

Financing City-Building: The Bangkok Case

Douglas Webster

April 2000

About the Author

Dr. Douglas Webster is consulting professor at A/PARC, working with the Urban Dynamics of East Asia Project. Webster has worked on urban and regional development issues in East Asia for twenty-five years, as an advisor to international organizations, East Asian governments, and the private sector. He was professor of planning at the University of British Columbia, Asian Institute of Technology, and the University of Calgary, where he directed the planning program. His current interests are urban systems, peri-urbanization, and urban management in East Asia. Professor Webster is currently senior urban advisor to the Thai Government (NESDB) and is a frequent advisor to the East Asian Urban Unit of the World Bank. Recent publications focus on changing urbanization patterns in East Asia in the context of globalization, localization, and decentralization, particularly in the Extended Bangkok Region. At Stanford, Webster has taught courses related to East Asian urban dynamics and managing the urban environment in East Asia. His research focus at A/PARC is comparative peri-urbanization in East Asia.

Financing City-Building: The Bangkok Case

Douglas Webster

1. Introduction

This paper examines the issue of urban public finance from the wider viewpoint of city-building in middle-income mega-cities of East Asia, based on the Bangkok example.¹ The analysis is from the author's perspective as Senior Urban Advisor to the National Economic and Social Development Board (NESDB), the national planning agency of the Thai Government, over the last six years.

All cities are different, but Bangkok is reasonably typical of a class of cities in East Asia characterized by: (i) diffuse and poorly coordinated institutional responsibility for urban management, including finance; (ii) ineffective land use planning; (iii) limited local government powers; and (iv) limited revenues and financial resources to cope with past and/or existing growth. Manila and Jakarta are fellow members of this group. All three of these mega-cities will be in the top thirty largest cities in the world by 2015.² As indicated by Table 1, Manila will rank thirteenth, Jakarta sixteenth, and Bangkok twenty-seventh.³

The Bangkok Metropolitan Administration's (BMA) current population is estimated at approximately eight million (there is no official agreement on the number), and covers an area of 1,569 square kilometers. The city is composed of 40 districts, with population densities by district ranging from 41,519 persons per square kilometer to 318. Until the economic crisis of July 1997, the city's economy grew rapidly, at an annualized rate of 17.2 percent (based on current market prices) between 1990 and 1996. After close to two years of decline, the city's economy began growing again in 1999, at between 3 and 5 percent. Bangkok is a middle-income city; in 1996, per capita Gross Regional Domestic Product (GRDP) was US \$6,528, or about \$20,891 per household. The Governor of Bangkok is directly elected, as are councilors at the city and district levels. District heads are civil servants, although the 1997 constitution proposes that they also be elected.

Table 1

Megacities In East Asia						
City	Population (in millions)			Rank		
	1975	2000	2015	1975	2000	2015
Tokyo	16.5	28	28.9	1	1	1
Shanghai	11.2	14.2	18	3	6	8
Osaka	9.4	10.6	10.6	4	18	23
Beijing	8.1	12	15.6	10	12	12
Seoul	5.3	12.2	13	10	11	19
Tianjin	5.2	10.2	13.5	21	20	18
Jakarta	3.9	9.8	13.9	24	21	16
Manila	3.5	10.8	14.7	27	16	13
Sheyang	3.5	n/r	n/r	29	n/r	n/r
Hong Kong	3.5	n/r	n/r	30	n/r	n/r
Bangkok	n/r	7.2	9.8	n/r	28	27
Hangzhou	n/r	n/r	11.4	n/r	n/r	22

n/r = not ranked as one of world's 30 most populous cities.

Data Source: United Nations; World Urbanization Prospects, 1996

The starting premises of this paper are as follows:

- (i) Network infrastructure is the prime driver shaping the macro pattern of development in middle-income mega-cities in East Asia. Most important are freeways and highways, but mass transit systems, and to a lesser extent, water supply, also play an important role in shaping urban form. At the urban district (community) level, the configuration of arterial and distributor roads (or lack thereof) largely determines the pattern of urban development.
- (ii) Basic urban infrastructure and services should be put in place before, not after, urban areas are built-up. This is usually referred to as “infrastructure-led development”. Furthermore, new physical development should be consolidated to the extent possible and “leapfrog” development minimized. Achieving this principle is complicated by the fact that most mega-cities in developing East Asia build up new areas in the context of significant, existing infrastructure backlogs.
- (iii) Capital for city-building is typically scarce, whether raised by local governments through their own source revenues, by intergovernmental transfers, private investment mechanisms such as Build-Operate-Transfer (BOT), or by borrowing (commercial credit, on-lending institutions, and bonds). Given its scarcity, capital should be allocated to highest priority urban infrastructure, as determined by local governance mechanisms.
- (iv) It is appropriate and desirable for cities to borrow for infrastructure (“use it while you are paying for it”), but borrowing should reflect future ability to repay debt. Roughly speaking, creditworthiness is a product of a city’s management track record, its future revenues (which normally correlate with the city’s expected future prosperity), and the willingness of its future residents to pay for public facilities and an efficient, higher-quality urban environment.

(v) A portion of the land value increases generated by public improvements should be captured by the public sector to pay for the improvements.

(vi) Good governance should incorporate equity, competitiveness, and sustainability concerns as reflected in local preferences, and determined through accountable, transparent, multi-stakeholder political processes.

2. The Dilemma of Urban Finance

A number of issues follow from the foregoing points. First, in most large, East Asian cities, urban infrastructure and services are delivered by a wide variety of agencies, many of which are state-owned enterprises. In reality, there is typically no corporate entity responsible for the planning and management of urban areas. Urban governments are only one—and often not the most important—of several agencies responsible for city-building. For example, in Bangkok (BMA), over 65 percent of city-building expenditures are made by state enterprises, as compared with approximately 25 percent by the national government, and less than 10 percent by the city government.

A second issue is the cross-sectoral allocation of finance. There is little coordination, and often even a lack of communication, between providers of city infrastructure and city services. This problem frequently extends to different departments and agencies within local and national governments, and results in a skewed balance between what is provided and what is demanded or needed. With growth in innovative finance (such as BOT projects, public-private partnerships, etc.), this situation may become even more unbalanced, given that some agencies, through bureaucratic entrepreneurship, are much better at mobilizing capital than others, whether from the private sector or public funds.

The third challenge is the under-bounding of cities. In most East Asian cities, the majority of new population growth, investment, and physical development is occurring outside the core city's boundaries. For example, over 50 percent of urbanization (measured in terms of population) is forecast to occur outside core Bangkok (BMA) over the next twenty years.⁴ The comparable figure for Jakarta is 77 percent.⁵ Of China's expected 335 million additional urban residents (a very conservative forecast) over the same period, 40 percent or more are likely to locate in peri-urban areas, outside established core municipalities.⁶ Thus, close to 50 percent of urban development in the next decades in East Asia is likely to occur outside established cities, where local government is fragmented and often ill-equipped to handle city-building processes. For example, over five hundred local governments (urban and rural) exist in the peri-urban Eastern Seaboard (ESB) area of Thailand, which is now home to over 2.6 million people.⁷

A fourth issue concerns the trade-off between technology, unit costs, and coverage. In city-building, technology type and the associated unit costs of installing and operating that technology are usually taken, unfortunately, as a given. Wastewater treatment is an excellent example of this phenomenon. Conventional sewerage systems, an expensive option, are often assumed to be optimal in all cases, but efficient septic and cistern systems in low- to medium-density areas can present a viable—and cheaper—alternative. Another example would be the possible trade-off between rail mass transit and bus ways.

How much debt should cities incur to improve their infrastructure?⁸ As noted above, it makes sense to borrow up front for high-priority infrastructure. At the same time, though, it is impossible to predict future local government revenues, out of which such debts will be

repaid. Present and future capital availability should directly translate into questions about the types of technology and infrastructure systems to be deployed. For basic services, e.g., water supply, drainage, and public transportation, coverage is more important than adherence to conventional approaches to address the problem. For some services related to economic competitiveness, such as broad band telecommunications, the opposite may be the case.

The problem of asymmetry between technological and institutional development is related to the above. Typically, some sectors in middle-income East Asian cities are well-managed and deploy modern technology (sometimes more advanced than in first world cities), while other sectors utilize out-of-date technology, frequently delivered by poorly managed organizations. For example, in the extended Bangkok region, private-sector operated cellular telephone and rapid transit systems are state-of-the-art, while commuter trains use 1940s-style equipment and travel through the city at grade. The public bus system in Bangkok is hampered by similarly inefficient organization. The state railway of Thailand and Bangkok's national bus system are operated by national state enterprises.

The asymmetry noted above not only causes major inefficiencies, but can also bias spatial patterns. Often the most inefficient systems are those that have existed as institutions for the longest period of time, first as government agencies (often enjoying monopoly power), and then as 1970s-style state enterprises. These agencies are mandated to deliver critical public infrastructure, yet they act as a drag on East Asian cities. Often consuming much more capital than is needed to deliver a given level of service, they may actually discourage consumption of the service in question, such as, for example, commuter train ridership. As commuters move away from one service, they put stress on other subsystems. Unless such agencies are restructured, they remain unattractive to private capital.

A final, important question in the area of urban finance concerns the difficult, uneasy balance between meeting backlog needs and catering to emerging demands related to development of new areas and changing urban dynamics. How can investment in backlog needs (such as sanitation and water supply in existing lower-income neighborhood) be balanced against new needs, such as rapid transit systems, coping with greater demands for the movement of people, or undertaking new city-building on the urban fringe?

3. Macro Capital Demands

A few agencies, particularly the Asian Development Bank, have attempted to estimate future demands for capital to finance city-building processes through public urban infrastructure. Table 2 summarizes the Asian Development Bank's current forecasts. These estimates are useful, but it must be understood that real urban capital spending will depend on the future prosperity of East Asian cities. Their demographic growth (factoring in the fact that significant infrastructure backlogs exist in most cities), revenue-raising mandates, and the fiscal instruments available to local governments and other public and private organizations very much affect such cities' abilities to involve themselves in city-building.

As demonstrated in Table 2 below, the amounts of finance that will be needed are very large: US \$1,077 billion between 2001 and 2020 in the case of Southeast Asia; \$2,419 billion in the case of China over the same period; and US \$2,502 billion in newly industrialized Asian countries (Hong Kong, Singapore, Taiwan, and the Republic of Korea). Of this capital need, approximately one half (in the case of Southeast Asia, US \$538 billion) would pay for facilities and services that can be termed municipal infrastructure. With increased decentralization, much of this is likely to be the responsibility of local government. The other half of

forecast capital needs would cover urban service infrastructure, such as telecommunications, energy generation, and raw water supply. Much of this urban infrastructure, ironically, can be off-site. In fact, as is often the case of power generation or water reservoirs, it may be outside the city itself.

Infrastructure that shapes cities spatially (primarily network infrastructure, as noted above) is often distinguished from point infrastructure, such as schools, which can play a lesser role in city-building. New telecommunications technologies—cellular telephones, for example—have been the subject of much attention with regard to urban shaping. In the case of Bangkok, however, new telecommunications systems have not contributed to spatial spread, since face-to-face contact is still highly valued. In fact, cellular phones and the Internet may have contributed to making traffic congestion in the central city bearable until the problem could be addressed, which it has been to a considerable extent (Kaothien and Webster, 2000a).

**Table 2. Projected Infrastructure Investment Requirements, 2001–20:
Newly Industrialized Countries (NICs), Southeast Asia, and China**

(\$ billion)

Country/Group	2001	2005	2010	2015	2020	Total for Period	Annual Average
Total Infrastructure in Urban Areas:							
• Newly Industrialized Countries	64.87	82.66	112.07	158.29	212.39	2,502.29	125.11
• Southeast Asia	23.91	31.22	43.62	70.98	99.45	1,076.93	53.85
• China	48.54	66.16	97.48	160.83	237.13	2,418.87	120.94
Total	137.32	180.04	253.17	390.10	548.97	5,998.09	299.90
Municipal Infrastructure:							
• Newly Industrialized Countries	32.43	41.33	66.03	78.15	106.20	1,251.14	62.56
• Southeast Asia	11.95	15.61	21.81	35.49	49.72	538.46	26.92
• China	24.27	33.08	48.74	80.42	118.56	1,209.43	60.47
Sub-Total	68.65	90.02	136.58	194.06	274.48	2,999.03	149.95

Source: Asian Development Bank, 1999

Note: Chinese data includes Mongolia and Central Asian Republics

Table 3 indicates that cities will account for an increasing proportion of public infrastructure investment in East Asia over the next two decades. In Southeast Asia, the share of national public infrastructure investment accruing to urban areas is forecast to increase from 45 percent in 2001 to 52 percent in 2020. In China, it will grow from 56 percent to 63 percent over the same period, while in the newly industrialized East Asian economies, the corresponding figures are 84 percent and 86 percent.⁹

Table 3. Urban as Percentage of Total Infrastructure Spending in East Asia

	2001	2010	2020	2001–10
NICS	84%	85%	87%	86%
Southeast Asia	45%	45%	52%	50%
China	56%	56%	63%	61%

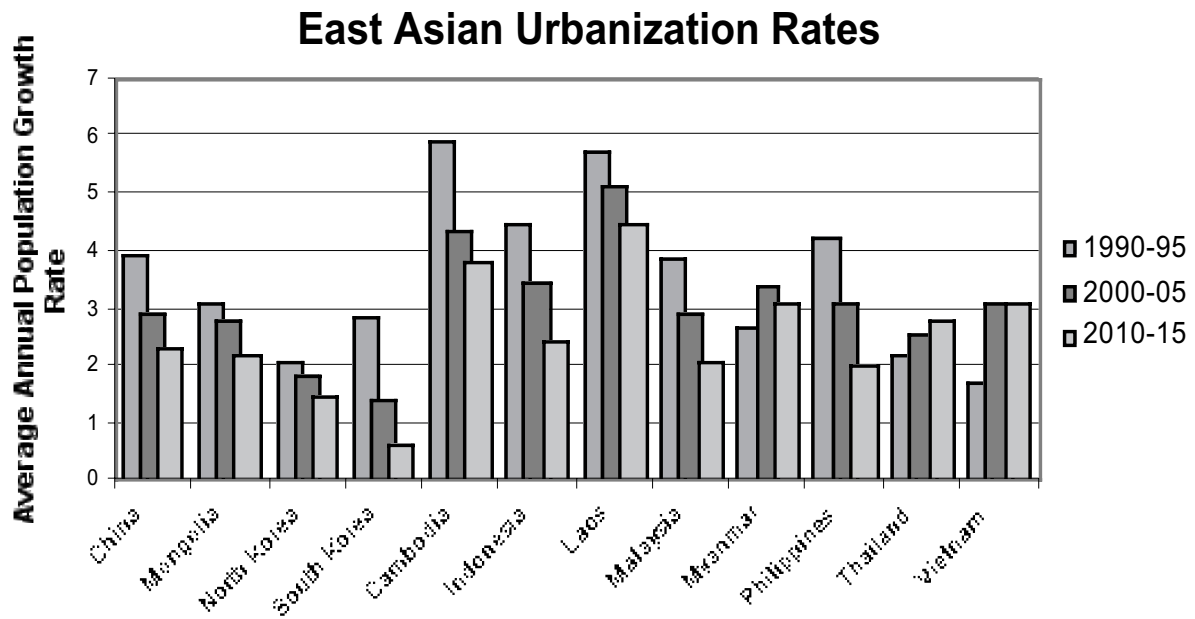
Source: Asian Development Bank, 1999

Most East Asian cities have already passed their periods of highest growth rates (see Figure 1), but absolute increments to the populations of many East Asian cities will remain high for the next two to three decades. To some extent, the crisis period of very rapid urban population growth is ameliorating in most East Asian cities. The implication is that, over time, *ad hoc* decision-making—“fire fighting”—with respect to urban management and investment should give way to more careful consideration of urban capital allocation in East Asian cities.

Bangkok (BMA) definitely benefits, at present, from low population growth. Its population grew at an annualized rate of only .25 percent over the period 1992–98. Its growth increased slightly—to .56 percent annually—between 1996 and 1998, but the city still gained only 63,000 residents over that two-year period. The suburban provinces that surround Bangkok (BMA) are growing faster, however, at an annualized rate of 2.45 percent between 1996 and 1998—a gain of 170,000 residents during 1996–98, at an annualized rate of 1.95 percent, or a gain of 84,000 residents. Given an annualized national population growth rate of 1.11 percent between 1996 and 1998, core Bangkok (BMA) is growing considerably slower than Thailand as a whole (which in turn has a low rate of increase, similar to that of a first world nation). However, the suburban and peri-urban areas that surround Bangkok are growing faster than the nation as a whole.¹⁰

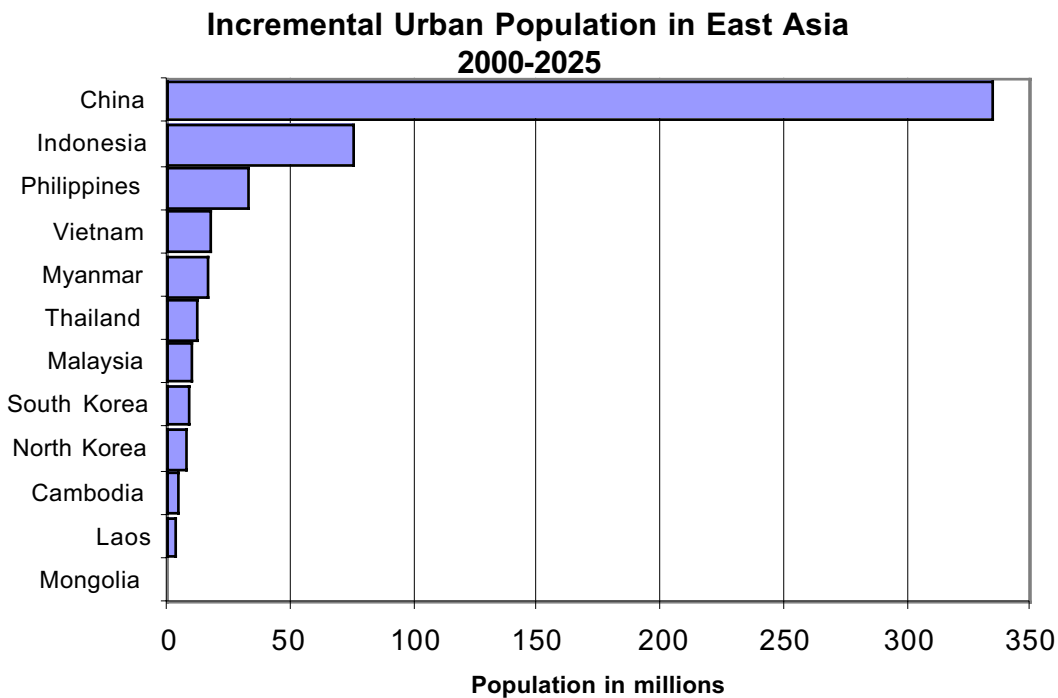
Luckily, most urban population forecasts prepared for East Asian cities in the 1960s, 1970s, and even the 1980s, proved too high. The more or less continuous downscaling of East Asia’s urban population forecasts over the last fifteen years has been caused primarily by lower-than-forecast national rates of natural increase, rather than by lower-than-projected levels of urbanization (percentage of population urbanized). Urban population forecasts continue to diminish, but if the United Nations Population Fund’s latest low-growth global demographic scenario proves true for East Asia, urban populations in the region could be even lower than most current forecasts.¹¹ This trend notwithstanding, large absolute gains in urban population *will* occur in China, Indonesia, the Philippines, Vietnam, and Burma, as indicated by Table 1, above, and Figures 1 and 2, below.

Figure 1



Data Source: United Nations World Urbanization Prospects, 1996 Revision

Figure 2



Data Source: United Nations World Urbanization Prospects, 1996 Revision

4. City-Building Processes

City-building is primarily associated with three processes.

(i) **Building at the fringe of the city on green field, or on relatively low-density rural sites.**¹² If properly handled, this type of development can engender the lowest capital investment costs. Land acquisition costs can be kept low, and replacing or retrofitting roads and other existing infrastructure can be minimized. Further, because they are usually significantly larger, pre-development plot sizes are easier to work with, and permit the creation of efficient land use/activity patterns, compared with already built-up areas.

(ii) **Redevelopment of existing urban areas.** Redevelopment is occurring in all neighborhoods, all the time. When it is the product of incremental, small-scale property improvements by many property owners, this activity does not require significant investment in capital facilities. However, if community character is significantly, cumulatively altered over time,¹³ as for example, when significant changes occur in school enrollments in different areas of a city, significant alterations to capital investment, can become necessary.¹⁴

Often, the need to address backlogs drives the redevelopment process. Most lower- and middle-income cities in East Asia have backlog needs of major proportions. For example, metropolitan Manila has substantial unfilled current needs in terms of housing, public transportation systems, drainage, and the like. Addressing these backlog needs may change the city's structure significantly, for example, if slums are replaced with high-rise public housing, or new roads or water supply systems are developed in previously underserved areas. However, as Figures 1 and 2 indicate, Manila also faces significant future infrastructure needs. To clear its backlog—let alone address the needs of newly urbanizing areas, as noted above—would require massive amounts of capital. Manila, like many developing East Asian cities, thus confronts difficult capital allocation choices.

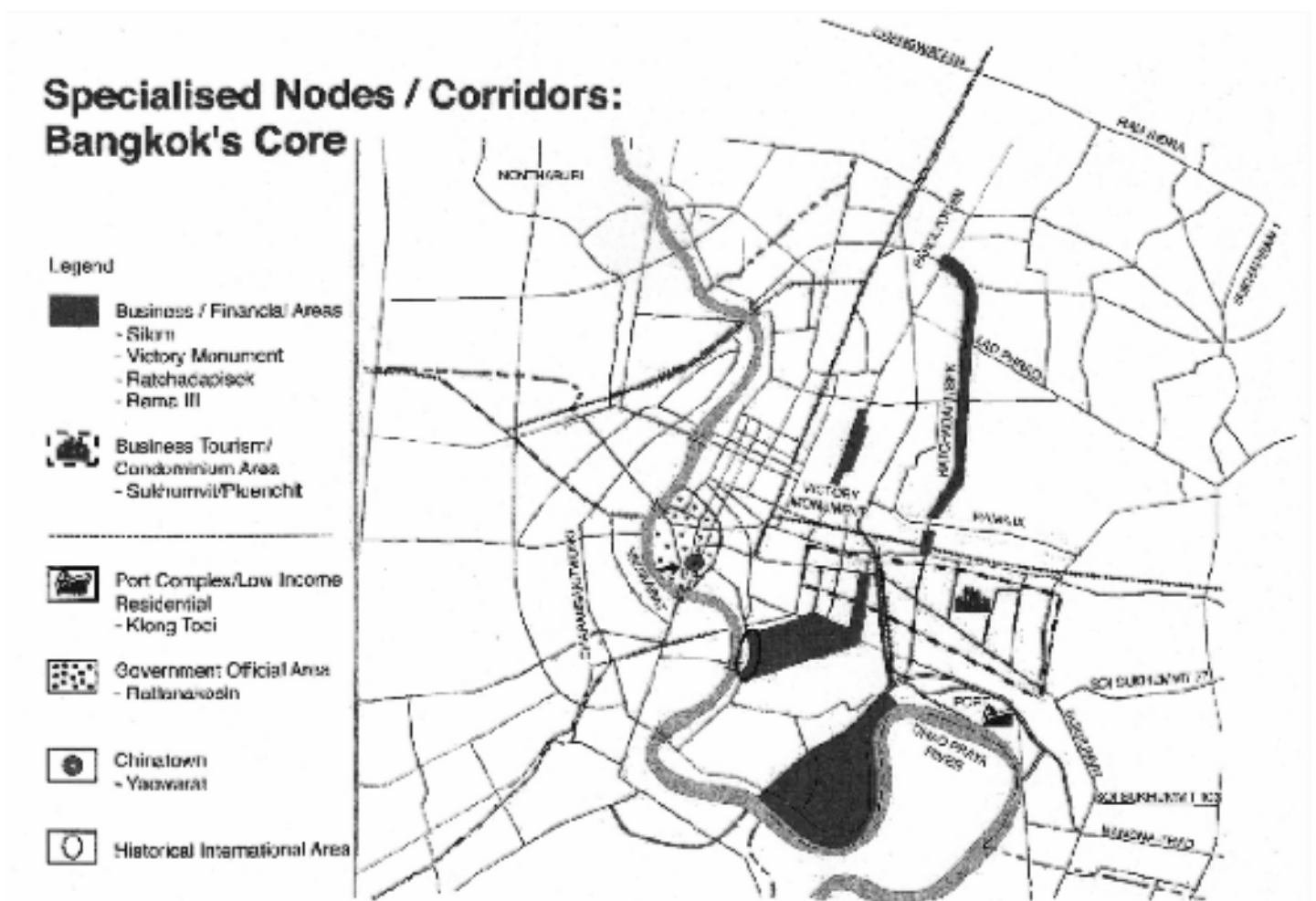
Of particular concern is large-scale restructuring or redevelopment, whether driven by public sector interventions or private initiatives. The former is best exemplified by major changes in urban accessibility contours brought about by new mass transit or freeway systems. With respect to the latter, improved urban accessibility (as well as other factors) can impel private developers to invest significantly in key areas of the city. In Bangkok, for example, a few leading firms, such as the Bank of Ayudhya, invested heavily to develop the Rama III “new downtown,” both in response to the city's changing global competitiveness, and to BMA's development of Rama III Road, which linked this area to the long-established Silom Road business district (see Map 1). BMA is currently promoting a design competition for the area.¹⁵

(iii) **In-filling.** Because arterial roads in East Asian cities like Bangkok are relatively scarce, large undeveloped lots often exist in interstices between corridors or in the interiors of “superblocks.” Once access is opened up, such as in the case of Rama III described above, major development can occur quickly, thereby significantly changing the city's structure.

The above three processes are constantly, interactively in play. As Map 1 indicates, Bangkok is shaped by network infrastructure, particularly highways.

Highway and mass transit additions to networks not only open up new areas, but may also reconfigure built-up areas, by providing new or better access to the central city. On the periphery, the private sector tends to develop property holdings (modules) along major (trunk) infrastructure networks, and along arterial road networks within “superblocks.” These holdings can be housing areas (called “mubans,” or villages, in Thailand), shopping complexes, office buildings, or industrial estates. In built-up areas, the city-building process is usually associated with smaller parcels of land (although often of high value) and is manifest through in-filling, demolishing and rebuilding, and upgrading or reusing existing structures. Refurbishing historic buildings because of their heritage value would be a subset of upgrading and reusing existing structures.

Map 1



From a city-building and financial perspective, it is critical that networks are properly planned (located and phased) and that decisions regarding mode (e.g., types of transportation systems) and technology are correct. This is especially important in cities such as Bangkok, Manila, and Jakarta, where urban land use planning processes are very weak. Further, because major urban corridors are much scarcer than in European and especially North American cities, each corridor is of great significance. The main corridors (trunks) of urban networks in East Asia are often multifunctional, containing controlled access highways, rail systems, trunk water supply, fiber optic cables, etc. Because of the intense use of network trunks, innovative financing mechanisms can often be used to capitalize and develop this infrastructure in large cities.

At the district or community level, the story becomes more mundane, but has equal, if not greater impact on people's everyday lives, since it involves local utilities, parks, schools, and the like. Unfortunately, as has been noted, in many East Asian cities the approach to city-building that prevails could be described as "infrastructure follows," rather than "infrastructure leads." That is, housing or commercial buildings are built, but proper road networks, maintained open space, and local services such as city system piped water (as opposed to local systems sourced from wells) may not be put in place until many years afterwards. Infrastructure-led development can only be realized if horizontal coordination exists among service providers at the local (micro) urban area scale. Local government authorities need to lead this process. Financial mechanisms, such as betterment and improvement fees, developer payments for infrastructure, and special area property tax assessments should be initiated. By tapping some of the increase in land values, these mechanisms compel local users to pay for all or part of the capital costs of establishing infrastructure in new urban areas. It is virtually impossible to pay for adequate district or community-scale public urban infrastructure out of general revenues, hence the requirement for local users to fund such systems.

5. Financing City-Building: Differing Perspectives

A plethora of work is available on urban finance, much of it oriented toward to East Asia, including materials (often manuals) on urban finance that focus on specific countries, such as Indonesia, the Philippines, and Thailand. This literature can be characterized in the following ways.

(i) Analysis and recommendations on national and subnational fiscal relationships.¹⁶

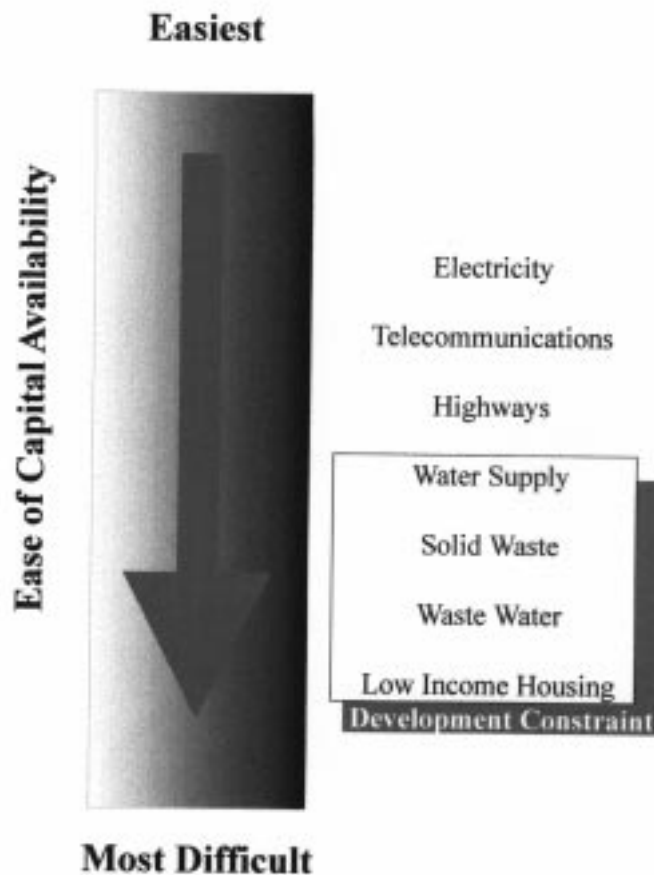
This material, frequently written by macroeconomists, focuses on national/subnational allocation of expenditure, revenue, and functional responsibilities. With decentralization becoming a worldwide phenomenon,¹⁷ this work is currently high profile. Important issues associated with decentralization include efficiency, equity, transparency, accountability, and impacts on macroeconomic policy. The guiding principle extolled in this body of literature is that the intergovernmental allocation of functions must be determined first, and that expenditure/revenue mandates should then follow.

(ii) Identification and assessment of innovative urban financing mechanisms.¹⁸ This work was set off by the popularity of privatization in the 1980s, first in countries like the United Kingdom, and later in several East Asian countries, particularly Malaysia (Itam, 1996). At the urban level, innovative financing takes the form of variants of

BOT and Build-Transfer-Operate (BTO) concessions; privatization of state, regional, and local government enterprises; and public-private partnerships to finance catalytic projects, such as suburban business centers, trade centers, and civic complexes. Japanese cities, such as Osaka, have been a leader in terms of the latter.

In the early 1990s, innovative urban finance was seen as a panacea for mobilizing capital to meet the investment needs of Asian cities. Now, it is increasingly viewed more realistically as only one set of instruments in the urban finance tool kit (Von Einsiedel, 1996). For example, as Figure 3 indicates, many sectors are unattractive for innovative finance. Further, private sector capital tends to be most interested in large cities. In the case of Thailand (Kaothien and Webster, 1996), virtually all private finance for urban infrastructure has flowed to the extended Bangkok region, avoiding even the largest of the secondary cities, such as Nakhon Ratchasima, Chiang Mai, and Hat Yai, each of which counts approximately one million people in their extended urban regions.

Figure 3: Ease of Access to Private Capital by Sector



(iii) **Sectoral analysis.** This body of literature, to which communities of analysts and practitioners actively contribute, discusses the finance (both capital and operating) of important urban systems, such as water supply, sanitation, education, health, low-income housing, and transportation. Because the financing characteristics for these various sectors are so different, this is an important area for further development. Ultimately, urban infrastructure is delivered and operated by sector-related agencies, which must bring best practice to the table—including alternative approaches—in addressing questions involving capital mobilization and allocation for public facilities in metropolitan areas.

(iv) **Financial management from the viewpoint of local urban government.** Many East Asian cities, particularly smaller ones, have limited capacity for financial planning, including risk assessment and management. In general, the literature on local urban financial management suggests appropriate structures and processes, based on international learning and best practice (McMaster, 1991). Some work focuses on mobilizing capital (overlapping with (ii) above); some focuses on financial management, including budgeting, accounting, and relating financing to programming (e.g., Program-Planning-Budgeting systems).

Analysis and recommendations from the perspective of cities as evolving, interactive systems, requiring horizontally-coordinated city-building processes, appear to be in short supply. As analysts such as Innes and Booher (1999) emphasize, there is a need to recognize not only the limits of the “distributed intelligence” which exists in various agencies engaged in city-building, but also the sheer impossibility of controlling these agencies according to a single plan. At the same time, externalities, capital scarcity, identifiable public priorities, and opportunities for significant positive synergy (based on coordinated delivery in time and space of appropriate urban infrastructure/services), require that there be coordination and broad-scale prioritizing in utilizing urban public capital. In taking a city-building approach, “line” institutions (and the policy and incentives frameworks within which they operate) are the prime determinants of capital allocation and management, both in terms of mobilization and use. A city-building approach to urban finance adheres to the principle that the key institutions guiding, delivering, and financing city-building should be networked. These institutions should operate within appropriate policy frameworks and incentive structures that encourage mobilization, allocation, and use of capital consistent with the city’s present and future needs.¹⁹

6. The Case of Bangkok (BMA)

6.1 *The Metropolitan Scale*

Bangkok (BMA) controls less than 10 percent of public facility/infrastructure investment within its territory. Most investment of this kind is undertaken by state enterprises, and to a lesser extent, by the national government. Figure 4 describes the wide variety of agencies that are responsible for key public services in the BMA, plus the larger Bangkok Metropolitan Region (BMR),²⁰ and the Extended Bangkok Region (EBR). BMA’s revenues were increasing rapidly until the onset of the economic crisis in 1997. Total revenues increased from 15,182 million Baht in 1993, to 27,836 million Baht in 1997, or US \$733 million at current

exchange rates—a gain of 83 percent in four years (Bangkok Metropolitan Administration, 1993, 1997–99). In 1998, however, revenues dropped to 26,400 million Baht, and further, in 1999, to 24,000 million Baht. Nevertheless, a renewed trajectory of significant annual growth in BMA’s revenues is widely expected, and will be reflected in the 2000 data.

Figure 4: Local Administration: Who is Responsible for What?
The Case of the Bangkok Region

	Core City (BMA)	Bangkok Metro Region (BMR)	Extended Region (EBR)
Infrastructure Development and Management			
Water	▲	▲▲×	▲□×
Sewage	(■)●	(▲)□	▲■□
Highways/Roads	▲▲■□●	▲■□×	■□×
Mass/Public Transit	▲▲□□(●)	▲▲□×	□
Telecommunications	▲□□	▲▲□	▲▲□
Public Housing/Slum Upgrading	▲(■)●*	▲(■)*	▲(■)*
Electrical Power	▲▲□	▲▲▲□	▲▲□
Social Services			
Primary Education	□●	■□×	■□×
Health	■□●	■□×	■□×
General Urban Services			
Refuse Collection	●	×	×
Parks and Recreation	●	×	■×
Fire Protection	■●	■×	■×
Law Enforcement	■●	■	■
KEY TO SYMBOLS			
▲ State Enterprise			
■ National Government			
● Bangkok Metropolitan Administration			
□ Private Corporation or Service Provider			
× Local Government			
* NGOs			

Source: James Raphael and Douglas Webster, Asia/Pacific Research Center, Stanford University

The efficiency of tax/user charge collection in BMA is very low, so there is considerable scope for increasing revenues in this regard. For example, BMA only collects about 20 percent of owed revenues for garbage pickup. (Appendix 1 describes BMA’s revenue sources between 1995 and 1999; Appendix 2 describes expenditures by activities over the same period.)²¹ The national government (particularly the Ministry of the Interior) is gradually allocating more powers to BMA, but this situation is changing relatively slowly.

It is notable that Bangkok does not borrow for capital (or operating) spending. This means that virtually all expenditure comes from current revenues. Most revenue is used for salaries and routine operational expenses; in the 1998 fiscal year, only 37.1 percent of expenditure was applied to capital facilities. This creates a situation whereby capital projects are often incrementally built meaning, for example, that a road may be constructed at the rate of only few kilometers each year.

For Bangkok to borrow, it must obtain permission from the Ministries of Interior and Finance, which could prove difficult. On the other hand, until recently, BMA had not

seriously considered borrowing at all to finance capital expenditure.²² Ironically, a credit facility—the Regional Urban Development Fund—was recently initiated in Thailand that enables smaller cities (excluding Bangkok) to borrow for public facilities without Ministry of Finance approval, subject to local government creditworthiness, and review by the provincial governor.²³

As described by Kaothien and Webster (1996), state enterprises deliver most public utility services in Bangkok. Water supply is provided by the Metropolitan Water Authority (MWA), electricity by the Metropolitan Electricity Authority (MEA), and the public bus system by the Bangkok Mass Transit Authority (BMTA). Another state enterprise, the Expressway and Rapid Transit Authority of Thailand (ETA), takes responsibility for the city's important urban-shaping toll freeway system, operating some expressways directly and others on a concession basis. Another state enterprise, the State Railway of Thailand, operates a *de facto* commuter rail service in the extended Bangkok region. A subway system is currently under construction, under the aegis of the Metropolitan Rapid Transit Authority, a state enterprise responsible to the Ministry of Transport and Communications. Public housing comes under the jurisdiction of a national state enterprise, the National Housing Authority.

The national government plays a key role in certain city-building arenas, particularly constructing major highways and bridges in the city, which are the specific responsibility of two national line agencies, the Departments of Highways and Public Works. (The Department of Public Works handles bridges, and has been able to increase its jurisdiction by arguing that roads feeding bridges also fall under its mandate.) Some other important systems—in particular, primary and secondary education and basic health services—are the joint responsibility of the BMA and the national government. While general responsibility is shared, functional mandates are often blurred. BMA receives significant transfers for education and health from the national government, as reflected in expenditures noted in Appendix 2, and its reputation for primary health delivery in the city, especially in lower-income areas, is good. Education, by contrast, appears more problematic. As illustrated in Table 4, the percentage of expenditure on social services was declining until the onset of the economic crisis. The significant increase in poverty in Bangkok post-July 1997, accounts for the increase in social spending in 1999. Interestingly, in fiscal 1999, general administration costs—typically a relatively fixed expenditure item—increased. This phenomenon is consistent with a sharp fall in capital spending, raising the relative share of administrative costs.

Table 4: BMA Budget

	1993	1997	1999
General Administration	2,529 (21.1%)	3,730 (15.2%)	4,432 (18%)
Physical Systems	6,439 (53.6%)	15,349 (62.7%)	12,189 (50%)
Social Systems	3,037 (25.3%)	5,392 (22%)	7,750 (32%)
Total	12,005 (100%)	24,471 (100%)	24,371 (100%)

Data Source: BMA

Other functions, such as wastewater and solid waste pickup and processing/disposal, are clearly, legally mandated to BMA. But if the system in question involves the need for high capital expenditure—as in the case of traditional wastewater treatment systems—the BMA effectively loses control of initiating spending because it depends on the national government for all or part of its funding. For example, the first phase (Central Stage 1) of BMA's wastewater treatment system cost 7.7 billion Baht (about US \$197 million) or, by way of comparison, about 32 percent of BMA's entire revenue for fiscal 1997. On a grant basis, the national government financed 75 percent of the amount. Three additional phases are underway, at a total cost of 9.4 billion Baht (about US \$240 million). In this instance, the national government strongly influenced the decision to build Bangkok's wastewater treatment system. Prime Minister Anand Panyarachun, who was in office at the time, took the lead in supporting the project, and it was also supported by BMA Governor Krisda Arunwongse Na Ayudthaya, and senior officials in the Ministry of Science, Technology and the Environment. It is worth underscoring the fact that, if the BMA is spending 25 cent dollars, as opposed to 100 cent dollars, their support for major urban infrastructure projects is obviously biased accordingly.

The Japan Bank for International Cooperation (JBIC)—formed after the October 1999 merger between the Japanese Overseas Economic Cooperation Fund (OECF) and the Export-Import Bank of Japan (JEXIM)—is the international “soft loan” arm of the Japanese Government, playing a major role in financing major urban infrastructure in Bangkok.²⁴ JBIC borrowing is guaranteed by the Thai Ministry of Finance, but this money can be used to finance a variety of initiatives, whether for national government (e.g., bridges), state enterprise (e.g., the Mass Rapid Transit Authority [MRTA] subway), or, it can be on-granted to the BMA local government (e.g., wastewater). Cumulative lending by JBIC (JBIC, 1997) in the extended Bangkok region totals 328 billion Yen (to 1997), the highest for any city in the world, followed in East Asia by Jakarta (259 billion Yen), Manila (146 billion Yen), and Seoul (136 billion Yen). JBIC loans are quickly approved with a minimum of “red tape,” are low in interest (3 percent), and include a grace period approximately corresponding with the construction phase. Other urban infrastructure lenders include the Asian Development Bank and the World Bank. The former is much less important than JBIC, but is a significant urban lender involved in sectoral infrastructure projects, particularly wastewater in suburban areas such as Samut Prakarn. Lending by the latter in the Bangkok area is minor, although the World Bank is playing a role in financing the Bangkok Transit System (BTS) of BMA (see below). It is also currently preparing a Bangkok Air Quality project for possible lending (US \$35 million) in the World Bank's fiscal 2001.

If the city government can access private capital to finance a function for which it has legal mandate, it can exercise considerable authority over the phasing, technology, route, etc. Such has been the case of the Bangkok Transit System (BTS) elevated rail system. The BTS is a 23 kilometer elevated rail system in the urban core, which opened in November 1999. Operating on a route designed by the city government, the BTS links key existing business centers. The BMA had the BTS developed on a thirty-year BTO (civil works)/BOT (mechanical, electrical, rolling stock) basis by a local business consortium. The total cost of the BTS is 54.9 billion Baht or US \$1.4 billion.²⁵ BMA was able to maintain control of the BTS project, vis-à-vis the national government, because the system's route runs above BMA-controlled roads; because it provides a service (local transportation) which is mandated to BMA; and most importantly, because it was able to raise the needed capital itself. The BTS is a major achievement for BMA, not only in terms of its significant contribution in shaping the city,

improving the quality of life, and providing travel options (despite initially disappointing ridership of fewer than 200,000 persons per day), but also because it illustrates the BMA's potential financial leverage.

The bottom line, however, is that Bangkok's local government is directly responsible for very little of the capital expenditure for public infrastructure and facilities which occur within its boundaries. Table 5 presents a partial description of public investment in Bangkok during the Seventh Plan period (1992-96), as no full accounting has been undertaken, and more recent data are not yet available. (For example, expenditures by the Metropolitan Electricity Authority are not included, nor is the national government's large-scale spending on drainage/flood control to protect Bangkok. Furthermore, Table 5 describes capital expenses only—the BTS project described above is not included, since BMA directly controls it through its private sector concessionaire, Tanayong Corporation.) As Table 5 indicates,²⁶ capital spending in the Bangkok area (several of the expenditures cover an area larger than BMA, "overflowing" into adjacent areas of the Bangkok Metropolitan Region), for just the agencies noted, was 181.9 billion Baht (US \$4.7 billion) over the Seventh Plan period, or an average of 36 billion Baht per year (US \$932 million). The average (mean) annual total revenue (all sources) of BMA over the same period was 16.7 billion Baht, or US \$429 million. In other words, on its own, the capital expenditure noted in Table 5 totals approximately 2.2 times the total BMA revenues over the Seventh Plan period. In monetary terms at least, city-building falls largely within the domain of organizations outside the official local government.

Table 5: Representative Capital Expenditures in BMA (Seventh Plan: 1992–96)

	Baht (Million)	US\$ (Million)
BMTA (Buses)	8,550	219
Mass Transit (Subway)	19,800	508
Public Housing ¹	15,615	400
Expressway Authority of Thailand	69,540	1,783
Private / Tollways Metropolitan	25,833	662
MWA (Metropolitan Waterworks)	23,310	598
Public Works Department (National Government): Road	19,221	493
Total	181,869	4,663
Annual Average	36,374	932

¹ Assumes that half of national expenditure is in Bangkok.

Source: National Economic and Social Development Board (NESDB),
Prime Minister's Office, Government of Thailand

6.2 *The District or Community Scale*

Private developers essentially dictate the where, when, and how of urban development at the neighborhood or community scale of city-building. Since Bangkok's official land use plan designates vast areas of the city for low- or medium-density residential use—and there are no effective legal mechanisms to enforce the plan at any rate—property developers can unilaterally decide where they will add to the urban fabric by constructing a “muban” (suburban community), or other property complex. The subdivision approval process then comes into effect. However, legal responsibility for subdivision approval lies with the Land Subdivision Committee and the Department of Lands, housed in the powerful Ministry of the Interior. The BMA has two representatives on the subdivision subcommittee responsible for BMA (one from BMA's drainage division, the other from their public works division), but their authority is limited. The subdivision law is designed to ensure that land is efficiently subdivided, that some land is deeded for public use in larger developments, and that the on-site road, drainage, wastewater (sanitation), and utility infrastructure is installed in a timely and orderly fashion. Generally speaking, electricity and telephone services are connected promptly, if the developer pays the costs of running a connection to a nearby line. The developer does not always provide a metered hookup for consumers to receive Metropolitan Water Authority (MWA) piped water, necessitating the use of wells. (In some cases, developers utilize a well source to construct a piped water system within the development.) The subdivision law has considerable clout because the Department of Lands issues title deeds, and consumers obviously want deeds to their land. Because a correct incentive system is in place, this system works reasonably well, at the micro scale to which it is targeted.²⁷

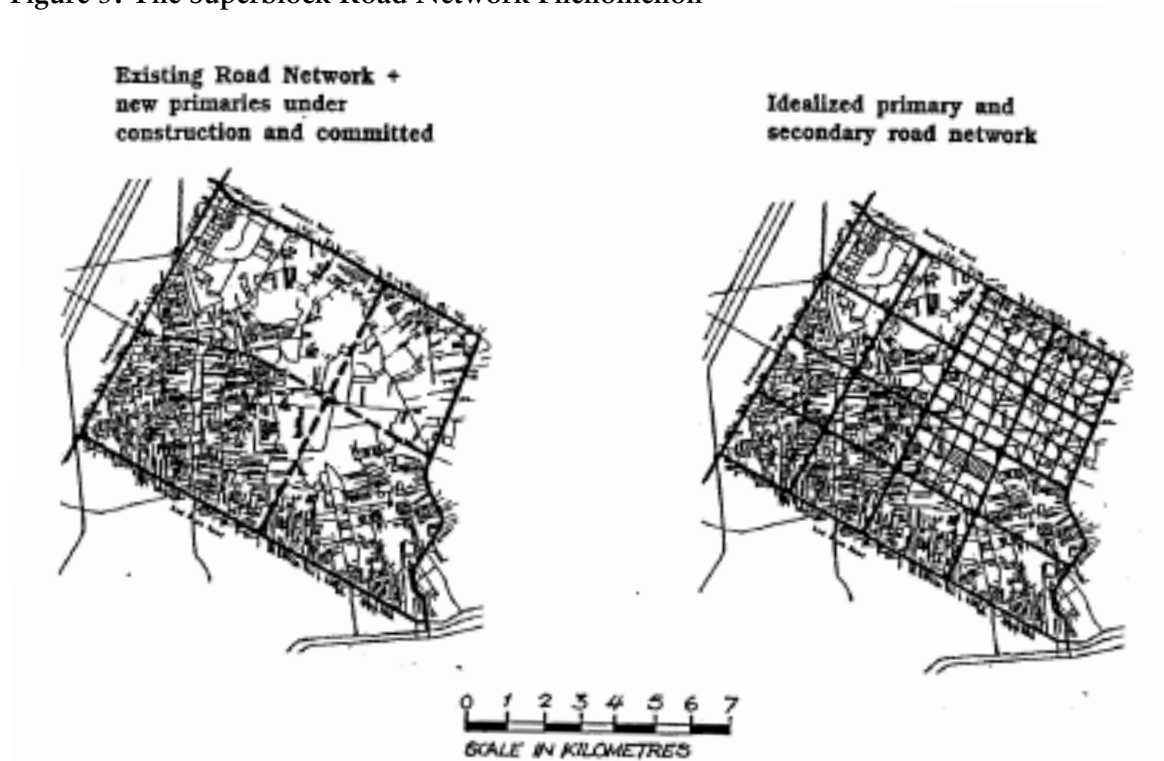
At the level of property development by individual developers, the land subdivision approval process has become more effective over the last decade. In particular, rapidly rising land costs (especially during the urban boom which lasted from 1985 until 1997), have resulted in more multi-unit developments (Dowall, 1992), which are subject to subdivision approval processes. Now, approximately 80 percent of housing is built as part of multi-unit developments. Twenty years ago, the situation was reversed, when about 80 percent of residential development was the product of “one off” housing construction. (Developments of fewer than nine units are exempt from the subdivision law.)

At the meso (district) and city-wide levels, however, problems occur. First, no mechanism exists to ensure that one subdivision project relates to the next. Consequently, city-building processes often result in superblocks, with chaotic road layouts and inaccessible “blind land” in their interior (see Figure 5). Second, at the city-wide scale, enough land is zoned for low- and medium-density residential development to accommodate growth for probably fifty to one hundred years, meaning that developers can choose to develop almost anywhere along the BMA's infrastructure skeleton. The result is often suboptimal and can have negative environmental impacts. For example, MWA water supply may not be available, so deep wells are sunk, exacerbating Bangkok's serious subsidence problem. Further, there are higher per capita and unit costs of infrastructure/utility provision, increased transportation infrastructure costs, higher energy consumption, and traffic problems—all due to the spread and chaotic nature of urban form, and related, travel origins/destinations. A further consequence is unsightly development in many areas.

Considerable development also has spread beyond BMA into surrounding provinces. In Pathum Thani to the north and Samut Prakarn to the east, urban infrastructure delivery is less coordinated and local governments are less able to cope. For example, on the northern edge of BMA (the Kukot Planning Area), in the airport corridor, three of the local govern-

ments are Tambon Administrative Organizations, which are essentially village governments. Recent analysis by the Japanese International Cooperation Agency (JICA) has indicated that official land use designations often change inappropriately and abruptly along boundaries where the BMA meets surrounding provinces.

Figure 5: The Superblock Road Network Phenomenon



Source: BMA Commission of the European Communities, *Structuring Urban Growth in the BMA*, Bangkok: BMA, March 1996, Figure 2.1

6.3 Assessment

In Bangkok (BMA) at present, A situation exists in which no one seems to be in charge of the city. No one is coordinating or guiding capital investment to the major networks that shape and ultimately constitute the skeleton of the Bangkok organism. At the micro level, the subdivision law provides some order at the project scale, effectively creating islands within an environment of scatter. However, subdivision projects do not fit together and can appear, legally, almost anywhere within the urban area. Given these conditions, it is amazing that Bangkok works as well as it does, and in fact, is improving, both in terms of quality of life and competitiveness.²⁸

Bangkok's development is not completely without coordination. A monthly meeting of all major urban systems stakeholders is held (chaired by BMA), at which information is shared and coordination is attempted. These meetings include national planning agencies, such as the Office for the Coordination of Mass Rapid Transit (OCMRT);²⁹ state enterprises serving the city (noted above), departments of the BMA; and key national government agencies, such as the Departments of Highways and Public Works. However, the agenda and

outcomes of these monthly meetings often focus on the marginal problems—making minor modifications to utility networks, for example, or solving operational problems—rather than substantive changes in capital allocations or major programming. Each agency tends to work to its own investment agenda, instead of within a framework set by BMA, or even the national government. In fact, even the national Bureau of the Budget, to which Ministries and major Departments submit budget proposals each year, has limited control over the internal agendas of national ministries and their departments working in the BMA (and, for that matter, elsewhere in Thailand). The Bureau of the Budget’s main power lies in influencing the share of the total national budget that each national agency receives.

Viewed from the perspective of pluralistic contemporary urban governance in some first-world nations, including the United States (Innes and Booher, 1999), diffuse and decentralized responsibility for urban capital spending is not necessarily a problem. This is true provided there are means to bring stakeholders together to coordinate priorities, capital allocation, and functional roles. The challenge is to benefit from distributed intelligence in various agencies, where sector-based technical knowledge of best practice should exist, while realizing synergy in city-building from coordinated priority setting and capital spending. Such a desired outcome emerges from meaningful multi-agency coordination and prioritization of capital spending, yet within in the context of vision and strategy, and guided by strong input from the urban population itself.

Some successes have come out of the current system in Bangkok, such as the BTS, but there have also been sectoral misallocations of capital. For example, wastewater has been given relatively high priority in terms of capital allocation, but the impact of this spending on improving the environment or public health of Bangkok has, to date, been minor. A shortage of collector sewers, means that the first-phase treatment plant is operating at 20 percent of capacity, an example of the low returns that infrastructure investment often produces when the necessary complementary investment and regulatory environments—which in turn create the needed critical mass of users—are absent.³⁰ In the view of one senior BMA official, capital allocation priorities should be mass transit (bus systems), schools, and rapid transit (rail-based systems), and not wastewater, drainage systems, and the like. But the city government has little control over capital allocations, and effectively takes what it can get, especially if it only has to pay 25 percent of project costs for investment in one sector, versus 100 percent of costs in another.

7. Bangkok: What is Needed?

One means to improving urban governance in BMA would be to privatize, consistent with current national government policy, the key state enterprises serving the city, with the city holding a certain number of seats on the new, private companies’ boards. This could be done either through equity holding by BMA or through law, based on regulatory principles related to safeguarding the public interest. By privatizing a typical urban utility state enterprise, capital and operating costs for a given level of service might be reduced by 20 percent.³¹

Second, to gain control over city-building at the scale of subdivision projects, the BMA should fully participate in the land subdivision approval process, with possible full decentralization of the function (as part of the current decentralization of Thai governance) ceded to the BMA. The BMA should construct networks of distributor/collector roads in the “preferred development areas,” to facilitate and guide the subdivision projects in these areas.

(This may require land readjustment as described below.) The BMA could fund construction of these distributor/collector road networks by a special assessment charge on the land parcels that increase in value through their new road connection. Furthermore, with the expected introduction of a true property tax, subdivision approval processes can be directly related to property tax measures (e.g., development charges), to pay for local infrastructure.

Giving the BMA powers to participate fully in the important subdivision approval function would strengthen integration with land use planning. In “preferred development areas,” where subdivision would be encouraged—and to which areas it could perhaps even be limited—first-rate infrastructure, such as feeder roads, water supply, and schools would be developed by BMA. Figure 5 indicates how feeder roads (perhaps in a more interesting pattern than the grid illustrated) could be developed to avoid superblock dynamics. By concentrating development in a few areas, major savings in capital costs of city-building would be realized, in turn reducing costs to local government. At the same time, most local-scale infrastructure costs would be paid by property developers, and/or users. Subdivision approval, city-wide land use planning, and property taxation processes could, in effect, be integrated at the subdivision project scale.

Third, land readjustment processes need to be implemented on a pilot basis, as a method of replotting land on the fringe of the built-up area. Expansion of the city normally occurs not on green field sites, but in semirural areas (although, if fringe settlement is grouped in villages, as is the norm in rural Thailand, suburban expansion is easier due to the considerable “green” land that exists in such fringe areas). Land “readjustment” is a process whereby private and public land in a given area is pooled. Some of this land is then redesignated for key public uses, such as roads and public facilities. Replotting is undertaken, infrastructure installed, and serviced land is returned to landowners, albeit with less area and in different shape than the land they supplied. When this technique is applied in an urbanizing area, all parties normally win financially. The replotted and serviced land attains a higher property value as it is converted from rural to urban use. Property owners in the community and the city as a whole benefit from improved quality of urban life and efficiency related to increased accessibility, availability of services, improved aesthetics, and higher and better land use than would otherwise be the case.

At present, it is difficult to redevelop older urban areas, which are sometimes in decline. They contain a multitude of different-shaped plots and a mix of buildings that vary in age, value, size, and shape. Many are situated on narrow streets with very limited access, causing developers to bypass such land and move outward, abetting centrifugal forces. The situation is exacerbated by a law in Thailand that makes expropriation for public facilities difficult and costly.³² Such legal environments explain, in part, the constant emergence of new business districts in cities such as Bangkok, Manila, and Jakarta. Aside from promoting sprawl, this type of urban development also endangers areas left behind, which are likely to degenerate badly through lack of investment. This situation is readily visible in older areas of Manila, as new investment concentrates more highly in “new” business centers such as Edsa and Makati, and in the Suriwong and New Petchaburi areas of Thailand. Land readjustment could assist in the redevelopment of older, built-up areas of Asian cities, but acceptance of this approach to redevelopment may be slow in cities such as Bangkok, perhaps taking twenty years. Such processes have proved successful in Japan, in crowded, old areas near rapid transit stations, but even there five or more years must pass before all residents in a built-up area agree to participate in the readjustment process.

The main constraint that the BMA faces in redeveloping older areas of the city is

Bangkok's inability, due to legal constraints, to use public land that it holds (or could acquire) to reshape areas through public-private ventures. Were it able to use this land for such purposes, the city government, in conjunction with the private sector, could play new, catalytic roles. Moreover, there are significant hurdles to successful implementation of land readjustment in built-up areas of the city. One is the prevailing public attitude that any cooperation between private interests and the city government implies corruption; obviously, such attitudes must change if private-public cooperative development mechanisms like land readjustment are to be successfully introduced. A second hurdle is that landowners often distrust government (including local government), and are therefore reluctant to turn over their land for replotting purposes.³³ In the short and medium term, major redevelopment in built-up areas of Bangkok will likely be limited to locations where the private sector can acquire reasonable-sized plots. The motivation to do so may be particularly high in areas near newly opened, high passenger volume, rapid transit stations. In some cases, especially where public land is involved, partnerships between private developers and the BMA (or other public agencies operating in BMA) may become possible, given changes to urban development laws being effected by the newly-formed (November 1999) National Decentralization Commission.

Fourth, BMA's monthly meeting of key stakeholders should be formalized to include identification of medium- and long-term investment needed to realize strategic objectives. Clear policy statements are needed regarding the role of various institutions in providing infrastructure in BMA; ranking, sequencing, and budgeting (capital program budgeting) of major infrastructure projects should also occur. Appropriate incentive structures must be put in place to make this a reality. Clear statements, too, in regard to the matter of investment priorities in the BMA would help national government agencies to take these priorities into serious account as they submit budgets to scrutiny by the Bureau of the Budget. Similarly, international borrowing by state enterprises and governments for investment in Bangkok could be prioritized, consistent with Bangkok's own investment priorities, utilizing the Ministry of Finance's mandate to approve, and guarantee, international bond issuance and borrowing. The above institutional changes would require both the Ministry of Finance and the Bureau of the Budget to adopt a strong subnational assessment capacity, as is already the case in many other countries.

Along with assessing the capital and operating expenditure mix proposed for BMA by the key agencies operating there, the Bureau of the Budget should consider examining annual (and multiyear) budget proposals on a geographic area, as well as on a sectoral basis. At present, neither the Bureau of the Budget nor the Ministry of Finance assess budgets, financial allocations, or international borrowing in terms of their subnational implications.

Fifth, to minimize the need for borrowing the BMA should maximize local revenues through the effective implementation of user fees for services (such as garbage collection) and through effective property taxation.

Sixth, future revenue streams should be forecast, perhaps based on two or three scenarios. Better economic and revenue forecasting by BMA would enable Bangkok to determine the degree to which it can service debt. In turn, bonds could be issued—preferably domestically, to tap excess liquidity, but also internationally, depending on national and international economic circumstances. At least initially, Ministry of Finance guarantees would be needed for international offerings of bonds. In addition, the BMA could access commercial credit.

Creation of a Thai municipal bond market will require institutional development.

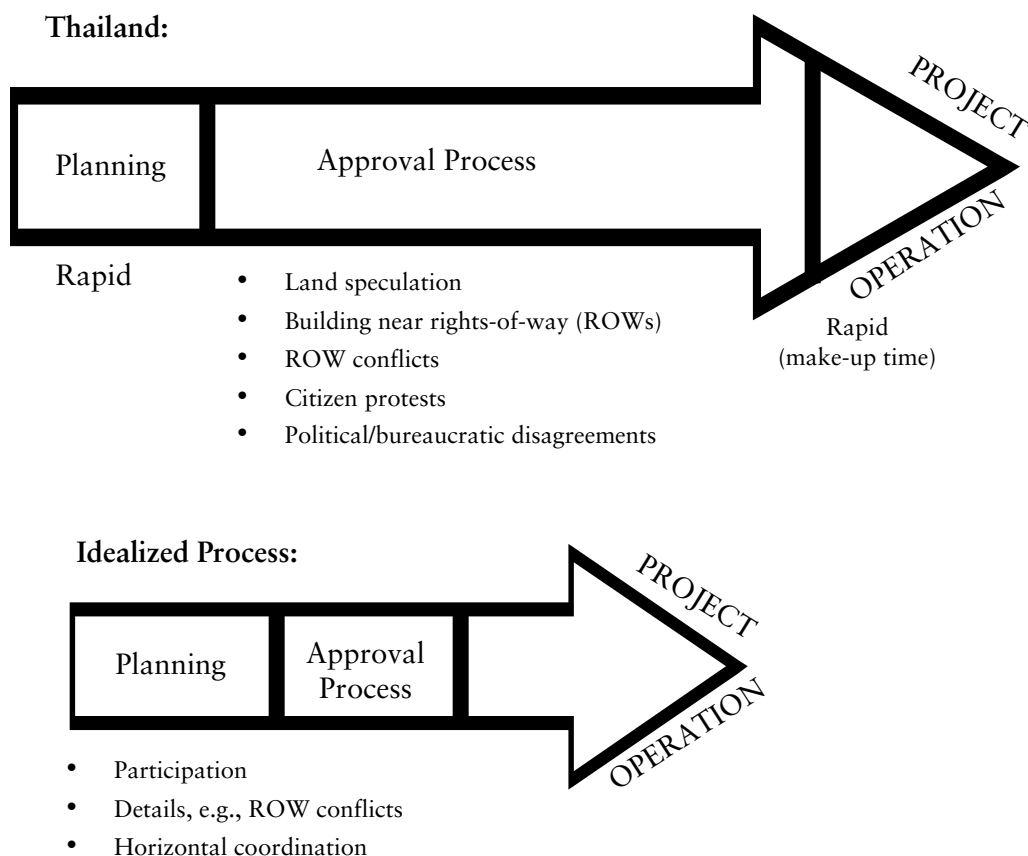
However, urban infrastructure agencies, such as the Expressway Authority of Thailand and the Electricity Generating Authority of Thailand (EGAT), already offer bonds internationally, guaranteed by the Ministry of Finance. One of the first key steps to establishing a municipal bond system is the implementation a municipal bond rating system. The Thai Rating and Information Service (TRIS), an established bond rating agency, has expressed interest in taking on this project.

Moneys raised through credit and equity finance should be used only for capital spending, and the use of the money should be clearly identified before tranches of bonds are offered, or major borrowing occurs. As a general rule, subsidies to projects should be “up front.” Credit or equity finance would enable BMA to fund catalytic facilities or critically needed services that private capital, the national government, or state enterprises do not provide. These investments could be based on the BMA’s own priorities, as established through transparent and accountable local governance practices. In addition, in cases where national matching grants are involved, if the BMA were contributing a larger proportion of capital costs, it would have a greater say in dictating priorities and the technical content of initiatives, rather than having to accept the priorities of the national government. Even with continued decentralization, as indicated by the earlier analysis, there will be limits to the proportion of infrastructure that the city can finance. However, it appears that the percentage of city-building initiatives and finance directly or indirectly controlled by BMA will increase substantially over the next twenty years. (The official target is for local governments to control 35 percent of public expenditure in Thailand by 2006.)

Seventh, the BMA and other relevant agencies should continue to explore and take advantage of innovative financing techniques. BOT-type schemes still have potential, although many of the prime freeway and transit concessions have already been let. In the cases of the Metropolitan Electric Authority and the Metropolitan Water Authority, privatization seems appropriate. One area of innovative financing that has not been used is public-private partnership development of catalytic projects. This should, however, be undertaken with care; Osaka is currently experiencing very serious local government financial problems because of its past reliance on public-private ventures to reshape the city (*The Economist*, 1999).

Eighth and finally, considerable time and money are lost in Thai urban infrastructure delivery because initial planning is not detailed enough, and public processes are not sufficiently participatory and transparent. These shortcomings lead to a variety of difficulties during the approval stage, as illustrated in Figure 6. Until recently, initial planning has not involved stakeholders, especially those impacted by projects; once they determine the true nature of the project, they frequently cause long delays in project implementation. Further, initial planning and physical design are often not careful and detailed enough to deal with micro-scale but very important issues, such as conflicting right-of-ways. For example, OCMRT identified numerous components of planned rapid transit and freeways systems that would literally physically conflict with each other. In some instances, however, construction is underway before such conflicts are worked out. A typical case is the BTS elevated rail system, which is planned to extend over the Chao Praya river to Thonburi, and to push its Sukhumvit line eastward. However, it is virtually impossible to extend the line up the busy northern corridor (to Don Muang Airport and the educational/research complex in the Rangsit area) because the Lad Prao flyover and the Don Muang tollway structures block the proposed route. This situation could have been avoided: the northern corridor extension would almost certainly have represented a better use of capital than the Thonburi extension, and possibly the eastward (Samut Prakarn) extension as well.

Figure 6: Infrastructure Delivery Process



8. Lessons

The following are lessons that can be learned from Bangkok's experience in financing city-building, which may in turn be applicable in other East Asian cities.

(i) Emphasize coverage at appropriate unit cost, utilizing appropriate technology, rather than at unit costs based on technologies which will result in considerably less coverage.

Many cities undertake city-building work based on an assumed technology, and coverage then becomes a product of the unit costs of that technology. Using this approach, the poorest areas of cities are often served last. To justify the approach, future phases of improvement to the subsystem in question are planned and promised, implying that significant or full coverage will be achieved over the medium or long term. But this is something that rarely happens.

Sewerage is probably the best example of this phenomenon. Water-borne network sewerage systems are relevant for high-density areas or upper- to middle-income cities. But at a minimum cost in Thailand of 6,000 Baht per capita for treatment plant capital expenditure alone (US \$154 at 1999 exchange rates), plus at least US \$200 for each building hooked up, it is probably not an affordable technology in most low- and middle-income cities in East Asia.³⁴ The Asian Development Bank (Asian Development Bank, 1999) rightly points out that sewerage

systems are unaffordable for cities with annual household incomes of less than US \$1,000. In Japan, to give a counterexample, approximately 50 percent of urban houses still do not have sewerage connections; they use septic tanks or cistern systems. Appendix 3 indicates guidelines and a hypothetical outcome, based on the Japanese urban experience, to determine which areas within a metropolis are best suited for individual wastewater treatment, e.g., cisterns or project-scale wastewater treatment, versus city-scale, water-borne sewerage systems. This is an example of technology being varied in different areas of an urban region to fit the situation on the ground.³⁵ Another example would be water supply. A private supplier or state enterprise could deliver trunkwater to a low-income community gateway, but the community itself, or an NGO, could develop an internal distribution system appropriate to the community's needs, while achieving 100 percent access.

(ii) In planning and budgeting capital facilities, develop some type of mechanism to prioritize and allocate capital.

This is the heart of the matter, and yet is an issue that is not easily tackled. By encouraging privatization, innovative finance, and establishing separate cost centers within local government, urban governments should probably do less than is commonly expected to deliver city-building infrastructure directly. However, a coordinating body is needed for the metropolitan area as a whole, to ensure that the highest priority capital needs attract investment; that "capital sinks" are abolished or made more efficient; and that large amounts of money are not wasted on low-priority infrastructure that delivers relatively low impacts in terms of social benefits. Non-cost-recovery items (especially in sectors that do not generate large contracts, as are typically associated with mega-projects), tend to lose out under existing pluralistic, uncoordinated, single institution/sector centered systems. Schools are a good example. Expensive capital projects—even if based on high levels of cost recovery and financed through borrowed money guaranteed by the national government—can crowd out borrowing for other sectors, particularly in countries with national annual borrowing ceilings, such as Thailand. International borrowing is not a fixed-sum game, especially in the case of projects that improve urban productivity, and thereby increase urban revenues in the long term, and projects with high cost recovery; however, the ability to borrow for urban infrastructure is only moderately elastic in the short term.

A system based on coordination by major stakeholders might prove to be the answer, in which the coordinating authority (in this case, the BMA) has political power both from its citizens, and from the national government through the Bureau of the Budget and Ministry of Finance. The Urban Development Coordination Division of the National Economic and Social Development Board (NESDB) could, and should, play a major role in facilitating the establishment of such a city-building coordinating entity. Such a coordinating body, which perhaps could be an outgrowth of the existing monthly stakeholder meetings, must be linked to a competent secretariat that undertakes long-term capital planning in the context of an urban development strategy. Furthermore, the city should be represented on the boards of directors of key public utilities servicing the city and, if possible, should even hold equity in key agencies. This would give the local government additional power as the nerve center for capital investment in the urban area.

In the case of Bangkok, a first step in implementing such an approach would be to develop a set of financial accounts for public capital investment and operating expenditures in the BMA. Ideally, this should be undertaken for the wider Bangkok Metropolitan Region (BMR). These accounts would summarize capital spending and capital programming in the urban region. The most difficult work in putting together such a comprehensive account for the BMA area will be national government expenditures, because they are not broken down on an area basis.³⁶ Ultimately, capital expenditures and programming could be disaggregated for sub-areas of the city, (e.g., by district in the case of BMA).

(iii) Buy rights-of-way ahead of time, including for distributive systems.

One of the major problems facing East Asian cities, such as Bangkok, is that rights-of-way are usually unavailable for new network infrastructure, both in, and even outside, the built-up area. As noted earlier, this is also true for distributive networks, such as roads, within local communities. This situation results in significantly higher capital costs for city-building, along with limits to what can be done. For example, in Bangkok, land purchase accounts for over 75 percent of the cost of building an elevated expressway. This severely limits the growth of the network, or perversely, often forces double-decking of existing freeways. In the end, the city is left with large, under-serviced interstices, rather than the construction of optimal route structures for more balanced spatial development.

If the public sector acquired more land near catalytic public facilities *before* they were constructed, land purchase could be used proactively to raise revenues and shape economically strategic areas. In the case of the extended Bangkok region's new container port at Laem Chabang, the government acquired only limited amounts of land near the facility. This shortfall has resulted in inefficiencies (and significant economic costs) in land use around one of the country's most economically strategic areas, as well as enormous lost potential public revenue through capital gains in land values near the port.

(iv) Land readjustment needed to shape local areas on the urban fringe.

As noted earlier, rural population densities in Thailand, and on rice plains in East Asia generally, are often high, thus rendering it difficult for developers to assemble land for city-building. The problem is exacerbated by the fact that physical expansion of urban development on rice plains will often cross the municipal boundaries of the core city into an area where planning controls are more lax, creating even more need to provide structure at the micro scale. Land readjustment processes would facilitate more orderly, efficient, and higher-quality development of land on the fringes of built-up areas.

(v) Pursuing appropriate subdivision processes.

Local government should participate fully in the local subdivision approval process. In Bangkok and many other East Asian cities, citywide urban land use plans, based on concepts such as regulatory zoning, mean little. Asian cities thrive on, and benefit from, intense mixing of land uses. Thus, public guidance of city-building should emphasize (a) infrastructure networks, particularly freeways and arterial roads, and mass transit, which create the skeleton on which private developers

“hang” their developments; and (b) the “modules” of private developers, which fall under the mandate of subdivision approval processes in many countries. In fact, the most effective and useful urban plan in Bangkok would be a simple one, setting growth boundaries with adjustments made over time. Specifically, it would be a simple, two-zone plan, with development permitted (“preferred development areas”), or not permitted; all other issues would be worked out at a more local level under subdivision law and infrastructure-led local area development processes at the community or district scale. Other highly urbanized areas, such as the Randstad in the Netherlands, the Ruhr Region of Germany, and the San Francisco Bay Area of California, are already practicing such growth boundary planning with success.

Land subdivision processes should be controlled by the local government and related directly to the property tax system or other mechanisms, to ensure that developers/property buyers pay the cost of local infrastructure, built to reasonable standards. As important as cost recovery is the need to shape and serve communities with well-located schools and other public facilities, such as health centers, maintained park land, and a hierarchy of neighborhood roads. Clear local area development plans must be created, with participation by local landowners, for “preferred development areas”. These plans would provide the basis for developing key infrastructure to shape local communities, and providing a meso-scale skeleton/structure to ensure that subdivisions, and property development by individuals, fit together. In the Thai context, and in most East Asian cities, there is no point in city planners making a plan in an office and trying to impose it on an area. The plan must be developed “from the inside” with landowners in local areas.

The financial implications of such an approach to development are fairly obvious. Most new development would be self-financing, paid for by the very people who will live and do business in the area in question. Although the costs for such urban infrastructure will show up in the macro urban infrastructure cost forecasts of concerned agencies (such as the Asian Development Bank), most of the finance needed for local urban community building would not be raised on the world’s financial markets. Local financial institutions would finance most local infrastructure indirectly by providing mortgages to property purchasers.

(vi) Demand Side Management

Given the relatively rapid growth of most cities in developing East Asian economies, demand side management will not eliminate the need for new urban infrastructure, as it may in some urban sectors of first-world countries. However, it can, and should be used to the fullest extent possible. Measures to reduce the demand for new infrastructure might include variable pricing of electricity and road use by time of day; and realistic user fees for solid waste collection, water supply, etc. If the demand for new infrastructure in some urban sectors can be slowed, capital can be reallocated to catch up with backlogs in other sectors.

(vii) Emphasize economic forecasting, revenue forecasting, and the wise use of credit.

Agencies engaged in city-building have to borrow. Cities need infrastructure now, and most urban civil infrastructure, if well maintained, has a long lifespan of fifty to one hundred years. It makes sense to enjoy these facilities now, to the extent that future income streams will support paying back the debt used to construct them. An

important question, addressed above, is how to allocate the limited amounts of capital that can be responsibly borrowed on local or international markets for city-building.

Future revenue to repay loans used for capital spending on city-building is basically the product of three factors:

- (a) the existence of instruments (and supportive laws) to raise revenues through property taxes, user fees, etc. and efficiency in collecting this revenue;
- (b) the willingness of urban residents to pay for city-building and public services;
- (c) future urban household income, which roughly corresponds with the overall future economic health and competitiveness of the city.

State-of-the-art forecasting methods should be utilized. Of the three factors noted above, future urban household income (c) is perhaps the most sensitive. Cities vary widely in economic performance over time; a well-managed city that is becoming increasingly competitive can invest heavily in city-building with a certain degree of confidence and thereby create a virtuous cycle. Of course, the opposite is also true. Cities that are poorly managed and are becoming less competitive in the global economy can be subject to a vicious cycle of diminished capital spending on city-building, with resulting loss of productivity and competitiveness.

(viii) Use decentralization processes to integrate city-building processes.

In Thailand, as elsewhere, decentralization is good news in terms of allocating capital more rationally at the city level. As more functions become the responsibility of local governments, the cross-sectoral allocation problem, discussed previously, should become increasingly manageable. If decentralization can be combined with annexation of built-up areas (or compromise solutions reached, such as creation of councils of local governments, regional authorities, special districts, and/or bilateral/multilateral local government contracting in provision of services), the under-bounding problem can also be addressed.

However, decentralization is occurring in tandem with privatization. Thus, many of the powers that are being devolved to local governments will be delivered by local (or national or international) private enterprises. In the future, governance of mega-cities in East Asia will likely be characterized not by larger local government, but by local government that is strategic, networked, and can exercise influence—government, in other words, that can act as the nerve center of the city's public service and capital planning/programming system. The challenge these mega-cities face will be to link private suppliers to guidance and regulatory mechanisms of local governments. In the case of Bangkok, where the spatial authority of state enterprises roughly corresponds to the city's boundaries, this will be less of a problem than in Thailand's smaller cities, which are served by national-scale private enterprises, such as the Provincial Water Authority and the Provincial Electricity Authority.

(ix) Institution-Building.

Last, but certainly not least, capital allocation for city-building will need to take account of the quality of institutions involved in the process, whether they are public, private, or public-private partnerships. The details of service delivery are best determined at the level of the institution that holds responsibility (within investment priorities and performance expectations set in a wider framework). Institutions, of course, will vary in performance. The best will find more cost-effective methods of

meeting client, group, and overall city needs, based on an awareness of, and response to, the public interest. The worst, as always, will be self-serving. To the greatest extent possible, capital should be steered (and markets will strongly reinforce this dynamic) to institutions that are strong performers.

9. Conclusions

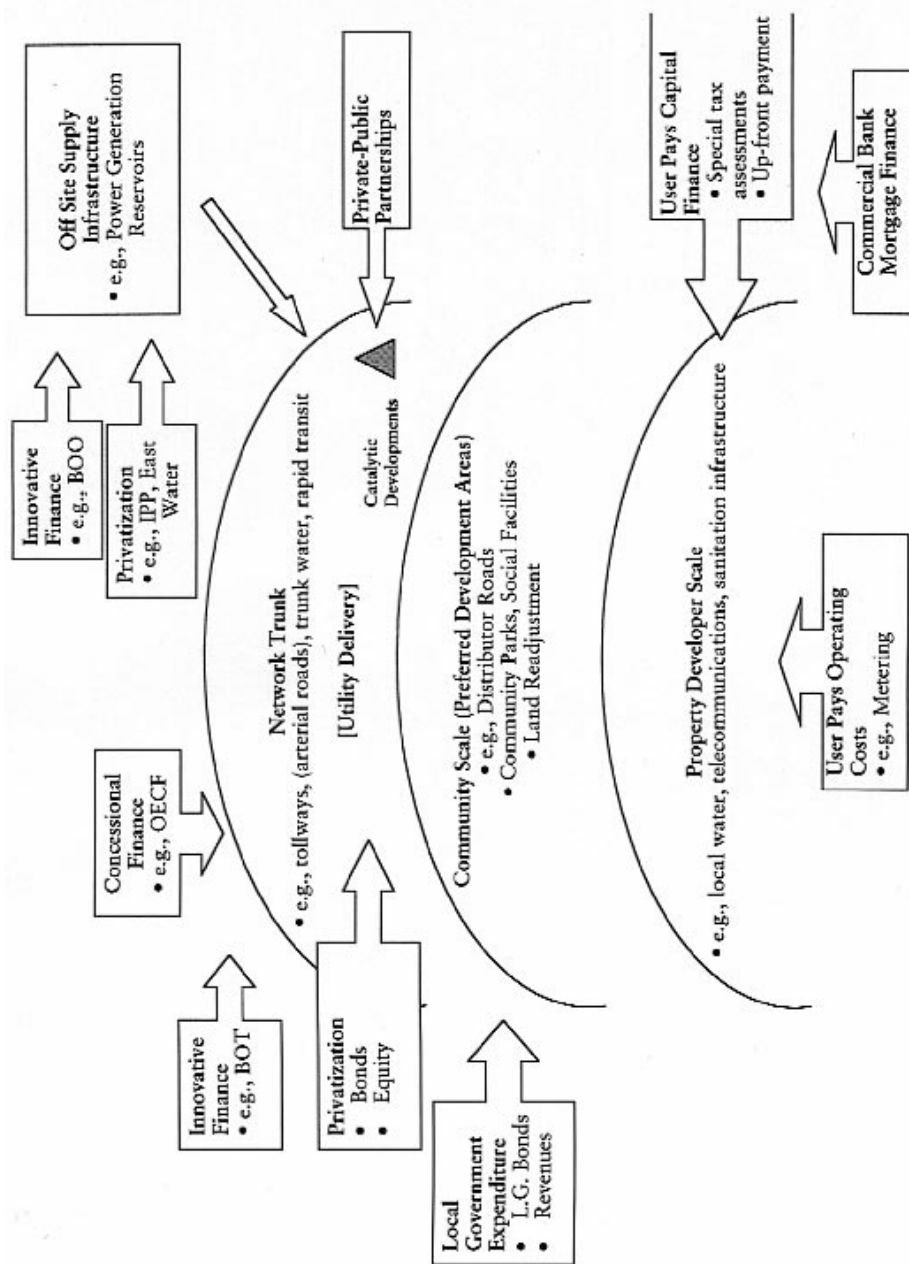
Cities such as Bangkok will require very large amounts of money to meet their backlog, current, and future infrastructure needs. Much of the mega-infrastructure that constitutes the skeleton of the city is very expensive. The mix must be chosen carefully, based on involvement of key stakeholders. To the extent that private capital and innovative financing mechanisms consistent with the public interest can be mobilized to fund such projects, it is desirable. Toll roads, rapid transit systems (with subsidy), electrical generation, trunk water supply, and urban telecommunications are all network systems likely to attract the interest of private investors in middle-income East Asian cities like Bangkok. In the case of privatization of trunk systems, social equity issues are often easier to address and resolve than privatization of distributive systems that serve diverse communities with socioeconomic characteristics. Figure 7 summarizes the relationship between city-building and public finance, as advocated in this monograph.

Privatization of key utilities could result in efficiency gains of approximately 20 percent, freeing up capital for other urban uses or for increasing coverage. At the same time, more rational spatial development (particularly in terms of sequence), based on approaches such as the preferred area development concept, might save another 20 percent in municipal infrastructure costs over the long term. Effective demand management would result in yet another substantial contribution to urban infrastructure efficiency.

At the community or local level, “user pays” principles should be implemented to the greatest extent possible, so that a proportion of the income of local people will be tapped (through mortgages) as a way of mobilizing capital for local infrastructure. Residents of middle-income cities such as Bangkok, with a per capita GRDP in excess of US \$6,500, can afford to contribute significantly to the costs of local infrastructure, if costs are amortized over approximately fifteen to twenty years. As has been argued, reform of the institutional and incentives framework in which city-building occurs should significantly lower the capital costs of local infrastructure, while improving efficiency and the quality of life of neighborhoods.

Other infrastructure, however, such as arterial roads, schools, recreational and cultural facilities, and environmental infrastructure needed for the public good will require direct government expenditure. To the extent that this expenditure is the responsibility of local government—as it increasingly will be in most countries of East Asia—responsible borrowing, through domestic or international bond issuance or commercial bank credit, will be needed. Local governments should, of course, access money at low cost, but technical assistance associated with loans from some sources may be an important factor. Timing is also crucial. For example, inexpensive JBIC money is not available once a nation reaches a defined stage of economic development (approximately U.S. \$3,000 GDP per capita); thus, early borrowing from such concessional sources may be justified. Borrowing should be done in the context of careful consideration of priorities, determined through coordinated, transparent, and accountable governance processes, as well as the future capacity of the city’s economy and people to repay debt.

Figure 7: Financing City-Building



The bottom line is that capital investment in city-building needs to be undertaken in a thorough and careful manner. With demographic and economic growth slowing in many parts of East Asia, there is time for a more deliberate approach to city-building. In the past, the solutions were seen by many to lie in implementation of mega-projects. These projects are still needed, but there also exists a need for deliberate, purposive involvement of local government and other key agencies in effective city-building, to maximize the gains from these large investments. By creating efficiencies in city form and tapping increases in land values, large, unrealized gains can be achieved. Moreover, city-building institutions require reform, including the introduction of property taxes, the linking of subdivision processes to district level planning, and so forth. Real institutional reform will produce large gains. This is true also at the micro-institutional level of state enterprise governance, where change is often most difficult and stressful. Given the enormous amounts of capital that future East Asian city-building will demand, and the real limits to capital that can be mobilized by cities in emerging countries, a shift in emphasis to the local and micro levels is urgently needed. For cities that want to be competitive in today's world such a shift is unavoidable.

Notes

¹City-building refers to investment in publicly used facilities/infrastructure within an urban or urbanizing area to create a structure or skeleton that facilitates investment in a variety of buildings and structures which constitute the urban landscape. Public infrastructure, resulting from city-building processes, enhances service delivery, and increases environmental performance.

² See Ruland (1996) for comparative assessment of developmental issues and governance responses in these three Southeast Asian metropolitan areas.

³ For a review of the urban infrastructure situation in Manila, see Trajano (1996).

⁴ See NESDB/Norconsult (1997), Table 4.2.

⁵ In terms of peri-urbanization, Manila is similar to the Jakarta case, with rapid population growth expected in CALABARZON (Cavite, Laguna, Batangas, and Rizal provinces).

⁶ Vietnam is an example of the opposite scenario at work. Cities such as Hanoi are so overbounded that most of the city's geographic area is rural, making urban governance difficult.

⁷ The three core ESB provinces referred to are Chonburi, Chachoengsao, and Rayong.

⁸ Aside from the obvious question of creditworthiness of local governments - their capability to repay loans; potential heavy subnational indebtedness can become a concern of macro economic policy. For review of this issue, see Ter-Minassian (1996)

⁹ For an overview of East Asian urban infrastructure priorities, see Yeu-Man Yeung (1996).

¹⁰ This statement is based on population registration figures from the Ministry of the Interior. The data are highly unreliable because people often do not register their new addresses when they move, which means that population in urban areas is undercounted, and overcounted in rural areas. In particular, these data undercount population in fast-growing areas with high in-migration.

¹¹ The lowest of the three latest projections from the UNFPA forecasts states that the world population growth will stabilize by 2040 at about 7.5 billion people, and then start to decline (United Nations, 1999).

¹² Rural population densities surrounding major East Asian cities in rice-growing areas are low only in a relative sense; population densities are often higher than in North American suburbia. However, in many East Asian countries, rural settlement is concentrated in villages; surrounding fields represent essentially green field sites.

¹³ Such cumulative shifts can be very significant over time. Bangkok, as is the case in many cities worldwide, has shortages of schools in many suburban areas, while surplus school plant exists in many inner city neighborhoods.

¹⁴ Interestingly, in periods of recession, small investments in property improvement may increase in East Asian cities such as Bangkok. These investments are at least partially driven by the availability and lower cost of labor, unemployed people making use of their time to improve their own properties, etc.

¹⁵ On a smaller scale, other functions shift very rapidly. For example the “yuppie” nightclub area, which occupies several large city blocks in Bangkok, quickly relocates, e.g., recently shifting from the Rama IX area to Suthisan.

¹⁶ For application of these concepts to a national system, see the classic textbook in this area, Bahl (1992). Also see Litvack and Seddon (1999).

¹⁷ For an overview of the global decentralization movement, see Hommes (1996).

¹⁸ This literature is well summarized in an East Asian context in Brockman and Williams (1996). See the discussion of these concepts applied to China in State Reform Commission of the Economic Systems of the People’s Republic of China (1996).

¹⁹ A city-building approach to urban finance is put forth by Neilson (1997).

²⁰ The Bangkok Metropolitan Region (BMR) is the wider metropolitan region which includes BMA, plus the five rapidly urbanizing surrounding provinces of Samut Prakan, Pathum Thani, Samut Sakhon, Nonthaburi, and Nakhon Pathom.

²¹ For a description of Bangkok’s urban infrastructure functions, see Suwarnarat (1998).

²² The BMA has initiated an initial dialogue with the World Bank and relevant national agencies concerning the feasibility of issuing bonds, either on the domestic or international markets.

²³ The Regional Urban Development Fund is an on-lending facility that lends money, at a rate slightly below the Minimum Lending Rate, to creditworthy intermediate and small-sized cities outside the extended Bangkok region for public facilities. The fund is managed by the Government Savings Bank, and the initial capitalization of US \$30 million is from a World Bank loan.

²⁴ OECF is now part of the Development Bank of Japan.

²⁵ Sources of capital for the BTS are approximately as follows: Shareholder (Thai) Equity 34 percent; Thai borrowing (Siam Commercial Bank-led) 20 percent; International Borrowing (dollar-denominated) 39 percent, IFC (World Bank, dollar-denominated) 7 percent. Given the 1997 devaluation of the Baht and the fact that approximately 46 percent of debt is dollar-denominated, it will be difficult for the project to achieve its objective of full cost recovery, virtually unknown for an urban rapid transit system. (The BMA provided the right-of-way at no cost.)

²⁶ The data in Table 5 are the most recent available. Data on urban public capital expenditure during the first two fiscal years of the Eighth Plan (1997, 1998) is currently being compiled by the Urban Development Coordination Division of NESDB.

²⁷ For more detail on the land subdivision process in Thailand, see Archer (1991, 1996).

²⁸ For description and assessment of Bangkok’s recent development, see Webster (2000) and Kaothien and Webster (2000a, 2000b).

²⁹ The Organization for the Coordination of Mass Rapid Transit (OCMRT), located in the Prime Minister's Office, was established to coordinate mass transit systems in urban Thailand, particularly Bangkok.

³⁰ Sewer hookups would cost at least US \$200 per building/housing unit served.

³¹ These efficiency gains are not guaranteed—privatization needs to be undertaken within a developed regulatory framework. See Lee, Yok-Shiu (1997).

³² In 1991, a change in Thai law raised the price for expropriated land to close to market price. However, because land expropriation procedures are cumbersome and take considerable time in Thailand, government and state enterprises usually acquire land through negotiated purchase. Nevertheless, because the new law has set a much higher “fallback” price, changes in the official criteria to determine compensation levels for expropriated land have significantly raised the cost of land acquisition for public facilities.

³³ This situation exists despite the fact that land readjustment is a very transparent process. Maps of plots and land values are clearly presented, both before and after the process.

³⁴ Very densely populated areas of cities should be served by sewers, but benefits will only be realized if a building collector system is in place and hookup is mandatory. In the case of large, dense Chinese cities on critical rivers—such as Shanghai, Wuhan, and Chongqing on the Yangtze—such sewerage systems may be a justifiable priority. However, low- and medium-density urbanization in lower-middle and low-income East Asian cities should, in many cases, be served by other systems that will free up urban investment capital for higher priority uses.

³⁵ Although the author is no supporter of urban sprawl, studies comparing the infrastructure costs per household in high- and low-density areas, usually hold the technology/type of infrastructure variable constant, particularly by continuing to assume water-borne network sewerage systems. This may be an unfair comparison.

³⁶ NESDB suggested that the Bureau of the Budget consider budget allocations on an area (rather than just Ministry/Department) basis during the 8th Plan period. Nothing came of the proposal, perhaps because it was not technically developed.

Appendix 1

BMA'S SOURCES OF FUNDS FISCAL YEAR: 1995-99 Sorted by Budget Revenue of 1999

(Million baht)

SOURCE OF REVENUES	1995	1996	1997	1998	1999
A. Regular Revenue	17,000	20,400.00	24,200.00	26,400.00	24,000.00
Local Taxes	15,348.00	18,285.60	21,923.40	24,107.20	21,736.30
Rental from BMA Assets	1,019.74	1,443.10	1,536.77	1,543.79	1,522.79
Fee, Fine, Permits, and Service Charge	155.10	195.10	252.10	315.71	395.05
Income from Miscellaneous Activities	444.06	432.20	427.73	428.30	345.86
Income from Public Utilities and Enterprises	33.10	44.00	60.00	5.00	n.a.
B. Special Revenue	765.66	1,838.26	3,636.08	n.a.	n.a.
GRAND TOTAL REVENUES	17,765.66	22,238.26	27,836.08	26,400.00	24,000.00

Source: Budget Division, Office of The Permanent Secretary for The BMA

Note: n.a. = not available

Appendix 2

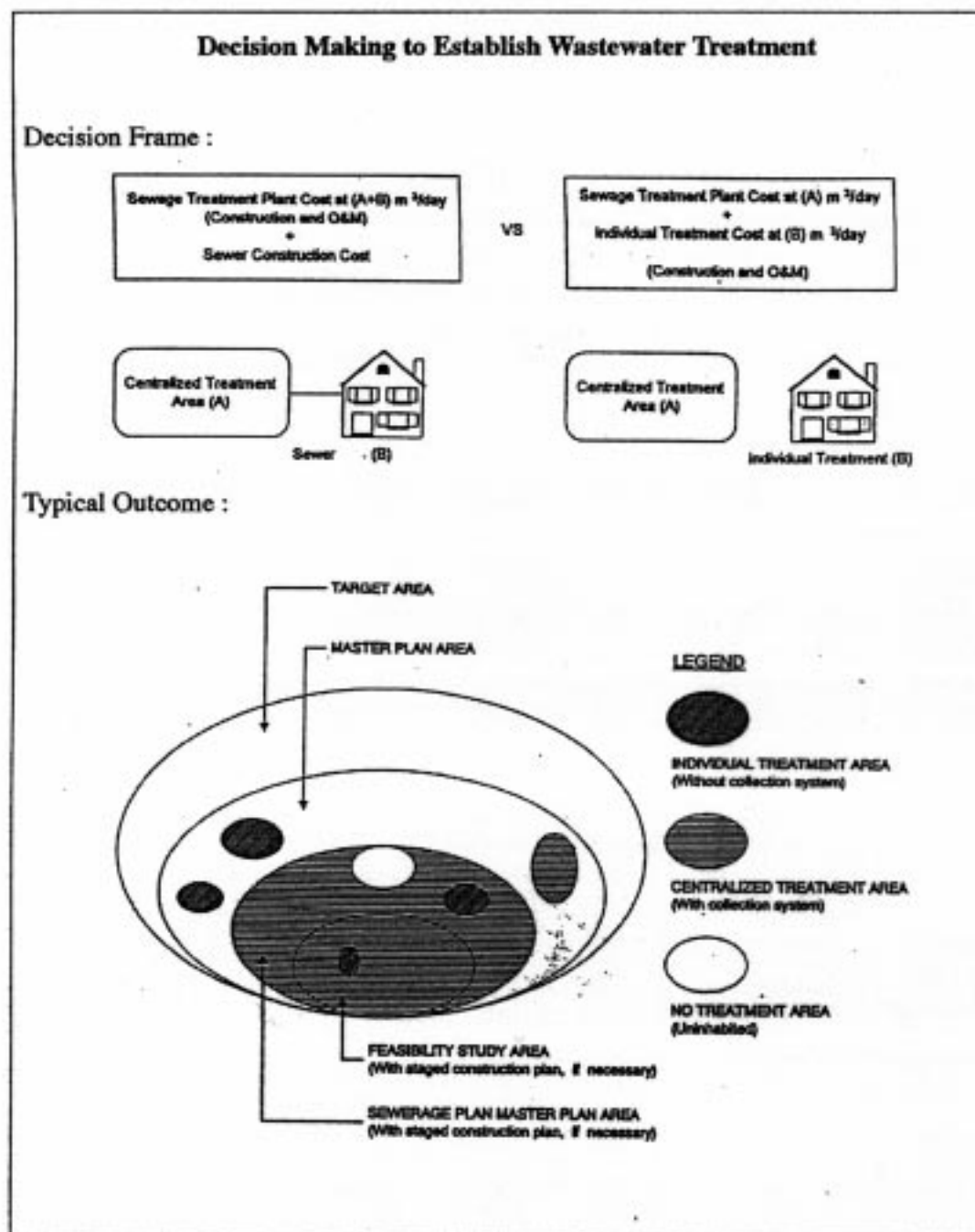
BMA'S BUDGET EXPENDITURE APPROPRIATION BY ACTIVITIES FISCAL YEAR: 1995-99 Sorted by Activities of 1999

(Million baht)

ACTIVITIES	1995	1996	1997	1998	1999
Public Works and Traffic	4,597.2	6,688.9	7,744.5	5,740.7	4,997.7
General Administration	3,947.2	3,350.2	3,729.5	4,950.1	4,432.4
Cleansing Services and City-Orderliness Operation	2,260.6	2,529.6	3,171.1	3,752.6	3,647.6
Public Health	2,174.1	2,194.9	2,574.3	3,586.6	3,628.8
Drainage and Wastewater Treatment	2,331.6	3,711.5	4,162.3	4,264.4	3,172.5
Education	801.5	810.6	1,244.2	2,484.4	2,231.9
Social Services and Development	887.8	1,114.4	1,574.2	1,621.2	1,889.1
Commercial of BMA	138.5	189.4	270.0	361.3	371.1
TOTAL	17,138.5	20,589.4	24,470.1	26,761.3	24,371.1

Source: Budget Division, Office of the Permanent Secretary for the BMA

Appendix 3



Source: JICA Advisory to BMA

References

- Archer, R.W., *Provision of Urban Infrastructure through Land Subdivision Controls in Thailand*, Human Settlements Division (HSD) Research Paper 26, Bangkok: Asian Institute of Technology, 1991.
- Archer, R.W., *Network Infrastructure for Sustainable Urban Development: Implementing the Formula $L + P + F + NI = SUD$* , HSD Research Paper 53, Bangkok: Asian Institute of Technology, 1996.
- Asian Development Bank, *The Bank's Urban Sector Strategy* (Draft), Manila: The Asian Development Bank, February, 1999.
- Bahl, R., *Urban Public Finance in Developing Countries*, New York: Oxford, 1992.
- Bahl, R., *Fiscal Policy in China: Taxation and Intergovernmental Fiscal Relations*, San Francisco: The 1990 Institute, 1999.
- Bangkok Metropolitan Administration (BMA) Department of Policy and Planning, *Statistical Profiles of BMA 1993, 1997, 1998, 1999*, Bangkok: BMA, 1993, 1997, 1998, 1999.
- Brockman, R., and Williams, A., *Urban Infrastructure Finance*, Manila: Asian Development Bank, 1996.
- Dowall, D., "A Second Look at the Bangkok Land and Housing Market?", *Urban Studies*, Volume 29, No 1 (1992).
- Hommes, R., "Conflicts and Dilemmas of Decentralization", *Proceedings of Annual World Bank Conference on Development Economics 1995*, Washington: World Bank, 1996.
- Innes, J. and Booher, D., "Metropolitan Development as a Complex System: A new Approach to Sustainability", *Economic Development Quarterly*, Volume 13, Number 2, May 1999.
- Itam, M., "Malaysia: Urban Infrastructure Financing", *Urban Infrastructure Development*, Nagoya: UNCRD, 1996.
- Kaothien, U. and Webster, D., "Country Report of Thailand", in Brockman, R., and Williams, A., *Urban Infrastructure Finance*, Manila: Asian Development Bank, 1996, Chapter 16.
- Kaothien, U., and Webster, D., *Globalization and Urbanization: The Case of Thailand*, Washington: World Bank, 1999 (Technical background paper for *Entering the 21st Century: World Development Report 1999/ 2000*).
- Kaothien, U. and Webster, D., "The Bangkok Region" in *Global City Regions*, London: Routledge, 2000a.

Kaothien, U., and Webster, D., “Globalization and Urbanization”, in Shahid, Y., and Wu, W., *Local Dynamics in an Era of Globalization*, Washington: World Bank, 2000b (forthcoming book chapter).

Lee, Yok-Shiu F., “The Privatization of Solid Waste Infrastructure and Services in Asia”, *Third World Planning Review*, 19(2), 1997.

Litvack, J., and Seddon, J., *Decentralization Briefing Notes*, Washington: World Bank Institute, 1999.

McMaster, J., *Urban Financial Management*, EDI, The World Bank/ UNCHS: Washington, 1991.

National Economic and Social Development Board and Norconsult, *A Spatial Development Framework for Thailand*, Bangkok: NESDB/Norconsult, 1997.

Neilson, L., *Improving the Financing of Metropolitan Areas*, OECD, 1997. (Paper presented to OECD/Sweden workshop on “Governing Metropolitan Areas: Institutions, Finance and Partnerships”, June 4-6, 1997 Stockholm, Sweden.).

Overseas Economic Cooperation Fund, “Supporting Urban Infrastructure in Developing Countries” (Chapter 1), in, *OECD Annual Report 1997*, Tokyo: OECD, 1997.

Ruland, J., *The Dynamics of Metropolitan Management in Southeast Asia*, Singapore: ISEAS, 1996.

State Reform Commission of the Economic Systems of the People’s Republic of China, et al, *International Workshops on Innovative Strategies for urban Infrastructure Financing in China: Proceedings*, Washington: World Bank, 1996.

Suwarnarat, Ksemsan, “Urban Infrastructure Development of Bangkok”, *Urban Infrastructure Development*, Nagoya: UNCRD, 1998.

Ter-Minassian, T., *Borrowing by Subnational Governments: Issues and Selected International Experiences*, Washington; IMF, 1996 (Paper on Policy Analysis and Assessment).

The Economist, “The Third Way: Business Partnerships Between the Public and Private Sectors Sound Like a Good Idea. They Have Not Proved so in Japan”, *The Economist*, June 12, 1999, pp. 74-75.

Trajano, D., “Country Paper on Philippine Urban Infrastructure Institutions Development”, *Urban Infrastructure Development*, Nagoya: UNCRD, 1996.

United Nations Department of Economic and Social Affairs, Population Division, *World Population Prospects: The 1998 Revision*, New York: United Nations, 1999 (Volume 1: Comprehensive Tables).

Von Einsiedel, N., “Overcoming Difficulties in Asia’s Infrastructure Development”, *Proceedings of ASEAN Association of Planning and Housing Tenth Convention*, Bangkok, December 1996.

Webster, D., *The Post-1984 Boom That Happened to Bangkok: Did the City Matter?*, Monograph (Dynamics of East Asian Urbanization Series), Asia/Pacific Research Center, Stanford, California: Stanford University, 2000 (forthcoming).

Yeu-Man Yeung, “Urban Infrastructure in Pacific Asia: Profile, Priorities and Prospects”, *Urban Infrastructure Development*, Nagoya: UNCRD, 1996.

The Urban Dynamics of East Asia

Project Discussion Papers

Douglass, Mike. East Asian Urbanization: Patterns, Problems, and Prospects. July 1998.

Ordering Information

Occasional Papers currently in print may be ordered at \$7.50 per copy (including postage and handling) and Working Papers and Discussion Papers at \$5.00 per copy through the Asia/Pacific Research Center. For further information, call (650) 723-9741 or fax (650) 723-6530.

Many of A/PARC's papers are also available for free in Adobe PDF format on the A/PARC website, at <http://aparc.stanford.edu>.

