in the region's industrial landscape. This has continued until the present, and contributes to Thailand's 'emerging-NIC' status.

Approximately 20 to 30 years ago Fordist industrialization arrived from western economies in new environments, where labour regulations and environmental standards were weak or non-existent. Particularly in Latin America and Southeast Asia, industrialization was coming to suppress customary economic

\textsuperscript{7} In August 1991, Industry Minister Sippanondha issued a directive to relocate approximately 500 factories out of Samut Prakarn province. The factories affected are responsible for excessive discharge and emission of pollutants, and are unable to meet accepted standards. The plan included a relocation scheme to industrial estates throughout the EBMR, where central waste treatment systems are in operation. As expected the plan has come against stringent opposition from the Samut Prakarn Chamber of Commerce. See BANGKOK POST, (1991) August 7, "Worry Over Relocation Plan".
production and remove agriculture from its commercial pedestal of sectorial dominance. Within the NIDL (New Industrial Division of Labour), multinational corporations take advantage of prevailing qualitative and quantitative labour systems and cultural processes. At the same time manufacturing throughout the post colonial world saw a steady automation of production processes, culminating in the growing use of unskilled labour. In this regard, Thailand was an accommodating, complying and preferred destination for MNCs from many western economies, and particularly Japan.

In a politically liberal environment such as Thailand, MNCs have wielded immense power on the landscape. The MNC production process is expansionary as it transforms space rapidly and irrevocably. With its large job creation potential, the imperialistic tendencies have been appreciated and revered by the state and industrial community. The EBMR may be the quintessential landscape to examine the benefits and deficiencies of MNC production in Thailand. The purpose of this discussion however, is not to put MNCs on trial, but to offer a short overview of MNC operation in Thailand, and the EBMR in particular. Also, there will be an evaluative case study review of three MNCs operating in the study region.

From Chapter 4, it can be seen that FDI (Foreign Direct Investment) data shows a sharp increase since about 1980. There are three important observations to note by disaggregating the total investment. First, traditionally the largest proportion of FDI was for oil and gas exploration, with little impact on the EBMR. This emphasis shifted in the last decade to the industrial sector, where textiles and electrical appliances have received the largest share. In the last few years, electrical appliance investment has increased sharply. In 1989 alone, 30 new electrical appliance factories were erected in the five inner ring provinces. In 1990-1991, the number of foreign semiconductor factories more than doubled from 6 to 13, including global giants such as AT&T, Hana Electronics, and Sony Semiconductor. Also included under electrical appliances

are micro chip producers such as Toshiba and Sanyo who both set up large plants outside of Bangkok in 1992. Large appliance manufacturers in the EBMR are producing a large supply of products such as microwave ovens, refrigerators, air conditioners, televisions, and stereo equipment. This sector (large appliances) grew 31 per cent from 1990 to 1991. Disk drive production is also proliferating, mainly due to Seagate Technologies of California, which has opened two factories, making Thailand its largest production base. Seagate plants, located in both Pathum Thani and Samut Prakarn have 16,000 employees.9

The garment industry has become a giant magnet for MNC investment. Once a major import commodity for Thailand, textile products, especially ready-made garments, have become the country's prime export. Between 1975 and 1992 the total value of Thai ready-made garments for export rose from Baht1 million to almost Baht87 million, and is currently, by value, the largest export product, ahead of rice, precious stones and electrical appliances.10 The growth rate of this sector in the last decade has spatially concentrated its operations in the EBMR. Areas of Pathum Thani and Samut Prakarn have obtained reputations as regional textile industrial centers. In particular there are many American and British textile firms along the Northern Corridor in Pathum Thani.11

Despite the unprecedented success of the garment industry, it is worth noting that investors, particularly from South Korea, Hong Kong, and Japan have recently been opting for China, Vietnam, and Pakistan as production bases. Wages in all three countries are presently about half the Thai rate. Also, Thailand currently has the highest tax rates in the world for imported dyeing chemicals; for example, six times higher


11. Large textile factories in Pathum Thani employ 1000s of women workers for relatively low wages with harsh working conditions (see Figure 8.2, km. 34). There are no published reports detailing the severe working environment in outer city garment factories, however a handful of Master theses are worth mentioning. In particular see Amphan Yosamornsumarn (1986) WAGES AND WORKING CONDITIONS IN THE GARMENT INDUSTRY, Economics, MA, Thammasat University, and Kultap, Praneet (1983) A STUDY OF INDUSTRIAL INJURY: A CASE OF THE TEXTILE INDUSTRY, Economics, MA Thammasat University. Both reports highlight the frequent evasion of labour laws in the factories, especially when the benefits from noncompliance exceed the costs.
than Indonesia. Domestic production of these chemicals is monopolistic, doing nothing to ease the cost. Notwithstanding, local Thai garment manufacturing is expeditiously replacing the relocating offshore investors. 12

A second observation is that chemical and petroleum products are also attracting large shares of FDI. This sector is heavily represented by MNCs from other Asian countries, particularly Taiwan and India. In 1989, 37 of such factories opened up in the five provinces, bringing the total to 547, of which 118 have greater than 50 employees, and three in each Pathum Thani and Samut Prakan have more than 500 employees. 13

Finally, service industries and finance proportionally receive the largest share of foreign investment. Although the majority are locating in Bangkok, there is an increasing number of such firms setting up in (or at least impacting) the outer city. Within this grouping, it is worth noting that FDI for financial institutions has experienced significant declines since the mid 1970s, due the maturation of indigenous banks and securities. The multinational tertiary sector however, is booming. For instance, Ogilvy and Mather is the largest advertising and public relations firm in the country. With the proliferation of motor vehicles in Thailand, MNC petroleum companies are also reaping exorbitant profits, as the market is dominated by foreign firms. 14 MNC fast food operations are also growing, and by the end of 1992 McThai (Mcdonalds) had opened 10 shops with over 1000 employees. Other larger foreign run fast food restaurants are already located in the inner ring provinces; Kentucky Fried Chicken (15 BMR outlets), A&W, Shakey’s Pizza, and Mister Donut (20 BMR outlets).


13. Obviously not all are MNCs but approximately one-quarter are. This sector produces aluminum hydroxide, caustic soda, hydrochlorine acid, enamel and emulsion paints etc...

14. The largest Shell petrol service station in the world is located in Pathum Thani, with 35 pumps, accompanying markets, shops, restaurants, oil/lube garages, and shanty town. On April 24, 1991, I estimated 1000 customers and employees on the site (see Figure 8.2, km. 39).
Case Studies:

Three brief case studies will help underscore the prevailing trend of MNC influence in the EBMR. All are offshore-controlled, and are utilizing the outer city industrial infrastructure and labour reserve. The first study is of a new firm to the EBMR, while the other two are well established in Thailand. They represent a cross-section of production styles and ownership patterns, being Indian, Japanese and European respectively.

(i) BV Diamond Polishing Works Ltd., which in August of 1991 set up a Baht125 million diamond polishing and setting plant at the Nava Nakorn Industrial Estate in Pathum Thani, 60 kilometers north of Bangkok is an Indian based company with current or proposed trading and production plants in Antwerp, Bombay, New York, Tel Aviv, Hong Kong, Paris and Melbourne. They were able to secure a generous package of BOI initiation privileges, and are operating in a 40,000 square foot plant, employing 300 workers. The initial production capacity is 2200 pieces of cut diamond per day with plans to raise production to over 10,000 pieces by early 1993. At that time the labour force will have expanded to over 1000, with housing provided for at least 500. BV Diamond chairman selected the Bangkok outer city for its Southeast Asia manufacturing base because of Thailand's competitiveness in both work force and production costs. Government support (BOI privileges) and cheap reliable labour were also cited. For a production process of this nature, the labour force is the primary consideration. Referring to its supposed 'docile' female labour force, a BV Diamond publication that appeared as a Bangkok Post insert in July, 1991 contains the following sardonic and patronizing passage:

Relatively inexpensive and easily trainable, Thai workers are like gems in the rough waiting to be polished to bring out their inherent value. Since they possess a heritage of excellent craftsman-ship, they are adept at learning new skills and displaying strictest attention to intricate details with thorough training
provided by the company, they easily become skilled in six to eight months.\(^15\)

(ii) The large Japanese conglomerate, Minebea is a typical success story of Japanese firms relocating their manufacturing bases to Thailand, avoiding the over-valued Yen, and high labour costs. It epitomizes the intra-Asia NIDL process. Established in Tokyo in 1951, the company found itself on an immediate successful run, first decentralizing to Karuizawa in the Japanese northeast for less costly labour, and by the 1960s it began a global conquest building up its international network with offices and manufacturing bases in Europe and the United States. An important juncture for Minebea was 1972 when the first Southeast Asian plant was built in Singapore. This was the start of a massive restructuring operation to shift operations to sites of cheap labour. As industrial operations became increasingly labour intensive, Thailand was the logical next major move. In 1992 Minebea celebrated its tenth anniversary in the Kingdom. In the ten years, Baht 18.39 billion in capital investment was poured into its Thai operations, now the corporation's largest, most profitable and diversified manufacturing base. Within the EBMR, Minebea has spatially focused in the lower and upper Central Plain with over 16,000 employees in factories throughout Pathum Thani, Ayuttahaya, and Lopburi.

From these factories Minebea is the world's largest producer of: ball bearings (696 million pieces a year), stepping fans and spindle motors (48 million a year), magnetic heads for floppy disc drives (25.2 million per year), and floppy disc drives (4.2 million units a year). Other products manufactured from their enormously diversified Thai production base include computer keyboards, axial fans, electronic circuits, die casts,

\(^{15}\) This is reminiscent of a controversial and (colonial) excerpt from a Malaysian government investment brochure appearing over a decade ago:

> The manual dexterity of the Oriental female is famous the world over. Her hands are small, and she works fast with extreme care... who, therefore, could be better qualified by nature and inheritance, to contribute to the efficiency of a bench assembly production line than the Oriental girl?

"Changing Role of South East Asian Women" (1979) SEA CHRONICLE, Issue no. 66, pg.8.

electronic circuits, cut orchid flowers, and tissue cultured baby plants. These products are almost entirely re-exported to Japan, with a small proportion going directly to wholesalers in Europe and The United States.

The Lopburi site in 1990 generated Baht3.63 billion Baht in net sales or 56 per cent of its total for the Kingdom. Its largest factory in labour force size is at Bang Pa-in, Ayutthaya with nearly 9000 workers.

Minebea would certainly agree with the reasons BV Diamond chose the EBMR as the location for its operations. In a Nation newspaper interview, the Chairman of the Board and CEO suggested that the Thai labour force is industrious, flexible and cheap. Although the corporation has a history of shifting production bases approximately every ten years, the CEO stated, "It seems to us that the next country after Thailand is Thailand", reaffirming the commitment to remain in the EBMR.

(iii) The final MNC case study is Swiss food giant manufacturer, Nestle. Currently there are five Nestle factories in Thailand, all located in the EBMR, and a sixth is scheduled to open in 1993. Factory Manager Pratchya Hemsuchi, running the most automated, state-of-the-art plant of the five, at Bang Poo Industrial Estate, Samut Prakan said that if 30 per cent of production is for export there are incentive privileges and

16. Although 1990 figures are not available, Lopburi had a total GPP in 1987 of just over Baht9 billion, making Minebea an overwhelmingly dominant player on the provincial economic stage. Minimum wage (1990) in Lopburi was 74 Baht per day, and with approximately 6500 employees, of whom 80-90 per cent are still likely at this wage level, a rough (and liberal) calculation indicates that Minebea-Lopburi pays out no more than Baht140 million in wages a year, meaning that net sales are 26 times greater then labour costs!! In 1990 minimum wage was 16 Baht per day higher in Bangkok and Pathum Thani. The rational for the upper Central Plain location is clear. Minebea also recognizes that any political instability such as coups or democracy demonstrations typically have no impact on operations in the Central Plain. Presumably, production did not miss a beat during Black May (1992).

17. (1991) THE NATION (1991) September 10, "Minebea Finds Home in Thailand", Thanong Khanthong; Appendix II (May 29, 1991). Although it is beyond the scope of this paper, an equally as substantial dissertation could be written on the role of Japanese investment in Thailand. Between 1985 and 1990, anywhere from one-quarter to more then a half of all FDI came from Japan. In 1987 for example, of 630 foreign venture investment projects, Japan accounted for 199, and 90 percent were export orientated. It was projected that on average, every third day from 1991 to 1994 a new Japanese backed factory opened in Thailand. Of all the recently published literature dealing with the 'unequal' economic relationship between Thailand and Japan, two standout: Ichikawa, Nobuko (1990) FOREIGN INVESTMENT IN THAI DEVELOPMENT: SPECIAL FOCUS ON JAPANESE INVESTMENT, Background Report 1-3, TDRI, and Tasker, Rodney (1990) "Japan in Asia" FEER, May 3.
pricing breaks on machine purchases if the location is outside of Bangkok. The Bang Poo plant is currently exporting 35-40 percent of production.

The coffee creamer plant was set up at Bang Poo Industrial Estate because of the accessible infrastructure already developed at sight; roads, sewage disposal, telephones, and water. Moreover, there is a business association of factories within the estate. For example, Nestle purchases vegetable oils from a neighboring factory.

Of the approximately 2700 Nestle employees in Thailand, 113 are located at Bang Poo, representing more then 100 percent growth since first starting up at this site in 1984. Labour is rotated around four shifts: 7AM-3PM, 3PM-11PM, 11PM-7AM, and the office staff are on an 8AM-5PM schedule. Roughly half the staff commute daily on Nestle’s small fleet of contracted out mini-buses, from Bangkok and Thonburi. The other half reside near the estate and arrive each day by bus, automobile or on foot. Less then one-quarter of the labour force are from Thailand’s Northeastern provinces, and most are from the Central Plain or eastern region.

The gender ratio, unlike BV Diamond and Minebea is 2.5:1 in favour of men. In the initial year of production (1984) it was 6:1. When asked to explain the skewed gender ratio, the Manager pointed out that 50 per cent of the current staff are from an original (now closed) Nestle plant in Thonburi, that operated when women were infrequently in off-farm work. He expects and hopes the ratio will be leveled off in a few years as the men retire. Most of the new workers are women, who are not encumbered by military conscription.

As for production, there has been a commendable 25 per cent growth rate per year since 1984 due largely to automation. Production grows quicker than the labour force. By 1994, he expects to double production with only 40 more staff.
The new plant when opened in 1993 will assume the export production of coffee creamer for ASEAN, while the Bang Poo factory would supply the domestic market. In late 1991, Nestle announced a massive Baht2.5 billion investment plan for factories in all five ASEAN countries. Through production restructuring, bolstering intra-ASEAN trade, and eliminating regional redundancies, ASEAN will be self sufficient in Nestle products in a unique corporate strategy aiming to reach almost all of the region's 300 million people with a new and diverse product range.  

The overriding theme of these three case studies is that multinational capital pursues cheap malleable labour. This is consistent with NIDL theories which point to labour as the most significant factor of location. A second theme that emerges from the studies is that state-sanctioned privileges such as tax breaks and start up grants are, as expected, a powerful incentive for multinationals to establish production facilities away from Bangkok.

6.1.3 Industrial Estates:

A number of techniques to hasten and improve industrialization have been instituted in Thailand in the last three decades; credit arrangements, development banks, appropriate technology, government intervention and advisory services. None has been more pervasive and prominent though, than industrial estates. Bredo offers a definition: "An Industrial estate is a tract of land which is subdivided and developed according to a comprehensive plan for the use of a community of industrial enterprises." Normally, industrial estates provide an infrastructure of roads, utilities, and often the support for erection of factory buildings. Zoning


and tax packages are also the responsibility of the estate management. Economies of scale permit several other services to industrial occupants; fire and police protection, landscaping, banking, medical services, and post.

After World War II, post colonial countries witnessed a surge in the construction of industrial estates. The relatively passive nature of industrial policy and land use regulation that nurtured earlier growth were no longer adequate. The practical spatial response was to begin building large suburban and exurban industrial estates, a practice in use since the turn of the century in the United States and Europe.20

The earliest known discussion of proposing an industrial estate in Thailand was in 1960 when the Ministries of Industry and Interior met with NESDB officials to voice their concerns over environmental deterioration and disorderly distribution of factories in Bangkok city. At that time a number of sites were identified as potential locations for an industrial estate. Not until a decade later did the cabinet give the Industry Ministry permission to begin construction on what was to be the Kingdom’s first ‘showpiece’ industrial estate in Minburi, at the eastern reaches of the BMA. The estate was named Bang Chan, as it was a few hundred meters from Bang Chan village (see Figure 8.7). At the time a state enterprise, named the Industrial Estate Authority of Thailand (IEAT), was created to oversee the operation of Bang Chan and expansion of new estates.21

20. The famous Trafford Park Estate in Manchester, England is regarded as the pioneer project, built in 1896. Three years later, the Clearing Industrial District in Chicago was erected as the first in the USA. The earliest industrial estates in the post colonial world were found in the late 1940s- 1950s in Puerto Rico, Mexico, Brazil, India, and Pakistan. Two significant books examining the development of industrial estates in its nascent stage, throughout the world are Bredo (above), and Gloeckner, Peter (1966) INDUSTRIAL ESTATES: AN INSTRUMENT FOR INDUSTRIAL DEVELOPMENT AND PROMOTION, Lahore: Ferozsons Ltd.

21. By the time Bang Chan was operating, industrial estates in other countries in the region were already well established, making Thailand a relative late starter. South Korea, for example, in 1972, had nearly as much land (50,000 rai) under industrial estate usage as Thailand had in 1991. An American consulting firm, in 1963 wrote an interesting, albeit humorous, report attempting to entice Thai leader Field Marshall Sarit Thanarat to invest in industrial estates, “industry is as necessary to every community’s well being as homes...”, and responding to industrial construction on Thailand’s arduous deltaic plain, the report suggests that estates have been erected in similarly difficult terrain, “Rarely is physical landscape an impediment... from the marshlands of New Jersey, and Mississippi river delta near New Orleans to the mountainous arid regions of Denver Colorado.” "International Development and Engineering Association" (1963) AN INDUSTRIAL ESTATE FOR THAILAND, prepared by C.H. Leavell and Company, and Adrian Wilson and Associates. Much of the language was
Since then, the industrial estate situation in Thailand has expanded in number, and administrative complexity. By 1991, IEAT, on its own had established five estates, while IEAT and the private sector have in a collaborative partnership set up another 13. There are also 20 estates, informally established through BOI promotional privileges. Altogether there are 38 industrial estates in Thailand on a total of 81,898 rai. 22 See Plate 6.2 for sample of a promotional advert for Hi-Tech Industrial Estate in Ayutthaya. Hi-Tech can be located on Figure 6.1.

Understanding the time frame of emergence of industrial estates in Thailand since 1972, gives an appreciation and recognition of the frenzied land use change and economic growth since the late 1980s. Of the 38 industrial estates in 1991, 32 have been built since 1987. In 1986, Thailand was home to only 6 estates on a total of less then 10,000 rai of land. 23

The rapid pace of industrial estate construction in the 1987-1991 period reflects several tendencies in the Thai space economy. First, as discussed earlier, offshore investors were hastily relocating their production bases to sites of cheaper labour and regulatory flexibility. Thailand's industrial estate construction boom was timed to correspond with this. Second, a growing awareness to air, water and solid waste pollution from industry created a vital demand for industrial concentration and pollution management practices. Third, the Central Plain, and Eastern Seaboard were developing an infrastructural network that was able to absorb industrial growth. At the same time, Bangkok's industrial capacity was becoming saturated. Fourth, land prices rose astronomically, giving way to a rise in speculative real estate, and industrial estate space was a rugged and virile, emphasizing the permanence, importance and stability of industrial estates. This undoubtedly was the style akin to Sarit, rooted in the belief that success reflected the merit of the ruler. His team of western-trained economists were probably also swayed and impressed by the report. Keyes (1989) op.cit. after Thak describes Sarit as, "..the kind of person who represented one central model of Thai masculinity" (pg.81). Ironically Sarit died the year the consulting report was released.


23. Currently (1992-3) there are many industrial estates 'under study', and construction, including two dozen in the South (of Thailand), and eight in the North and Northeast. Naturally, many are also 'under study' in the EBMR as well.
Invest in Thailand at the Hi-Tech Industrial Estate

Excellent Location... ample supply of water and electricity

- 3-way transportation alternatives to choose.
- Situated on over 400 acres, adjacent to the main highway, and only 41 kilometers north of Bangkok in Ayutthaya Province, Hi-Tech Industrial Estate offers you a choice in how you transport your raw materials and finished goods... as well as being near to your labour force.

1. By Road. A main arterial highway linking the North and North-East and Bangkok, the Hi-Tech Hi-way will also be linked up with the Eastern Seaboard development zone as well as the new expressway road that will bypass Bangkok to join up with the southern expressway from Hi-Tech, by using the Express Way network. Bangkok's King Taksin Decks are just 40 kilometers south.

2. By Plane. Between Bangkok and Hi-Tech, via Don Muang International Airport, you can fly to your warehouses and distribution centers in 30 minutes.

3. By River. By cargo or lighter, the main Chao Phraya River runs along the Estate, where a wharf can load or unload rates of finished goods or raw materials for onward journey to and from the Eastern Seaboard or the Centre Port.

4. By Rail. Bang Paki railway station borders the Estate, where containers can be conveniently loaded for outbound journeys. It is also a convenient and economical transportation system for your staff-bus from the outlying Bangkok and the nearer Ayutthaya residential areas.

An impressive infrastructural network to ensure no delays in production

Within the Estate you will find a comprehensive array of services like a Business Service Centre, Labour recruitment and training facilities, a computer and communications centre, as well as other community facilities such as supermarket, shops, fire station and post office, a bank and a medical centre plus an area for social and recreational activities.

Other features include:
- Wide Roads that are well lit and designed and constructed to international and to the Industrial Estate Authority of Thailand's specifications.
- Electricity supply from 2 x 40 MVA power substations, plus emergency generators to maintain production operations during any extended blackouts.
- Telecommunication lines, over 2,000 direct lines and an access to a worldwide communication network.
- Abundant water supply, both from the adjoining Chao Phraya River and from artesian wells running through a maximum 10,000 cubic metres per day capacity water treatment plant.
- Solid Waste Disposal for combustible and non-combustible waste will be treated by a specially designed treatment plant before disposal.

Flood prevention is carried out through a system of drains and drainage channels with pumping stations located at strategic points around the Estate's perimeter. The flood prevention scheme is designed to cope with any eventual abnormal flood.

Estate Layout. Integrating the mentioned facilities, the Estate is divided into 3 zones: Export Processing Zone and the General Processing Zone, each taking up 315 acres, with the remaining 220 acres being allocated to Residential, Commercial, Administrative and utility services.

Developed by a team of experts, and supported by the Government, Hi-Tech Industrial Estate is a joint operation between the Jurong Town Corporation, the pioneer that developed "Jurong", into an Economic powerhouse for Singapore's industrial growth, with the local expertise from the Thai Industrial Estate Corporation Ltd. and SEATEC Co., Ltd., acting as Project Consultant Engineers. This project is the culmination of a master plan made into an economic reality.

With the Nation's aspirations aiming for greater industrial growth, the Government's Board of Investment has granted immense privileges to business investors in this industrial estate. Furthermore, there are many services provided by the Estate to help reduce administrative delays and speed up manufacturing and documentation approvals.

YES! I have plans to invest in Thailand.
Please send me a detailed brochure of this New Industrial Estate.

Name:
Address:
City:
Country:
Telephone:
English version: Thai □ Mandarin □ Japanese □

And send to:
Thai Industrial Estate Corporation Ltd., 1st Floor, Eastern Building, 132 Winyo Road, Bangkok 10300, Thailand.
seemingly sound speculative investment.²⁴ Fifth, state policy of liberalizing the bureaucracy and establishment of industrial estates was a stimulus for development.

The benefits of operating in an industrial estate are abundant. For example, companies which build outside an estate are subject to Thai laws requiring a minimum of 51 per cent indigenous ownership, but within the estate this edict is nullified. Also, by setting up in an estate, a company is not badgered by a potential 'dangerous' neighbor that may arrive later. As one foreign investor said, "It's like buying a house- you like to know that your neighbors are good citizens who share your concerns about the environment and the appearance of their property". There are also a handful of tax concessions that foreign companies are privileged to receive only in an industrial estate. Moreover, aside from the basic infrastructure that is prebuilt, most estates are furnished with recreational facilities and higher priced, but higher quality housing for executives.²⁵

By comparison, outside the estate, private land purchases for industry can be a laborious and time consuming process. The following typical sequence of hurdles and permits is often obstructive; 1. BOI- promotional permit, 2. Land Department- apply for permission for land, 3. Ministry of Interior- apply for permission to build a factory, 4. Ministry of Industry- apply for production permission, 5. Ampoe- final location confirmation. All phases operate at different levels, and coordination among the departments is essential, but not in place. Furthermore, in a private land purchase, the actual plot may have been owned by several different interest groups, (farmers, speculators, and crown), leading to the possibility that title has not been fully cleared. Obtaining clear title to the land takes a long time. Building at an industrial estate becomes an attractive preference.

²⁴ The industrial estate speculative market may have exceeded profitable venture. A combination of the 1991 Gulf War and world wide recession has left a large amount of industrial estate space sitting empty. In some estates, only one-third to a half of the sites are occupied; Appendix II (May 19, 1991).

²⁵ For literature on industrial estates in the Bangkok region, a pair of informative articles with a richly local perspective are worth seeing: "Industrial Estates Programme for Thailand" (1974) BANGKOK BANK MONTHLY REVIEW, August, pg.505-19, and "Thai Industrial Estates - So Many Advantages Await Foreign Firms" (1989) BUSINESS REVIEW, April-May, pg.10-31.
However, the only drawback of locating in an industrial estate is the likely distance from Bangkok. This, however, is declining in significance as residential population, and so the workforce itself are decentralizing. Most estates have accompanying residential zones, and a fleet of commuting buses to bring city workers to and from the industrial estate (in 1-2 hours). Professional and executive city-based staff with private vehicles would prefer commuting outwards than within Bangkok.  

Predictably, the positioning of the 38 estates reveal a spatial aggregation in the provinces of the EBMR. In fact, including Bangkok, 31 of the 38 estates are located in 11 provinces of the EBMR. As for area, 84 percent of total industrial estate area is again located in the EBMR (see Figure 6.1 and Table 6.8). The estates in the Eastern Seaboard are the largest, suggesting the future potential growth in that area of the EBMR. The average size of an estate in the Eastern provinces of Chonburi, Rayong, and Chachoengsao is 5490 rai, more then twice the size of the national average.

Case Studies:

Two case studies will illustrate the geography of industrial estates in the EBMR. Both estates are large operations with adjacent residential and recreational zones, and are situated in eastern areas of the EBMR with rapid rates of population and economic growth. The first is an established estate set up in 1978, while the second was set up only in 1991.

(i) Bang Plee Industrial Estate and Newtown, bestowed as 'King Kong Island' is located in Samut Prakan, 40 kilometers east of Bangkok on Bangna-Trad Road, tambon Bang Sar Tong, ampoe Bang Plee (see Figure 6.2). It was established in 1978 as a unique joint venture between the IEAT and the National Housing


27. The map and the table do not perfectly correspond because the industrial estates in Rayong are not on the map, and only three of the five estates in the BMA are indicated on the map.
## TABLE 6.8

### INDUSTRIAL ESTATES IN THAILAND, 1991

<table>
<thead>
<tr>
<th></th>
<th>NUMBER</th>
<th>AREA (RAI)</th>
<th>AVG. SIZE</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHONBURI</td>
<td>4</td>
<td>12865</td>
<td>3216</td>
</tr>
<tr>
<td>SAMUT PRAKARN</td>
<td>3</td>
<td>4506</td>
<td>1502</td>
</tr>
<tr>
<td>PATHUM THANI</td>
<td>3</td>
<td>7000</td>
<td>2333</td>
</tr>
<tr>
<td>AYUTTHAYA</td>
<td>4</td>
<td>5863</td>
<td>1466</td>
</tr>
<tr>
<td>CHACHOENGSAO</td>
<td>2</td>
<td>10490</td>
<td>5245</td>
</tr>
<tr>
<td>SAMUT SAKHON</td>
<td>2</td>
<td>2552</td>
<td>1276</td>
</tr>
<tr>
<td>RAYONG</td>
<td>3</td>
<td>13189</td>
<td>4396</td>
</tr>
<tr>
<td>SARABURI</td>
<td>3</td>
<td>5894</td>
<td>1965</td>
</tr>
<tr>
<td>NONTHABURI</td>
<td>1</td>
<td>680</td>
<td>680</td>
</tr>
<tr>
<td>RACHABURI</td>
<td>1</td>
<td>2300</td>
<td>2300</td>
</tr>
<tr>
<td>BANGKOK (BMA)</td>
<td>5</td>
<td>3777</td>
<td>755</td>
</tr>
<tr>
<td>NON EBMR</td>
<td>7</td>
<td>12782</td>
<td>1826</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>38</strong></td>
<td><strong>81898</strong></td>
<td><strong>2155</strong></td>
</tr>
</tbody>
</table>

Note: All area includes export processing zones and unsold area.

Authority (NHA), with a 1995 target of 130 industrial units and a population of 130,000. The initial construction loans came from the Asian Development Bank and USAID. It officially opened with four factories in 1985, and in 1991 was operating with 99 factories, approximately 10,000 employees on an area just over 1000 rai. When (the third phase is) complete, it will cover an area of 4,469 rai, making it one of the largest estates in the country.

Bang Plee is 'semi-clean', referring to factories which produce relatively limited amounts of air pollution and waste water. Factories that are 'unclean' have an opportunity to locate in Bang Plee, provided they are equipped with waste water treatment systems, and adhere to estate sanctioned emission levels.

An interesting advantage to the Bang Plee estate is that 1000 telephone lines connect to Bangkok directly without long distance charges. Outside the estate in ampoe Bang Plee toll charges are collected for the same call. Also, the BMTA (Bangkok Metropolitan Transport Authority) run two city bus routes (#132 and 133) between CBD Bangkok and Bang Plee New Town. These are important apertures for reducing the spatial friction between the estate and the city.

The skyrocketing price of land in the Bang Plee Estate is comparable to general land value increases in the region. In 1984 a rai of land was marketed for Baht450,000, and has increased consistently and significantly each year, and through each expansionary phase. In 1991 Baht4 million per rai was the standard value.

The objectives and mandate of King Kong Island are not only to create employment opportunities, relieve traffic congestion, and lessen the pressure on Bangkok's infrastructure, but also to "create a new urban infrastructure", with occupational and residential facilities on site. In 1991, 60 per cent of workers (6000) lived in the residential zone of the estate, for an aggregate Newtown population of 5205 households or nearly 32,000 people. An innovative aspect of the residential area is that housing is organized by the National Housing Authority (NHA) and size and quality varies according to income. Households are accorded subsidized housing which will vary by level of subsidy and income level. For example, a
household with a monthly income of Baht7000 is offered a range of choices; a one story row house can be purchased for Baht100,000 with long-term payments, or Baht53,500 cash, or the household may opt for a semi-detached two story row house with a steeper set of purchasing options. Moreover, the NHA has left the majority of the houses unfinished, leaving options for buyers, "We've provided houses with a toilet and electricity but left it up to the owners to paint and landscape. We've also provided enough land so that they can build additions to the basic house when they have the money".

Aside from the standard fire department, police station, health center, and refuse disposal system, there are four kindergartens, one each of a primary and secondary school, sports center with gymnasium, football ground, two tennis courts, two badminton courts, two basketball courts, and an Olympic sized swimming pool. There is also a large commercial area with restaurants, markets, and petrol stations. It is truly a self contained city in a traditionally very rural region. The 30 foot statue of King Kong off Bangna Trad Road, at the main approach to Bang Plee is a befitting representation for this mammoth island of urbanization.  

(ii) The second industrial estate case study is a much more recent and contemporary project, still in its nascent stage. Gateway City in Chachoengsao province, ampoe Plangyao (see Figure 6.2), is 82 kilometers east of Bangkok, and in an advantageous position to service the rapidly developing Eastern Seaboard. It has quick road links to the three deep-sea ports (Klong Toey, Laem Chabang, and Map Ta Phut), the two international airports (Don Muang and U Ta Phao), and the proposed third international airport at Nong Ngu Hao. It also is selling itself as an industrial "Gateway" to Cambodia and Vietnam.

With nearly 7,000 rai, and a 45 kilometer internal road system, it is the largest industrial estate in the Kingdom, and 62 per cent of total space is designated for industrial use. The large size ensures all forms of industry can be accommodated. In the summer of 1992, Toyota opened an enormous 625 rai, Baht1 billion factory on site.

It is one of the few estates with positive geotechnic features: excellent soil stability conditions significantly lowering foundation costs, at 20-50 meters above sea-level, it is not subject to seasonal flooding, and is adjacent to a 10 million cubic meter 900 rai reservoir reducing water fees. Despite these advantages, it is still almost two hours from Bangkok's CBD. As a result land values in the estate are lower than at Bang Plee (Baht 1.4 million per rai).

Its location will also benefit from the supply of Northeastern labour that has begun invading the Eastern provinces for employment. The work force is not only abundantly available, but is at a considerably lower rate of pay than other EBMR industrial estates. Neighboring Prachinburi province is currently setting up a series of vocational schools (with Japanese funding), again potentially favoring Gateway City.

Similar to Bang Plee, Gateway City has a subsidized residential zone with a small amount of low cost housing. As the estate expands its operations over the next decade the NHA will be providing additional stock. The 40 rai commercial zone consists of a bank, post office, telecommunication services, modern supermarket, restaurants, and petrol stations. There is a new golf course on site as well.29

The two case studies point to a particular type of outer city settlement within the region. A characteristic of the morphology of RBU is that it has no consistent pattern. The industrial estate landscape is an 'archipelago of industrialization', as small concentrations of industry and residential population are dispersed throughout the outer city. It evokes a sense of a scattered series of islands in a large sea. This landscape should of course be contrasted with the tight concentrated high density geography of city based urbanization.

6.2 AGRICULTURE

There are two dominant processes occurring concurrently: first, agriculture is in retreat as its lands are the main source of land for emerging housing estates, industry, and recreational areas. Second, there is a conspicuous cropping pattern shift underscored by a decrease in the traditional dominance of paddy cultivation.

As in Gottmann's megalopolis in the 1950s, there has recently been a significant national level restructuring of costs and prices which has created a situation where all agricultural commodities grown in the EBMR could be produced elsewhere in the country at a lower cost. Moreover, the abandonment of agriculture occurs at a very uneven rate. Non-agricultural activities encroach through tentacle like extensions, often corresponding with roads or canals. Frequently farms are caught in a network of industrial or residential development forcing upon them a non-agricultural value; an incontestable stimulus for land use transition. Rapid urban encroachment leads to speculation in the ownership of EBMR land. Prices have risen so rapidly and steeply that new farmers can rarely finance ownership, and those with land can not justify producing under-valued produce on over-priced land. In this circumstance land owners commonly rent out their fields to landless farmers for little more then the tax rate. This is an increasingly common form of tenancy. In Pathum Thani for example, traditionally with some of the highest tenancy rates in the Kingdom, there has been a recent escalation of various low rent leasing arrangements. Landowners rarely cultivate themselves, holding on to the land for an anticipated further value increase.


31. One case study concerns a middle aged couple owning 10 rai of land near Rangsit, Pathum Thani who both have jobs off the farm (one at a school nearby, and the other as a clerk in a Bangkok bank). For five consecutive years they have leased their land to landless cultivators from the adjacent ampace for a nominal rate, Appendix II (February 20, and May 5, 1991). This is quite a ubiquitous tenancy arrangement in the outer city, certainly enhanced by speculation and uneven urban intrusion. Interestingly, Gottmann reports similar tenancy contracts in the Megalopolis, during transition periods.
The next common response to speculation of agricultural lands is to pull it out of production. Throughout the EBMR, previous rice fields appear as overgrown untended fields. The land in this state may be owned by the farmer, or by an absentee private speculator. In either situation the land will eventually host a non-agricultural use.

A further consideration is that some forms of agricultural production are more viable than others. The farmer is swayed by economic return and often, but not always may have the resources to respond flexibly. An important trend in the EBMR’s agricultural sector is the frequency of rice lands giving way to more profitable crops. A report published by the Minburi Agricultural Department clearly illustrates that economically rational decision making based on input value and selling price would adduce cultivation of grass (or turf) over rice (see Table 6.9).

In the Nation newspaper’s 1991/1992 Midyear Economic Review, the page one editorial column was entitled, “Will the 1990s Herald in the Death of Agriculture in Thailand?” The article echoed a voice and

### Table 6.9

**Minburi District Agriculture: Decision Making**

<table>
<thead>
<tr>
<th>Type of Agriculture</th>
<th>Input (Baht/rai/yr)</th>
<th>Sell (Baht/rai/yr)</th>
<th>Ranking of 10 Crops</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grass</td>
<td>5560</td>
<td>16000</td>
<td>1</td>
</tr>
<tr>
<td>Fish Pond</td>
<td>4950</td>
<td>12500</td>
<td>2</td>
</tr>
<tr>
<td>Rice</td>
<td>1030</td>
<td>2124</td>
<td>8</td>
</tr>
</tbody>
</table>


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32. Other alternatives are aquaculture, market gardening, orchards, and tapioca. These will be discussed later in this section.
Concern heard everywhere in the Kingdom, and more so in the EBMR. Agriculture currently represents less than 15 per cent of the national GDP, and younger generations are *en masse* rejecting agriculture, opting to work in the rapidly expanding industrial and service sectors. As land prices soar, and rice prices slip, the trend appears irreversible.\(^{33}\) Dr. Utis Kaothien, Director of the Urban Development Coordination Division of the NESDB, acknowledges the run away urbanization trends and believes that the market will shape the landscape. His recommendation is to preserve and promote first class irrigated agricultural land; an expectation he confesses is beyond realism. He understands the power of the private sector and submits to its expansionary tendencies, but at the very least would like to direct them along a 'positive' course.\(^{34}\)

To someone unfamiliar with the space economy of the EBMR, there would be a dominant perception that the region is characterized by agriculture. Spatially this may be the case, but based on employment and sectorial GDP, this is far from accurate. In Pathum Thani for example, nearly three-quarters of the land (1989) is under agricultural uses, and more than half of all land is covered by rice fields (Table 6.10), yet only 28 per cent (1990) of economically active population are employed in this sector. Although this represents a dramatic break from earlier land use, it certainly does not correspond with a traditional urbanization morphology. Perhaps this is the most remarkable and distinctive attribute of a region based urbanized landscape as seen in the EBMR.

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34. For example: housing estates, industrial parks, dissuasion of strip development, and 'clean' industry. As for preserving irrigated farm land by saving the canals, he states, "urban growth will not go against the flow of water." Based on personal interview, Appendix II (March 26, 1991).
6.2.1 Agribusiness:

The recent Sixth and Seventh five-year Development plans have stressed the promotion of agricultural commodities with high potential for export. In particular, agro-industrial products with high value added processing will be offered incentives and provided with promotional considerations. Those with the highest priority are: processed food, meat, fisheries products, canned fruits, and tapioca animal feed. This policy focus corresponds with the already growing market for tropical fruits and vegetables in the U.S. and Europe. A similar demand for frozen prawn and chicken is coming from Thailand’s East Asian trading partners. The

Note: Other uses include industry, residential, recreation, and water bodies.


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result has been dramatic growth in the agro-industry sector showing great potential for continued acceleration.\textsuperscript{36}

A distinguishing characteristic of agribusiness in Thailand is that, unlike most countries where MNCs hold large plantations, the majority of produce in the EBMR for example, is produced by thousands of independent smallholders. Only the final processing and international marketing is controlled by the larger conglomerates. For instance, when Dole Pineapple Inc. moved a large share of their production base from Hawaii to Thailand in the 1970s because of rising labor costs, instead of buying up large tracts of land, tens of thousands of farmers ploughed up their rice and sugar cane to grow for Dole. This land use shift continues. In Chonburi for example, 17,000 fewer rai of sugarcane were planted in 1989 then in 1990-91. The difference was made up with pineapple and other commercial or residential based land uses.

The actual land owned and controlled by agribusiness is quite small, however its influence and relevance are large and growing.\textsuperscript{37} As of 1992, it appears that the government's national agricultural council is set to pass a bill in the legislature to further assist agribusinesses at the expense of farmers. In 1992 this was being debated in the National Assembly, and was possibly to be passed in 1994. Under present agribusiness relationships, farmers have choices whether to enter a contract with business, and whether to opt out at any time. Despite these few options, contract farmers are an exploited weak partner in the relationship, and the proposed bill will further marginalize their position in the relationship. Farmers will be bound to grow


\textsuperscript{37} It is difficult to collect land use data on agribusiness in the region because of its hidden nature. Farmers are not always willing to admit they raise chicken for Charoen Popakand or grow Pineapples for Siam Food Products, however it is likely that 'contracting out' is widespread. Several respondents grieved that their produce is not always purchased for the price they were promised by the large firms. A relatively new and viable agribusiness commodity taking roots in the EBMR provinces of Nakhon Pathom and Samut Sakhon is canned baby corn. The product is almost exclusively exported and is quickly emerging as a big foreign exchange earner.

For further discussion on agribusiness see: Dohr, Larry (1988) COMMERCIAL AGRICULTURE AND EQUITABLE DEVELOPMENT IN THAILAND, Southeast Asia Business Papers, University of Michigan.
specified crops, deal with specified buyers, pay into a Research and Development fund, purchase the
designated raw materials (seeds, fertilizers, pesticides, etc.) at set prices, with no flexibility or alternatives.
It is expected that farmers already facing near bankruptcy conditions will be forced to comply (with
resentment). If passed, the bill will have a large impact on remaining agricultural lands in the EBMR. It will
act as another incentive and subsidy for urban and industrial land uses. Farmers who have given up on rice
and earn their income from export oriented agricultural commodities would plainly sell their land.38

6.2.2 Aquaculture:

A rapid increase in demand for fishery products, especially prawns, at both domestic and international
markets, has brought on an upsurge in aquacultural production in Thailand. Roughly 10 per cent of total
fishery production is accounted for by aquaculture.39 Although aquaculture is practiced in the south of
Thailand, the coastal provinces of the EBMR have the largest concentration. Thus, prawn culture is
commonly found in Samut Prakarn, Samut Sakhon, and Samut Songkhram. In fact, over 90 per cent of
shrimp farms are found in the inner part of the Gulf of Thailand. Prior to 1984, 90 per cent of prawn
harvests were from natural sources, mainly in the Gulf. In 1990, that figure had dropped to 50 per cent, as
prawn farming area stood at 420,000 rai, and production has been estimated at 130,000 tons. Five years
earlier, 255,000 rai produced only 15,000 tons. Only China produces more prawns than Thailand.40
Prawn farming is the environmental pariah of aquaculture. The "fill and flush" approach, adopted by many
aquaculturalists is paralleled to slash and burn agriculture; "Both [prawn culture and slash and burn] methods

39. Pravit Ruyabhorn and Dhira Phantumvanit, "Coastal and Marine resources of Thailand-Emerging Issues Facing an
constitute a serious threat to the environment as they eat on new territory, leaving devastation in their
wake. Improper disposal of brackish waste water from the breeding ponds is leaving land too polluted to
support continued breeding. Agriculture is rendered impossible in a flushed area, and nearby vegetable and
rice farming are also being endangered. The salty lethal waste also has been tainting groundwater supplies,
and most critically, wells. A recently released report claimed that Chonburi, in the EBMR, has the worst
aquaculture pollution load in the country, with stagnant waste water beginning to encroach built up urban
areas.

Prawnfarming has led to a widespread encroachment on coastal mangrove areas. Approximately 200,000 rai
of mangrove forests have been transformed to aquaculture, mainly prawn farms. Coastal marine
environmentalists claim one rai of mangrove area is capable of yielding four tons of marine fish and
crustaceans. The razing of mangrove forests are driving various species of insects, reptiles, birds and over
100 species of flora to extinction.

A desperate rice farmer rarely considers the potential environmental impacts of aquaculture when
contemplating a shift to fish farming. The prevalent motivation to enter aquaculture is to escape high debts
accrued from rice farming. One aquaculturalist in Nong Chok district of the eastern EBMR was in this exact
situation, and in 1981 pawned all his valuables, borrowed some capital and shifted his land to a series of
large fish ponds. Alongside the pond is 10 rai of coconut, mango and cut flowers. The embryonic fish (1-2
millimeters) are purchased from a breeder in neighboring Chachoengsao for one-tenth of a Baht each. The
feed (chicken gizzards and low grade rice) to sustain the crop is inexpensive as well. With three harvests a
year income potential is high. He claims to earn approximately 3.5 times his annual input costs, and is

42. Borosopit Mekavachai et al (1990) op.cit.
preparing for expansion. With a large home and several vehicles he appears to be very well off.\textsuperscript{44} Not all aquaculturalists are so prosperous.

6.2.3 Turf Farming:

In response to the proliferation of golf courses and to a lesser extent, aesthetic landscaping encircling industrial and housing estates, turf farming is emerging as a preferred alternative to rice. Particularly in the eastern BMA districts of Minburi and Nong Chok, and Pathum Thani there is an escalation of this activity. The Grass Farmers Union Office in Nong Chok estimates 200-300 independent grass farmers operating out of the union office.\textsuperscript{45} It is a lucrative but very labour intensive operation requiring continuous (daily) irrigation and labour input. Within 35 days a properly cultivated field spreads into a rich carpet, which is then sliced into one square meter slices and sold at markets and to golf courses for eight Baht per slice. Several slices are always retained to plant the next crop through a regeneration process which involves replanting each blade individually. This routine can be repeated 10-12 times per year. If done successfully the returns are substantial.

From interviews it was clear that those involved in this activity take pride in their work. They consider grass to be a 'specialty' crop and emphasize the required skills and experience. The grass farms all appear to be labour intensive with a variety of small activities occurring simultaneously; harvesting, weeding, watering, curing irrigation rivulets, sowing and fertilizing. At one site there were four households (18 people) who

\textsuperscript{44} This information is derived from a series of interviews done with prawn farmers in the EBMR, Appendix II (March 7, 10-12, April 16, 1991).

\textsuperscript{45} My survey of the region would indicate there are at least twice that number, as many turf farmers are not involved with, or a member of the union.
within the month collectively sold all their rice land and migrated from Nakhon Nayok in the Northeast to Minburi where they were renting 30 rai of land. They were enthusiastically building houses, a road, and irrigation rivulets (2 meter wide) in preparation to commence grass farming. 46

6.2.4 The Persistence of Rice:

Despite the apparent diversification described hitherto, if one were to identify one economic activity that spatially characterizes the EBMR as a region it would be paddy agriculture. Particularly in the lower and upper Central Plain and eastern reaches of the BMA including Chachoengsao, much of the landscape is still dominated by what seems as continuing fields of rice, often reaching to the horizon. In the Eastern Seaboard provinces of Chonburi and Rayong the main crop is sugar cane, covering at least twice the area as rice. Table 6.11 compares harvested rice yields in 1975 and 1990. Aside from Pathum Thani and Ayutthaya there is a considerable decrease in harvested yield. 47

There is a stubborn persistence of rice cultivation, and it appears that rice will continue to thrive alongside industry and manufacturing for decades to come. Rice fields abutting factories are ubiquitous in this region. However, despite rice cultivation's 'spatial perseverance', its GDP contribution, labor levels, and importance in general are declining.


47. The 1974/75 rice season in Pathum Thani was particularly low, probably due to flooding, brown hoppers and rodents. Normally yields were over 800,000 rai, and nearly 1 million rai in some years (1979).
Rice exporters are being driven out of business, and the Central Plain smallhold producers are responding by curtailing their paddy land. Thai rice exports, for years, the world’s front runner, are undergoing a critical transition. Competition from Vietnam, and unexpected challengers such as Pakistan are considerably undercutting Thai production costs. Moreover, a weaker demand in the international market combined with unpredictable market swings make rice exporting a very risky business. As one insider quipped, "The golden time has already gone". 48 Land use changes already recorded are also playing a role in the decline in rice production.

An intricate lattice work of inland waterways provided sustenance for the Central Plain to earn its reputation as one of the continent’s premier 'rice bowls'. It is perhaps ironic that problems surrounding the provision of

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water, a constant reliable resource for over a century, is now contributing to the decline of paddy production. In the EBMR there are three main concerns:

1. The canals and Chao Phraya river are polluted, resulting in declining yields. In most Central Plain villages, farmers expressed concern at the levels of pollution, including toxic, in the canals.

2. The spiralling cost of fuel to operate the irrigation pump has severely cut into earnings.

3. With rising industrial, residential and golf course water consumption there exists annual acute water shortages, and unsurprisingly, the farmer loses. In 1991 for example, rice farmers were warned by the Interior Ministry to postpone annual rice planting until rain fell. Furthermore, the Ministry proposed that the second crop be suspended to preserve water for other uses. The 1991 edict effected the EBMR changwats of: eastern BMA, Pathum Thani, Samut Prakran, Nonthaburi, Saraburi, Lopburi, Nakhon Pathom, and Chachoengsao. 49

Again this exemplifies the perennial neglect the central government has imposed upon the agricultural sector since the turn of the century. It is not surprising that agriculture is in retreat.

A village headman in northern Minburi, who was notified by district officials that his village should cut back from two crops a year to one because of local water deficiency did not seem indignant. He cited three reasons for complacency:

1. many farmers in the last two years have been raising cattle, and it has proven to be a lucrative alternative to paddy.

2. Most of the villagers are working in nearby factories, and,

3. rice cultivation had become a high risk venture.\(^{50}\)

Nearly everywhere throughout the EBMR people told stories about the demise of rice. The District Official at Lam Luk Ka, Pathum Thani predicted that there would be no rice planted in his district by 1996. Another official in Pathum Thani spoke of a linear land use transition: rice- orchard-, residential. There is also clear indication of cropping changes. Throughout the region farmers are ploughing over rice fields and altering their irrigation system by digging ditches and rivulets in preparation for a substitute crop. Even at the core of the Central Plain rice bowl in Nong Sua district Pathum Thani farmers are abandoning rice cultivation. In 1990, only 41 per cent of households planted one or two crops of rice, down considerably from 67 per cent in 1980. In nearby Klong Luang district there has been a similar decline (48 per cent down from 69 per cent).\(^{51}\)

Yet another explanation for the shift away from rice production concerns the use of labour. The Green Revolution in its broadest sense has radically impacted labour input levels in the EBMR. Although traditional rice cultivation methods are still widely practiced, modern labour saving agricultural technology, especially associated with the harvest are now common. Throughout Pathum Thani rice farmers are banding together during harvest period in April and May and renting a tractor combine-harvester. The machine and the communal sharing of labour (termed aow in Thai), could bring down 30 rai of paddy in one day. Under

\(^{50}\) Appendix II (April 22, 1991)

\(^{51}\) Iqbal, Javaid (1990) VERIFICATION OF THE 'DESAKOTA' CONCEPT, ASSESSMENT OF LAND USE AND ENVIRONMENTAL PROBLEMS, AND RELATED POLICY IMPLICATIONS: CASE STUDY OF THE NORTHERN CORRIDOR, BANGKOK THAILAND, Masters Thesis, Asian Institute of Technology, Bangkok. During a number of visits to Nong Sua in April of 1991, there were at least a dozen rice farms being changed into orchards, mostly by labor gangs from Saraburi and the Northeast. There were also several bridges being constructed across Klong 11, which will facilitate villagers commuting to the factories along the highway. See Northern Corridor case study in chapter 8.
traditional methods one person harvests a rai in approximately three days. This represents a (technological triumph), and a critical labour saving.

Data from all areas of the EBMR are indicating dramatic reductions in agricultural labour levels, and en masse, labour are entering the non-agricultural sectors. An interesting repercussion of this sectorial labour shift is often agricultural labour is left as the responsibility of the older generation. During the school break they are accompanied by the children.\textsuperscript{52}

A wide range of pressures are being exerted on rice farming (and agriculture in general). In this situation, how persistent can agriculture be? When a spatial conflict arises between urban and rural, urbanization typically prevails. A potent combination of industrial pollution, a speculative land market, labour saving technology, a downswing in the commodities market, imperialistic agribusiness, and nearly 150 years of state disinvestment in agriculture has been the recipe for vitalized urban expansion. Again, the most asked question in the region becomes relevant: will the 1990s herald in the death of agriculture?

6.2.5 Summary:

The two key production sectors of the economy, industry and agriculture are both under a dramatic restructuring process in the outer city, in terms of labour, production, and ownership. For labour, despite radical changes in cropping patterns, there is an increasing shift away from agriculture towards industry. This is consistent with the rapid rise and diversification of the industrial base in the provinces of the EBMR.

\textsuperscript{52} During field work a distinct and consistent observation was that during the day the villages were vacant except for a handful of older people. Often to meet them we would have to go out to the fields. The other village occupants were at school or working off the farm.
As for ownership, there is a clear trend towards corporate concentration by MNC and agribusiness consortiums.
CHAPTER SEVEN:

THE NEW LANDSCAPE II: HOUSING AND RECREATION

As urbanization in Bangkok finds its locus in the outer city, a housing agenda needs to be constructed which can explain new spatial patterns as they differ from traditional city based ones. In the next decade, the population of the outer city will grow at about five per cent per annum, more than twice the national average. When combined with significant growth rates of real per capita income, as is the case in the outer city, there exists the conditions for a dramatic increase in housing disbursement. Mills (1991) argues that a doubling in real per capita income typically leads to about an 80-90 per cent increase in housing expenditure. These figures coincide with the scenario occurring in outer city regions of Bangkok in the last 5-10 years.

In earlier sections I have written on the real estate boom in the EBMR. Private and commercial interests have come to dominate outer city real estate in all areas of land development; housing, industry, and golf courses in particular. Considering the hyperactivity of the real estate market, Mills contends that the market value of housing is higher than all other real estate added together, hence housing is and will continue to be the core of the continuing real estate boom.

In many instances the proliferation of housing is not an unexpected trend. Social scientists and demographers predicted it over a decade ago. The National Sixth and Seventh Five Year Development Plans allocated

1. Dr. Edwin Mills, a Professor of real estate and finance at the Kellog Graduate School of Management, Northwestern University spoke at Chulalongkorn University's Sasin Graduate Institute of Business Administration in 1991. His paper appeared in the BANGKOK POST (1991) May, Real Estate Guide.

2. Mills appears to be hypothesizing on the Thai real estate market based on U.S. data. He writes, "In the United States, the market value of all housing is 1.6 times the market value of all non residential structures.... and I am confident that the same is true in Thailand and, indeed, in all countries". There is no data to verify the authenticity of this figure as it applies to Thailand, however my familiarity with the market causes me to surmise that it would be a smaller figure in Thailand, perhaps 1.1 or 1.2.
additional funding for public housing in anticipation of the rising need. The housing boom is not just simply coinciding with natural population increases and inter regional migration patterns, but is rooted in fundamental social and economic alterations to society. Two points underscore the escalation in housing need:

1. The age structure of the population is changing. As average age is increasing, there are more young adult workers who by the nature of the type and location of their work require housing off the farm or at least apart from their family home.

2. There is a marked evolutionary trend, rooted in the rise of per capita income, towards single-family nuclear housing. A survey of the new stock of outer city housing indicates the configuration and layout are catering to smaller single families. Moreover, a considerable portion of the outer city housing stock, as we will see later, caters to young unmarried labourers, again a clear and dramatic break from traditional housing norms.

Table 7.1 presents data to underscore the shift in housing stock to the outer city. In the mid 1970s the number of houses in the outer city and core were comparable (306,825 and 278,338 respectively). By 1988 the outer city housing stock was greater then twice that of the core (854,564 and 401,818). Since 1988 this trend has accelerated and will be the focus of the section.

**TABLE 7.1**
**HOUSING STOCK IN BMR, 1974, 1984 AND 1988**

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>1974</th>
<th>1984</th>
<th>1988</th>
<th>INCREASE 1974-88</th>
<th>% INCREASE</th>
</tr>
</thead>
<tbody>
<tr>
<td>CITY CORE</td>
<td>278,338</td>
<td>334,461</td>
<td>401,818</td>
<td>123,480</td>
<td>44.4</td>
</tr>
<tr>
<td>OUTER CITY</td>
<td>306,825</td>
<td>625,313</td>
<td>854,564</td>
<td>547,739</td>
<td>178</td>
</tr>
</tbody>
</table>

Note: Outer City includes extended BMA and 5 adjacent changwats
Source: Adapted from PADCO (1990), pg.43.
To describe the growth of current outer city residential development as simply suburbanization would disregard the true essence of its extensive spatial dispersion. In this light, housing production patterns represent a trend to consume more land on the urban fringe; a residential development that is largely low density and dispersed. Much of the new housing stock are locating in the two rapidly developing provinces of Pathum Thani and Samut Prakarn, both without any significant sized cities.³

The objectives of this section on housing are twofold. First, as already indicated, there will be an attempt to document the spatial extent of outer city housing. Can millions of people live an urban lifestyle in a quasi-rural environment in the extended Bangkok region? The environmental sustainability of such residential development is a serious concern. The second, is to construct an outer city housing typology. There are a number of distinct and disparate housing types all serving different functions for the socially and economically diverse populations that have made the outer city their home. The growing gulf between the rich and the poor in many ways is reflected in the wide range of housing types. This section will catalog and describe this outer city residential typology. Finally it is worth noting that this topic warrants the endeavor and enterprise of an entire dissertation. It is my intention to follow up some of the concepts and inclinations presented here at a later time. For now though, rigid boundaries need to be set to limit this section and keep it within reasonable scope of the larger project. Although the entire region delineated as the EBMR is undergoing some form of an evolution in housing, this section will address the two provinces of Samut Prakarn and Pathum Thani foremost. Other regions of the EBMR will be treated at a cursory level only.

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³ In Pathum Thani, Rangsit and Muang are the only 'municipal' centers, both less then 30,000 people. In Samut Prakarn as well there are only Muang and Phra Phadeng, neither very large. The figures from the 1990 census show Pathum Thani is four per cent urbanized, and Samut Prakarn is 10 per cent. Notwithstanding an objective of the larger project is to critique the quintessence of urban-rural distinction in this region. But the point is clear, urbanization is proceeding without large cities, Thailand Government (1990), Population and Housing Census.
7.1 Spatial Extent of Outer City Housing:

There are a number of variables worth examining to gain an appreciation of the spatial extent of outer city housing. First, the number of new accommodations registered in the two provinces between 1987 and 1989 is displayed in Table 7.2. Nearly 28,000 newly constructed accommodations were registered during the three years in Samut Prakan. The modest figure (3,163) for Pathum Thani may reflect a trend to under register new development that may not meet minimum national standards for drainage or water provisions, and does not capture many older accommodations or land holdings that are informally subdivided.

By scrutinizing the provincial distribution of subdivision permit requests, a clearer picture is portrayed of residential proliferation. Table 7.3 indicates that the two provinces have submitted requests for a very large and disproportionate share of subdivision permits. For most situations in the two provinces, landowners have applied to construct townhouses on their land, largely catering to the stream of incoming factory workers.4

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**TABLE 7.2**

**NEW ACCOMMODATIONS REGISTERED IN TWO OUTER CITY CHANGWATS**

<table>
<thead>
<tr>
<th></th>
<th>1987</th>
<th>1988</th>
<th>1989</th>
<th>3 YR. TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>PATHUM THANI</td>
<td>749</td>
<td>962</td>
<td>1452</td>
<td>3163</td>
</tr>
<tr>
<td>SAMUT PRAKARN</td>
<td>6726</td>
<td>10960</td>
<td>10133</td>
<td>27819</td>
</tr>
</tbody>
</table>

Source: Adapted from Bank of Housing Assistance (1990), (in Thai language).

TABLE 7.3

SUBDIVISION PERMIT REQUESTS, 1989

<table>
<thead>
<tr>
<th></th>
<th>% OF WHOLE KINGDOM</th>
<th>% OF WHOLE KINGDOM'S POPULATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAMUT PRAKARN</td>
<td>8</td>
<td>1.4</td>
</tr>
<tr>
<td>PATHUM THANI</td>
<td>9</td>
<td>0.7</td>
</tr>
</tbody>
</table>

Source: Adapted from Barasopit Mekivachai et al (1990).

Figure 7.1 illustrates a general pattern of outer city housing development in the BMR. It is clear that six dominant corridors are acquiring the majority of new residential development:

1. Northeast of the BMA along Ram Intra Road, past Bang Chan village towards Minburi.

2. Northwest of the BMA into Nonthaburi along Chang Wattana Road.

3. North of the BMA along the Vibhavadi-Rangsit highway deep into Pathum Thani.

4. West of the BMA on Charan Sanitwong Road and Petch Kasem Road into Samut Sakhon.

5. Southeast of the BMA along Sukhumvit Road into Samut Prakarn.

6. Southeast of the BMA along Bangna Trad Road also into Samut Prakarn.

The costs of extending an infrastructure to a low density and dispersed residential settlement is very high. The provision of water, waste removal and road construction are costly and inefficiently delivered. The difficulty of providing public transport is also an obstacle to be dealt with. Leapfrog land assembly is a
common repercussion from dispersed land development, leaving large under-utilized tracts of land. A complementary concern is the loss of fertile high value farmland. Perhaps the most worrisome consequence is that outer city residential growth leads to auto-dominated development. Private automobile ownership among outer city residents is higher than in the city. The main roads and highways in the five inner ring provinces of the BMR are heavily congested, sometimes more so than in the city. Traffic jams are often bumper to bumper on outer city roads in both directions, generating higher levels of airborne pollutants. Car dealerships, petrol stations, and auto service centers are ubiquitous in the outer city. As for the labourers of the factories in Samut Prakarn and Pathum Thani, if they are unable to reside near their place of employment daily commuting by bus poses serious problems. Companies often rent a fleet of buses to transport the workers to and from the factory, or the worker depends on public transportation which is unreliable. Given the daily traffic congestion, commuting times of over three hours per day are not exceptional. Population growth in the outer city has drawn capital and jobs from the city core, exacerbating dispersed urban development. Conventional anti-sprawl wisdom is not a new critique of urban development, but at the scale and pace that the Bangkok region is growing, there is an increased awareness of some of the problems and controversies.  

7.2 Outer City Housing Typology:

There are seven housing types common in the outer city. Some of these types can be overlapping and the description redundant, but to avoid omitting a certain housing type, the seven that follow best capture the broad range. The value in the construction of such a typology is the on-going documentation of rapidly

changing residential landscapes, and exploration of current problems of particular forms of outer city housing in the EBMR.

7.2.1. Shophouses:

It would be misleading to refer to shophouses as exclusively residential or unique to the outer city. In fact each shophouse unit has ground level commercial space, and pre-industrial Bangkok was dominated by strips of shophouse development, principally owned and occupied by the Chinese. Even today, the older parts of Bangkok are filled with shophouse enterprises. This housing type has been extended to the outer city in large numbers. Roadsides from the Eastern Seaboard to the upper Central Plain are dotted with shophouse development. In Pathum Thani and Samut Prakan it is an ubiquitous development, as each road, thanon and soi surely has at least one shophouse strip.

These units are typically constructed in blocks anywhere from five to 30 units in length. Each unit is three to five levels high, most commonly four. The average size of the units are 4 meters wide by 12 meters deep. The ground level is used for commercial activities, often associated with the automobile or motorcycle (service and sale). Other commercial activities typically include, restaurant, food shops, health clinics, Buddhist sculpture making, and agricultural implement sales. In rare instances the second and third floors are under commercial use as well.

The owner or rentier most often resides above the shop, as well as any employees of the commercial enterprise requiring housing. A housing study in the Rangsit area of Pathum Thani surveyed shophouse residential population, and established that the average unit houses 5.9 people, and several had over 20.6

Although this is the most common housing type in the outer city, the majority of the shophouses are vacant including some built more than five years ago. One of the surprising and most noticeable features of the outer city real estate market is the seemingly endless blocks of vacant shophouses in nearly all areas. In some, paint is peeling off the walls, and the plastered sides are discolored, with no indication of there ever being an occupant. In areas of Nakhon Pathom and Pathum Thani there are large complexes of new, yet barren shophouse blocks instilling a ghostly and eerie ambience.

The construction of shophouses is often the outcome of real estate speculation. Construction had begun when land and production costs were less expensive, and upon completion the market value rose, frequently leaving the development vacant. As the region fills out, presumably, most will be rented or purchased eventually. For example, the Eastern Seaboard is saturated with rows of barren shophouses, but with imminent growth along the coast, most will likely be purchased shortly.  

7.2.2 Row Houses:

What has driven the price of housing up and often beyond affordability for many prospective buyers is the price of land. It follows that if the land component is decreased, housing prices can be cut significantly. Conventional wisdom has led developers to respond in two ways: vertical construction, such as high rises, or tightly placed houses side by side, such as row houses. The vertical solution turns out to be costly and unless the high-rise caters to middle or upper income buyers it is often socially disastrous. Hence, the horizontal solution has been the practical response, and in the EBMR, after shophouses, it is the most prevalent form of residential development.

7. Appendix II (May 4, June 5-10, September 8, 1991).

8. Evidence of this can be found in Hong Kong. Also urban renewal high rise projects in the United States and Britain in the 1960s and 1970s are further verification. Singapore stands as an exception.
In Pathum Thani and Samut Prakarn row houses have emerged as privately owned real estate development, and sold by individual unit to a buyer. In many cases, the buyer purchases more than one, and rents the units to lessees. Row housing is accessible to a broad range of income groups. Some blocks have tiny units that are crude and basic, and fetch a nominal market price, appealing to young single factory workers on a small fixed income. At the other end of the income spectrum 'rows' can be upscale, equipped with two car garages and a spacious yard. Often these are single stand-alone units.9

Although row houses are generally affordable, enhance infrastructure efficiency, and fill a market gap for first time buyers, there are a few problems. The land on the back side of the block is largely dormant, and subsequently fetches a very low price relative to the row houses. This is another example of inefficient land utilization. In my visits to various row housing developments in Pathum Thani and Samut Prakarn, residents usually were armed with scores of grievances, such as not being able to have doors and windows on the sides, flimsy partition walls separating the units, stagnant waste water along the back side causing building discoloring, and lack of security.10

Row houses are, and will continue to be the EBMR planner's ideal. Certainly not without its problems, 'rows' are sensitive to outer city consumers' needs, and when the pros and cons are tallied, they deliver the best balance between affordability and livability.

7.2.3 Condominiums11:

9. Appendix II (February 20, March 7, March 12, August 9).

10. During my research tenure in 1991, I resided in a row house in the eastern BMA near Minburi. A seemingly candid concern for many of my neighbors was the approximate 50:50 proportion between owners and lessees. Owners complained that renters did not provide sufficient upkeep and maintenance of their units. As one owner said, "You can clean the windows or paint the door, but unless your neighbors do the same it all looks untidy". On the positive side there was a vibrant sense of community along the 'row', undoubtedly fostered by the close proximity of the units.

11. Parallel terms are 'townhouse' and 'apartment'. Both are used in Bangkok's urban edge, but for this section they can be deemed as interchangeable. A townhouse is a group of houses joined by common side walls. Technically it could be a shophouse, row house or even condominium. An apartment is a condominium with rental or tenancy status. Since
Residential condominiums began in Thailand in the mid 1970s to cater to high income groups living in Bangkok. Rising land prices allowed for condominiums to be practical and profitable investments as they required less building space. Condos, like shophouses are now flooding the outer city residential market, and the concept has been modified to low cost projects. Samut Prakan and Pathum Thani have a high density of condos, serving the broadest range of income earners.

Outer city low cost condos are the most prevalent form of this development, usually found near industrial estates and factory sites. Yap and Rahman (1992), in their study of factory worker housing in the Northern Corridor of Pathum Thani, found that the primary owners of condo units were nearby factories who in turn leased them to their workers.¹²

Outer city condos are anywhere from three - 15 levels, most being five or six. The image usually implied by 'condominium' is 'upscale', 'affluent', and sometimes 'opulent'. Outer city condos are in fact very different than the perception. The rooms are generally very small, and often house three or more people. Even the new buildings appear run down and dreary. Elevators are rarely functioning, and burglaries are common. Notwithstanding, as the case with row houses, condos do fill a certain residential niche for migrants and industry; that being the reproduction of labour.¹³

most condos are eventually rented a clear distinction is not essential. It is important to note that 'condominium' in the local vernacular has a different meaning then in North America.


13. Before settling in my row house I viewed about 10 condominiums in Samut Prakan and considered a rental agreement, which is not very difficult to arrange. Most units were quite shabby and less then 35 square metres, without private bath. Perhaps the only redeeming feature was the price, usually under Baht1500 per month for a rental arrangement. After interviewing many residents, I sense most occupants are displeased with their condo. A Nation report on outer city condos concurred, "They do not seem to have any other choice but to live in a small room which both buyers and developers try to call a 'condominium'. THE NATION (1991) August 21, "The Downside Of Condos", Thasai Jearania & Veena Thoopkrajae.
The most ambitious low income outer city condo project in the Kingdom is scheduled for completion sometime in 1993. Bangkok Land Co., arguably the largest residential real estate developer in the country, is constructing a mammoth condo complex off Bangna-Trad Road in Samut Prakarn, costing Baht4 billion. The project consists of 26 11-story condominiums, with 5600 units, expecting to house 20,000 people. The target market is exclusively labourers in the factories of Samut Prakarn. Situated in the complex is a department store, food centre, and theatre. The units sell for an average price of Baht500,000 (Cd$25,000)\(^{14}\).

7.2.4 Dormitories:

The majority of factory workers are often temporary migrants, underpaid, and unmarried women, suggesting this group is hardly in a position to purchase permanent accommodations. Moreover, most workers remit a portion of their wages to their families in the countryside. Also, single women require security and privacy within their accommodations. Responding to these needs, it is hardly surprising that many factories provide on-site dormitories for their female workers.

As a foreign male researcher it was not possible to personally visit any of the dormitories on factory sites. There also appears to be very little written on the topic.\(^{15}\) I did however interview several dormitory residents and spoke at length to factory managers concerning conditions, costs, and services.

\(^{14}\) Muang Thong Bangna, (the project's name), was sold out before construction began. The same developer is also responsible for a second project, again combining commercial and residential development in a single complex named Muang Thong Thani. This equally as large complex will have four condo towers all over 18 levels, and feature the, "magnificent Park Lane Plaza- the shopping and entertainment complex of tomorrow". This project, located in Nonthaburi province is targeting a more 'upscale clientele'.

\(^{15}\) A notable exception is Yap and Rahman (1992), op.cit.
Dormitories provide two significant advantages to its residents. First, it practically eliminates commuting altogether. Workers arrive at the shop floor punctually and (presumably) alert, potentially increasing workers' productivity. Absenteeism is reduced. Also, the workers bear no commuting cost in time and money. Second, there is a considerable saving on the expense of rent. Dormitory residents are charged less than Baht500 per month, but most often it is free.

It is difficult to ascertain the actual number of workers residing in dormitories, or even the number of factories that provide the service, but it became clear that most large enterprises, such as those along Pathum Thani's Northern Corridor, and in Bang Plee, Samut Prakarn, have dormitory arrangements. Of those factories that provide the service, approximately 50 per cent of the workers are in residence. And, although it mostly serves women workers, some men are also residents.16

Dormitories are small, and can house up to five workers. There are no kitchen or washroom facilities in the rooms, but there are shared baths on each floor, and the factory provides subsidized meals in its cafeteria. Although no one I spoke with, including factory managers, praised dormitory living in prodigal terms, there is a consensus that it is practical and convenient. It serves labour and management equally well.

There is possibly an ambivalence as to whether factory management condone dormitory arrangements. On the one hand, it is politically convenient to have a large proportion of the work force together. It enhances convivial staff relations, and allows management to logistically exercise more direct control. On the other hand the threat of labour collusion and organization is increased. For this reason, management rarely have qualms to bus its labour force to and from the factory from scattered sites throughout the region.

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16. Yap and Rahman, ibid, report that dormitories for men in the Northern Corridor seem to be under occupied (pg.7).
A point raised by Yap and Rahman is that foreign investors prefer to maintain maneuverability and flexibility, and may be hesitant to over-invest in fixed assets, such as residential real estate. The bussing option, for some firms may have additional political advantages.\(^{17}\)

Without being redundant, it is worth noting that there are a number of other residential tenancy arrangements between work-place and worker in the outer city. As mentioned earlier row houses and condos are often bought up by factories to lease to their workers (as will the case be with Muang Thong Bangna in Samut Prakan). Several factories have also erected their own apartment-condo buildings outside the factory gates, but nearby, exclusively for their work force. Industrial Estates almost all have residential districts, often set up in conjunction with the National Housing Authority (NHA) to provide low cost subsidized housing for workers (see discussion on Bang Plee Industrial Estate in Chapter 6). Finally, small scale rural industry in this region, often with 10-20 employees or less, has for centuries provided residential services for its staff. My travels throughout the outer city brought me in contact with countless small industries, often cottage handicrafts, and nearly all provided on-site housing for migrant workers.\(^{18}\)

7.2.5 Slums: \(^{19}\)

Slum evictions throughout inner city Bangkok have increased markedly, making room for new shopping plazas, hotels, and a convention center (Queen Sirikit). An NESDB study found that slum housing, in areas within 10 kilometers from the city core decreased by 11,376 units between 1984 and 1988. Since the units are not being replaced by privately constructed low cost or NHA subsidized housing in the city, residents are forced to seek other locations. Thus, slum development has been suburbanizing in the same way as other

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\(^{17}\) Ibid, pg.19.

\(^{18}\) Appendix II (April 11, May 16, 1991).

\(^{19}\) The term 'slum' may no longer be a useful term. The functional nature of this settlement type generally does not warrant the negative connotation associated with the term. In Thailand, and throughout the literature I reviewed, the term is heavily used. For that reason it may appear here as well.
housing types. In fact there is a proliferation of slums throughout the outer city, and particularly near the industrial zones in Pathum Thani and Samut Prakarn. There has also been a marked increase in a similar housing type, which is largely indistinguishable from slum housing, referred to as informal settlements.

Yap has provided data which indicate that informal settlements in Pathum Thani and Samut Prakran, between 1984 and 1988, have risen 76 and 93 per cent respectively. This data is hardly surprising, as even a hasty tour through the outer city exposes many informal settlements, most emerging very recently. The most common type is houses that are set on both sides of a narrow wooden walkway running perpendicular from the highway. The houses are often built on posts over undrained water-logged land. Many houses appear to be built with second-hand materials, probably collected from nearby construction sites. There is rarely a piped water supply, as most households depend on rain water collection barrels. Most units are serviced by electricity, but are without a garbage disposal system.

A frequent arrangement which precipitates the informal settlement is as follows: outer city landowners observe factories erected all around their area and respond by setting up a few shacks bisected by a walkway on the edge of the parcel of land, and soliciting it as residential rental units. The units are without proper amenities and do not abide by the minimum required housing regulations. The acute shortage of affordable housing insures a profitable return for the landowner-cum-landlord.

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21. There is no real delineation between outer city slums and informal settlements. Both take on similar morphological characteristics and are serviced with marginal amenities on poorly drained land or perched along a canal. For this section, the terms informal settlements and slums will be used interchangeably.


24. One arrangement of this nature in Samut Prakarn, which I visited in April, 1991, was particularly grim. The 30 rooms (or shacks) set up in two long rows were very small and crowded, there was one sunk tube latrine and one water pipe. The rent was only Baht700, enabling the entirely migrant tenants to "save and remit". Less than 30 metres from
It is also worth mentioning that several village headmen complained that "squatters" from Bangkok have set up housing within the village land. One village in the eastern reaches of the BMA had a reputation as a "safe place" for recently evicted slum dwellers. 25

Finally, a few words must be made concerning the critical housing deficiency of migrant gangs of construction workers. As already written, all types of construction are booming in the outer city, attracting a very large population of construction workers. Their housing may be the grimmest of all. The literature has paid little attention to their plight, probably as they are the most contingent and ephemeral of all outer city populations. Notwithstanding, even the sparsest amenities are lacking.

7.2.6 Housing Estates:

Outer city housing nomenclature in the EBMR has adopted the term 'housing estate' to denote any fenced off community of single detached buildings or houses. A group of condominiums, industrial park housing complexes, a few blocks of row houses, or upscale residential communities are all 'housing complexes'. In Thai the term muban, meaning village has been used to connote the same. To avoid redundancy, the following discussion will focus only on upscale housing catering to those in upper middle class income brackets.

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the slum was the landlord's palatial residence, with all the trappings; three cars (including a BMW), central air conditioning, a pair of vicious (and deviant) guard dogs, and a retinue of servers; Appendix II (April 2-4, 1991).

Landlords could easily get away with renting delapidated slum housing because the rising average housing price is driving rent prices up. In fact between 1987 and 1990 the average housing price in the BMR increased the highest for low income units (34.3 per cent, while middle income housing in comparison increased at 22.4 per cent). See PADCO, op.cit, 1990, pg.86.

As with all other housing types, there has been a proliferation of these estates beginning in the late 1980s. They are found mostly in Pathum Thani and Samut Prakan, but are beginning to be developed in areas further from Bangkok, such as Chonburi and Ayutthaya. The marketing is targeting the growing middle and upper classes of professionals employed in the formal sector. Each estate may also have a small community of professional expatriates. Very few are rental arrangements, and prices can be upwards of Baht 10 million per unit. Some estates are as large as 800 or 1000 units. These housing estates are often mini fortresses with highly elaborate security. Almost all have three or four bedrooms, two bathrooms, and two or sometimes three car garages, and are usually adjacent to large leisure ponds, and golf courses. Some are built on the banks of canals, using the waterways as an estate marina.

Perhaps more than anything else, these housing estates are laden with status, implying wealth, success, prosperity and achievement. The image portrayed is bent on emulating American suburbia, and just as important to suburbia as to these outer city estates is the (over)reliance on the automobile. Advertisements and brochures promoting the estates seem to consistently emphasize the automobile. One advert seemingly set in the 1930s is of a young family with a Ford Model T out for a weekend picnic.

Villa California, an estate named to imitate the recognition of alternative geographies, developed in *ampo* Muang, Pathum Thani has adopted as its dictum, "It is specifically designed to be a lush green suburb in the northern corridor of Bangkok." Example of promotional advertisement is shown in Plate 7.1.

The newly developed Habitat in *ampo* Bang Plee, Samut Prakan uses the following lines for its description, "The warm aura of having a contemporary home set amid fresh air and lush greenery... A place where you can flourish amid the freshness of nature and with all modern amenities".

26. Appendix II (March 10-12, August 9, 1991).
GET A SLICE OF CALIFORNIA PARADISE ... IN BANGKOK
An interesting marketing angle used by a large developer whose company is named *Baan Chonnabot*, (translated to 'village home'), in a new estate in *amphoe* Senah Phra in Ayuthaya province, is to appropriate traditional Thai rural values. *Baan Thai Village* claims, "the old Thai lifestyle need not be forgotten...{as} the essence of Thai style is relived". There are several other estates attempting to reclaim a romanticized history.

Figure 7.2 shows the location of these outer city housing estates. Soja, referring to Los Angeles, but relevant to EBMR housing estates, eludes to the labelling of space:

> In naming, as in so many other contemporary urban processes, time and space, the 'once' and the 'there' are being increasingly played with and packaged to serve the needs of the here and the now, making the lived experience of the urban increasingly vicarious, screened through simulacra, those exact copies for which the real originals have been lost.

### 7.2.7 The Persistence of the Traditional Village:

Foreign and local urban planners (and consultants) who seem to be beating a path to the Bangkok metropolis, and attempting to offer some semblance of order to the ever sprawling urban development, seem to disregard or at least overlook the fact that more than half of the EBMR's 13 million residents still reside in traditional villages. In no way does this suggest that all are engaged in agriculture. The persistence of the village will certainly outlast the persistence of agriculture. But this does suggest that outer city housing is not restricted to city-based residential development. The highly speculative and vigorous real estate market has not

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27. Soja, Edward (1989) *POSTMODERN GEOGRAPHIES*, London: Verso, pg.245. See Plate 7.2 for examples of outer city housing estates. Fortune City, in Samut Prakarn can be located on Figure 7.2 Muang Thong Bangna is also in Samut Prakarn.

28. In December, 1991 a large international conference entitled "Managing the Mega-Urban Regions of ASEAN countries: Policy Challenges and Responses" was held in Bangkok, and I was surprised that very little discussion dealt with traditional villages in any of the five Mega-Urban regions covered by the conference agenda.
Figure 7.2: Upscale Outer City Housing Estates
PLATE 7.2

Muang Thong Bangna

Fortune City
conquered and integrated the entire region. For non-migrant, and even nonagricultural workers the 'village' should remain a viable residential settlement for a long time yet.

Thanks to breakthroughs in transportation, and particularly informal privately owned forms of transportation, most villages in the EBMR are unsegregated from the urban based industrial and service sectors (see Chapter 4 for more on informal transportation systems). Most villages are able to combine agriculture and nonagricultural activities fairly well. Without trying to romanticize the traditional village, it is apparent that tradition still has much to offer in terms of life quality, environmental aesthetics, and sense of community. After all why are the 'city-based' housing estate developers rushing to recreate the charm of the indigenous *muban*?

7.2.8 Summary:

There are two points to be brought out in summary. First, it is apparent that outer city housing, within its broad range of housing types, is in many ways a microcosm of many of the social problems underscoring the larger region. The gap between the rich and the poor, the worker and manager, the landlord and tenant, is as conspicuous in the outer city as it is in Bangkok. Social and economic relations are often exaggerated in the outer city. In many ways the urban edge has facilitated flexibility by providing ample land, and an abundant low cost labour pool with lack of regulations. Anything is acceptable and encouraged. It is a geographic grey zone caught between the rigidness of the city and the more lenient countryside. It has permitted and almost encouraged estates like California Villa to abut informal slum settlements. The rules are flexible and often nonexistent. The outer city in the EBMR is very much a postmodern housing condition!

The second point is an important reiteration of an earlier theme. The EBMR, at least as we have seen, is taking on a very urban housing landscape (rowhouses, condominiums, shophouses, etc..) without any
significant cities. Beyond suburbanization, this is additional evidence supporting a 'region based urbanization'. It is affirmation of urbanization proceeding without cities (This theme will be dealt will more thoroughly in Chapter 10).

7.3 RECREATION LANDSCAPE

7.3.1 Golf in the EBMR:

Since 'Visit Thailand Year' in 1987, there has been an enormous promotion for golf tourism. Golf promoters have realized that golf can be profitable. The golf industry's idol, Jack Nicklaus, who seems to frequently visit Thailand to design a new course layout, or partake in a lavish opening ceremony for a new course, said at a Bangkok press conference, "When you see a game grow as fast as it has in the last couple of years in Thailand, it makes you feel real good." The following year Nicklaus was quoted in the Bangkok Post as saying, "Golf courses are the windows of the world. They are the greatest tourist attraction and exact tremendous interest. Anyone who says they destroy natural vegetation, disturb farmlands, absorb too much water or deprive people from earnings from their land, don't know what they are talking about." And so it is in Thailand. The words of this one golfing demi-God seem to be the conventional wisdom that drives

29. The revered and respected Nicklaus seems to be held in particularly high regard in Thailand. When in the Bangkok region, his entourage is followed by a large doting press corp that detail his every move and spoken word. Nicklaus's California based management firm Golden Bear International designs and builds courses and markets a line of golfing sportswear. The Hong Kong regional office by 1990 was involved in 26 new golf course projects in Asia, of which 14 were located in Thailand. With numbers like that, surely Thailand's admiration for Nicklaus can only reciprocated. The first quote: BANGKOK POST (1991), December 2. The second quote comes from: "Getting in the Swing", (1990), ASIAWEEK, December 21-28.
and dictates policy which has led to the emergence of the fastest growing, and arguably the most oppressive, land extensive, golf industry in Asia. It is a form of development that plays on 'non-city' sensitivities and aesthetics.

7.3.2 Evolution of Golf in Thailand: The Emergence of an Outer City Activity

The first golf course in Thailand opened in Chiang Mai in 1910, and was followed shortly afterward by a few small layouts in Bangkok, including one on the grounds at the Chitralada Royal Palace. Throughout the century a small number of courses were built, mostly in Bangkok, but a few were developed in the outer city, including a Royal Thai Air Force course at the Don Muang airport in 1936, and a nine hole layout in Bangna (Samut Prakarn) in 1965. In the September 1964 issue of the American published "Golf Digest" magazine, Thailand was described as nation of 27 million people, where only 1000 played golf on a total of 10 courses.30

Through the 1970s, with an increasing number of Japanese companies operating in the Bangkok area, and a handful of regionally acclaimed professional golfers of Thai nationality, the golf industry began to take off. A few more courses at Bangna, and one each in Bankapi and Nakhon Pathom province began to establish the outer city as a select location for the industry to establish a spatial niche.31


31. Ibid.
As the country's economy grew significantly into the 1980s, the golfing population started to enlarge. Moreover, the swelling tourism industry at this time contributed in no small way to nurture and develop golfing as not only a leisure activity but a profitable business venture.32

As mentioned earlier, by 1987, 'Visit Thailand Year', the golf industry had a firm hold on the outer city, and courses proliferated at unprecedented levels. There are approximately 140 courses in, or near operation in Thailand, with little reason to expect a development slowdown. The golf and tourism lobby maintain that Thailand has a market demand to sustain twice the current level.33

There are two principal explanations for the current golfing boom in the outer city. First, golf course and country club investment are one constituent of the prevailing real estate sector. As developers and investors rush to buy up land and property on the urban fringe, golf courses appear to be a 'fashionable' and profitable asset. Although start up and development costs are high, returns are lucrative.

Second, the sport is catching on quickly with the surging middle and upper classes. The status and prestige associated with the sport, not only has driven membership and green fees spiralling, but has placed the sport in a gentrified class of its own. Pleumarom estimates there are 500,000 golfers nation wide, of which 100,000 are expatriates and foreign tourists.34 The Bangkok Post Economic Review for mid-year 1990 used the figure of three million for the number of people who have taken up the sport.35

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33. Ibid.
34. Ibid. pg.104.
35. Although 3 million seems absurdly high, this figure includes mostly occasional and irregular golfers. Notwithstanding, based on the number of courses, and prohibitive costs associated with game this figure is highly implausible. BANGKOK POST (1990) Mid Year Economic Review, pg.53.
Golf has become a social and business venue for the elite class amongst the military, politicians and the business community. Since the late 1980s, the golfing tourist trade is dominated by Japanese, who arrive on golfing holidays, and in some instances purchase memberships and country club property. It is more affordable to become a member of a Thai club, and pay travel costs to Bangkok, then to buy into a Japanese golfing country club. Many Singaporeans arrive in Bangkok in cars and buses for a weekend golf holiday. There is a brisk golfing tourist trade from Taiwan and Hong Kong as well.36

Of the 140 courses in the Kingdom, nearly 50 are located in the outer city (see Table 7.4 and Figure 7.3). In the outer areas of the BMA, Pathum Thani, and Samut Prakan have the highest concentration of course developments. However, it is the Bangna-Trad Highway, linking Bangkok with the Eastern Seaboard, with the largest concentration, that has appropriately been titled 'golf course highway'. An unnamed source in the Bangkok Post Mid Year Review stated, "Travelling down the Bangna Trat Highway in the near future will be like staring down one giant fairway... to the left and right, intermingling with rapidly diminishing farmland and fast growing industrial estates and housing developments, there could very well be the largest concentration of golf courses in the world".37

One of the curious features of outer city golf courses are their size. The developments are very large and extensive endeavors. Pleumarom contrasts the size of golf course developments in Europe and Thailand: "...whereas a golf course in Europe takes up about 64 hectares, a project in Thailand covers a much larger area, on average 160-320 hectares".38 This can be explained with three reasons. First, most of the new and proposed outer city courses are accompanied by luxury hotels, small housing estates, and other sport and

36. In Japan, memberships often cost more the Baht10 million, compared to Baht1 million in the private courses around Bangkok. In addition to the membership there may be a monthly maintenance fee and green fees. In Thailand, even the public courses are extremely expensive with green fees priced at a minimum Baht500. After equipment purchase or rental, appropriate attire, and caddy fees, the cost is truly prohibitive. As one article quipped, (the high costs have) "placed the salaried duffers in the endangered species list or turned them into joggers." Business Review, op.cit, pg.88. In attempt to combat exorbitant costs, many developers are setting up driving ranges, often huge enterprises, sometimes 3 levels high. Although, these are costly as well, they are affordable to a much wider range of potential golfers.

37. Ibid, pg.53.
### TABLE 7.4

**OUTER CITY GOLF COURSES**

<table>
<thead>
<tr>
<th>Course Name</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ekachai, Samut Sakhon *</td>
<td>Kiaratee Thana, Samut Prakarn</td>
</tr>
<tr>
<td>Muang Ake, Thani *</td>
<td>Thana City, Samut Prakarn</td>
</tr>
<tr>
<td>Navatancee, BMA</td>
<td>Lake Wood Country Club, S.P.</td>
</tr>
<tr>
<td>Rose Garden, Nakhon Pathom</td>
<td>Palm Beach, Samut Prakarn</td>
</tr>
<tr>
<td>Royal Thai Airforce (RTAF), BMA</td>
<td>President Country Club, BMA</td>
</tr>
<tr>
<td>RTAF, BMA</td>
<td>Vinson, BMA</td>
</tr>
<tr>
<td>Pinehurst, Pathum Thani</td>
<td>Panya Resort, BMA</td>
</tr>
<tr>
<td>UNICO, BMA</td>
<td>Panya Sri Racha, Chonburi</td>
</tr>
<tr>
<td>Krungtheep Kretha</td>
<td>Panya Bang Chan, BMA</td>
</tr>
<tr>
<td>A. I. T., Pathum Thani</td>
<td>Panya Ramindra, BMA</td>
</tr>
<tr>
<td>Bang Poo, Samut Prakarn</td>
<td>Chauncheeon Flora, Pathum Thani</td>
</tr>
<tr>
<td>EGAT, Chonburi</td>
<td>Windmill Park, Samut Prakarn</td>
</tr>
<tr>
<td>Green Valley, Samut Prakarn</td>
<td>Krung Kavee, Pathum Thani</td>
</tr>
<tr>
<td>Royal Irrigation, Nonthaburi</td>
<td>Muang Ake Vista, Pathum Thani *</td>
</tr>
<tr>
<td>Royal Thai Navy, Samut Prakarn</td>
<td>Maburine, BMA</td>
</tr>
<tr>
<td>Thai Country Club, Samut Prakarn</td>
<td>Noble Place, Chonburi</td>
</tr>
<tr>
<td>Prime City, Pathum Thani</td>
<td>Ayutthaya, (3 courses)</td>
</tr>
</tbody>
</table>

* denotes 24 hour course

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### OTHER GOLF COURSES IN THE KINGDOM

<table>
<thead>
<tr>
<th>Course Name</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMA (inner city) 8</td>
<td>Petchaburi 10</td>
</tr>
<tr>
<td>Pattaya 12</td>
<td>Phuket 10</td>
</tr>
<tr>
<td>Kanchanaburi 5</td>
<td>Chiang Mai 12</td>
</tr>
<tr>
<td>Khon Khaen 5</td>
<td>Udon Thani 1</td>
</tr>
<tr>
<td>Yasodhan 1</td>
<td>Saraburi 1</td>
</tr>
<tr>
<td>Tak 1</td>
<td>Ratchaburi 1</td>
</tr>
<tr>
<td>Nakhon Nayok 1</td>
<td>Rayong 5</td>
</tr>
<tr>
<td>Songkla 3</td>
<td>Nakhon Si Thammarat 1</td>
</tr>
<tr>
<td>Utradit 1</td>
<td>Lopburi 1</td>
</tr>
<tr>
<td>Lampang 1</td>
<td>Phitsanalouk 1</td>
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<tr>
<td>Nakhon Sawan 1</td>
<td>Chaiyaphum 1</td>
</tr>
</tbody>
</table>

leisure facilities. Second, most of the new courses are 27 or 36 hole layouts. Only in very few settings is this the case of North American and European courses. Third, with many novice golfers taking to the course for only the first time, the fairways are wide, often twice the width of a European fairway.

Another curious feature of outer city golf courses are that many of the new projects and some of the more established ones are installing floodlights for night golfing. Already in practice in Taiwan and Japan, Ekachai Golf Club in Samut Sakhorn province, southwest of Bangkok was the first to 'extend their hours' beginning in 1991.

7.3.3 Golf: A Non-Productive Sector:

The recent boom in the golf industry confounds the decision making process concerning the use of remaining natural resources in the outer city. Scarce water supplies are being expended by the arid courses, forest and mangrove swamps have nearly all vanished, and most critically, prime fertile agricultural land is bulldozed into golf courses. In this light, there appears to be cause for apprehension, as the golf sector serves a leisure class dominated by a narrow strata of the Thai population and overseas tourists.

A small rebellious lobby has emerged in the Bangkok region to scorn current land use practices and future golf course development. They provide a defiant voice in aversion to mainstream views. Their nemesis,

39. The most ambitious golf development in the Kingdom as of 1993 was taking shape 120 kilometers south west of Bangkok in Petchaburi province. The Kaeng Krachan Country Club, covering 35,000 rai, boasts a 54 hole layout, 700 residential units, a five star hotel, department store, amusement park, auto racing track, and airport, ibid, pg.105.

40. Ekachai golf club spent Baht30 million to light the course. Although night golfing is not without its problems, such as mosquitoes, inefficient lighting in the rough, or off the main fairways, it seems to be a rampant trend. Expectedly, membership and green fees rise to absorb the cost. See Asia Magazine, (1991), June 21-23, pg.13.
Sathit Uthaisri, vice president of the Bangkok Bank, an ardent defender of golf course expansion, is on record as saying, "Thailand should import rice and grow grass."\(^{42}\)

The acquisition of land for golf courses is a process leading to inflated land values and rural landlessness. Pleumarom, (after The Nation) describes the process:

To acquire a vast plot of land, investors normally begin by contacting kamnans (subdistrict headmen) and village headmen to act as brokers in land deals with villagers. The tactic employed is to scoop up small plots of land at the edge of the project sites first. When all areas around the project sites have been occupied by the investors, villagers living within the boundary created by them find they have no right of exit to the outside and are likely to face charges of intruding on private property if they cross the peripheral land bought for the golf course... Without the access to the main roads, the villagers have no recourse but to sell their land to the investor.\(^{43}\)

Golf course development also drives the market price of land upwards. Land that carries a low value as agricultural use, is reappraised when converted to commercial use. The tax base increases, particularly when clubhouses, hotels, and condominiums are part of the development. One farmer in Minburri told me that his land has tripled in value since construction began on nearby President's Golf Club. For landowners wanting to sell their land, an adjacent golf course is analogous to ‘striking oil’. For landless agriculturalists it reaffirms the unachievable aim of farming their own land.

41. Although this lobby is not organized in the form of an association, a number of NGOs have taken up the cause. Anita Pleumarom, representing a German NGO, and coordinator of the Tourism, Development and Environment Project of the Bangkok based Ecumenical Coalition on Third World Tourism, appears to be a leading voice in the lobby, (op cit, 1992). A sprinkling of newspaper articles addressing the darker side of the sport’s impact on the environment and society have been published. They act as a critical counter balance to the media’s consistent commendation and adoration for the game and its proponents.

42. Asiaweek, (1990) op. cit., pg 59.

43. Pleumarom, (1992) op. cit, after The Nation, July 7, 1991. Pleumarom describes one Northern Thailand land acquisition process where a landowner, who held her ground while all the land around her was bought up, was warned by investors that the only way she could get off her property was by helicopter. Pleumarom also reports that as an average, villagers receive 30 per cent of the market value when they agree to sell. Although I saw little evidence of this, I am aware of unfair and manipulative buying practices of investors and developers in the outer city, and this is not restricted to golf.
Since outer city golf courses are developed on prime agricultural land, it has been a significant cause of the growing landlessness among the population of the Central Plain. One article states that an 18 hole golf course with accompanying amenities, typically displaces 300-400 farming families. Although landowners are compensated for their appropriated land, landless labourers and tenants often suffer the biggest loss.

Proponents argue that dispossession of land is only a provisional problem for the farmers, because courses create many jobs. This is only partially correct. During the construction phase, 200-300 labourers, often recently dispossessed peasants, are required for about two years. When the construction is completed, an average golf course can operate with about 40 workers, mostly low paying greenkeepers, guards, and clubhouse staff. As technology for golf course maintenance (automatic water sprinkling systems, tractor mowers) advances, jobs are made itinerant and redundant. Some courses are operating with as little 10 staff.

Caddies however, who are exclusively young women, are hired in very generous numbers. Some courses have a 'stock' of over 500. In the more 'prestigious' clubs, golfers typically hire two caddies; one toting the clubs and a lawn chair, the other following close behind the golfer with an umbrella. Caddies are often shamed into sexual liaisons with the players after the golf match. A few golf clubs which discourage sexual exploitation have replaced the caddies with motorized carts.

44. Business Review, op.cit, pg. 84.
46. A Bangkok Post article addresses this feature of golf courses in Thailand: "Thai golfers use caddies, more caddies than any other golf players in the world- an act that the Guinness Book of Records should have." BANGKOK POST (1991), August 19, "Golf: A Game of Life on the Green" August 19.
47. A European trade journal describes caddies on the golf courses of Thailand in these patronizing terms; "Good quality equipment is always available and caddies usually come in the form of young and surprisingly knowledgeable ladies. And if you feel somewhat embarrassed at having a delicately built girl lugging heavy golf bags around an 18-hole course, then tip her appropriately". Hastings, Colin (1991) "Golf Home Away From Home for Japanese" ANNULA MEETING NEWS, October 16.
The environmental consequences of golf course proliferation are quite drastic. Not only are courses utilizing scarce water supplies as farmers are being asked to cut back their consumption, but the chemicals and fertilizers routinely used on the golf courses are highly toxic and poisonous to the natural environment. 

The Thai language newspaper- Thai Rath, has taken the position that financing for golf course development should be directed to development projects which reach the broadest segment of society. As golf courses drain the country of much needed money, only a small minority of elites benefit by participating in this leisure sport. Although it is hard to disagree with this view, the fact is the outer city landscape is undergoing a revolutionized metamorphosis. Foreign investors, local developers, and multi-national interests are shaping the outer city in a less than altruistic way. Development is set to maximize surplus value and subsequent reproduction of profit. In this regard we should not anticipate an equitable social and economic spatial framework for the outer city. Of all development in the outer city, golf courses, epitomize the widening gulf between the rich and poor or the club member and caddie.

Despite the dedicated work of the anti-golf lobby, it appears that the industry will continue to grow unabated. Table 7.5 is a partial list of some of the influential and wealthy Thai decision makers who are proponents and advocates for the game, and sit as honorary chairmans or on the board of governors of golf courses.

7.4 Hobby Farms:

Beginning in the mid 1980s a new form of subdivision emerged. The original intention was to convert rice paddies into small orchards. Hobby farms, or *Suan Kaset* are typically small plots of land in the outer city purchased by middle and upper class Bangkokians for weekend leisure and recreation. The individual plots may have a small orchard of mango or orange trees, usually a picnic table and a small covered shelter. It is
immobile property considered a safe form of land investment. Asthetically, they offer the owners a 'non-city' escape from the noise, congestion, and pollution of the city.

The outer city hobby farm boom occurred between 1989 and 1991, when dozens of these developments emerged in almost all areas of the Bangkok fringe. One of the advertised attractions of the hobby farms was a complete infrastructure; electricity, telephone lines, 24 hour guard station, accessible road network, irrigation pumps, gardening services, and recreation club houses. With the extensive infrastructure, by 1991, predictably, many individual owners started to construct houses on their plots, converting hobby farms into small residential subdivisions.

Many hobby farms have evolved into housing estates, with the small agricultural component playing a less significant role. Utis Kaothien, Director of the Urban Development Coordination Division at the NESDB believes hobby farms are mostly a form of real estate and land speculation, moreover, 'hobby' is just a term to conceal the true profit motive objectives.

Not all hobby farms appear to be evolving in this direction. Rangsit Hobby Farm, for example, on Klong 11 in ampoe Nong Sua, Pathum Thani, as of 1992 was strictly hobby farming in its literal sense. A promotional brochure speaks to outer city tranquility: "Golden location for metropolitan people... not far from Bangkok, fresh air, natural scene, with fertile soil which is suitable for almost every type of fruit tree..." The hobby farm managers will provide on request, technical counseling for, gardening upkeep, fertilization levels, and irrigation rates. To earn income from the effort, the crop could be sold to merchants who will pick it up at Rangsit Hobby Farm and sell it at nearby Rangsit market. Figure 7.4 displays a layout of the hobby farm.

There are 44 individual plots, all 400 square wah or one rai in size,. (they resemble mini Seignuerial long

49. Houses are usually constructed by farmers living nearby.

50. Based on personal interview, Appendix II (June 11, 1991). Dr. Utis's view is shared by a number of farmers in adjacent areas to hobby farms. One farmer suggested that hobby farming as a concept is a hidden agenda for what will ultimately be outright residential communities.
lots in 19th century Quebec). Each single rai plot sells for Baht800,000 to Baht1,200,000 depending on proximity to the main road. An elaborate and accommodating payment scale has been drawn up to allow for monthly payments for up to a 15 year period.

There are three main areas of the outer city where hobby farm development is prevalent: (see Figure 7.5).

1. All of Pathum Thani on the east side of the Chao Phya (in some areas of Klong Luang this may be the most common form of new land use).


3. Eastern BMA districts of Minburi and Nong Chok.

There is a second outer city development, part of the suan kaset nomenclature, that are also outer city orchards, but emphasize production more than leisure. Private small plots are sold off in a similar fashion to hobby farms, but the owner focuses on production, marketing, and often the use of new small scale agricultural technology. For example Durian Park, which opened in 1991 along the Eastern Seaboard, maintains the 'urban farmer' can benefit from computer controlled watering and fertilizing, in pursuit of higher production.

51. This appears to be a competitive price. A brief survey of other hobby farms in the outer city, showed that Rangsit's prices were on the low side, and although it is relatively far from Bangkok, it seems to be priced fairly. Legacy Garden Hobby Farm along Klong 12, slightly further from Bangkok were selling 1 rai plots starting at Baht1,520,000. Pornpicha Project Hobby Farm in the BMA's eastern Nong Chok district had prices starting at Baht2,120,000. See NANGSU PIM PRACHACHART TURAKIT (1991) (newspaper), 21-26 April, (in Thai).

52. Although there were no homes yet constructed in Rangsit Hobby Farm, there is evidence that this may be a future intention. Brochures and notices in the hobby farm office refer to public utilities that are in the process of being expanded; electricity, and telephone exchange. The mention of a nearby hospital and school may also suggest future plans for residential development. See Suan Kaset Rangsit (1991) Promotional Brochure, (in Thai).
Figure 7.4: Hobby Farm
Nong Sua, Pathum Thani

Klong 11
Main Road (Klong 11)
Paved Road (8 metres wide)
Irrigation Ditch (7 metres wide)
44 Plots (1 RA EACH)
Figure 7.5: General Patterns of Outer City Hobby Farms.
Hobby farms, like all the other outer city development, responds to a certain need of Bangkokians. Unlike western societies, most city dwellers in Thailand have direct roots or connections, if not applied living experience, in the rural areas. Hobby farms, in a postmodern manner, allow 'successful' city people to identify with the countryside in a proactive way. It is ironic how post industrial urbanism draws people to pre-industrial expressions.

7.5 Summary:

This chapter has shown the diverse uses of land in the outer city. The consumption of space is quite distinct from traditional land use as the old countryside of the EBMR has adopted new forms and functions. The housing study underscores the broad variation of socio-economic strata that have come to occupy the outer city. The recreation landscape section of this chapter, in many ways sustains the theme of diversity and divergence. In this light, an important theme of this chapter has been the focus of the widening gulf between rich and poor that appears to characterise the housing and recreational landscapes. Because of the vast array of heterogeneous functions juxtaposed throughout the region, RBU is an eclectic landscape, and can be characterised as a space that is neither urban or rural, rich or poor, modern or traditional. In short, RBU is the ultimate 'grey zone' landscape.
CHAPTER EIGHT:

OUTER CITY ILLUSTRATIONS

This section will consist of two case studies of small areas in the EBMR. The objectives are to focus on actual, precise land use activity, by bringing together some of the sectorial themes considered in the previous chapters, and show how they work at the local level, on the urban edge. It will largely be a descriptive exercise, based on interviews and surveys of the two regions, sketching and explaining the rich disparate mix of land use. The reader will obtain a sense of landscape in the outer city.

8.1 The Northern Corridor:

The Northern Corridor is a rectangular swath of land in Pathum Thani province, that is approximately 20 kilometres north to south and averaging 8 kilometres east to west, narrowing in the south. The boundaries of this corridor are Ayutthaya province to the north, the northern fringe of the BMA to the south, the main tracks of the Northern rail line to the west, and Klong Sam to the east. The principal artery along the corridor is Phaholyotin Highway, which is the main roadway to the North and Northeast. Administratively, the Northern Corridor is mostly (over 80 per cent) in ampoes of Thanyaburi and Lum Luk Ka. Also because of the convergence of the rail

1. Appendix II


3. This highway is also known as, Highway #1, the Friendship Highway, and forms a part of the Asian Highway.
line and Klong Sam in the south of the corridor, south eastern parts of in the realm of the Northern Corridor (see Figure 8.1).

The earliest evidence of a population in the Northern Corridor vicinity goes back to the Ayutthayan Period, when as early as the 12th century, there was a small settlement at what is today Muang Pathum Thani, along the Chao Phraya River. It was a small market and supply centre, half way between the Gulf of Siam and Ayutthaya. During the 19th century, Pathum Thani was developed with an intricate web of canals, bringing commercial agriculture, and population to the whole province. It has since developed into one of the most densely populated regions of the Kingdom, conveniently situated at the northern fringe of Bangkok. The administrative arrangement of seven was set by King Prajadhipok (Rama VII) in 1932, with Khlong Luang originally named Bangrai.

Since the national census only recognizes administrative districts, there are few accurate and reliable population tabulations for the Northern Corridor, hence, data from Klong Luang administrative district will be used and should be reflective of the changes and development of the corridor. Table 8.1 gives population data for Klong Luang between 1960 and 1990.

Firstly, Klong Luang has grown nearly twice as fast as the province, and between 1960 and 1980 substantially increased its population share for the whole province. Table 8.2 is a Department of Town and Country and Planning (DTCP) projection and estimation for the Northern Corridor. Again, the rapid population growth is noticeable and pronounced. In fact, this may be more accurate than the census data (Table 8.1) because it appears to be sensitive to the large population of migrant factory workers who are mostly resident of other provinces. A common criticism of the census is its indiscreet exclusion of itinerant, hard to reach, and hidden population. In other words, factory workers are often overlooked by the census, rendering DTCP's data, albeit an estimated projection, as, or more credible.

4. The population density of Pathum Thani is 270 persons per square kilometre (1990 census), and in the Northern Corridor is 832 persons per square kilometre. (Based on DTCP's 1987 estimation).
TABLE 8.1

POPULATION: KLONG LUANG AND PATHUM THANI
(1960, 1980, 1990)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>KLONG LUANG</td>
<td>26,616</td>
<td>66,849</td>
<td>86,375</td>
<td></td>
</tr>
<tr>
<td>PATHUM THANI</td>
<td>189,801</td>
<td>319,764</td>
<td>412,407</td>
<td></td>
</tr>
<tr>
<td>KLONG LUANG AS % OF PROVINCE</td>
<td>14</td>
<td>21</td>
<td>21</td>
<td></td>
</tr>
</tbody>
</table>


TABLE 8.2

ESTIMATED PROJECTION OF NORTHERN CORRIDOR POPULATION

<table>
<thead>
<tr>
<th>YEAR</th>
<th>POPULATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1985</td>
<td>80,684</td>
</tr>
<tr>
<td>1986</td>
<td>84,200</td>
</tr>
<tr>
<td>1991</td>
<td>104,800</td>
</tr>
<tr>
<td>1996</td>
<td>130,500</td>
</tr>
<tr>
<td>2001</td>
<td>162,400</td>
</tr>
</tbody>
</table>


TABLE 8.3

NORTHERN CORRIDOR: 1987 LAND USE

<table>
<thead>
<tr>
<th>LAND USE</th>
<th>RAi</th>
<th>SQUARE KILOMETRES</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>3207</td>
<td>5.13</td>
<td>4.07</td>
</tr>
<tr>
<td>Commercial</td>
<td>448</td>
<td>0.72</td>
<td>0.57</td>
</tr>
<tr>
<td>Government Institution</td>
<td>1113</td>
<td>1.78</td>
<td>1.40</td>
</tr>
<tr>
<td>Industrial</td>
<td>2844</td>
<td>4.56</td>
<td>3.62</td>
</tr>
<tr>
<td>Warehouse</td>
<td>257</td>
<td>0.41</td>
<td>0.33</td>
</tr>
<tr>
<td>Religion</td>
<td>994</td>
<td>1.59</td>
<td>1.26</td>
</tr>
<tr>
<td>Sports Stadium</td>
<td>19</td>
<td>0.02</td>
<td>0.02</td>
</tr>
<tr>
<td>Livestock</td>
<td>581</td>
<td>0.93</td>
<td>0.74</td>
</tr>
<tr>
<td>Road and Subroad</td>
<td>1129</td>
<td>1.81</td>
<td>1.43</td>
</tr>
<tr>
<td>Educational</td>
<td>3148</td>
<td>5.08</td>
<td>3.99</td>
</tr>
<tr>
<td>Klong</td>
<td>3106</td>
<td>4.97</td>
<td>3.94</td>
</tr>
<tr>
<td>Agrl., Speculate, Unused</td>
<td>61954</td>
<td>99.13</td>
<td>78.62</td>
</tr>
<tr>
<td>TOTAL</td>
<td>78880</td>
<td>126.08</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Table 8.3 depicts the distribution of land use in the Northern Corridor. From DTCP's land use maps it is apparent that almost all residential, industrial, and educational land is along the main highway. There is also a lighter clustering of non-agricultural land uses near the Rangsit market, along the Klong roads, and adjacent to, and along the Rangsit-Nakhon Nayok Road. A striking observation is the amount of land that is lying idle, due to lack of access, or more commonly because it is held for speculation. There is a real sense of incongruity in the Northern Corridor; the contrast of the exceedingly dense Phaholyotin Highway and the largely stark and barren lands flanking the corridor. It offers a valuable lesson on transportation's influence and impact on land use. The transport corridor is characterized basically by a large number of modern, large scale factories owned predominantly by TNCs and foreign and domestic joint ventures. The number of factories in the Northern Corridor in 1990 was 373, employing 67,895 workers (Table 8.4). Note that nearly 38 per cent of all industrial workers are engaged in weaving and garment industries, and the next highest is appliances and electronics at 14 per cent. Of all the workers, 75 per cent were female.

A survey conducted by Rahman (1993), a Master's student at the Asian Institute of Technology uncovered and confirmed some interesting facts about female factory workers in the Northern Corridor. The survey size was 300 (female workers in the corridor). Of these, 55 per cent were under age 25, and almost 80 per cent were under 30. As for length of tenure in the Bangkok region, 71.4 per cent have resided there for less than five years. The workforce is comprised of low paid and unskilled workers. This was verified by the survey,

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6. Not included in Table 8.4 are the factories in Lam Luk Ka and Muang Pathum Thani in the south of the corridor. Of particular importance is the Seagate Technologies factory in Lam Luk Ka with approximately 12,000 employees. Also not included in the table is the population engaged in informal industries and production, and the growing number of contract and piece workers. In my travels along the corridor I regularly met workers, mostly woman, sewing and weaving, or doing assembly work for a large factory. Often their spouses were employed in a nearby factory.

7. Department of Industries (1990), Pathum Thani. The gender survey included 39,834 employees of the 67,895. Considering over 50 per cent of the total workforce were in either appliances or textiles, this figure (75 per cent) may be anticipated. Moreover, it is known that the brand of capitalism operating in the EBMR utilizes large numbers of migrant female workers.
### TABLE 8.4

**NUMBER OF FACTORIES AND LABOUR FORCE BY TYPE OF FACTORY IN THE NORTHERN CORRIDOR, 1990**

<table>
<thead>
<tr>
<th>TYPE OF FACTORY</th>
<th>TOTAL FACTORIES</th>
<th>TOTAL WORKERS</th>
<th>% OF WORKERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food Products</td>
<td>28</td>
<td>1328</td>
<td>1.96</td>
</tr>
<tr>
<td>Drinks</td>
<td>2</td>
<td>17</td>
<td>0.03</td>
</tr>
<tr>
<td>Tobacco</td>
<td>1</td>
<td>57</td>
<td>0.08</td>
</tr>
<tr>
<td>Weaving</td>
<td>32</td>
<td>15048</td>
<td>22.16</td>
</tr>
<tr>
<td>Garments</td>
<td>20</td>
<td>10685</td>
<td>15.74</td>
</tr>
<tr>
<td>Leather</td>
<td>7</td>
<td>1402</td>
<td>2.06</td>
</tr>
<tr>
<td>Shoe</td>
<td>6</td>
<td>3242</td>
<td>4.78</td>
</tr>
<tr>
<td>Plastics</td>
<td>12</td>
<td>1045</td>
<td>1.54</td>
</tr>
<tr>
<td>Wood Products</td>
<td>14</td>
<td>386</td>
<td>0.57</td>
</tr>
<tr>
<td>Furniture</td>
<td>9</td>
<td>693</td>
<td>1.02</td>
</tr>
<tr>
<td>Paper</td>
<td>3</td>
<td>610</td>
<td>0.90</td>
</tr>
<tr>
<td>Printing</td>
<td>4</td>
<td>319</td>
<td>0.47</td>
</tr>
<tr>
<td>Chemical Industries</td>
<td>12</td>
<td>2464</td>
<td>3.63</td>
</tr>
<tr>
<td>Chemical Industries' Products</td>
<td>13</td>
<td>464</td>
<td>0.68</td>
</tr>
<tr>
<td>Rubber</td>
<td>12</td>
<td>923</td>
<td>1.36</td>
</tr>
<tr>
<td>Earthenware</td>
<td>2</td>
<td>1190</td>
<td>1.75</td>
</tr>
<tr>
<td>Concrete, Cement, Bricks, Tiles</td>
<td>11</td>
<td>472</td>
<td>0.70</td>
</tr>
<tr>
<td>Steel</td>
<td>6</td>
<td>819</td>
<td>1.21</td>
</tr>
<tr>
<td>Metallic Industries and Products</td>
<td>38</td>
<td>3772</td>
<td>5.55</td>
</tr>
<tr>
<td>Engine Products</td>
<td>34</td>
<td>4529</td>
<td>6.67</td>
</tr>
<tr>
<td>Appliances and Electronics</td>
<td>34</td>
<td>9824</td>
<td>14.47</td>
</tr>
<tr>
<td>Vehicle Production</td>
<td>18</td>
<td>1816</td>
<td>2.67</td>
</tr>
<tr>
<td>Medical Instrument and Camera</td>
<td>12</td>
<td>2541</td>
<td>3.74</td>
</tr>
<tr>
<td>Service</td>
<td>30</td>
<td>4033</td>
<td>5.94</td>
</tr>
<tr>
<td>Petroleum</td>
<td>1</td>
<td>39</td>
<td>0.06</td>
</tr>
<tr>
<td>Others</td>
<td>12</td>
<td>177</td>
<td>0.26</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>373</strong></td>
<td><strong>67895</strong></td>
<td><strong>100.00</strong></td>
</tr>
</tbody>
</table>

Source: Adapted from Pathum Thani (1989), Report from Provincial Office.
as 57 per cent earned less than Baht4,000 per month, and as for education, almost one-quarter of respondents had no secondary training, meaning they never attended school after 11 years of age. A final, and important observation from the survey data was that 90 per cent of the respondents were from outside Pathum Thani, most arriving from other provinces in the Central Plain, and over one-third from the Northeast. The production zones of the EBMR are characterised by an impermanent and itinerant labour force, a qualification of McGee’s desakota model (see Chapter 2). This confirms that RBU is a fluid process under perpetual change and restructure, at least in terms of labour force.

Although discussed in the section on housing, it is worth reiterating that the Northern Corridor contains a wide range of housing types. Apartments, townhouses, and worker dormitories are all visible merely by travelling along Phaholyotin Highway. Perhaps most striking is the large number of slums or informal housing that has clearly proliferated with increasing population and industrial development. These are often located at the edge of the highway and along the canals. There also a number of upscale housing estates and condominium projects.

As for transportation, road transport is the most important mode in the Northern Corridor. Phaholyotin Highway has a steady flow of traffic 24 hours a day. Figure 4.10 indicates traffic volumes on the Highway leading north and southwest of Bangkok. The stretch of highway immediately north of Bangkok with 82,700 vehicles passing a day is likely one of the heaviest used highways in Asia. Much of the traffic is transport trucks coming and going to the many factories that line the road, and also trucks shipping produce from the north to Bangkok. The rail line at the western boundary of the Northern Corridor is almost exclusively for passenger service.

Very little freight moves by any mode aside from truck.

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The extension of public transportation, particularly by the Bangkok Metropolitan Transportation Authority (BMTA), to the outer city has been a response to the growing number of employment opportunities outside Bangkok. There are at least 10 routes, some going 24 hours a day, between Rangsit market and Bangkok (Sanam Luang and Hua Lamphong train station). Several of these routes terminate 10 kilometres further than Rangsit at AIT. From Rangsit there are dozens of buses, songtaews, and pickup trucks travelling throughout Pathum Thani. Many vehicles are privately owned, and are part of the extensive informal transportation system that allows this region to be so fluid and open. Perhaps the best example of informal transportation along the corridor is the hundreds of motorcycle taxis, 5-10 per pack, situated at every small roadway intersection along the highway.11

Off the main highway to the east, up to Klong Sam, there is again a fascinating landscape with a rich mixture of land uses. Barely a half kilometre off Phaholyotin, the noises and congestion give way to a fairly serene and tranquil rural ambience. This area up to the mid 1980s was exclusively rice cultivation amongst the sedentary linear village settlements straddling the canals. Although rice is still grown, it is no longer the crop of choice for the residents. Orchards and market gardening are more prevalent in this region. In my travels I have also noticed maize, beans, fish farming, and water melons being cultivated. Market gardeners complained that during the dry season, the irrigation department opens the dams to assist rice farmers in irrigation, resulting in extensive flooding of all fields. Vegetable crops are frequently deluged and ruined by excess water, causing vegetable farmers to pump dry their fields, at a considerable cost (for fuel).12

Much of the land, particularly within two kilometres of the highway is lying idle, presumably under speculation. With land prices of Baht2-3 million per rai, this is hardly unanticipated.13

10. Rail service is not just long distance, but also moves commuters from Bangkok to the Pathum Thani area and vice versa. It is a service that is heavily used, and in May of 1993, to encourage additional use, the fares on all BMR short-haul routes were slashed by 50 per cent.


13. Ibid.
Along Klong Sam, parallel to kilometre 44-48 are a large number of hobby farms, some reuting to be the first in the country, many taking on the appearance more of a residential sub-division then weekend orchards (see section on hobby farms in Chapter 7).

An enormous parcel of land between Klongs Sawng and Sam, parallel to AIT, and extending three - four kilometres northward has recently (1990) been purchased by the Tamaguy Foundation, an alternative Buddhist denomination. They are building huge temples, meditation centres, shrines, gardens, and ponds. They are also extending a public access road network through the site, perhaps to appease local residents. All the construction and development is supported by faithful followers. 14

From my informal interviews and visits to the villages in this area it is apparent that there are NO households fully dependent on agriculture. Every household I visited had some, if not all members engaged in the non-agricultural sector. A surprisingly large number of workers commute daily to Bangkok, but most are employed within the Northern Corridor. Transportation for commuters is not an impediment at all. There are ample motorcycles, minibuses, and songtaews plying up and down the canal roads from early morning (4:30 AM) until late night. 15

In sum, the Northern Corridor characterises region based urbanization (RBU) in every way. There are roughly 100,000 people, yet no morphological evidence of a city landscape anywhere. The population is not concentrated, there is no CBD, and the land use, unlike a city, is a medley of varying functions. Nearly 80 per cent of the land is 'undeveloped', yet agriculture is not the central initiative of the economy. Aside from Rangsit market, according to the 1990 Population and Housing census, the Northern Corridor is entirely rural, or non-municipal. Traditional orthodox meanings of rural and urban have no relevance in the Northern Corridor. On a topographic base map of Thailand, or even the Central Plain, one could not identify the

15. Ibid
extent of development in this area, as there are no 'urban' centres. It could just as well be a non-built up rural landscape (see Figure 8.2).

8.2 Minburi-Bang Chan:

Minburi is one of 36 districts comprising the Bangkok Metropolitan Administration (BMA), and is located in the eastern reaches of the city towards Chachoengsao. Only Nong Chok district is further east (see Figure 8.3). It is a flat and occasionally swampy terrain, making it suitable for agriculture, livestock, and fish cultivation.16 As mentioned in Chapter 3, Minburi was only opened up and populated in the second half of the nineteenth century, with the construction of the Saen Saeb canal, first ordered by Rama III in the 1830s, and completed by King Monkhut (Rama IV). In this respect, the metamorphosis of Minburi has been remarkably quick; in less than 150 years, Minburi has evolved from a vacuous and barren wasteland to a very productive and densely populated rice bowl, and is still changing, now, to an urban region of disparate and mixed land use.

Minburi was originally a province until King Prajadhipok (Rama VII) in 1951 brought it into the jurisdiction of Bangkok for easier bureaucratic transfer of paddy into the city.17 A turning point for Minburi’s

16. Minburi, in English is ‘city of fish’, earning the title because of the ease fish were raised in the paddy fields. To the north, adjacent to Minburi is Pathum Thani’s southern Ampoe of Thanyaburi, meaning ‘city of rice’. The two are considered ‘confrere’ in production of the two staples, rice and fish.

Figure 8.2: Selected Landuse Activities along the Northern Corridor
Minburi in the Eastern Districts of BMA
development was during World War II when the Japanese occupying forces began to construct a road from Laksi in north Bangkok to Minburi. It was finished in 1946, and received a final layer of asphalt in 1953. Minburi was changing from a distant farming region to an untapped suburb of Bangkok. Sharp and Hanks describes the impact of the new highway:

Suddenly buses moving along the highway brought city streets within an hour's travel. Bang Chan moved cityward; whereas in 1948 many had never visited the capital, by 1955 four-fifths of all household heads had visited Bangkok once or more during the past twelve months.... government services became more available, and high officials as well as foreigners visited to satisfy their curiosity about the community that foreign ethnologists were studying... A former generation had moved eastward to find farmland, but youths of the 1950 with half a degree of self confidence moved into the city to find "easier" work. 18

Minburi was not brought into the fold of commercialization as early as other areas of the Central Plain. Perhaps this was because of the small resident population, or the harvests were never large. Sharp and Hanks referring to the Bang Chan vicinity in the first decade of this century, suggested that only a negligible proportion of paddy production was not for domestic or household consumption. This situation changed during World War I, and hit a crescendo in the years prior to the 1929 stock market crash. Pre-depression prosperity gave Minburi a taste of new technologies, new labor relations on the farm, and an appreciation for land commodification. Several decades later, after World War II, with the new road to Bangkok almost complete, the high prices of paddy returned and reaffirmed the ways of agricultural commercialization. Prices of land in the region shot up beyond affordability of the average family. Between 1948 and the mid 1950s, land values increased from Baht300 per rai to Baht1000, while land alongside the new highway was as high as Baht12,000. Much like the situation today, farmers fortunate enough to possess land adjacent to the main roads became extremely wealthy if they decided to sell. The post war boom had other semblances to today's situation. For instance, a few of Bangkok's wealthier entrepreneurs appeared on the scene to purchase land for speculative purposes. This naturally triggered a proliferation of landlessness and a diminishing average size per holding. 19

18. Sharp and Hanks (1978), op.cit. pg 225. Although in this passage they were referring specifically to Bang Chan, it could just as well be applied to the impact the new road had on the whole district.
Through the 1960s and 1970s an increasing amount of Minburi land was being removed from paddy production; a way of life was ending. In 1972, the nation's first showpiece industrial estate was built at Bang Chan, and signalled the beginning of a hurried revolution in land use. The landscape has become industrial and residential, or in other words urban, and the agriculture that remains has undergone a dramatic alteration of cropping pattern. For example, Minburi is less recognized for rice as for grass, hobby farms, and aquaculture. Let us now examine some of the present demographic and land use factors of this outer city district, figuratively and spatially caught in the crossroads of urban and rural.

A common misunderstanding in Thailand is that the rice farmers of 'rural' Bangkok are an affluent and prosperous group. To the contrary, most are landless labourers, and are typically as immiserated as their provincial counterparts. Bangkok farmers are often late in receiving government assistance, and a number of compensation and support packages have been directed exclusively to the provinces. The disregarded and ostracized Bangkok farmer is becoming isolated and their numbers are rapidly declining. The great Minburi rice bowl, traditionally with some of the highest yields per rai in the Kingdom, is under a transition comparable to Pathum Thani and Samut Prakarn. This outer city case study will examine the land use changes of Minburi with a distinct focus on the decline of rice production. A sub-study will highlight the village of Bang Chan at the western fringe of Minburi.

The population of Minburi is just over 100,000, with almost 40 per cent residing in the sub-district by the same name (Table 8.5). The district is 174 square kilometres with a population density of 586 persons per square kilometre. To reach the present population, as seen in figure Table 8.6, Minburi has increased its

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19. In particular see Sharp and Hanks (1978), op. cit Chapter eight, "The Transformation Scene" for an indepth discussion on the transitions of the post war period.

20. There is an inaccurate perception, particularly among farmers outside Bangkok, that the (rural) BMA cultivators are a prosperous group. The basis of this perception is simply, if Bangkok is wealthy, Bangkok's farmers are too.

21. The government in 1992 shored up paddy prices by Baht300 a tonne in the provinces only, leaving Minburi rice cultivators both annoyed and alienated, Appendix II (December 13, 1992).

22. In comparison the Northern Corridor has roughly the same population on (50 square kilometres) less land (for a population density of 832).
### TABLE 8.5

**POPULATION OF MINBURI AND ITS SUBDISTRICTS (1991)**

<table>
<thead>
<tr>
<th>Subdistrict</th>
<th>% of Whole District Population</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minburi</td>
<td>38.5</td>
<td>39,289</td>
</tr>
<tr>
<td>Saen Saeb</td>
<td>18.1</td>
<td>18,471</td>
</tr>
<tr>
<td>Bang Chan</td>
<td>13.2</td>
<td>13,471</td>
</tr>
<tr>
<td>Sam Wa Ook</td>
<td>11.2</td>
<td>11,430</td>
</tr>
<tr>
<td>Sam Wa Tok</td>
<td>7.1</td>
<td>7,246</td>
</tr>
<tr>
<td>Sai Kong Din</td>
<td>4.9</td>
<td>5,000</td>
</tr>
<tr>
<td>Si Kong Din Tal</td>
<td>7.0</td>
<td>7,144</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>100.0</strong></td>
<td><strong>102,050</strong></td>
</tr>
</tbody>
</table>


### TABLE 8.6

**MINBURI'S POPULATION: 1984-1991**

<table>
<thead>
<tr>
<th>Year</th>
<th>Population</th>
<th>% Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>1984</td>
<td>66,966</td>
<td></td>
</tr>
<tr>
<td>1987</td>
<td>81,110</td>
<td>7.0</td>
</tr>
<tr>
<td>1988</td>
<td>86,558</td>
<td>6.7</td>
</tr>
<tr>
<td>1989</td>
<td>92,741</td>
<td>7.1</td>
</tr>
<tr>
<td>1990</td>
<td>95,900</td>
<td>3.4</td>
</tr>
<tr>
<td>1991</td>
<td>102,005</td>
<td>6.4</td>
</tr>
</tbody>
</table>

Note: 1987 % increase (7.0) based on three year average.

numbers quite dramatically since the mid 1980s. While Minburi's population was increasing by 3.5 to over 7 per cent per annum, of the highest population growth rates among all BMA districts, Bangkok (during the same period) was growing at 1-2 per cent per annum.

The population increase rate of the district is far surpassed by the rate of decline in land used for rice production. In the three years up to 1991, land under paddy declined by 300 per cent (Table 8.7), while production increased for a handful of alternative crops.

TABLE 8.7

FARMLAND IN MINBURI UNDER PADDY, 1989-1991 (IN RAI)

<table>
<thead>
<tr>
<th>YEAR</th>
<th>RAI</th>
</tr>
</thead>
<tbody>
<tr>
<td>1989</td>
<td>60,115</td>
</tr>
<tr>
<td>1990</td>
<td>49,959</td>
</tr>
<tr>
<td>1991</td>
<td>15,000</td>
</tr>
</tbody>
</table>


A study carried out by the Minburi district agricultural officer found the following alternatives for decision making of farming activity in terms of investment, selling price, and overall income. The ranking was as follows:

1. Grass farming
2. Aquaculture
3. Mango orchard
4. Orange grove
5. Market gardening (vegetables such as tomato, chilies, and lemon grass)
6. Rice
7. Banana
8. Beef Cattle 23

So the decline of rice farming is as much an economically rational decision, as one based on the availability of alternative non-agricultural activities. Moreover, in Minburi (and the entire Central Plain), through the mid 1980s to 1991, the climate has been unstable with higher than average precipitation causing regular flooding and disrupting paddy production. High land prices, land contamination from industry, rising fuel costs, and rodents\textsuperscript{24} are also contributing to the decline.

The approximately 510 rice farmers in 1993 comprised a negligible 0.5 per cent of the total Minburi population. It is relevant to note that almost all are older people, and with the high cost of land it is inconceivable that young people will enter this livelihood. If economic rationality does not prevail to efface rice farming in Minburi, then the demographic circumstances will.\textsuperscript{25}

The Minburi district has responded to the decline in paddy by creating a number of employment projects targeted at former rice farmers. In 1990, the following agricultural enterprises were promoted and subsidized by the district: cantaloupe plantations, mango village development, and kitchen and market gardening. One village headman while being interviewed, spoke of the local government attempting to introduce cattle farming to his village as a substitute for paddy. The Bangkok Agriculture and Agricultural Cooperatives (BAAC) have aggressively been promoting aquaculture, particularly Tilapia. Also, a few non-agricultural activities were advocated through a mobile school for vocational studies. These included electrician training, radio repair, hair dressing, dress making, and tailoring.\textsuperscript{26}

\textsuperscript{24} The problem of rodents is not a trivial matter. During interviews, nearly all rice farmers spoke of the affliction caused by such pests on their crop. The problem has escalated with the increased presence of townhouses and factories which attract rats and field mice. Farmers told me that a new residential development within a few kilometres of their field will unavoidably lure pests; Appendix II (May 14, 1993).

\textsuperscript{25} Two separate village studies found the following results: i) in Muban Moo Paed of Sam Wa Tok sub-district, of 84 households, seven were planting rice in 1993. Only 100 rai were under rice cultivation, compared to 600 ten years earlier. ii) in the vicinity of Muban (village) Bang Chan of Bang Chan sub-district, of an estimated 2000 households, less then 10 were cultivating rice in 1991; THE NATION (1993), May 27.

\textsuperscript{26} The Golden Minburi, (1990) Minburi district Office (in Thai language); Appendix II (December 13, 1992).
The most prevalent new alternative crop is grass or turf. The earliest grass farming in Thailand was in 1980 by Muslim farmers in Minburi, who still are involved in this activity. The district is blanketed with grass farms, and with the proliferation of new golf courses and housing estates there is little reason to believe this activity will not expand further. Ninety per cent of all grass produced in Minburi leaves the district, mostly destined for Pathum Thani and Bangna-Trad Road in Samut Prakan.

Two other common alternative agricultural land uses are chicken processing and hobby farming. There are many smallholders raising chickens for the large CP chicken processing and eviscerating plants in Minburi. Particularly in Sai Kong Din Tai and Saen Saeb many people are linked to chicken processing, either as producers or employed in one of the processing plants. The two sub-districts that are characterized by hobby farming are Sam Wa Ook and Minburi. People in Minburi anticipate hobby farming will increase in popularity and participation, based mainly on a demand from Bangkokians.

Based on the preceding discussion it is evident that industrial employment is rising throughout the district. Although this is true, the density and predominance of industry and factories is not as apparent as in the Northern Corridor. Aside from the Bang Chan Industrial Estate, there is no concentration of industrial activity. Throughout most of the district, industrial activity is dispersed and in some areas very few factories are visible at all. The exceptions are along Ram Intra Road and in the town of Minburi. In 1990 there were 305 factories in the district employing 17,580 people.

27. Over a century ago Rama III gave large tracts of land along the newly built Saen Saeb canal to Muslim traders. They have traditionally been the largest land owning class in Minburi, and still comprise over 70 per cent of the population, Hanks and Sharp (1978) op.cit.

28. In fact Minburi is recognized as a significant 'domestic' agricultural export district. 90 per cent of all fish produced leaves Minburi. Same is true for fruit and vegetables (75 per cent), and rice (80 per cent).


30. This figure (305) is up from 265 in 1989. Of the 305 factories, 74 were located in the Bang Chan Industrial Estate, with 10,695 workers. Of interest as well is that only 5 of the 305 factories are unionized, ibid.
As mentioned earlier, an effective gauge measuring economic growth and change is the level of new housing starts. In 1989, there were 2,667 new houses registered in Minburi. For 90,000 people this represents a very high rate and reflects the over 7 per cent population growth rate.\textsuperscript{31}

As in the Northern Corridor, an essential contributing factor facilitating growth and development is an extensive transportation network. This certainly is in existence in Minburi. The district is very well serviced by a network of 54 paved and 100s of gravel roads.\textsuperscript{32} All villages are served by a roadway eventually leading to Minburi town. In this regard, seemingly isolated population easily participate in non-agricultural activity if desired. Moreover, there are six main bus lines, five of which run to Bangkok. There are also dozens of minibuses, \textit{songtaews}, and other informal modes transportation. It is common for individual villages to run a return trip in a \textit{songtaew} four or five times a day to Minburi town. Many residents commute daily to Bangkok, and the converse is just as commonplace.

The hundreds of kilometres of natural and human made waterways in the district are still regularly used for transportation. In fact, local administrators intend to enhance the usage of waterways for commuting. An official district 'water policy' recommends the maintenance of canals not just for consumption (irrigation), but also for transportation, aesthetics, and flood protection (drainage).\textsuperscript{33}

Any region characterized by a lattice work of waterways, faces transportation problems regarding motor vehicles. Crossing canals is not just an inconvenience, but can be a hindrance to development, and discourages industrial expansion and cross-canal commuting. Throughout the EBMR there is evidence pointing to the inability of non-agricultural activity to diffuse across a waterway. The obstacle, seemingly

\textsuperscript{31} Figures for 1990 and 1992 were not available, but it is apparent that new housing registration levels increased significantly. By 1993, Minburi earned recognition as a choice residential location. Data was obtained from Bank of Housing Assistance (1990) (in Thai Language).

\textsuperscript{32} Minburi District Office (1991), op.cit.

\textsuperscript{33} Ibid.
mundane and simple to resolve, can be quite formidable. In Sam Wa Ta Wan Ook for example, villagers spoke of a bridge built in 1989 that radically altered the economic base of the village. The dependence upon a weakening rice economy was terminated, and residents were offered a range of employment alternatives to choose from. Several commute to Laksi in north Bangkok. In total, the district constructed 25 short span bridges in 1989, and affirms a commitment to 'connect' all population disengaged by waterways (see Figures 8.4 and 8.5).

In the south west corner of the district lies the legendary Bang Chan village. This was the focus of a multidisciplinary study headed up by the Anthropology Department at Cornell University from 1948 until 1975. For nearly three decades a wide variety of topics relating to life in a traditional Buddhist rice growing village were studied.35

In the 1990s Bang Chan stands as a model for region-based urbanization. It is a representation for neither 'city' nor countryside, but a curious amalgamation of both. To stroll along Bang Chan canal, one is struck by the conflicting structures comprising the landscape. It is not uncommon to feel the tranquility of a secluded village, as you pass century old traditional Thai houses built high up on stilts. In the next few metres one passes a modern two story house with three car garage and private swimming pool. Across the canal from the linear residential 'neighborhood' at the same site as the old paddy fields, is the mammoth 36

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34. op.cit, Golden Minburi (1990), op.cit; Appendix II (May 9, 1991). A khwaeng is a sub-district in the BMA, also referred to as a tambon.

35. From the research dozens of articles and papers and a number of prominent books were published. Some of the facets of the study were: kinship, peasant groups, agri-anthropology, community organization, maternity health, religion, urban-rural linkages, and local governmental structure and operation. Two distinguished books on Bang Chan are; Sharp and Hanks, op.cit and Hanks, Lucien (1972) RICE AND MAN: AGRICULTURAL ECOLOGY IN SOUTHEAST ASIA, Chicago: Aldine Atherton Publishers.

36. Bang Chan canal built in the 1850s was a rivulet off the larger Saen Saeb canal. At the intersection of the two was a 2000 rai parcel of land that Rama III turned over to Dit Bannag, who served with distinction as the Foreign Minister, and was responsible for Bangkok's reign over part of the Malay territory. He brought with him a number of Malay prisoners who resided at the site. These were the first residents of Bang Chan, Sharp and Hanks (1978) op.cit, pg.39.
Figure 8.4: Khwaengs of Minburi
Figure 8.5: Selected Landuse Activities in Minburi
hole President's Golf and Country Club, and a new 2800 rai upscale Baan Panya Indra housing estate with artificial lakes and fortress like security. Developers are preparing for a grand 1994 inauguration. It will offer the best of outer city living. As the promotional advert states; "You want to enjoy the serenity of your peaceful island in Panya Indra and still get to town with the least fuss possible. Far from care, but not from the office. At Panya Indra you can do both." Would the Cornell anthropologists recognize the 'new' Bang Chan?

The village has also been converged upon by factories and the nearby Bang Chan Industrial estate. Residents are almost entirely dependent on off farm income, and very few have any connection to agriculture at all. Most of the economically active population commute to Bangkok or elsewhere along Ram Intra or Sukhipiban roads.37

For a first time visitor, a sojourn to Bang Chan elicits an anti-city perception. It is unlike Bangkok or any city in Thailand. At the same time there is very little evidence of an agricultural landscape. Local residents are mostly dressed in city garb evoking an outward semblance of service or industrial sector reliance. Housing is mostly western in style with a persistent sprinkling of a few traditional Thai farmhouses. There is likely not a household without television, and certainly none without electricity. Most households have an automobile or motorcycle, and many have two or more. The most effective description of Bang Chan comes from the maps. From Figures 8.6 and 8.7 we can compare the Bang Chan landscape between 1957 and 1993. The 1957 map is from Sharp and Hanks in the midst of the Cornell University study. It reflects a village mostly dependent on rice production. Thirty-six years later, the same village is dependent largely on nonagricultural production and as expected the landscape is dramatically altered. This landscape is not unlike much of the rest of Minburi district, (and most of the EBMR).38


38. Ibid.
Figure 8.6: Bang Chan, 1957
Source: Hanks and Sharp (1978)
Figure 8.7: Bang Chan, 1992
Minburi's short century and a half history is analogous to a migration experience that has come full circle. The original habitants emerged from Bangkok in the 19th century seeking agricultural land and riches. Their descendents, a century later, with improved transportation technology, returned to Bangkok for employment and education. Although they never intended to return to Minburi, their ties were never severed. Now, in the last decade of the twentieth century, Minburi is again merged with its urban source, as Bangkokians and migrants from around the Kingdom converge on Minburi for jobs at the local factories, and for homes in the housing estates. The essence of region based urbanization is appropriately reflected in an outer city region such as Minburi, that never is absorbed or engulfed by the large city, nor is part of the process of urban sprawl, but is able to transform its economic base, and its social and cultural foundation, without a city-like landscape. It is fully urbanized but detached from Bangkok in terms of space and morphology.
CONCLUSIONS

CHAPTER NINE:

CAPITALISM AND RESTRUCTURING:

To use the term 'capitalism', particularly in a cross-cultural context, one must be attentive to its various forms and articulations. For our use, production of surplus value, extracted largely from wage labour, is the main tenet of the capitalist mode of production. The surplus value is then converted into capital, which when accumulated, acts as investment capital to further enlarge the capitalist foundation. This is Marx's principal postulate about the general process of capitalist accumulation. When land resources and investment capital are factored in, it is reflective of the procedure of industrial capital accumulation in the EBMR.¹ To further elucidate the nature of capitalism in the EBMR and its capacity as an agent of change and restructuring, a number of additional features are worth reviewing.

First, there is a shift of production to the secondary and tertiary sectors of the economy. The dominant production processes in the region are no longer agrarian-based, but are manufacturing and services.

Secondly, much of the capital is dominated by what Yoshihara (1988) would call, 'ersatz capitalists', comprised of rent seekers, business clans, bureaucrats, speculators, political leaders, and transnational corporations (TNCs).² These players are important figures for the capitalist environment, but too often, they are only after quick profits, with 'short time horizons', with minimal trickle down. Admittedly, the role of TNCs in the process is more complicated. While they are not above being involved in liaisons with 'ersatz capitalists' in speculative investments, they also fuel this process by investment in production and service


facilities which have a longer term return as part of their goal. Thirdly, (and connected to the preceding two points), capitalist institutions in the EBMR operate with high levels of flexibility and mobility. Capitalist relations are increasingly powerful and flexible agents, setting an agenda economically, socially, and across space. Finally, elements of (late) capitalism are at their most exaggerated in the mega-urban regions. It is not only less formal with a reduced role for government’s ceremonial structures, but it is the greatest place of convergence and flexibility. They are regions predisposed to change. Outer city landscapes, particularly at the edge of Bangkok, have undergone critical periods of spatial construction, deconstruction, and reconstruction. They are not obstructed by the ‘committed’ built environment of the city core, and thus permit diverse land use activity to flow throughout the region.

Capitalists in Thailand, particularly in the last few decades, are far from a unified homogeneous group with undivided interests. All attempts in the past to intellectually characterise Thai capitalism have been either sprinkled with inaccuracies or have excluded important players. In fact, the search for an absolute form of Thai capitalism is a futile endeavor. Within Thailand, Sino-Thai capitalism is dissimilar to crony capitalism, which in turn is unlike compadore and ‘royal’ capitalism. Military bureaucratic capitalism is in itself a unique style of capitalism, and again quite separate from land speculators and offshore TNCs. Moreover, there is no single path to capitalist dominance in the EBMR; all forms coalesce to form the full flower of the capitalist class. This section will examine several aspects of the nature of EBMR capitalism; spatial processes, forms of dominant capital, capitalism and labour, and finally, capitalism and underdevelopment.

3. This is neither the time or place to critique previous works on capitalist development in Thailand. For a review of the complexity of capitalist relations in Thailand, Chapter 3 of this dissertation briefly unveils the various players. For a more detailed examination see Hewison, Kevin (1989) POWER AND POLITICS IN THAILAND: ESSAYS IN POLITICAL ECONOMY, Manila: Journal of Contemporary Asia Publishers. It is also worth noting that most of the writing on capitalism in Thailand focuses on "dependent" capitalist development, and its inability to develop the broadest segment of Thai society. See Yoshihara (op.cit.), and Grit Permanjik (1982) POLITICAL ECONOMY OF DEPENDENT CAPITALIST DEVELOPMENT: STUDY ON THE LIMITS OF THE CAPACITY OF THE STATE TO RATIONALIZE IN THAILAND. For a comprehensive history of capitalist development in Thailand with a fairly complete review of individual players and companies see Suehiro (1985) op.cit.
9.1 The Spatial Process of Capitalism in the ERMR:

The urban process is shaped and transformed under capitalism (or any mode of production for that matter), permitting the landscape to be studied and scrutinized. Capitalism as an ideological economic system transforms space and shapes the form and function of urbanization. Since space cannot be considered independent of capital, when the Central Plain came under the dominance of commercialization beginning in 1855 with the signing of the Bowring Treaty, the region was pried open with roads, canals, and later railways. Lefebvre argues that the sustenance of capitalism is, "only by occupying space, by producing space". 4 For the years following Bowring, each new stage of capitalism, whether it was monetization, Chinese rice milling, compradore trading, allocation of royal ricelands, arrival of TNCs, or the appearance of industrial estates, brought with it an infrastructure to facilitate operations, and new and different conceptions of time and space from that which dominated the Sakdina order. The "canalization" of the Central Plain for example, as we read in Chapter 3, permitted control and monetization of power. It allowed Bangkok-based Chinese rice traders to penetrate the countryside and at the same time facilitated the opening of new lands for paddy production. Also at that time, Siam was mapped and changwated into small administrative units, again as a process of domination, taxation, and control.

Notwithstanding, as in 18th century England with the enclosure system, the parcelling and infusion of the Central Plain led, predictably, to the commodification of land and valuation of private property, or as Harvey writes, "the buying and selling of space.." 5 The equating of property with wealth and status has been a very important event in the history of the region's commercialization process. It became the basis of class, power, authority, and was the foundation for the outer city royal ricelands, which were the genesis for

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4. Lefebvre (1976), op.cit, pg.21.
today’s speculating land market and industrial landscape. Veblen’s writings centred around property and ownership, as the conventional basis of esteem.6

The inequity of ownership is perhaps demonstrated no better than through private property. In the EBMR, the division between property owners and renters (or tenants) is a critical one shaping status and power. The founder of philosophical Liberalism, John Locke, wrote in the 17th century, "Where there is no property, there is no injustice".7

In the 1980s and early 1990s, corresponding with the years of Thailand’s unprecedented double digit economic growth, land was redeveloped at a pace unimaginable even a decade or two previous. Capitalism worked its way through the region with reckless force carving out pockets of commercial activity across the Central Plain. Factories, golf courses, housing (to reproduce labour and as investment real estate), and industrial estates were the work of mostly business and market forces. As they move through the landscape they are unencumbered by trade unions, zoning laws, or construction ordinances. They have clearly set the margins and developed the landscape of the EBMR. It is also worth noting that small-scale local entrepreneurs have played a role in developing the landscape in recent years. Family owned shops, cafes, restaurants, and mills are ubiquitous on the landscape. Cottage-handicraft manufacturing still exists, but is rapidly fading. This chapter however, focuses on the more monumental national and international forms of capitalist venture shaping the EBMR.


7. Locke, John (1690) ESSAY CONCERNING HUMAN UNDERSTANDING.
9.2 Forms of EBM Capitalism:

It is difficult to obtain data on ownership of property and industry in Thailand. Complex webs of extended family based holdings, foreign and domestic joint ventures, and royal patronage corporations obscure any attempt to absolutely identify ownership patterns. We do know that in the earlier decades of this century, aside from Chinese capitalists, and the privy purse, indigenous capital was limited. This has changed, particularly in the 1980s and early 1990s. While foreign ventures and investment may be larger and more numerous and powerful then ever, the role of Thai capitalists has come to play a central position in national economic growth. In 1980, 75 percent of total registered Board of Investment (BOI) capital was domestic.

There are a new breed of indigenous industrial revolutionaries, quite different then the older generation of traditional business families. While the old guard depended on personal and bloodline contacts, and were largely involved in a speculative brand of capitalism, the new younger group are educated in the west, depend more on knowledge than contacts, and are as much technocrats as entrepreneurs. Moreover, large multinational operations, which have traditionally maintained exclusive foreign management, are slowly replacing the expatriates with young Thai executives.

An important support apparatus for domestic capital is the powerful and highly developed indigenous finance sector. Hewison states that since the 1950s Thai owned banks have invested heavily in the manufacturing sector, and, as an example, cites the Bangkok Bank, which he claims is the largest bank in Southeast Asia.

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8. Yoshihara (1988), op.cit, has assembled what is probably the best compendium of Thai capital ventures.


10. see BUSINESS REVIEW (1993) "New Blood in the Thai Arena", May, vol.22, no.268. For example, Thailand operations for Xerox, Kodak, and IBM are all headed up by Thai directors. For all three TNCs this stands as a radical departure from earlier management practices.

Also, many of the large domestic industrial conglomerates such as Siam Motors, Boonsoong, Thai Seri, Saha Union, and Charoen Popakand have expanded into finance, or possess direct corporate shareholding links to a bank.\textsuperscript{12}

The large industrial groups are essentially family-based with lineage connections often through marriage. The extended family business has been an important component of Thai capitalism since Chinese trader families grew to be large corporate players in the 19th century. Across Asia, the Chinese business family is a ubiquitous constituent of industrial and service sector development. During periods of political instability and crisis, the family or clan was an unrelenting dependable constant, and hence the persistence of extended family businesses until the present.

We have seen in Chapter 3 that for centuries Thailand has been a lucrative destination for foreign investors and TNCs. Particularly after the Bowring Treaty, the role of foreign capital heightened, and a century later, under the stewardship of General Sarit, offshore capital again was promoted and induced. It would not be an understatement to say that the EBMR is presently characterised by 'things' foreign. Whether it be the ubiquitous foreign automobile, small foreign owned businesses, European or Taiwanese managed factories, large TNCs, or small international franchised tertiary sector facilities such as KFC or 7-11, the outer city is truly a theatre of accumulation for non-Thai enterprise.\textsuperscript{13}

Any one region dependent on offshore capital and production runs the risk of possible economic crisis or collapse. Political instability, war, a bloody coup, or civil unrest, can act to drive investors out of the

\textsuperscript{12} The five industrial conglomerates mentioned all have massive holdings in the outer city; Saha Union - textiles and rubber, Boonsoong - vehicle assembly and soft drinks, Thai Seri - aquaculture/seafood, CP - agro-industry and textiles, Siam Motors - vehicle assembly and parts.

\textsuperscript{13} The fact the outer city is a 'grey zone' for zoning and ordinance injunctions, combined with the fact that the outer city, since the late 1960s, was targeted for business investment as part of a national decentralization policy, gives it an international character. For these reasons, in many ways the outer city is more 'international' than Bangkok (with its large pre-industrial districts).
country.\textsuperscript{14} Also, foreign firms are more dependent on imported raw materials, resources and machinery than domestic firms, and moreover, according to Permtanjit, the degree of dependence on domestic input materials does not increase with length of time. Foreign firms also retain a high number of technical and administrative workers, hampering domestic technology development.\textsuperscript{15}

It is not the intention to lead the reader to believing that capitalism in the EBMR can be conveniently and rigidly divided along the lines of domestic and international. In fact, the alliance between international and local capital is a growing and critical one. Outer city ownership laws, (when enforced) restrict outright foreign land ownership, fostering partnership. More than half of the accepted BOI investment ventures are again joint partnership between domestic and foreign capital.\textsuperscript{16} A common criticism leveled at such alliances is that overall operations are more closely tied to the accumulation needs of the foreign partner than the local. As a consequence, internal development is hindered, while the economy is integrated more closely with the capitalist world economy.\textsuperscript{17} Although this is a vital concern, it is beyond the research limits of this project at this time.

Both domestic and international capitalism are boosted by the state. Hewison writes, ".. the state has played a substantial role in securing and expanding this class's accumulative base in finance and industry."\textsuperscript{18} The state has played a very active role in promoting industrial development. The BOI, for example is an instrument of the state, which has won many continental awards for its efficiency, creativity and its

\textsuperscript{14} Vietnam, Lebanon, and Cuba provide recent examples. In Thailand, it appears the most probable cause for departing foreign capital would be infrastructure inadequacy.

\textsuperscript{15} See Chapter 5 of Permtanjit (1982) op.cit, for a discussion of dependence on imported means of production.

\textsuperscript{16} As an example, in January, 1991 the BOI approved an investment project that will produce for export 2160 tons per year of "frozen instant food from crushed fish", employing 30 people. The Baht60 million investment is 60 per cent Thai holding, 20 per cent Korean, and 20 per cent Singaporean. The factory is located in Samut Sakhon (inner ring changwat). This is one of hundreds of such joint projects each year, BOI Statistical Report (1991).

\textsuperscript{17} Permanjit (1982), op.cit.

\textsuperscript{18} Hewison (1989), op.cit, pg.30.
reputation for reactionary visions, and has stimulated investment in areas mostly outside Bangkok. The state has also insured a ready supply of cheap labour by suppressing trade unions and maintaining high rural taxes, particularly for agricultural commodities. Arguably the most liberal investment laws in Southeast Asia are also part of the state apparatus promoting capital development. The state also insures that natural resource inputs such as energy and water are available to industry, often at the expense of domestic and agricultural users. In general the state has not taken merely a passive role nurturing the capitalist class.

Although discussed in Chapter 5, the role of land speculating and real estate investment is worth reiterating. Outer city property has become a very lucrative capitalist venture in all areas of the EBMR. There is substantial wealth being accumulated from 'non-productive' land deed transfers.19 Also, landowners who have recently sold farmland have become new players in capitalist accumulation, many of whom have been investing in various types of business ventures.

The Kanjanapas family for instance, a prominent Sino-Thai business family with roots in Hong Kong and Bangkok had purchased large tracts of outer city land decades ago, when the price was Baht125 per square meter. Although they are not selling, they are developing their land which is presently (1991) valued at an average of Baht7500 per square meter.20 Between 1989 and 1993 the Kanjanapas family under the name Bangkok Land Development Company embarked on three major outer city land development projects, making them the largest property developer in Thailand. Their two showpiece projects, Thana City and Muang Thong Thani, as discussed in the Housing section of Chapter 7, are satellite cities costing Baht30 billion, and will house tens of thousands of people. This brand of non-industrial capitalism is extremely important and immense in the EBMR, and has transferred huge amounts of money to the hands of a few Promethean (mostly) Thai-Chinese developers and speculators.

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19. It is well known, and I have personally befriended real estate tycoons who can earn Baht500,000 a week or more (every week) from flipping land deeds in their Bangkok office. The number of players in this game is not small.

9.3 Capitalism and Labour:

For outer city industrial capitalism to flourish it requires non-skilled, non-unionized, largely female migrant workers from Isan who are hardly in the position to quarrel with salaries or conditions (see Northern Corridor case study in Chapter 8). The continuous and persistent war to decimate organized labour and the consequent dependence on migrant workers has led to a critical deskilling of the workforce, particularly among young female workers with a very high turnover. When Sarit came to power in 1957 he wasted little time banning unions, arresting labour leaders, and prohibiting by law all strikes. Domestic and foreign capital were satisfied with these edicts, as Thailand received a reputation, which still holds true today, as the finest anti-union country in Asia.

Since the 1980s, the EBMR has been witness to a massive expansion of "contingent" labor, which is flexibly organized, occasionally part time and largely low paying service and manufacturing based. This has been facilitated by migration from other regions of the Kingdom, whose magnitude is well known and incomparable anywhere in Southeast Asia (see Chapter 3). The migrant flow is a capitalist favour. Exploitation of migrant workers in the outer city, is not unlike early 19th century factory owners in the American northeast who preferred to employ newly arriving migrants, with no experience or alternative to the sale of their labour. 21 Hewison states; "While workers paid dearly with their labour, health and lives, capitalists continued to accumulate." 22 There were on a daily basis stories appearing in the newspapers telling of injustices and exploitation of workers in outer city factories. Demonstrations and protest marches demanding better working conditions are also common occurrences. In November 1992, delegates from 23


countries joined 1000 industrial workers from Rangsit, Pathum Thani and Samut Prakan in a solidarity
march through Bangkok demanding maternity leave, reinstatement of state enterprise unions, and improved
environmental conditions inside the factories.\(^{23}\)

A tragic industrial accident occurred on May 10, 1993, when a deadly fire razed through a Cabbage Patch
doll factory in Nakhon Pathom, southwest of Bangkok, killing over 200 workers, almost all young women
migrants. After an inquiry it was determined that the Hong Kong based company, Kader Industries, had
spared expenses by not ensuring that proper safety measures were installed. In the same year a number of
Kader executives were arrested, and a call for the death penalty perhaps more than anything else,
underscores the fury and anger people harbor for delinquent factory bosses and owners.\(^{24}\)

9.4 Capitalism and Underdevelopment:

In the euphoria surrounding the latest economic boom in the EBMR, it needs to be pointed out that there is
certainly evidence of a proliferation of slums and informal housing in the outer city, and the neglect of
agriculture is seriously under valued by officials and media.\(^{25}\)

\(^{23}\) BANGKOK POST (1992), November 30, "Workers March to Demand Better Deal".

\(^{24}\) This was the worst factory fire in history based on loss of life. Two days after the fire the Kader Group, at a Hong
Kong press conference announced that ".. the accident will have no substantial financial impact on the Group." That
initial announcement made no mention of remorse or compensation for the victim's families. For more on the
relationship between labour and management in the Thai factory see Bell, Peter (1992) "Thailand's Recent Economic
Development: The Contradictions of Export-Orientated Growth" Paper prepared for the Fifth Annual Conference,
Northwest Consortium of Southeast Asian Studies, UBC, Vancouver, October 16-18; and Sunarrej Komin (1991)
"Social Dimensions of Industrialization in Thailand" REGIONAL DEVELOPMENT DIALOGUE, vol.12, no.1,
Spring, pg.115-131.

\(^{25}\) Appendix II (February 20, March 7, 1991); Bell (1992) ibid.
Almost all production is being carried out by large producers, whether local or international. The longstanding tradition of small-scale cottage and handicraft industries, that the Central Plain was known for, is all but over. If any of the small producers had intentions for expansion and possibly entering the export sector, or had hoped to diversify, the state has ensured that this would not happen. The existence, promotion and support of large, technological-based firms precluded the possibility of the survival of this century-old Thai tradition, at least in the EBMR.

The individual human costs are also apparent. The divergence of industry and state, and the increasingly footloose and transnationally mobile firms, free of any long term geographical attachment pose a profound threat to social welfare provisions. The result is a de-skilled and powerless labour force. A declining number of 'mid-level stepping stone jobs', acts to suppress upward mobility. There is an unambiguous widening gap between the rich and the poor. In the last 10 years the EBMR has experienced a dramatic intensification of class polarization. For the Bangkok region, Komin (1992) presents data to support increasing inequity in the share of wealth. She says that the first quintile (most affluent), from 1976 to 1986, increased their share of wealth from 49 per cent to 55.5 per cent. At the same time, the fifth and last quintile decreased to 4.6 per cent from over six per cent.\(^{26}\) It is sobering to debunk the myth of 'super' Thailand, and begin to analyze the nature, quality, and sustainability of the economic growth.

\(^{26}\) Komin (1992), op.cit.

Over the course of this research (May, 1992), there was lamentable civil unrest in Bangkok, where several hundred civilians were killed or are still missing. This was connected to the absolutist military regime that is intimately tied to industrial capitalism, despottically stubborn, and is refusing to loosen their grip of control. Although, as this dissertation goes to print (winter 1994), the military are no longer in "P"olitical control, their economic and political power is still felt throughout the Kingdom.
CHAPTER TEN:

NEW MODELS: THEORETICAL REFINEMENT OF SETTLEMENT AND URBAN GEOGRAPHIES

This study has attempted to elucidate and make intelligible the presence of a region based urbanization (RBU) in the extended Bangkok Metropolitan Region. There was also an effort to understand the specific synergic conditions which give rise to the observed landscape. A coalescence of factors (political, physical, economic, and historical) have been relevant to comprehend the settlement system. This final chapter will synthesize the multifarious factors to theoretically resolve a rationalization of a region based urbanization.

Chapter 2 reviewed two discourses of urban theory; urban transition model and settlement dichotomy, to build towards an explanation of region based urbanization. This chapter will go further, with more specificity and depth, to not only build upon the RBU model, but to comment on how this hypothesis can be loaned to urban regions other than Bangkok, and to criticize the resulting forms and functions of an urbanization which acts as a vast engine of growth for capitalist enterprises.

10.1 Verification of A New Settlement System:

From the preceding chapters, four salient observations can be made to provide evidence for a settlement system, distinct from traditional explanations.
Firstly, this form of settlement outside the city core is *neither urban nor suburban nor rural*, but a meandering extension of the city, or what Douglass (1991) has referred to as, "finely textured rural-urban landscape," or as we have labelled it, a chaotic tapestry of a landscape. To proponents of the romantic traditional countryside, it would be "excessive-urbanization".  

Secondly, we have observed a landscape where the contact between *nature and industry inflect upon each other*. This relationship has traditionally been a detached one, and urban theories (as seen in Chapter 2), have largely been derived from their separation. There is little reason to expect a return to the rigid subdivision between rural and urban. This is the basis for embracing a new thinking in urban development.

Thirdly, RBU is a landscape defined by the juxtaposition of production, recreation, and suburbanization. In Bangkok and other large Southeast Asian cities, there has historically been a zonal segregation of differing functions (see Chapter 3). This has been replaced by a non-discriminating land use in the outer city, where one small tambon may comprise a number of disparate functions in tight proximity. *Spatial heterogeneity of functions* is a platform of RBU.

Fourthly, major changes in the world economy have given the EBMR a decisively different form and appearance from traditional urban patterns. Beneath the redesigned *desakota* architectural styles, and the commercial and industrial facades, are a new cultural, social and political vibrancy, reflecting the *globalization and convergence* of urban theatres throughout the world. Later in the chapter we will comment upon the importance of cultural convergence in the form of consumer durables and the media.

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2. Later in this chapter we will examine various terminology to articulate RBU.

3. Suburbanization should not be spatially used in the narrow "American" sense to denote a residential and retail zone adjacent to the CBD. The evocation should be more attuned to outer city residential.
Briefly stated, these four points are an introduction to the construction of a new model of urban theory, one which is sensitive to a political space economy driven by market forces.

10.2 Convergence and Standardization within the Urban Region:

Armstrong and McGee (1985) pointed out two important contradictory developments occurring simultaneously in Third World Urbanization. On the one hand, there has been increasing heterogeneity among the cities of the Third World. The many variations of urban industrial expansion, and the diverse roles played by the cities suggested a striking divergence in patterns of urbanization and urban development. As an example, Armstrong and McGee distinguish between an industrial export economy like Taiwan, and a low income agricultural exporter such as Bangladesh.

On the other hand, largely from the emergence of an integrated global economy, there is a growing standardization of urban patterns. This is particularly applicable for the larger primate capital cities which have become central command and control headquarters for orchestrating the global flows of transnational capital. Convergence of urbanization patterns operate as much at a global level as at a continental or regional scale, explaining the striking commonalties of the built up CBD in urban centers as distant as Singapore and Toronto.

Urban convergence is present at several levels. Firstly, there is a convergence of power relations. There is an emerging ruling class with international values that are increasingly being placed in key decision making positions at both the political and corporate level. Secondly, there is a convergence of consumption patterns.

The global trend of multinationalization is spurring a wide spread trend of imported lifestyles for a global consumer class. Advertisers are sending a unified message that is appealing to a broad diversity of populations, and in many ways, beginning to homogenize and consolidate consumption patterns across national borders and even continents. This is obvious in the ubiquitous theme parks in the outer parts of the urban region. The third convergence, culture, may be the most daunting of the three. It appears that local and traditional culture are being eroded, and replaced by a faceless global psuedo-culture dominated by corporate interests and diffused through mass media, particularly television, and satellite television.

The Armstrong and McGee thesis is accurate, and has subsequently been expounded upon by other writers. In this dissertation, however, there is a convergence process that appears to go beyond the Armstrong and McGee model, and has a profound impact on the urbanization of Asian regions, that being, the convergence of patterns in the urban region. Within the urban regions, rural culture and its rich traditions are being modified by a mass media-driven culture with technocratic values. The global convergence explained by Armstrong and McGee is happening at a swifter pace in the urban regions with much less discrimination. It is evolving impulsively and infectiously, and those who choose to ensconce from its impact, eventually find it to their detriment.

In the EBMR the metropolis is everywhere, perhaps not in terms of landscape and morphology, but certainly in other ways. The long-standing subtle intellectual and psychological wall surrounding the city has come down. There are naturally irrefutable differences between life in Bangkok and Minburi, however, populations in both places have increasing access to the same consumer durables, and the same intangible ideas. The distinctions of the two places are in fact increasingly negligible and inconsequential.5

5. This is not in any way suggesting that there is not a wide gulf in lifestyles within the region. There is absolutely no evidence of a convergence process among social strata. There are many very rich and very poor people in Bangkok and its periphery. Although the urban region as a spatial entity is under convergence, development proceeds very unevenly.
In the EBMR the impact of the television is not trivial. It is an important purveyor of standardized culture. More and more people are not only being educated by the TV, but are attaining their ideas and motivations from it. It permits advertisers to enter nearly everyone’s life to plant seeds that will germinate into chronic consumerism. Between 1984 and 1991, total spending on advertisements in East Asia (including ASEAN) has tripled, and is influencing tens of millions of people living in the urban periphery.

As discussed in Chapter 4, increased transportation linkages and modern modes of communication are instrumental in breaking down the urban-rural dichotomy. Space-time convergence is contributing to a standardization of lifestyles throughout the mega-urban regions of Asia. The automobile for example, has dramatically improved mobility and has permitted vast new areas of land to be developed, allowing population residing 50 kilometres or more from Bangkok to reside in the outer city but participate in the city’s cultural and spatial economy. The social and spatial geography of the automobile has directed urban expansion; the EBMR in many ways is planned by Nissan and Mazda. In the same vein, the cultural and economic baggage that originates in Bangkok is easily transferred almost anywhere throughout the region. Douglass explains:

The economy of the "city" is, in many instances, mobile and is as likely to come by a vendor’s truck to the village as it is by moving villages on buses to the distant town. This city economy may not even be local, but may even come from Bangkok.

6. I have written elsewhere in this thesis that 100 per cent ownership of televisions among outer city village and housing estate households is not uncommon. Furthermore, many villages and estates have access to satellite TV. Factory workers and rice farmers in Pathum Thani are watching the same Australian produced drama as not only Bangkokians, but viewers in Singapore, Indonesia, and a dozen other Asian countries. In my travels through the outer city, nearly all households I visited had the TV on, (even if no one was watching) at all times. The TV has become a habitual and permanent feature in nearly everyone’s life.


8. The pre-automotive city had a clearly marked edge with a magnetic central city.

Cultural and economic convergence may be homogenizing the region, and critics of global standardization would have a feast observing recent changes in the EBMR, but for local residents it certainly provides a vibrancy that most seem to appreciate. In dozens of open ended informal interviews throughout the EBMR, only a few did not mention an appreciation for the opportunities available for increased consumerism. Outer city shopping malls, and television were mentioned by most respondents when asked to speak of the affinity between Bangkok and their tambon. The presence of universities and other post-secondary institutions, 7-11s, department stores, a wider selection of restaurants, banks, and naturally a diverse and extensive array of non-agricultural employment opportunities are also contributing to a region wide convergence, an ubiquitous urbanization.

10.3 Ideology and Extended Urban Development:

A repetitive theme in this project has been the importance of the political space economy with respect to the use of space, and labour-capital conflict in the EBMR. Massey contends that in order to interpret the space economy in any regional case study it is essential to examine specific forms of capitalism in that area. Using a 'geology' metaphor, she argues that over time, rounds of capital accumulation can contribute to uneven development, by depositing layers of industrial sediment throughout the landscape.10 As capital adapts to changes in local and international markets, the restructuring process builds the landscape. Warde, commenting on Massey's (1984) work, refers to capital's restructuring as a "search for spatial advantage" and moreover, explains that for capital, space is a resource.11


Although one could criticize Massey for her exclusion of political practices, and local culture, and her singular fixation on capital as a determination for space, her thesis provides an applicable backdrop for examining the most predominant development in Bangkok’s outer city, the dispersion of productive activity. It is explained in terms of a theory of capital’s restructuring and flight away from the metropolitan core.

The accumulation of capital leads to an efficiency of production forces and standardization, which in turn causes a reduction in locational dependence on industrial centralization. Standardization of the production process decreases unit transport costs, again widening the spatial margin. In the Bangkok region, production efficiency in terms of flexible technology and standardization has permitted industries to locate in the periphery, away from the ports and markets. Furthermore, the wider spatial margin is enhanced by the space time collapse.

External diseconomies of scale have contributed to industrial decentralization as well. The costs of urban congestion have begun to exceed the benefits of industrial centralization. The outer city avoids the diseconomies of centrality, yet maintains the benefits of proximity. The number of activities that require centrality, such as high value services (international banking) are few, and it appears, as congestion and land values rise, their numbers decrease.

More recent rounds of capital accumulation have also led to a degeneration of specific skills, concomitant with a rising reliance on increasingly sophisticated and automated machinery and equipment. The deskilling process of production allowed for locational flexibility and declining dependence on skilled labour pools that were typically concentrated in the metropolitan markets. This led to another unprecedented spatial factor of location; the geographic separation of skilled and unskilled labour within the same corporation.

12. It is important to distinguish between deskilling of labour vs. deskilling of the production process. In the current discussion, we are referring specifically to the latter as a consequence of automation within production. It should also be mentioned that there have recently been efforts to promote high technology industries in Thailand, with local research and development.
non-metropolitan labour force, wage levels are kept at a lower rate. Repeated waves of decentralization however, eventually leads to a convergence in wage rates between city and outer city.  

A debate concerning the rise and development of the outer city industrial landscape begs the following question: is the decentralization of production due to the preceding migration of population to the outer city, or is it due to the flight of capital away from the metropolitan area because of diseconomies of scale, and migration subsequently follows? Greenwood commenting on locational decentralization has argued in support of the former, however in the EBMR, based on early capitalist activities beginning with canal excavation and economic functions by the privy purse and Chinese merchants, it appears that capital investment by the privy purse was the leading determinant for outer city development, and population followed. However, it is fair to reason that an increasing outer city population encourages new rounds of industrial decentralization.

At this time the discussion will shift to examine the larger role of the urban region within the context of a production orientated global economy. It would not be unreasonable to suggest that the outer city has been constructed and promoted to produce and accumulate wealth. The attributes of EBMR development that have been reviewed in the preceding chapters point to a region that is acting as a vast engine for operating corporate interests. Planning and development should improve the quality of life for local residents and migrants. Instead, accumulation is nurturing the bank accounts of TNCs, bureaucratic capitalists, and industrial clan lineages. Bookchin writing in his new book, "Urbanization Without Cities" presents an

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13. This is very common. Typically, the office is in Bangkok or Singapore and the factory is Pathum Thani. Minebea (see Chapter 6) is a fitting example.

14. Daily minimum wage in Bangkok (1992) is Baht125 while in Chonburi it is Baht110, Board of Investment (1993) Key Investment Indicators. In Thailand the trend of industry shifting to areas outside the EBMR, such as the Chiang Mai area and the Southern Seaboard is in many ways a manifestation of the same process as the shift to the Bangkok periphery.


interesting thesis lamenting the imperialistic expansion of cities, and the ruination of the countryside. He argues, "Cities today are typically measured more by their success as business enterprises than cultural foci."^17^ The point is not original, but in many ways profoundly captures a salient condition occurring in the outer city, a condition no one deals with in their writing (save Sulak, Bell and Komint to some degree). Because the outer city landscape is developing and changing so rapidly, there has not been an opportunity for academics, local administrators or planners to step back and reflect on the type of social and economic landscape that is emerging, and what are the theoretical implications in terms of livability and sustainability. This will be done in the following section.

In Chapter 2, we examined two explanatory frameworks that contributed to the theoretical fabric of RBU; McGee's *desakota*, and Gottmann's megalopolis. The two act as frameworks explaining the type of urbanization arising in the EBMR, and provided the rationale to articulate urban-rural fusion. But, as we see from the preceding discussion on ideology and urban expansion, the one critical exclusion of both models (*desakota* and megalopolis) was an attempt to explain their particular forms of settlement in terms of the capitalist space economy. It would be inconceivable to fully explain the settlement formations in Bangkok's outer city without analyzing the various rounds of decentralization of capital investment. The amalgamation of McGee's *desakota* (in particular) and an understanding of the nature of the EBMR's specific brand of capitalism, (including the historical evolution of outer city capital formation) helps to resolve some of the challenges surrounding an adequate explanation of the type of settlement looming in the outer city.

10.4 The Urban Region: An Awakening for Urban and Settlement Geographies:

Urban Geography, or more appropriately, cities, as we have traditionally read and studied, are undergoing momentous restructuring in terms of size, morphology and population. The term city, is itself becoming antiquated, as it does not justly and adequately give credence to the extent and complexity of urbanization.

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Bookchin for example, has dismissed the word city, and refers to it as a "social euphemism" for a form of urbanization in the past. He writes:

In reality, cities are being supplanted by areas so immense in size that they are losing their contours, specificity, and uniqueness. Many urban agglomerations today have larger populations than many countries had a century ago and are in many respects hardly different from small nation-states.

Although Bookchin never uses the term urban region, it is a fitting idiom to describe the form of urbanization he describes. Populations who reside in the urban region, but not in the city are part of a citified lifestyle, engaged in city-type employment, are increasingly removed from nature (largely not involved in agriculture - purchase rather than produce their food), culturally urbane, and are increasingly city-paced in a synthetic environment.

Recall that in Thailand nearly one in three people reside in the EBMR. Moreover, the proportion of national population that will live in the region is predicted to increase into the next century if current trends continue (see Chapter 3). In this light, the urban region threatens to replace a rural lifestyle, to absorb and engulf them into the standardized and faceless urban macrocosm (reread the Minburi case study in the previous chapter).

18. Ibid, pg.xv.
19. Ibid.
20. Bookchin argues that urbanization has not only usurped the countryside, but also the city too! His justification is that the city used to be a human place, with pleasant neighborhoods, and an altruistic community mentality. This he says is in the past. Cities today have been engulfed by urbanization and its homogenized anonymity. Although this is an overly romantic view, there is some truth to it. Contrast Sternstein's (1982), op.cit, comments of pre- and early industrial Bangkok with Satchell's (1991) Blade-Runner-like Bangkok; Satchell, Charles (1991) "The Emerging Crisis in Bangkok: Thailand's next Boom" A Report to the Thailand Development Research Institute.
It should be noted that the EBMR will not necessarily expand in size. That is, the 13 changwats included are, at least for the next 25 years, the maximum extent of the urban region. However, two processes within the region can be expected. Firstly, areas outside the BMR will be 'more heavily urbanized' in terms of industry, housing and receding agriculture. Secondly, migration from the Northeast, North, and South of Thailand will increase in volume, and target the outer ring provinces of the EBMR (Ayutthaya, Saraburi, ESB). In this light when we use verbs such as 'engulf' and 'absorb' it is not in terms of spatial expansion and extension, and should not be associated with what has traditionally been recognized as urban sprawl. Instead, it is a process of 'filling in' or a densification of the region's landscape.\footnote{21}

In the highly commercialized and polarized mega-urban theatres, governments and private developers have embraced urban planning as a mechanism for obtaining international capital and investment. In this respect the role of the Thai government (state) should not be underestimated. It has created industrial estates in the outer regions, an international airport, improved roads, and has built a new deep sea port complex. However, integrating and restructuring urban and outer city society seem to be on the bottom shelf of priorities. The Bangkok outer city is saturated with restricted hobby farms, over-priced theme parks, extravagant golf courses, fortress housing estates and extensive industrial parks. The development of the landscape is lacking many of the institutions that provide a modicum of self identity to the citizens.

One final comment is appropriate at this point. The size of current urban regions shatter most previous conceptions of urban geography. The EBMR with over 40,000 square kilometres is made up of more than a dozen changwats, but considering the expansive dimensions it is a remarkably fluid and ubiquitous urban region.\footnote{22} The point is that time-space convergence has made 'size' a superfluous variable in urban
geography. And with the emphasis of dimensional size diminished the classical urban location models, land use zonation theories, bid rent curves, and other geometries of sectors are also rendered ineffective.

Moreover, commercial inroads have deepened and pushed capital and subsequent infrastructure to even the seemingly most isolated areas of the EBMR. Investment has opened up space throughout the region so effectively, that regional quantification has become a much less important consideration in the urban geography. The new regional geography calls for a move towards 'sense of place' or ideological symbolism of space and place, and permits a more applicable cognizance of urban geography. Although the physical and built up landscape is concrete, we must move beyond the observable and attempt to elucidate features that can not be read off the landscape, such as symbols, social and labour relations, and power. The less physical, tangible, and material landscape are important for defining the nature of the EBMR.²³

10.5 Seven Questions for Consideration:

The rapidity of change characterising the Bangkok urban region makes it almost impossible to reach neat conclusions on the major causes of the phenomena. This will be the subject of future research. In the concluding section several research questions are raised. Each question will be accompanied with explanatory text, and where feasible I will provide some modicum of a response. Further research by myself

²³. The artist or novelist has an ability to capture the subjective qualities of landscape. This is what is refreshing about Impressionist art (see Chapter 1). In Thailand, Suchat Sawadsri, a literary journalist has been juxtaposing fiction with the underbelly realities of economic transformation. His radical literary activism is well received by a small alternative following. They encourage him to continue his writing, which is a combination of short stories, poems, and published journal entries. For an interesting article on the literary contributions to interpreting the intangible landscape, see: Meinig, D.W. (1983), "Geography as an Art" TRANSACTIONS, INSTITUTE OF BRITISH GEOGRAPHERS, New Series, vol.8, pg.314-328.
and other students of urban geography will hopefully in the future yield plausible answers to these questions. To reiterate a remark by Knox, concerning studies and research on outer city urban geography; "The cupboard is bare" (see footnote 10 of Chapter 2) It has been my intention to begin filling this 'spacious' cupboard.

(1) The way one chooses to define 'urban' will shape all policy and planning decisions. In light of the discussion dealt with in this project, the question is simply, what is an urban area?

Determinants traditionally used are archaic for the EBMR and mega-urban regions in general. Particularly weak are the ubiquitous political definitions which do not encompass these areas. Orthodox criteria such as accessibility of amenities, demographic densities, economic activity, GDP and GDP per capita, and land use, are increasingly deficient criteria, unable to deal with the scope and nature of large urban regions. Several less tangible determinants should be considered; land prices (see Chapter 6), transportation time via public and private means, land use transition rates, and the extent and depth of transnational corporatism. Current urban determinants and statistics that governments collect and publish do not account for mega-urban regions. In Bangkok however there is a sensitivity for the outer city as government statistic keepers have shown an interest in the extended urban periphery for the management of the surrounding natural resources and to analyze and define areas for expansion.

(2) In light of rapidly advancing industrial and residential development are these urban regions transitional in terms of desakota status, and will they eventually become a huge built urban area?

Although there is no definitive answer to this question, and acknowledging that each urban region is inherently different from others, the short answer is that it is very difficult to predict. There are at least four factors that may influence the future.
First, the large size of the region makes it highly unlikely that it will become built up. It may assume a pattern of poly-centred towns with other land use occurring between. In order for the EBMR to densify into a completely suburbanized region or city, population would certainly have to increase, perhaps by three or four fold. This is highly unfeasible, particularly in light of present efforts to develop the peripheral regions of the Kingdom (Isan, Southern Seaboard, and Chiang Mai vicinity). The EBMR and other urban regions are more than just a collection of urban forms. There are currently, and there will remain undeveloped green spaces; whereas some are parks and speculative landholdings, many are farmland.

Second, with respect to agriculture it appears that agriculture will persist for many decades if not longer. Although paddy production in the region is decreasing, a restructuring of cropping patterns, to new and high profit produce such as prawns, turf, and vegetables ensures agriculture will persist. Also, the role of agribusiness will continue to increase. Recall that Gottmann points out that as late as 1961, 28.1 per cent of total Megalopolis land in the U.S. was comprised of farmland. In the EBMR, built up areas comprise as little as 25 per cent of the total. In order for the EBMR to densify into a completely suburbanized region or city, population would certainly have to increase, perhaps by three or four fold. This is highly unfeasible, particularly in light of present efforts to develop the peripheral regions of the Kingdom (Isan, Southern Seaboard, and Chiang Mai vicinity). The EBMR and other urban regions are more than just a collection of urban forms. There are currently, and there will remain undeveloped green spaces; whereas some are parks and speculative landholdings, many are farmland.

Third, the land market has just come down from an extremely inflated curve, and even with land values cooling off, and speculation partially subsiding, land for investment will probably comprise outer city space for a long time. In more developed outer city markets, such as the Los Angeles Basin, and the Northeastern American seaboard, land speculation has persisted, tying up large proportions of the overall land reserve.

Finally, concerning industrial growth and investment in the outer city, it seems growth is reaching saturation, and without further investment in infrastructure, industrial investment will almost certainly slow down. Moreover, there is evidence pointing to offshore investment shifting to China, Vietnam, Bangladesh, and several other low wage production centers.

(3) What should the role of local and state government be in developing the outer city landscape in terms of infrastructure?

I have described the sprawl and extension of Bangkok, at the surface at least, as the work of private enterprise, particularly TNCs and indigenous family based investors aided by the state. At times we must be reminded that all urban growth and annexation of farmland costs great sums of public money; water and sewage pipes, roads, schools, health care, transit systems, etc... If developers continue pushing the city further outward at a rate and pace that the state can not contend with, the infrastructure will become constrained by excessive development. For the most part this has been the case. Action by governments will be imperative for the sustainability and livability of these regions. If these regions are as important and as viable in economic growth as has been suggested, then decisions will have to made by governments against fostering small town development and rural industrialization in peripheral regions of their nations.

Perhaps the most critical decision governments will have to make, concerns the improvement of transportation access in these zones. We have established that these are areas of intense interaction, and although time-space collapse has been instrumental in these regions' emergence, as population increases, there will be further need to enhance transportation fluidity. Fast arterial highways, such as the Taipei-Kaoshiung corridor in Taiwan, are essential in other urban regions. High speed rail lines should also be considered. In the EBMR, the government has a unique opportunity to take advantage of pre-existing river and canal routes as well.
Finally, the state must accelerate the delivery of urban-like social services, such as education and health care, to areas outside existing municipal boundaries. This needs to be a cornerstone of any strategy to promote livability in the extended urban regions.

(4) If there is a desire to live harmoniously with nature, concurrent to realizing and achieving the goals and objectives of the new "economic plans", then rigorous compromises are needed, where growth and wealth are measured with new and rational yardsticks. Success in reversing past environmental depredations and preserving sustainable resources must be a competing measure with output. What are some of the strategies required to deal with the environment, that will not curtail continuing economic growth?

Sprawling development in the EBMR, and other urban regions has resulted in a mixed land use, with a host of different and competing activities located interspersedly. For example, one small parcel of land may contain, residential development, a petrol filling station, vegetable gardening, a health clinic, a fish farm, and a leather tannery operation. This haphazard land use pattern, with various forms of contamination and pollution emitted from the diverse activities is an obvious environmental disaster. In the EBMR, tambons 60 or 70 kilometres from Bangkok are forced to endure lead pollution, hazardous waste disposal decisions, and a toxic water supply. Moreover, the costs of environmental degradation are rarely distributed to the responsible parties. These are the grim costs of extended urban development.

It is beyond the scope of this section to deal sufficiently with environmental recommendations for urban regions or even the EBMR. There are several academics who have dealt effectively with this problem though. At this time I will briefly introduce what appears to be the most encouraging solution in an attempt to begin dealing with the issues.


The current political-economic system has imbedded in its structure, a "right to pollute" clause. The dozens of leather tannery factories in Bang Plee, Samut Prakarn, for instance, have the right to do almost anything to boost profits. Contrary to economic logic, the tanneries may be bringing upon themselves a diminishing value. Lack of conservation is a form of economic waste.

Ecological economics (eco-economics) represents a juxtaposition between environmental awareness and economic theory. It is a new thinking which argues that domestic product increases by conducting energy saving measures, and by decreasing pollution load. Politicians who relate better to fiscal ledgers then green petitions, may be more prepared to embrace this form of environmental logic. Already, a number of international agencies, including the World Bank and OECD are making efforts to incorporate environmental costs into their calculation of national output and Physical Quality of Life (PQL).

After many interviews throughout the EBMR, it was apparent that district level officials and village headmen were incited by two different but connected concerns; more money for development projects, and environmental degradation. Eco-economics through broad based education can be an effective vehicle for establishing the connection. Also more dialogue between polluters and 'victims', at the local level will facilitate understanding and commitment to eco-economic thinking.

(5) The implications for administration of mega-urban development can be intricate and complex. As for administration, how do we maximize infrastructure and growth without conflicts in planning?


Note: the author originally intended to include an analysis of the environmental problems of the EBMR, but this was not included because it would have made the dissertation too long. See Greenberg, C. (1994) "Environmental Sustainability in the Extended Bangkok Metropolitan Region", WESTERN GEOGRAPHER, forthcoming.

Administrators can no longer abide by the 'patchwork approach', which views the larger region as a group of smaller independently planned zones. They will have to adopt a finer integrated system of government that reflects an understanding of the process, by way of responsive decentralized implementing agencies.

A novel administrative body has been created in Thailand. In a promising light, the NESDB, the premier planning organization in the country, in a recently released National Urban Development Policy Framework, part of the recommended development strategies for the Seventh Five Year Plan (1992-1996), stressed the extent of Bangkok’s urban growth. One of their key institutional and implementation recommendations is the integration of the BMR and surrounding provinces into an area they have labelled, the Extended Bangkok Metropolitan Region (EBMR). The NESDB goes even further, by calling for the establishment of an Extended BMR Development Committee (EBMRDC). The recommendation is that the EBMRDC should possess institutional responsibility for urban management in the extended metropolitan region. Furthermore, the membership composition should be at the highest policy level, with the Prime Minister acting as chairman. The recognition of extended urban development is a responsive acknowledgment of a new form of urbanization.

The proliferation of different agencies and organizations involved in the process of EBMR planning lack coordination, particularly between Bangkok and the adjacent provinces. Although the EBMRDC will be in the position to coordinate and orchestrate the policy and implementation of the various agencies and reduce duplication, their mandate as of 1993 was unclear.


29. Overlapping and duplication of planning initiatives is common in the EBMR. Separate agencies have vertical relationships as opposed to horizontal; resources are exhausted with little benefit. For example 14 different agencies are responsible for transportation management in the Bangkok Region, with no single agency possessing coordinative responsibility. See Samudhavanija Chai-anan (1990) "Administrative Reform" THAILAND ON THE MOVE: STUMBLING BLOCKS AND BREAKTHROUGHS, (ed.) Suchart Prasith-rathsint, Bangkok, TURA-CIDA, vol.10, no.34.
The most grievous and intractable question of the 7 is the issue of growing poverty and inequality in the outer city. What can be done to relieve conditions of mounting poverty and marginalization for a large proportion of the population during times of relative productivity and prosperity in the urban regions?

This project has established that the outer city landscape is covered with contrasting evidence of lavish wealth and dire poverty. One particular example is housing: fortress-like luxury housing estates that abut proliferating slums. Urban regions have experienced an intensification of class polarization, as a large number of mostly construction and factory workers, and their families, numbering in the millions, are being marginalized with less political and economic power than ever. It should be mentioned that the income and conditions in which some workers live may be improving in absolute terms, but at a rate that leaves them behind a rising median income level of the larger society.

Since the end of World War II, one of the main tenets of development planning in all post colonial countries, has focused on urban-rural linkages in terms of imminent trickle-down development from the city. Much of the exhaustive literature however, highlights the parasitic flows and subsequent limited development of the rural areas, concurrent to an advantageous situation for the city. More recently the global mobility of transnational capital and new flexible micro electronic modes of industry have done little to reverse the exploitive relationship, and in fact, in most countries inequalities and poverty appear to be rising, lending more political and economic leverage to the core urban region.30

In light of the emergence of large urban regions, tens of 1000s of square kilometers in size, with tens of millions of people, an alternative focus to the traditional policy of breaking down differences between urban and rural, which in itself should not be totally dropped from planning agendas, should be in the direction of eradicating inequality and poverty within the large urban regions. Considering that urban regions, with

unprecedented levels of primacy, are the pulse of the nation, with the greatest share of economic and political power, any attempt to direct development initiatives to the urban region would ultimately impact and benefit the nation.31 Yet, if the socio-economic inequity, that has characterized cities in the past, is persistent or repeated in the EMRs, equitable development for the countries would be virtually unachievable. This form of planning would shift the development cannon away from the urban-rural problem and lay it squarely on an urban region problem.

(7) The final question is more ornamental then theoretical, and largely a matter of semantics. Is there a label or term to represent outer city urbanization as described in this project?

Throughout the literature on the outer city a legion of terms have been used denoting the process, and considering the elasticity of such terms, there should be an effort to clarify and organize the nomenclature.

The following is a list:

- mega-urban region
- region-based urbanization
- over-urbanization
- diffuse urbanization
- outer city production zone
- extended metropolitan region
- ubiquitous urbanization
- extended urban field
- exurbanization
- rurban
- edge city
- suburban sprawl
- desakota
- galactic urbanization
- stealth urbanization

In some way each of these terms could be effectively applied to an outer city urban region. The task at hand though, is to highlight several terms that most accurately characterises the EBMR, spatially, economically,

and politically. Throughout the preceding pages, four terms have been used, almost interchangeably; 1. mega-urban region, 2. region-based urbanization, 3. desakota, and 4. outer city.

1. Mega-urban region is an effective and well used term, but for this project it is not precise, as it includes Bangkok, which has not been included in the analysis, except in comparison with outer regions of the EBMR. This is not to suggest that Bangkok is not an instrumental component of the urban region, but the analysis, synthesis and focus of this project has been areas adjacent (and not necessarily including) Bangkok.

2. Region-based urbanization (see Chapter 2) may theoretically and spatially be the most accurately descriptive term, as it clearly denotes urbanization that is non city-based. It evokes a sense of an urban landscape covering a rural area. Essentially, that is what has been described. However, it lacks political and economic delineation, which we have concluded in this chapter, is an analytical foundation explaining the region’s emergence.

3. Desakota (see Chapter 2), as coined by McGee is also an effective term. Similarly to RBU, it does not capture what is the most dynamic quality of this form of urbanization; the political economy. Moreover, desakota has been applied to urban regions across Asia, from Tokyo to Kerala. EBMR requires terminology more specific to its space forming qualities. Desakota does not elucidate the myriad of capitalist activities occurring. It is a landscape of diversity, inconsistencies, and contradictions, and any descriptive term should capture these attributes.

4. Outer city is an effective term and describes the region’s 'sination' in terms of relative location to the city. It is however obviously city-biased.

At this time I will introduce an alternative term, that based on the analysis of this project may be the most effective in describing the EBMR.

Stealth urbanization: This is a term coined by Knox (1993), and used to describe American edge cities. It is as appropriate (perhaps more so) to characterize rapidly emerging production zones in the EBMR; specifically I refer to the two case studies (Northern Corridor and Minburi). Knox describes the region:

Many of these, having grown up on greenfield sites near interstate junctions, straddle several administrative areas. As a result, they fail to show up on census charts or electoral maps, and many even remain unnamed on street maps. They are 'stealth cities', economically powerful but politically invisible.

The word 'stealth' suggests an invisible potency and strength. In many ways outer city production zones, such as Rangsit, Bang Chan, Klong Luang, and King Kong Island, are largely unknown spatial entities. Even on a large-scale (say 1:30,000) topographic map of the region there is little evidence as to the economic vigor or even that it is a location of city-like residential communities. Following the desakota hypothesis, Knox would concur that they are 'grey zones', falling between administrative and legislative cracks. They are certainly not part of the city, but are economically and spatially distinguishable from the countryside.

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34. Ibid.

35. Because there is no consistent density to this development, and the built up areas appear to 'float in space', even the most recent topographic maps of the EBMR, portray rice fields or unproductive land.
Conclusion

In Chapter 1, five goals and objectives were set. I believe all have been realized, and the union of the five forms an explanatory and analytical framework for the full flower of region based urbanization. The following is a succinct response to the dissertation's objectives (see Chapter 1).

1. A complex interplay of synergic preconditions, ranging from geological formations to political economy, have been described (mostly in Chapter 3) to explain why at this time, in this region, a pattern of extended urbanization has emerged around metro Bangkok.

2. This project, sensitive to the new regional geography, has (mostly in Chapters 5-8) characterised the 'mixing pot' depicting the NEW landscape of the EBMR. I have attempted to not just describe the 'observable', but explain the cultural, economic, and political ground causes of its 'formation'. For example, in Chapter 7, I have not only described the material environment of outer city golf courses, but ways of thinking about it, and 'human purposes' and implications of this consumption of space.

3. The third objective was to interpret the role of the market economy and capitalist investors in the space-forming urban process. The main point here is that 150 years of capitalist development in the Bangkok region, has been represented by disparate forms of dominant capital, and by a diverse set of players. For example, we contrasted military bureaucratic capitalism with TNCs. Both have achieved high levels of accumulation, but with very distinct space forming attributes. Notwithstanding, a cornerstone of this dissertation is that the urban landscape of the outer city could not be described, explained, or characterised without a synthesis of the layers of capitalist 'sediment'.
4. Uneven development in the EBMR was an important theme of this dissertation. The use of late 19th
century outer city impressionist art (in Chapter 1) exposed the phenomena of development inequality in
Paris' periphery. Merriman commenting on outer city Paris in the 1850s argues that the process was tied
closely to capitalists searching for cheaper land near rivers and canals to develop industry. The process itself
generated a "mass marginalization" (which was captured by the work of Seurat and Monet). This could be
related to Bangkok's outer city in terms of regional disparities, which this dissertation has shown is a
dominant characteristic of the EBMR.

5. Finally, Chapter 2 and earlier parts of this chapter have imparted theoretical models of urban growth to
rationalize the urban forms in the EBMR. A new exhilarated urbanization, radically distinguishable from
city-based urbanization is the dominant urban form. We have referred to this as region-based urbanization.
The term 'stealth' urbanization is also an effective spatial term, suggesting the process of urbanization is
proceeding without large cities. The fact that Pathum Thani is only 4 per cent urbanized (according to the
1990 census), but is becoming one of the premier industrial production zones in Southeast Asia is a clear
indication of the non-concentrated, dispersed, cityless manner of this development. It serves not only as a
profound critique of urban transition theories, and rural urban dichotomy models, but suggests that the urban
'region' (often the size and population of small countries), as opposed to the 'city', is the formative scale of
urban analysis, in urban geography.
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APPENDIX I

Research Plan and Methods

The dissertation adopted primarily a phenomenological approach. I intended to yield descriptive data from informants residing in the outer city. This allowed me to observe the 'world' as the subjects saw it, and clarify social preconceptions as a route to understanding their 'world'. Hence, qualitative methodologies comprised the base of the research. However, since the topic was inherently geo-economic, it also adhered to a positivist theoretical perspective; there was a substantive commitment to empiricism. I compiled facts and causes of phenomena, but did not disregard subjective qualities, or what Durkheim (1964) described as "social facts".

Qualitative methods such as participant observation, open ended interviewing, and personal documents/artifacts were used. Participant observation is "characterised by a period of intense social interaction between myself and the subjects in the milieu of the latter. During this period data are unobtrusively and systematically collected." (Bogdan and Taylor, 1975). Spradley (1979, 1980) states that it is difficult to gather satisfactory and meaningful responses through direct questions. This made the open ended ethnographic interview a desirable research technique for the study. Personal documents/artifacts were analyzed to explore material values that are important and attached to the subjects' lives. It permitted me to study facets of people which are often hidden and unobservable by a simple interview or observation.

Ideas and values comprise the central core of culture. In this regard, problems arise when conducting research in an unfamiliar culture. Observational bias, applicability of tests, translation difficulties, relevance of experimental procedures, all potentially create problems with research methodologies (Price-Williams, 1985). Segal (1979) argues that a test may be a good index of a construct in one culture but not of the same construct in a second culture. Hence, this project was cognizant and sensitive to the dichotomy of
ethnocentrism and cultural relativism. All cultures must be examined on their own terms. Full objectivity is desirable, but infeasible, hence subjectivity must be curtailed. The worst pitfalls of ethnocentrism will destroy the research, hence relativism must be adopted for meaningful evaluation. In order to cut through the thick layers of subjectivity, the holistic perspective was practiced. By viewing culture from a 'wide-perspective' the interconnections and interdependencies of society become evident. These observations increased understanding of human behavior.

Presence of mind was paid to eliciting unrepresentative data by the presence of the researcher. In some circumstances, as a researcher, I had influence on informants, particularly those whom were 'stakeholders'. Interviewing, observing, taping, photographing, etc. are often intrusions of privacy and space. Ethically, I intended (at all social costs) to protect the dignity, privacy and respect of the informants. Moreover, when presenting the data, consideration was given to my personal influence and the sway and effect it had on the data. Qualitative research has distortions in its methods, and requires sensitivity and caution in delivery.

The positivist perspective of this project required the collection of a vast selection of numerical inventories. A systematic and detailed examination of relevant census materials, land use maps, statistical yearbooks for agriculture and industry, and other demographic data were accessed. Survey-questionnaires were also administered, although sparingly, to government, district, and industrial officials.

Since ethnographic and qualitative research are cyclical rather than linear processes, field notes and data were analyzed on a regular basis through the field work period. By analyzing and evaluating data before the formal data collection phase was over, emerging theories were identified and research directions were often extended and redirected.
Rapid Rural Appraisal:

The principal method guiding the learning process of the research was Rapid Rural Appraisal (RRA). It is typically associated with evaluating conditions of rural areas in an iterative, cost-effective, qualitative, and informal manner. RRA is a learning process which philosophically denounces the traditional laborious and tedious questionnaire-survey. The traditional hegemony of statistics, and the time required to generate mounds of irrelevant and unusable data has been supplanted by a post-quantitative movement centred around "quick and clean" methods of description and judgment (Chambers, 1981).

RRA came about in the early 1980s as an evaluative rural research technique endorsed and used by the Institute of Development Studies, Sussex. Subsequent progress has been made refining RRA at a series of symposiums at Khon Khaen University in Northeastern Thailand. (Lovelace et al, 1988; Proceedings on RRA, 1987; Chambers, 1981; Honadle, 1982; IDS, 1979; McCracken et al, 1988).

RRA was selected as the fundamental learning process for the research supporting this dissertation because of its suitability for rapidly transforming regions. It endorses the use of a variety of applications with a diverse array of research tools. This flexibility seemed appropriate considering the swift pace of transformation in the urban region, and the tenuous quality of current land use and economic data. Chambers writes:

> Its relevance is enhanced by the view that rural development projects are not like construction works, with engineering blueprints which precisely predetermine what will be done, but rather like voyages into uncharted seas where direction and steering will change with new soundings and sightings (pg.96).

RRA methods also emphasize the value of indigenous knowledge, or what Chambers refers to as Indigenous Technical Knowledge (ITK). Informal consultation with local residents in many instances is far more effective and cost efficient then the often-impractical sophisticated approaches usually imbedded in tedious top-down questionnaire-survey instruments.
The following pair of indices are summaries of the key guidelines adhered to with RRA, and the core techniques used in the information gathering process:

A. Key Guidelines:

1. **Triangulation**: A foundation of RRA is the use of several different sources and means of gathering information. Accuracy and completeness are maximized by evaluating phenomena in diverse ways. As an example, for the fieldwork on the Bang Chan case study (Chapter 8) I used a variety of sources to collect and substantiate the data; historical sources, topographic maps, informal and structured interviews, repeated field checks, sketch maps, group interviews, multidisciplinary discussions, and direct observation.

2. **Interdisciplinary**: The complexity of the EBMR as a region required a broad interdependent approach for gathering and evaluating information. The interdisciplinary approach is an important aspect of RRA, and within the parameters of my research, I went to great lengths to bring "guests" to my field sites as often as possible. Referring to the Bang Chan case study again, I was accompanied on several field visits by an anthropologist, historian, physical scientist, and by several urban geographers from other regions in Asia.

3. **Cyclical**: RRA adheres to a cyclical rather than linear philosophy, where the ‘learning as you go’ methodology affected the research plan. Newly generated information helped to set the agenda for later work. As I travelled throughout the EBMR, the majority of my informants were serendipitous encounters.

4. **Innovative/Flexible**: Rarely does RRA evaluation adhere to a standardized set of methods. Techniques are used for particular situations depending on specific conditions. For example, after trying without success for three days to meet a well known army general who resides in the eastern district of Nong Chok, I approached his wife, who agreed to a discussion, which became a four hour meeting. She was a very
communicative informant (and strategic stakeholder). RRA is flexible at another level; its diversification is a key factor. Both urban and rural studies have applied the approach.

5. **Informal**: In contrast to the rigidity of most other approaches, RRA is unceremonious and relaxed. Informants are never made to feel strained or pressed for responses. I rarely had a clipboard or tape recorder in sight of an informant. Tea, Coke, beer, and cigarettes were often consumed during discussions. Informal conversation at the back of a bus, in a tea shop, or along a country path were common venues to obtain information.

6. **Qualitative Description**: To accompany the quantitative data, an effort is made to evaluate a phenomena or landscape with qualitative information. By shifting the methodological cannon away from an excessive focus on material and quantifiable elements of the landscape, a more comprehensive understanding of place becomes obtainable. The new regional geography (see Chapter 1) supports this supposition, and is a natural ally to RRA. For the industrial case studies (see Chapter 6), if I were to rely on government and corporate published statistical information only, I would obtain an incomplete understanding of the outer city industrial landscape. Qualitative research for instance, provided me with meaningful information on labour relations and worker marginalization.

7. **Interactive**: RRA is interactive in nature at two levels. First, there is an effort to foster cooperation and exchange amongst the (interdisciplinary) research team members. Regular discussion (and "brainstorming") among the investigators is important to develop ideas and theories to guide further research. Second, there should be reciprocation between researcher and informant. In the field I would encourage and attempt to foster fluid exchange with the informant. Some of the most incisive information came not from a response to my question, but from their reactions to my comments or questions. Often, an informant's question back to me was significant in terms of information gathering.
B. Core Techniques:

1. **Secondary Data**: Secondary information, both published and unpublished, was an important component of the data collection. All secondary information can be found in the bibliography. Some examples are: annual reports, theses, maps, research papers, survey results, project documents, government publications, photographs, travel books, newspaper and magazine articles, academic research reports.

2. **Direct Observation**: Any direct observation of field objects or phenomena on the landscape are included in this technique. Areal relationships are particularly important observations. Frequency of exposure to a process or object are worthy of observation, as are irregularities and inconsistencies. Impressions can be recorded in several ways: notes, on tape, sketches, diagrams. For a useful discussion on field observation in geography see Daugherty (1974).

3. **Semi-Structured Interview**: This is the cornerstone of RRA, and subsequently the most effective technique in my research kit. The semi-structured interview is a flexible process, where only one or two predetermined questions are used. The interview (or discussion) becomes balanced and interactive, to the point where the term 'interview' misrepresents the purpose and process. It is the most dynamic in terms of information flow when there are several investigators, and more than one informant.

4. **Formal Interview**: In special circumstances the formal interview is used. On several occasions government officials or factory managers requested a questionnaire-survey prior to a meeting. This technique was used sparingly.

5. **Cross-Checking**: Following the concept of triangulation, cross-checking observations and situations with different techniques and sources is a fundamental technique. RRA is an iterative learning process, and confronting the same object from different angles maximizes accuracy and completeness.
Two final comments are apposite at this point. First, no methodology can claim to be value-free. All information gathered in the research process is ultimately jointly 'created' in the relationship between the investigator and the informant. What results from this procedure are one or more subjective constructions. However, through cross-checking and triangulation, RRA reduces, but certainly not eliminates, the more arbitrary components of the construction.

Second, if information is power, then information withheld (by an informant) gives the informant important levels of power within the relationship. It is not the evaluator, but the informant who controls the exchange of 'power'. RRA, however, rarely relies on a single source, and can act to erode the investigator's disadvantageous position.

In sum, rapidly transforming regions require the development of 'fast' systems of data collection. RRA is a research discovery procedure that is responsive to dynamic land use changes, and population growth. When information is needed hastily, and policy is often preempted by time, RRA may be an advantageous methodological platform.
APPENDIX II

Field Work Diary

The following is a calendar of field work activities:

1989:

May - August: This was a period of preliminary evaluation. Based at the Asian Institute of Technology (AIT), (in Pathum Thani), I travelled throughout the BMR and collected data from mostly secondary sources. This period of research provided the output to write a dissertation proposal that was granted funding from several research agencies.

1991:

February 1: Arrived at AIT; met with contacts from two years previous.

February 3-28: Period of organization; devising research plan, studying base maps, and informal trips to the field.

February 11: Day at Rangsit, Pathum Thani; conducted several informal interviews with people at market.

February 14: Travelled by motorbike through Klong Luang, Pathum Thani; met with farmers, and villagers.

February 17: Day was spent at Hi-Tech Industrial Estate in Ayutthaya; interviewed workers, bus drivers and factory manager.

February 19: Discussions with Professor Suwattana Thadiniti, Head, Planning Department, Chulalongkorn University.

February 20: Travelled through several amphoes in Pathum Thani with colleagues; interviewed two households in Northern Corridor.

March 1: Travelled through eastern districts of BMA (Nong Chok, Minburi, and Ladkrabeng); met informally with shopkeepers, factory workers, and students.

March 7: Spent day in Samut Prakarn, particularly the three eastern amphoes of Muang, Bang Plee, and Bang Po. Met with various informants.

March 10-12: Returned to Samut Prakarn for three day visit; Resided at guest house in Phra Phadeng; extensive travel through the amphoes; interviewed 25 informants (factory workers, farmers, aquaculturalists, golfers, condominium residents, etc...).

March 15-20: At AIT meeting with various Human Settlements Development Division faculty; several visits to Rangsit, and Klong Luang.

March 21: Travelled in Longtail Boat through canals of Pathum Thani, and along Chao Phraya River; met with several farmers.
March 26: Interview with Dr. Utis Kaothien, Director of Urban Planning for National and Economic Social Development Board (NESDB).

April 1: Moved away from AIT into rented rowhouse in eastern district, near Minburi.

April 2-4: Field work in factory corridors of Samut Prakarn (Bangna Trad Road).

April 5: Met with officials at Thailand Development Research Institute (TDRI) in Bangkok.

April 8-10: Travelled throughout Minburi, and particularly in Bang Chan village; met with villagers: farmers and factory workers.

April 11: Spent the day interviewing a group of factory workers at Bang Plee Industrial Estate.

April 15-19: Day were spent observing and interviewing grass, rice, and fish farmers in Nong Chok and Minburi; met with three village headmen.

April 20: Travelled to Bang Poo Industrial Estate; interviewed factory workers and residents.

April 22-29: This week was spent in the three ampoes of Thanyaburi, Klong Luang, and Nong Sua in Pathum Thani; visited and interviewed with informants at temples, factories, farms, markets, and government officials.

May 3-7: Travelled along Eastern Seaboard: Chachoengsao, Chonburi, and Rayong.

May 9: Spent day in Minburi; morning in villages, afternoon at district offices in Minburi town; met with chief agricultural planner for the district.

May 10-14: These four days were spent at Bang Chan village; met with villagers; interviewed Monks at Bang Chan temple.

May 15: Travelled through Lam Luk Ka, Pathum Thani, mostly on Longtail boats along the canals; met with farmers and fishers along the route.

May 16: Morning interview with manager of Mazda assembly plant at Bang Chan Industrial Estate; afternoon interview with District Officer of Muang, Pathum Thani.

May 19: Met with factory manager of Nestle-Carnation at Bang Poo Industrial Estate; visited three hobby farms in Pathum Thani.

May 20-21: Two more days at Bang Chan village to meet with several households and migrant construction workers.

May 22: Met with District Officers from Thanyaburi and Lam Luk Ka; interviewed rice farmers and factory worker.

May 23-24: Visited with motorcycle taxi drivers and housing estate residents in Bang Plee, Samut Prakarn; interviewed two village headmen.

May 27-June 3: Travelled by bus and train throughout the upper Central Plain changwats of Ayutthaya, Saraburi, and Lopburi.

June 5-10: Continued visiting areas of the "outer ring" EBMR; travelled through eastern changwats of Chonburi and Chachoengsao.
June 11: Had a second meeting with Dr. Uthit (see March 26).

June 12-18: Library work; note: throughout the field work period there were seven libraries I used on a regular basis; they were: Thamassat University, Chulalongkorn University, National Statistics Office, Thailand Development Research Institute, AIT, Office of the National Environment Board, UN-ESCAP, and Siam Society.

June 21: Back at AIT meeting with students and faculty.

June 22: Spent day in Phra Phradeng, Samut Prakarn; met with (intoxicated) District Officer.

June 25-July 4: Library work.

July 5-7: Travel through region with dissertation advisor, Dr. McGee.

July 8-20: Except for two trips to Minburi and one to Pathum Thani, this block of time was used for library work.

July 22: Interviewed five respondents at Bang Chan village regarding historical shifts in land use.

July 26: Met with Paul Penner, representative from the Division of Transportation and Communications at ESCAP.

August 1-4: Library work.

August 6-7: Based at AIT, travelled around Northern Corridor and ampoe Sam Kok; observed and interviewed construction workers.

August 9: Travelled by motorbike throughout Nonthaburi; visited hobby farms and housing estates.

August 10-14: Four days in western changwats of Nakorn Pathom, Samut Sakhon, and Samut Songkram; visited temples, factories, and housing estates; met with numerous informants.

August 15: Spent day in Ayutthaya interviewing factory workers from Nava Nakorn Industrial Estate.

August 17-20: Three days in Samut Prakarn to meet with District Officers, farmers, golfers, and factory workers.

August 22-24: Two days of meetings with Mr. Penner (see July 26).


September 4-6: Travelled through 'peripheral' Pathum Thani (Lat Lum Ka); met with farmers and villagers.

September 8-11: Travelled throughout Chachoengsao conducting numerous interviews with factory workers and farmers; visited Gateway City Industrial Estate.

September 12-15: Intensive evaluation and survey of Northern Corridor (on bicycle); visited factories (when permitted).

September 19-23: Library work.
September 24: Interviewed household in Klong Luang, Pathum Thani regarding commuting practices of family members who work in Bangkok; met with hobby farm occupants and golfers.

September 25-26: Met with contacts at Bang Chan village and surrounding areas; interviewed Monk in Nong Chok.

1992:

December 1-5: Mega-urban Regions of Southeast Asia conference at AIT.

December 6-8: Library work.

December 9-14: Made various trips to validate and verify data set: Nong Chok, Chachoengsao, Minburi, Pathum Thani, and Nakorn Pathom.

1993:

May 1-5: Library work.

May 7: Spent day meeting with contacts at AIT; travelled to Muang Pathum Thani, and ampoe Sam Kok.

May 13-20: Spent a week in Minburi, visiting many villages and interviewing farmers, factory workers, and rowhouse residents.

May 24-25: Met with officials from Bang Chan Assembly, one of Thailand's largest automobile assembly plants; visited with villagers at Bang Chan.

June 1-8: Library work.

Notes:

- Through 1991 I met frequently with Professor Ira Robinson, from the Human Settlements Development Division, at AIT. He was my acting advisor.

- Through 1991 I gave one presentation each at AIT and Thamassat University. I also published an article in a local newspaper. See THE NATION (1991), October 20.

- Although not all days were listed in the diary, aside from two excursions to Malaysia to renew my visa, and one short trip to the Northeast (Isan), all the days were spent living in the outer city; day to day living was field work.

- For reasons mentioned in the note above, many important and relevant ‘field experiences’ were not recorded in the field diary, but were ‘weaved’ into the dissertation. Open ended, informal, qualitative, fourth generation field work can be candid, unpreameditated, and serendipitous.

- As described in Appendix I, there wasn’t a notable distinction between ‘meeting’ and ‘interviewing’. All discourse with informants was carried out informally and unceremoniously. Exceptions were with government and corporate officials who often requested a questionnaire prior to the interview.
APPENDIX III

Notes on Thailand Census Data

Thailand's first national population census was undertaken in 1909 by the Ministry of the Interior. The following four censuses (1919, 1929, 1937, 1947) were also the responsibility of the Ministry. The next census, 1960, was conducted for the first time by the National Statistics Office, whom have overseen all subsequent censuses. The 1965 Statistical Act, under the provisions of the United Nations, recommended that all countries undertake censuses at least decennially, to obtain relevant data on population size and characteristics. Hence, following the 1965 Act, subsequent censuses have been conducted in 1970, 1980, and 1990.

The dissertation (mostly in Chapter 4) has primarily used population and occupational data from the previous five censuses (1990, 1980, 1970, 1947). Some migration data has also been analyzed. During the final writing stage of this dissertation (December, 1993), some of the 1990 data tapes had not been published. I have obtained some of the raw data, but in some areas there remain gaps in the data set.

The most recent four decennial censuses have all been conducted by the National Statistics Office, and are, in terms of pertinent definitions, uniform and consistent from decade to decade. There is however, one important definitional discrepancy, which will be mentioned later. The 1947 census, conducted by the Ministry of Interior had several significant definitional dissimilarities from the National Statistics Office censuses. I had to manipulate some of the categories to fit them with the four decennial censuses. Yet, the changes were not severe in scope, and involved categories 1, 2, and 3 of Tables 4.4 and 4.5.

The one definitional discrepancy involves the term 'agricultural household', which in turn determines 'agricultural population', as used in Tables 4.6 and 4.7. In 1960, an agricultural household was "one which
operated two or more rai, had crops and animal at value of 2,400 Baht or more, or had an income of 2,400 Baht or more from agricultural products" (Thailand Population and Housing Census; 1960, Pg.B). In 1970, this was replaced with the following condition for agricultural household: "if agriculture was the occupation of the head of the household, regardless of whether his status was own account worker or employer" (Thailand Population and Housing Census; 1970 {pg.xvi}, 1980, 1990). The implications of this are that in 1960 landless tenants or peasants were not considered agricultural population (but were considered unskilled labour). This suggests that the decline of agricultural population between 1960 and 1970 may be more dramatic than indicated in the two tables.

Two additional terms need to be defined in regard to the survey:

1. Economically Active Population: "All persons 11 years of age and over were employed on the census date, or who had worked on any day during the 7 days preceding the census date as well as experienced workers and new workers who were looking for work and those waiting for the farm season were counted as the economically active population." (Thailand Population and Housing Census; 1980, pg.32).

2. Migration: "Migration was the movement across village or municipal area of persons who had changed their place of residence within the 5 years preceding the census date. Movement within village or municipal area was not migration (ibid).
## APPENDIX IV

### FOREIGN DIRECT INVESTMENT (MILLIONS OF BAHT)

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Source: Ichikawa (1990), pg.16
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Source: Japan International Cooperation Agency (1990b)

(i) Distance in kilometres from centre of Bangkok City.
(ii) Road: Number refers to the number of the road on which land data was collected.
(iii) Price in Baht per rai (1 rai = 1600 square metres, 6.25 rai = 1 hectare).
Figure 5.1a(appendix)

Land Prices
Agricultural area - road side

Land Price in Baht (000s)

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Figure 5.1b (appendix)

Land Prices

Agricultural area - off road

Land Price in Baht (000s)

Distance from BMA (kms.)

0 10 20 30 40 50 60 70 80 90 100 110 120 130 140
Figure 5.1c (appendix)

Land Prices
Non-agricultural area - road side

Land Price in Baht (000s)

Distance from BMA (kms.)
<table>
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<tr>
<th>LOCATION</th>
<th>DISTANCE (IN KMS.)</th>
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<th>PRICE (BAHT)</th>
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</table>
Figure 5.1d (appendix)

Land Prices
Non-agricultural area - off road

Land Price in Baht (000s)

Distance from BMA (kms.)
APPENDIX VI

List of Acronyms

ADB  Asian Development Bank
AIT  Asian Institute of Technology
ASEAN Association of Southeast Asian Nations
BAAC Bangkok Agriculture and Agricultural Cooperatives
BMA Bangkok Metropolitan Administration
BMR Bangkok Metropolitan Region
BOI Board of Investment
CBD Central Business District
CBU City Based Urbanization
DIW Department of Industrial Works
DLD Department of Land Development
DTCP Department of Town and Country Planning
EBMR Extended Bangkok Metropolitan Region
EOI Export Orientated Industrialization
ESB Eastern Seaboard
FDI Foreign Direct Investment
GDP Gross Domestic Product
GNP Gross National Product
GPP Gross Provincial Product
IBRD International Bank for Reconstruction and Development, World Bank
IEAT Industrial Estate Authority of Thailand
IMF International Monetary Fund
<table>
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<th>Acronym</th>
<th>Full Form</th>
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<td>ITK</td>
<td>Indigenous Technical Knowledge</td>
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<tr>
<td>ISI</td>
<td>Import Substitution Industrialization</td>
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<td>JICA</td>
<td>Japanese International Cooperation</td>
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<td>MNC</td>
<td>Multi-National Corporation</td>
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<td>NESDB</td>
<td>National Economic and Social Development Board</td>
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<td>NGO</td>
<td>Non-Government Organization</td>
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<td>NHA</td>
<td>National Housing Authority</td>
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<tr>
<td>NIC</td>
<td>Newly Industrializing Country</td>
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<td>NIDL</td>
<td>New International Division of labour</td>
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<td>NSO</td>
<td>National Statistics Office</td>
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<td>ONEB</td>
<td>Office of the National Environment Board</td>
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<td>OPM</td>
<td>Office of the Prime Minister</td>
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<td>PADCO</td>
<td>Planning and Development Collaborative International</td>
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<td>Region Based Urbanization</td>
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<td>Rapid Rural Appraisal</td>
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