

Greater Bangkok: A Solution Proposal for its Urban Governance Effectiveness

Veerayuth Chokchaimadoln

Institute of Public Administration and Public Policy, Rangsit University, Thailand

Email: weerayut@rsu.ac.th

Received: January 11, 2024

Revised: June 29, 2024

Accepted: June 30, 2024

Abstract

This paper reviews and asserts whether BMA should expand to cover the neighboring provinces as districts and become Greater Bangkok with more uniformity and more effective administrative governance. Bangkok Metropolitan Administration (BMA) has been facing the problem of urban sprawl including population density, traffic congestion, air pollution, waste management, infrastructure-related issues. Those burdens arise from five major Bangkok's neighboring provinces that are under regional administration separate from BMA.

The author studied to propose that to succeed in managing the metropolitan and ensure uniform effective public services, the governance of Bangkok Metropolitan should expand to cover its neighboring provinces: Pathum Thani, Nonthaburi, Samut Prakan, Samut Sakhon and Nakhon Pathom, and become Greater Bangkok. The proposed Greater Bangkok has two-tier management: Upper Tier of Executive Board and Lower Tier of provincial governing management. The Two-Tier government has two phases, the first starting in 2025 for five years and the second in 2030.

Keywords: Greater Bangkok, Urban Governance, Urban Sprawl, Public Policy, Thailand

Introduction

Bangkok, the capital of Thailand, positions its metropolitan to be the Capital of Asia in the next 20 years towards the direction of sustainable development (Bangkok Metropolitan Administration, 2014). Administratively, however, Bangkok Metropolitan has lacked uniformity and effectiveness, now that urban sprawl has been eclipsing Bangkok vicinity and its neighboring provinces. Given that, governance of the former and the latter is not only separate but also under different legal jurisdiction.

The capital is administrated by Bangkok Metropolitan Administration (BMA), an independent unit formed to govern urban areas under the Bangkok Metropolitan Administration Act, BE 2528 (1985). Meanwhile, its neighboring provinces belong to the regional and local administrations, designed to drive the development in local and rural areas under the State Administration Act, BE 2534 (1991) and local administration acts. This paper reviews and asserts whether BMA should expand to cover the neighboring provinces as districts and become Greater Bangkok with more uniformity and more effective administrative governance.

To the author, the issue is compelling because the lack of administrative uniformity and effectiveness has put greater burden on BMA, resulting in urban sprawl, population density, traffic congestion, air pollution, waste management and infrastructure problems. The difference is made up of commuters from adjacent cities who work in Bangkok. BMA, fully responsible for solving these problems, if aiming to success, is to stretch its action beyond BMA boundaries where the root cause partially lies.

Getting more relevant to the situation, BMA should be enlarged to include partial, if not all, areas of vicinity provinces as Bangkok's districts so that integrated strategic and operation plan for BMA and surrounding cities can be fully crafted to cope with various challenges facing BMA and its adjacent cities. For this to happen, paradigm shift is needed regarding BMA governance, from abiding by legitimacy by law only to looking at physical urban sprawl to neighboring provinces: Pathum Thani, Nonthaburi, Samut Prakan, Samut Sakhon and Nakhon Pathom.

In the past, BMA tackled urban problems, one after another, issue by issue, as particular problems arise. This has been done without reaching outwards to relevant adjacent areas in the vicinity of neighboring provinces that bear impacts and consequences. Major situations such as the great flood in 2011 and PM 2.5 air pollution in 2019 are evidences of a need to inevitably expand BMA boundaries and authorities of governance.

Enabling Greater Bangkok (Special Administrative Region) would better effectuate Bangkok governance and create better solutions to ease the burdens of Bangkok, with more than 10 million residents, non-residents, tourists, workers and commuters today (National Legislative Assembly, 2017, p.18).

This paper offers a proposal for expanding Bangkok Metropolitan boundaries to cover its neighboring provinces, partially if not entirely, to become Greater Bangkok that governs comprehensive relevant areas where responsible for urban development factors and the

consequences of urban sprawl issues. This is to enable administrative uniformity of BMA in solving urban problems.

Background

Thailand, officially the Kingdom of Thailand, is a Southeast Asia country. Located at the center of the Indochinese Peninsula, it covers an area of 513,120 square kilometers, and a population of over 66 million people at the 2022 census (DPA, 2023). Thailand is the world's 50th-largest country by land area, and the 22nd-most-populous country in the world. The capital and largest city is Bangkok, a special administrative area.

The country is bordered to the north by Myanmar and Laos, to the east by Laos and Cambodia, to the south by the Gulf of Thailand and Malaysia, and to the west by the Andaman Sea and the southern extremity of Myanmar.

Thailand is a constitutional monarchy and parliamentary democracy. It is a unitary state; the administrative services of the executive branch are divided into three levels by the Constitution of the Kingdom of Thailand, BE 2560 (2017) and the State Administration Act, BE 2534 (1991): central, regional and local. Thailand is composed of 76 provinces, which are first-level administrative divisions. In addition, there are also two specially governed districts: the capital Bangkok and Pattaya. Bangkok is at provincial level and thus often counted as a province. Each province is divided into districts and the districts are further divided into sub-districts. All provincial governors and district chiefs, which are administrators of provinces and districts respectively, are appointed by the central government (CIA, 2020).

Thailand has put the effectiveness of the state administration on top of the national agenda. Under the 2017 Constitution, the government is committed to “develop a system of administration of State affairs of central, regional and local administrations, as well as other State affairs in accordance with the principles of good public governance, provided that State agencies shall cooperate with and assist each other in performing duties, with a view to maximizing, for the benefit of the people, the efficiency of the administration of State affairs, provision of public services and expenditure of budget.” (Parliament of Thailand, 2017)

To understand decentralization and local authority in Thailand, it is essential to understand the state administrative structure (Nagai ed., 2008). The central administration system consists of the Cabinet, the ministries and the departments. Ministries are headed by ministers, who supervise full-time officials, including permanent secretaries and department director-generals.

The regional administration system (de-concentration) comprises provinces and districts. Central ministries, notably the Ministry of Interior (MOI), the Ministry of Agriculture and Cooperatives, the Ministry of Education, and the Ministry of Public Health, have their branch offices at provincial halls and district offices. They dispatch their officials to these field units. Even the departments of some of these ministries have their branch offices at such locations. In other words, regional administration in Thailand is in many ways nothing but an aggregation of the branch offices of central ministries and departments. These units are individual entities; provinces even have the status of a juristic entity. Provincial governors and district officers, who are MOI officials, have the statutory authority to direct and order government officials from other central ministries and departments at the provincial and district levels.

In exception, the branch offices of the Ministry of Finance, Ministry of Education and Ministry of Higher Education, Science, Research and Innovation are under direct control of their respective central Ministry. So are units of justice system, namely courts, attorney bureau and police bureau. Yet, governors direct government officials under the Ministry of Justice. The local administration is distinct from the other two systems. It is made up of some 7,850 local authorities nationwide, as of August 2020. These local authorities are placed under the control and supervision of provincial governors and district officers, who, along with the Minister of the Interior, have the authority to approve their annual budget plans at local regulations, dissolve local councils, and dismiss local councilors.

A key point of the local administration is the dual system of regional and local administrations. For the regional administration, central government officials are dispatched to provinces and districts. Some ministries, including the Ministry of Public Health, the Ministry of Agriculture and Cooperatives and the Ministry of Education, even assign their officials to the lower administrative units. A district is divided into sub-district, which are subdivided into villages. Every sub-district and village is headed by a headman. A village headman is elected by popular vote once every five years. A sub-district headman is elected from among the village headmen directly by the local residents in the sub-district, and serves for a five-year term.

In a sense, the sub-district and village headmen are the representatives of their respective constituencies. On the other hand, they also serve as agents of central government. Their duties range from communicating central government orders to the residents to

managing resident registration, maintaining public order, and even exercising quasi-judicial power. They are paid monthly allowances by the Ministry of Interior

Bangkok Metropolitan Region

Like other Asian nations, Thailand has faced a challenge of urban drastic changes in recent decades, particularly in the Bangkok Metropolitan Region (BMR).

The region may refer to a government-defined “political definition” of the urban region surrounding the metropolitan of Bangkok. It is defined as the metropolitan and the five neighboring provinces of Pathum Thani, Nonthaburi, Samut Prakan, Samut Sakhon and Nakhon Pathom. The BMR covers an area of 7,762 square kilometers (City Population, 2020).

Bangkok has seen rapid urbanization since its population reached two million in the 1960s. Since the 1980s, greater Bangkok’s built-up areas have spilled beyond Bangkok’s borders to neighboring provinces, initially to the north and south. Despite a general suburbanization trend, Bangkok remained centralized and the city core remained extremely dense until the early 2000s as heavy commuter traffic limited choices.

The countryside between once independent towns and the capital became ever more filled in, with the advent and expansion of urban rail transit, as well as cheap credit enabling automobile adoption by the working class. The outward push of suburbanization has intensified as park and ride lots near train stations have sprung up.

Bangkok has transformed into a region where traffic flows in all directions rather than simply to the central core, as it once did. Suburbanization has swallowed ever more fields and swamps, though even parts of Bangkok itself are not built-up. (*see Figure 1.*) The first areas to suburbanize were in Pathum Thani, Nonthaburi, and Samut Prakan provinces. Other areas more recently have agglomerated in Samut Sakhon and Nakhon Pathom.

Figure 1 Bangkok Metropolitan and its vicinity in 2022

Name	Type	Area (sq.km)	Populati on	Distric ts	Sub- distric ts	Municipaliti es	Villag es
Bangkok Metropolit an	Special Administrati ve Region	1,568.7	5,494,932	50	180	--	--

Pathum Thani	Province	1,525.8	1,201,532	7	6	29	529
Nonthaburi	Province	622.3	1,295,916	6	52	21	433
Samut Prakan	Province	1,004	1,360,227	6	50	21	396
Samut Sakhon	Province	872.3	589,428	3	40	14	290
Nakhon Pathom	Province	2,168	921,882	7	106	26	904

Pathum Thani is north of Bangkok. In many places, the boundary between the two provinces is not noticeable as both sides of the boundary are equally urbanized. Pathum Thani covers 1,525.8 square kilometers and had a population of 1,201,532 at the 2022 census. The province is divided into seven districts. The districts are further subdivided into 60 sub-districts and 529 villages. As of 2022, Pathum Thani has one Provincial Administrative Organization (PAO) and 29 municipalities. The municipality of Rangsit has administratively “city status”. Further nine have “town status” and 19 sub-district municipalities. The non-municipal areas are administered by 35 Sub-district Administrative Organizations (Pathum Thani Provincial Office, 2022).

Nonthaburi is northwest of Bangkok on the Chao Phraya River. In most parts it is as urbanized as the capital, and the boundary between the two provinces is nearly unrecognizable. Nonthaburi covers 622.3 square kilometers and had a population of 1,295,916 at the 2022 census. The province is divided into six districts. The districts are further subdivided into 52 sub-districts and 433 villages. There are one Nonthaburi Provincial Administrative Organization (PAO) and 21 municipalities in the province, as of 2022. The capital Nonthaburi and Pak Kret have city status. Further ten have town status and ten sub-district municipalities. The non-municipal areas are administered by 23 Sub-district Administrative Organizations (Nonthaburi Provincial Office, 2022).

Samut Prakan is south and east of Bangkok. The province covers 1,004 square kilometers and had a population of 1,360,227 at the 2022 census. Samut Prakan is divided into six districts. The districts are subdivided into 50 sub-districts and 396 villages. As of 2022, Samut Prakan has one PAO and 21 municipalities. The capital Samut Prakan has city status. Further seven have town status and 13 sub-district municipalities. The non-municipal areas

are administered by 27 sub-district administrative organizations (Samut Prakan Provincial Office, 2022). Samut Sakhon is southwest of Bangkok. The province covers 872.3 square kilometers and had a population of 589,428 at the 2022 census. Samut Sakhon is divided into three districts, which are further subdivided into 40 sub-districts and 290 villages. There are one provincial administrative organization and 14 municipalities in the province. The capital Samut Sakhon and Om Noi have city status. Two have town status and ten are sub-district municipalities. The non-municipal areas are administered by 23 sub-district administrative organizations (Samut Prakan Provincial Office, 2022).

Nakhon Pathom is a province in the Central region, located in the west of Bangkok. The province covers 2,168 square kilometers and had a population of 921,882 at the 2022 census. It is divided into seven districts. The districts are subdivided into 106 sub-districts and 904 villages. As of 2022, there are one provincial administrative organization and 26 municipalities in the province. The capital Nakhon Pathom has city status. Further five have town status and 20 sub-district municipalities. The non-municipal areas are administered by 89 sub-district administrative organizations (Nakhon Pathom Provincial Office, 2022).

Bangkok Metropolitan Administration

Bangkok is the capital and most populous city of Thailand. It occupies 1,568.7 square kilometers in the Chao Phraya River delta in central Thailand and has a population of 5,494,932 at the 2022 census (DPA, 2023). Over ten million people lived within the surrounding Bangkok Metropolitan Region at the 2022 census, making Bangkok the nation's primate city, dwarfing Thailand's other urban centers in both size and importance to the national economy.

Bangkok traces its roots to a small trading post during the Ayutthaya Kingdom in the 15th century, which eventually grew and became the site of two capital cities: Thonburi in 1768 and Rattanakosin in 1782.

In 1933, a year after the abolition of absolute monarchy and constitutional rule adopted, a new State Administration law was implemented. As a result, *Phra Nakhon* (Bangkok) and Thonburi provinces were introduced. With growing number of residents on both areas, the government founded city municipalities of Bangkok and Thonburi in 1933 and 1936 respectively to ensure that public goods and services were effectively provided for the benefits of the people.

In December 1971, the government passed a law to merge *Phra Nakhon* (Bangkok) and Thonburi provinces into a new entity called Bangkok-Thonburi Metropolitan (BTM) to respond

effectively to cope with urban drastic changes. However, BTM lasted only a year. The government dissolved BTM in December 1972 and established a special- administrative Bangkok Metropolitan, which adopted the local and urban administration system. The reason given was to tackle and solve growing urban problems effectively. Notably, the new entity retained the areas of Bangkok and Thonburi.

At present, the city of Bangkok is locally governed by the Bangkok Metropolitan Administration (BMA). Although its boundaries are at the provincial level, unlike the other 76 provinces, Bangkok is a special administrative area whose governor is directly elected to serve a four-year term. The governor, together with four appointed deputies, form the executive body, who implement policies through the BMA civil service headed by the Permanent Secretary for the BMA. In separate elections, each district elects one or more city councilors, who form the Bangkok Metropolitan Council. The council is the BMA's legislative body, and has power over municipal ordinances and the city's budget.

Bangkok is divided into 50 districts, which are subdivided into 180 sub-districts. Each district is managed by a district director appointed by the governor. District councils, elected to four-year terms, serve as advisory bodies to their respective district directors.

The BMA is divided into 21 departments (BMA, 2022), each overseeing different aspects of the administration's responsibilities. Most of these responsibilities concern the city's infrastructure, and include city planning, building control, transportation, drainage, waste management and city beautification, as well as education, medical and rescue services. The BMA has 437 schools and nine hospitals under its supervision. Many of these services are provided jointly with other agencies. The BMA has the authority to implement local ordinances, although civil law enforcement falls under the jurisdiction of the Metropolitan Police Bureau.

During the 1960s through the 1980s, Bangkok grew rapidly and exerts a significant impact on Thailand's politics, economy, education, media and modern society. However, the capital's rapid growth coupled with little urban planning has resulted in a haphazard cityscape and inadequate infrastructure. An inadequate road network, despite an extensive expressway network, together with substantial private car usage, have led to chronic and crippling traffic congestion, which caused severe air pollution in the 1990s. The city has since turned to public transport in an attempt to solve the problem. Five rapid transit lines are now in operation, with more systems under construction or planned by the national government and the

Bangkok Metropolitan Administration, but congestion still remains a prevalent issue. Interestingly, the issue is that mass transit such as public bus, subway, elevated train and taxi boat are not under BMA supervision.

Bangkok today is facing major chronic problems caused by the fact that its daytime population actually comprises fluctuating, if not ever-increasing, number of commuters who are citizens of the neighboring provinces. They all consume facilities and utilities of Bangkok each day but are paying taxes to their hometown provinces. Bangkok has been weakening from within.

Strengthening Bangkok and its vicinity thus becomes a top agenda of the National Strategy (2018-2037), which is the country's first national long-term strategy developed pursuant to the 2017 Constitution. It shall be pursued to ensure that the country achieves its vision of becoming "a developed country with security, prosperity and sustainability in accordance with the Sufficiency Economy Philosophy" with the ultimate goal being all Thai people's happiness and well-being.

The agenda is that:

"Expanding economic areas and cities by establishing new economic and innovation hubs in other parts of the country, in complementarity with Bangkok and vicinity; promoting special development; fostering economic development alongside urbanization; establishing specific economic towns for agricultural, industrial and service cluster promotion, with innovation inducing ecosystem as well as support from local educational institutions and all sectors, and geographical advantages available in each area; promoting the development of innovative cities designed to help propel economic growth in their region and attract more investment through the promotion of international innovation and cultural festival organization by the cities with academic assistance from local educational institutions." (Office of the National Economic and Social Development Council, 2019)

Relevant to the National Strategy (2018-2037), earlier in 2012, BMA had delivered the 20-year Development Plan for Bangkok Metropolis. The plan is derived from people's vision regarding the development of Bangkok in the next 20 years and translate of the plan into actions, which are expected to spur the growth of Bangkok in view of the integration of ASEAN Community and the various changes in Bangkok's own circumstances.

The Bangkok Vision 2032 states that:

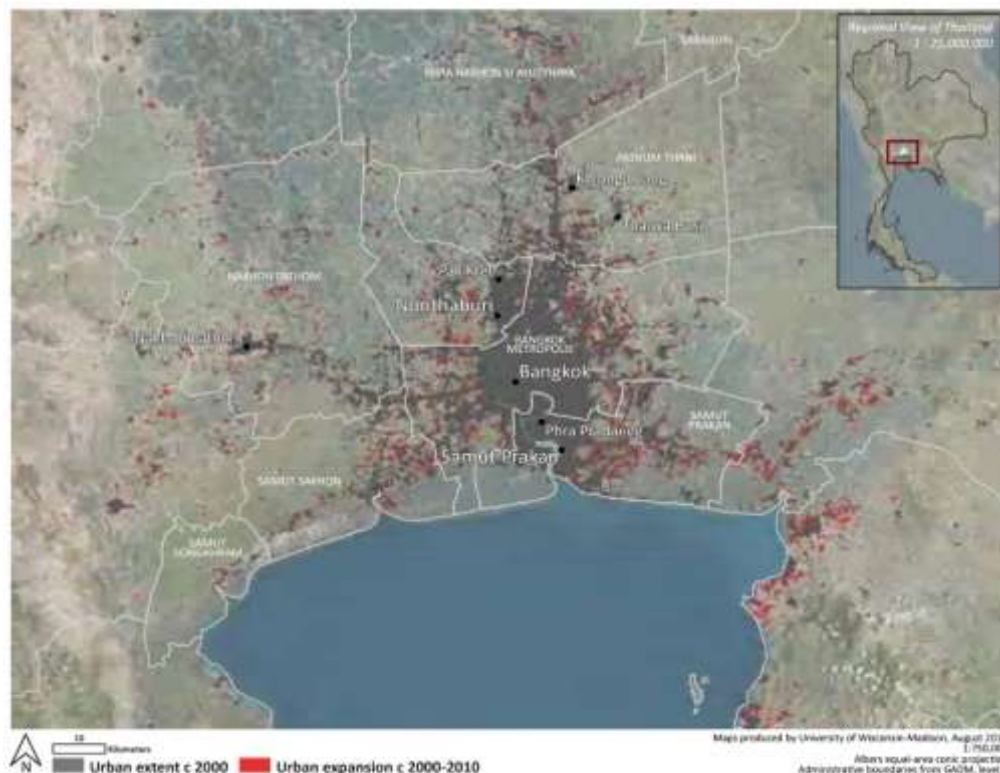
"In the next 20 years, Bangkok is hoped to become 'the Capital of Asia as Bangkok: Vibrant of Asia'. Bangkok will be regarded as a key driver of the economic and social sectors in ASEAN and Asia. When people around the world think of Asia, they will think of Bangkok"

as a city with prime service sector, as well as safety, beauty, convenience, and environment-friendliness. Still, Bangkok can maintain its uniqueness as a city with simplicity, charm, and liveliness". (BMA & CU, 2014)

In that sense, the physical structure of the city will be adjusted. From a capital with a single city center, Bangkok will be turned into a city with dispersed city centers both in the old town area and suburbs. The dispersed city centers will be interlinked by mass transit systems which are efficient and affordable while expansion of the old city center will be controlled.

Despite optimism of the Vision 2032, Bangkok has faced a challenge of urban drastic changes in recent years. In 2015, the World Bank (World Bank, 2015) reports that hundreds of urban areas in East Asia cross local administrative boundaries. About 350 urban areas in the region spill over local administrative boundaries. In 135 of these urban areas, no single jurisdiction encompasses even half of the total urban area. Poorly planned urban expansion that results in low densities and segmented land use increases the cost of extending infrastructure to outlying areas and can worsen traffic congestion and air pollution.

Map 1 Urban expansion in the Bangkok, Thailand, urban area, 2000-10 (World Bank, 2015. p.116)



The report states Metropolitan Fragmentation as a key development in East Asia including Bangkok urban sprawl in form of Spillover Urban Area (*see Map 1*). To illustrate, fragmentation of metropolitan areas refers to the spillover of urban growth from original boundaries into neighboring jurisdictions, or the merging of multiple cities into a single entity, while they continue to be administered separately.

Reforming Bangkok is also put on Thailand's stop agenda in 2014 as the National Legislative Assembly (NLA), acting like National Parliament, had systematically conducted a study on this critical issue. With Thailand government policy to have been reforming the country to becoming a developed country, according to a proposal by the NLA commission on local administration, its Bangkok Metropolitan capital has a lot to improve to meet global metropolitan standard.

The NLA study identified certain critical issues, which give a clear picture of problems and obstacles posing on Bangkok and its surrounding provinces.

An issue mentioned is that Bangkok population has increased and many are excluded from calculation database for expenses on public services. According to a study of the National Legislative Assembly published in 2017, Bangkok then had 5,363,378 population (making 7,839,816 with the vicinity.) This increased to 5,692,284 in 2014 (making 10,624,700 with the vicinity), and to 5,686,646 in 2017 (making 10,765,226 with the vicinity). People in the vicinity area commute or move to Bangkok for work regularly making a hidden population of 3,050,400 in the national census of 2010. Also, every year 19,367,482 foreigners come to Bangkok as tourists and residents (data as of 2015). These three groups of people in the city are not counted in the database for calculating public services expense (National Legislative Assembly, 2017).

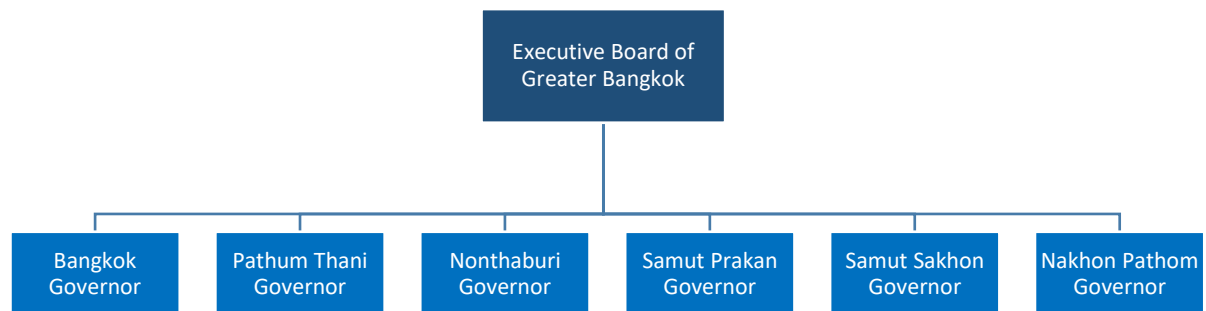
As the geosocial context of Bangkok has changed drastically, the capital is coping with critical challenges including drainage and hygiene, logistics and traffic, safety of life and assets, among others, which greatly impact planning to provide public services and activities. A need is there to reshape the administration policy, structure, governing laws and budgetary setting to effectively meet these challenges.

Recommendations

This proposal recommends the establishment of Greater Bangkok that agglomerates Bangkok Metropolitan, Pathum Thani, Nonthaburi, Samut Prakan, Samut Sakhon and Nakhon Pathom provinces. The management of Greater Bangkok is proposed in two phases starting

the first phase in 2025 for five years before the second phase begins in 2030. Greater Bangkok shall have Two-Tier governing system, Upper Tier and Lower Tier.

Figure 2 The proposed two-tier management of Greater Bangkok



For the first phase, as shown in Figure 2, Executive Board of Greater Bangkok sits at the Upper Tier level to supervise the management of each province within the boundary at the policy making level. Except for that Governor of Bangkok Metropolitan is elected, other provinces have appointed Governors as it is. The provincial Governors control the local management of their own at Lower Tier. The Executive Board of Greater Bangkok consists of the six Governors, chaired by Bangkok Governor.

In the second phase, Executive Board of Greater Bangkok remains of the Governor members. Yet, the latter shall be elected rather than appointed. This is to empower and further engage the people. As for Bangkok Metropolitan, current 50 district offices turn into municipalities whose executives are elected to manage Lower Tier responsibilities. The five neighboring provinces dissolve their provincial administrative organizations rendering the supervisory authority to the Executive Board of Greater Bangkok while having local administrative bodies of their own operate Lower Tier management and organizations

The policy to evolve Bangkok urban areas as such is not unprecedented but dating back to December 1971, when the government passed a law to merge *Phra Nakhon* (Bangkok) and Thonburi provinces into a new entity called Bangkok-Thonburi Metropolitan (BTM) to respond effectively to challenging urban drastic changes and later to December 1972 when the government established a special-administrative Bangkok Metropolitan, which adopted the local and urban administration system. The reason given was to tackle and solve growing urban problems effectively.

After 50 years of adopting BMA model, it is high time to shift to another phase of making BMA and its adjacent cities serving the people better. Larger as it would be, Greater Bangkok should have statutory authority and governance over many units and entities of consequential public need, such as mass transit, public utilities and infrastructure of well-being for all citizens.

Today situation of Bangkok urban challenges calls the Thai government to revisit the concept alike. The demand is to drive the capital of Thailand to becoming the Capital of Asia in the next 20 years towards the direction of sustainable development as the national strategy has it.

References

- Bangkok Metropolitan Administration (BMA). (2014). *20-year Development Plan for Bangkok Metropolis (2013-2032): Executive Summary*.
http://www.bangkok.go.th/main/backoffice/upload_editor/file/plan20y.pdf
- City Population. (2020). *Thailand: Bangkok Metropolitan Region*, 10 September 2023. from
<http://www.citypopulation.de/php/thailand-bangkokmetropolitan.php>
- Department of Provincial Administration (DPA). (2023). *Thailand's National Census 2022*.
<https://www.dopa.go.th/news/cate1/view8263>
- Nagai, Fumio, Nakharin Mektrairat, & Tsuruyo Funatsu, eds (2008). *Local Government in Thailand – Analysis of the Local Administrative Organization Survey*. Chiba: Japan External Trade Organization.
- Nakhon Pathom Provincial Office (NPPO). (2022). <http://www.nakhonpathom.go.th>
- National Legislative Assembly (NLA), 2017, Committee on Local Administration. *Report: Directions of Improving Administrative Structure of Bangkok Metropolitan Administration. Secretariat of the Senate*.
- Nonthaburi Provincial Office (NTPO). (2022). <http://nonthaburi.go.th/en>
- Office of the National Economic and Social Development Council (ONESDC). (2019). *(Unofficial Translation) National Strategy (2018-2037)*. <http://nscr.nesdb.go.th/wp-content/uploads/2019/10/National-Strategy-Eng-Final-25-OCT-2019.pdf>
- Parliament of Thailand (PT). (2017). Section 76. *(Unofficial Translation) Constitution of the Kingdom of Thailand, BE 2560*. https://cdc.parliament.go.th/draftconstitution2/ewt_dl_link.php?nid=1460&filename=index

- Pathum Thani Provincial Office (PTPO). (2022). <http://eng.pathumthani.go.th>
- Royal Thai Government Gazette. (1985). *Bangkok Metropolitan Administration Act*, BE 2528.
- Royal Thai Government Gazette (1985). *State Administration Act*, BE 2534.
- Samut Prakan Provincial Office (SPPO). (2022). <http://www.samutprakan.go.th>
- World Bank. (2015). *East Asia's Changing Urban Landscape: Measuring a Decade of Spatial Growth. Urban Development Series*. Washington, DC: World Bank.
doi: 10.1596/978-1-4648-0363-5.