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AND DEVELOPMENT**

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Hairul Nizam Ismail

**CONTEMPORARY URBAN LIFE
AND DEVELOPMENT**

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Ariva Sugandi Permana
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Foreword

Dean of Faculty of Engineering
Universitas Sebelas Maret

First of all, I would like to express my gratitude to the contributors and the editors who made the publication of this book possible. This book, **Contemporary Urban Life and Development**, is essential as it provides a valuable point of view from the perspective of the durability of an effort for an international collaboration of our universities. The idea of the collaborative book arose during another collaborative event of the workshop of joint publication in July 2018 held in Universitas Sebelas Maret, Surakarta. Even though it is not an easy process, all the contributors and editors, from three different countries are successfully able to publish the work.

For the last few years, several collaborative efforts have been initiated among UNS, UTM, and KMITL. Collaboration meetings, summer school, guest lectures, a joint workshop for publication, and currently also working on the first international conference ICoPS 2019 (International Conference of Planning towards Sustainability) that will be held on 6-7 November 2019 in Surakarta. All the efforts, including the book, demonstrate that all the stakeholders keep up the excellent works, and show their commitment towards sustainable cooperation.

This book provides valuable insight into contemporary problems and a way forward in urban and regional planning, particularly from ASEAN-region perspective. The book discusses the regional-wide challenges of planning related to unprecedented urban population growth to the idea of

innovative tools at a lower scale of planning: neighborhood and community, also the importance of local wisdom for planning. The book also brings to the front the role of the urban village, street vendors, building use control, collaborative capacity, modes of transport, sustainable development, and the emerging technological use, in the contemporary context of urban and regional planning.

Lastly, I believe that the cooperation among the three universities, UNS, UTM, and KMITL, will continuously flourish over time and will bring significant benefits for all universities for sharing knowledge, strengthening academic capacity, as well as widening the universities' network.

Dr. techn. Sholihin As'ad, M.T.

Dean Faculty of Engineering, Universitas Sebelas Maret

Foreword

Dean of Faculty of Built Environment and
Surveying
Universiti Teknologi Malaysia

The Contemporary Urban Life and Development Book offers compilation of chapters with recent topic related to urban planning paradigm in Nusantara Archipelago within the context of three neighboring countries, namely Indonesia, Malaysia and Thailand.

Today, these countries are facing complex, rapid and dynamic urbanization process. Thus, production of this book chapter by experts in urban planning education from these countries is timely. It is hope that the views from experts from these three institutions, UNS, UTM and KMITL will publication contribute to the expansion of body of knowledge in contemporary issues, challenges and new ideas related to urban problems. This book chapter offers readers with multi-discipline urban planning topics covering three main themes and 13 interesting contemporary topics.

This book initiated by group of writers and researchers from UNS, UTM and KMITL is a first collaboration in joint publication between the most prominent planning school and faculties offering urban planning program from these three countries. It is my sincere hope that the readers will be able to go deep into the results of the work from the research teams who have collaborated together to produce the writing for this

book and found it useful as part of the learning progress in this interesting discipline.

The first theme relate to Urban Planning and Spatial Planning (4 topics), second themes discusses Urban Design and Conservation (3 topics) and the third theme, which is associated with Urban Development and Sustainability covers 6 topics.

Thank you and enjoy your reading!

Prof. Dr. Mohd Hamdan Haji Ahmad

Dean

Faculty of Built Environment and Surveying

Universiti Teknologi Malaysia

Foreword

Dean of Faculty of Engineering
King Mongkut's Institute of Technology
Ladkrabang, Bangkok, Thailand

It is my great pleasure to welcome a first collaborative Book Chapters prepared in collective and collegial manners by Academic Staffs of the Department of Civil Engineering, Faculty of Engineering, King Mongkut's Institute of Technology Ladkrabang, Thailand; the Urban and Regional Planning Program, Faculty of Engineering, Universitas Sebelas Maret, Indonesia; and the Department of Urban and Regional Planning, Faculty of Built Environment and Surveying, Universiti Teknologi Malaysia.

By observing the institutional background of the collaborators, we can expect that this Book Chapter contains various interests of the authors particularly in the field of planning and sustainability, as reflected in the title of Book Chapter: **Contemporary Urban Life and Development**. In my opinion, when well-being of urban citizens becomes the goal of urban life and urban development, the support of engineering disciplines is unavoidable. Therefore, **Engineering for Sustainable Society** could be a potential theme of next collaborative Book Chapters. I certainly hope.

I hope this good culture of collaboration among three higher education institutions in three countries can be expanded to

more collaborators in more ASEAN member countries, within the spirit of ASEAN and mutual interests of the institutions.

Thank you to all contributors.

Assoc. Prof. Dr. Komsan Maleesee
Dean, Faculty of Engineering
King Mongkut's Institute of Technology Ladkrabang
Bangkok, Thailand.

Preface

Looking at the lengthy and tiring process of the preparation of this book chapter, we can self-proclaim that this is a historical accomplishment of the academic staffs of the Urban and Regional Planning Program, Faculty of Engineering, Universitas Sebelas Maret (UNS), Surakarta, Indonesia, Department of Urban and Regional Planning, Faculty of Built Environment and Surveying, Universiti Teknologi Malaysia (UTM), and Department of Civil Engineering, Faculty of Engineering, King Mongkut's Institute of Technology Ladkrabang (KMUTL), Bangkok, Thailand.

The idea of this book was thrown by Dr. Sholihin As'ad, Dean of Faculty of Engineering, Universitas Sebelas Maret, during the occasion of collaborative workshop between UNS-UTM in 2018, as he wanted to see a very clear milestone of the workshop, beside journal publications, which is usually taking time to prepare up until publication. On the other hand, book chapter has no very stringent and specific requirement to publish. The workshop participants accepted the challenge by immediately discussing the timeline to implement the publication of book chapter.

The book brings the general theme of sustainable development, with specific theme, as exhibited in the title of the Book, Contemporary Urban Life and Development. The additional word of 'contemporary' was introduced for the reasons that the world is changing rapidly, and the essence of discussion may not be able to catch up this rapid change.

The chapters have been proofread and peer reviewed to maintain minimum standard of academic writing. The editors have upheld the editorial works to the best of they could do. However, any shortcoming of the book may still be possible.

Ariva Sugandi Permana
Paramita Rahayu
Hairul Nizam Ismail
Editors

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The Growth and Distribution of Cities in Java, Indonesia

Paramita Rahayu

Fadjar Hari Mardiansjah

Introduction

Indonesia is the fourth most populous country in the world. Based on the last census in 2010, the country's population was 237.6 million of which 49.8% is categorized as urban population. The archipelago covers a land area of 1,860,360 km² and is made up of 17,508 islands, including the five largest islands: Kalimantan or Indonesian Borneo (571,509 km²), Irian Jaya or Indonesian Papua (424,500 km²), Sumatra (486,064 km²), Sulawesi or Celebes (193,649 km²), and Java (130,045 km²). In addition, Indonesia also has two archipelago regions, i.e., Bali and Nusa Tenggara or the

Small Sunda Islands (67.632 km²), and Maluku or Moluccas (92.310 km²). The capital of the republic is Jakarta, located on Java's northwestern coast.

Indonesia has experienced a rapid urbanization process and its urban population has grown rapidly for in the last several decades. Although this growth rate has decreased from nearly 6% annually in the 1970s to less than 3.5% in the 2010s, the absolute increase in urban population rose from about 1.3 million per year in the 1970s to more than 3.5 million in 2010s. As a result, Indonesia's urban population exploded from only 15.48 million in 1961 (BPS, 1962), at the time of the first national census since independence, to 118.3 million in 2010 based on the latest national population census (BPS, 2012). This census confirmed that Indonesia has entered the group of countries with an urban population of more than 100 million comprising China, India, the United States, Brazil, Japan, and the Russian Federation. In 2015, the Intercensal Population Survey estimated that Indonesia's number of urban dwellers increased to 135.6 million (BPS, 2015). A chronological analysis shows that the urban population needed about twenty years to double from 15 million in 1961 to 30 million in the 1990s and then doubled again in thirty years from 60 million to 120 million in the 2010s.

Following the rapidly growing urban population, the level of urbanization in Indonesia also increased sharply. The proportion of people living in cities to the total population increased from 15.95% in 1961 to 41.9% by the end of the 20th century and then rose to 49.8% based on the 2010 census.

Jones and Mulyana (2015) stated that the urban population exceeded 50% of the country's total population for the first time in 2012. In 2015, the Intercensal Population Survey provided the latest estimation that the urban population was 135.61 million, which represents 53.1% of a total of 255.18 million Indonesians. Therefore, Indonesia is now can be considered as an urbanized country, as its urban population has more than its non-urbans.

Java is the smallest among the five largest Indonesian islands. It covers less than 7% of the total land area of the country. Furthermore, its land area of about 130 thousand km² makes Java the 13th largest island in the world. With a population of 145.0 million, Java has a population density of about 1,115 inhabitants per km², making it the most densely populated large island in the world. In addition, similar to the total population, Indonesia's urban population is distributed unevenly. As shown in Table 1.1, the population density of Java is much higher than that of other regions, which is a sign that the urbanization process in Indonesia is concentrated in Java. These features distinguish Java from other large islands in Indonesia as well as in the world.

The urbanization process in Indonesia also increased the number of cities and towns, influenced by the political context in the new decentralization era that provides the political framework to create new cities. Meanwhile, towns are mostly influenced by the Indonesian urbanization process that takes place at the regional level and increases in the concentration of urban dwellers in urban centers in many regions. In this context, this chapter differentiates between

cities and towns not only in terms of the population size of urban centers, where cities are usually larger than towns but also from the availability of urban development management institutions in cities, which is absent in towns.

The creation of new cities or *daerah kota* that is usually referred to as *kota* (urban district) and new *kabupaten* (non-urban district), is an administrative and political process because the creation of the districts requires new local governments. It is also considered part of the country's democratization process (Fitriani et. al., 2005); therefore, most new *kabupaten* and *kota* were created after the year 2000, the starting year of new decentralization era and the democratization process in Indonesia. In Indonesian, the process is known as *pemekaran*, which literally means 'blossoming' (Fitriani et. al., 2005). However, Booth (2011) prefers to call it 'splitting' since the creation of new *kota* or *kabupaten* 'splits' the new *kabupaten* or *kota* from their *kabupaten induk* or 'mother *kabupaten*'. The number of *kota* in Indonesia has increased from 49 *kota* in 1961 to 63 in 2000 and 94 in 2015. Most cities created after 2000 are located outside Java, as Java has only six new cities, while Sumatera and Other Island Regions have twelve new cities each.

This chapter will analyze the distribution of cities in Java, the most densely populated and most urbanized island in Indonesia from 2000 to 2015. The cities are represented by municipal cities in Indonesia and are defined as *daerah kota* (cities or urban regions). However, Jakarta, which has a special provincial status, is considered as a city since the province has become a city-province for decades. The

analysis employs statistical data, collected from the national census in 2000 and the Intercensal Population Survey 2015. The analysis also considers regional features and spatial patterns, before formulating the implications for Indonesia's future urban development. The analysis starts at the year 2000 considering this year was the start of the new decentralization era in Indonesia, which provides the political framework for the creation of new cities.

Following the introduction, the chapter reviews the literature on the growth and distribution of cities with a focus on developing countries. Then, the chapter analyzes the growth and distribution of cities in Indonesia followed by an elaboration of the growth and distribution of cities in Java, as the base for the implications for the future urban development and urbanization process. Finally, the chapter presents conclusions and recommendations.

Table 1.1 Distribution of the urban and total population in Indonesia, 2015

Regions	Area (km ²)	Urban Population	Urban Population Contribution	Total Population	Level of Urbanization	Population Density (people/km ²)
Java	130,045	90,825,696	66.97%	145,013,573	62.63%	1,115.10
Sumatra	486,064	22,848,775	16.85%	55,198,752	41.39%	113.60
Other Islands	1,349,600	21,938,615	16.18%	54,969,819	39.91%	40.70
- Sulawesi	193,649	6,892,367	5.10%	18,702,298	36.85%	96.60
- Kalimantan	571,509	6,864,938	5.10%	15,320,017	44.81%	26.80
- Nusa Tenggara	67,632	5,998,627	4.40%	14,091,466	42.57%	208.40
- Papua	424,500	1,191,056	0.90%	4,011,907	29.69%	9.50
- Maluku	92,310	991,627	0.70%	2,844,131	34.87%	30.80
Indonesia	1,965,709	135,613,086	100.00%	255,182,144	53.14%	129.80

Sources: Calculated from the *Intervensal Population Survey (SUPAS) data, 2015*.

The growth and distribution of cities: perspectives from previous studies

Cities are crucial nodes in urban systems because economic activities concentrate here (Soo, 2005). As such, cities not only have the potential to expand the urbanization process to their neighboring region and thereby creating new cities, but cities also experience rapid population growth within their own boundaries (Fan, 2013). Cordoba (2008) defines the two types of evolution of urban systems as the extensive and the intensive margin of urban growth. The former creates a more even distribution size of cities, while the latter produces an unequal distribution (Eaton and Eckstein, 1997).

Describing and explaining the size and the growth of cities is an important focus of research of urban systems (Fan, 2013; Brakman et al., 1999; Fang, Pong, and Liu, 2017). Huang et al (2015) argued that appropriate and consistent definitions of urban areas or population, as well as consistency of data over time, are crucial to a robust empirical study and analysis of city size distribution. Reed (2002) argued that the distribution of city size shows a pattern of regularity across countries (or regions) and periods of time. In this context, global studies on city size distribution suggest that middle-rank cities are dominant, and the development of small and medium-size cities worldwide is increasing, with limited agglomeration influence of metropolis (Fang, Pong, and Liu, 2017). Nevertheless, more studies are required to explain this regularity (Reed, 2002).

The urban population in developing countries increased rapidly during the last decades. However, most research on

city size distribution has focused on developed countries (Anderson and Ge, 2004). Western experience claims that the vertical and horizontal growth of cities is influenced mostly by economic factors (Eaton and Eckstein, 1997; Fan, 2013). Even though the connection remains debatable, previous studies have linked city size and distribution with economic development, as for example, Alperovich (1993) in Krakover (1997) who claimed that a high degree of economic development will foster urban dispersal, while GDP per capita growth rates are positively associated with the increasing urban primacy (Mera, 1973 in Krakover, 1997).

Yet, studies in developing countries claim that the increased population concentration cannot be proved to have a relation with economic development (Fan, 2013; Ye and Xie, 2012). Several studies claim that institutional factors such as government policies are important for explaining city size distribution in developing countries, particularly for those with strong centralization policies (Fan, 2013). As such, the distribution and growth of cities are predictable for countries with strong government control (Bosker et al., 2008). China offers a clear example of the influence of a centralization policy to city size distribution since Chinese cities have steadily evolved and expanded over time (Ye and Xie, 2012; Anderson and Ge, 2004). This is evidenced by the last four decades when nearly all of China's ten largest cities have remained the same, and they are spread over China's eastern, western, northern, and southern regions. Each region and these 10 large cities have important administrative and political functions, or host large scale strategic industrial activities and receive high levels of foreign direct investment.

Furthermore, Ye and Xie (2012) explain that regional development across China demonstrates different results of development in accordance with government policies implemented in those regions. For instance, regions supported by rural industries experience bottom-up urbanization, leading to evenly distributed city sizes. Regions that have important political functions and receive strong financial support from the central government undergo rapid urbanization and generate urban primacy. Regions with economic reform policies can create even growth across the region leading to the growth of small and medium-size cities.

Soo (2005) revealed more types of city size distribution from his cross-country study, i.e., countries with an unstable political situation tend to exhibit primacy and uneven city size distribution because the urban population prefers to live in large cities. Factors such as a country's size, measured by population and land area also influence the dynamics of city size distribution; even though Soo (2005) argued that these factors are less significant than political factors. Meanwhile, a Brazilian study of panel data of city size and growth for three decades suggests that the growth of cities is independent of their size (Resende, 2004). However, as this study is an initial effort, more studies are needed to explain the growth of cities in Brazil in more detail (Resende, 2004).

The development of cities in Indonesia

As indicated in the context of developing countries, institutional and political factors influence the growth and distribution of cities (Ye and Xie, 2012; Bosker et al., 2008;

Soo, 2005). This section of the chapter will elaborate on the growth and distribution of cities in the first fifteen years after Indonesia implemented decentralization policies, i.e., from 2000 to 2015.

In the new decentralization era, the number of Indonesian cities grew from 63 in 2000 to 94 in 2015 (see Table 1.2). One important feature is that most Indonesian cities are categorized as small and medium-size cities based on their populations, i.e., cities with a population of fewer than 500 thousand inhabitants in every city. Furthermore, most large cities, i.e., cities with a population of over 500.000 inhabitants are located in Java. About half of Indonesia's large cities are located on this most densely populated and most urbanized island in the country. Until 2015, there were only 13 cities with more than one million inhabitants and 14 large cities out of a total of 94 cities in Indonesia. Most of these cities are located in Java, while most of Indonesia's small and medium-sized cities are found outside Java.

The dynamics of Indonesia's twenty largest cities highlight the increasing prominence of cities in Java. Table 1.3 lists the 20 largest cities and shows that the population range of the twenty largest cities has increased from 473.000-8.4 million in 2000 to 651.139 to nearly 10 million urban dwellers. The number of cities in Java in the list increased from ten in 2000 to eleven in 2015, even though Surakarta, one of the Javanese cities ranked 19th in 2000, dropped from the list in 2015. However, two other Javanese cities (South Tangerang and Tasikmalaya) replaced cities from outside Java (Banjarmasin and Denpasar) in 2015.

**Table 1.2 Development of Cities in Indonesia,
from 2000 to 2015**

	Java	Indonesia
In 2000:		
Number of cities	24	63
Population of largest city	8,384,853	8,384,853
Population of smallest city	116,000	23,654
Total urban population	23,512,343	
Urban primacy	3.3	3.3
Median	282,476	242,211
Average	979,681	595,526
Cities with a population > 1,000,000	7	10
Cities with a population of 500,000 to 1,000,000	2	8
Cities with a population of 300 - 500 thousands	2	8
Cities with a population of 100 - 300 thousands	13	30
Cities with a population < 100 thousands	0	7
In 2015:		
Number of cities	30	94
Population of largest city	9,963,129	9,963,129
Population of smallest city	124,912	38,077
Total urban population	31,558,534	
Urban primacy	3.5	3.5
Median	397,580	237,542
Average	1,051,951	587,234
Cities with a population > 1,000,000	8	13
Cities with a population of 500,000 to 1,000,000	6	14
Cities with a population of 300 - 500 thousands	4	12
Cities with a population of 100 - 300 thousands	12	46
Cities with a population < 100 thousands	0	9

Sources: Calculated from the 2000 Census and 2015 Intercensal Population Survey.

Table 1.3 The Development of Indonesia's Largest Cities, from 2000 to 2015

No	In 2000				In 2015			
	Cities	Location	Population	No	Cities	Location	Population	
1	Jakarta Special Capital Region	Java	8,384,853	1	Jakarta Special Capital Region	Java	9,963,129	
2	Surabaya	Java	2,588,816	2	Surabaya	Java	2,805,906	
3	Bandung	Java	2,141,837	3	Medan	Sumatra	2,465,469	
4	Medan	Sumatra	1,899,327	4	Bekasi	Java	2,381,053	
5	Bekasi	Java	1,639,286	5	Bandung	Java	2,339,463	
6	Palembang	Sumatra	1,441,522	6	Makassar	Sulawesi	1,651,146	
7	Semarang	Java	1,345,065	7	Depok	Java	1,631,951	
8	Tangerang	Java	1,311,746	8	Semarang	Java	1,621,384	
9	Depok	Java	1,146,055	9	Tangerang	Java	1,566,190	
10	Makassar	Sulawesi	1,091,643	10	Palembang	Sumatra	1,548,064	
11	Malang	Java	749,768	11	South Tangerang	Java	1,219,245	
12	Bogor	Java	743,478	12	Bandar Lampung	Sumatra	1,166,761	
13	Bandar Lampung	Sumatra	743,109	13	Batam	Sumatra	1,029,808	
14	Padang	Sumatra	711,351	14	Bogor	Java	982,469	
15	Pekanbaru	Sumatra	582,240	15	Pekanbaru	Sumatra	872,271	
16	Banjarmasin	Kalimantan	532,556	16	Padang	Sumatra	872,271	
17	Denpasar	Bali	522,785	17	Malang	Java	808,945	
18	Samarinda	Kalimantan	521,471	18	Samarinda	Kalimantan	752,845	
19	Surakarta	Java	488,834	19	Tasikmalaya	Java	678,027	
20	Pontianak	Kalimantan	473,000	20	Pontianak	Kalimantan	651,139	

Sources: Calculated from the 2000 Census and 2015 Interensual Population Survey.

On the other hand, some cities outside Java have increased in size. Namely, Medan (Sumatera) is now ranked third, replacing Bandung which dropped to fifth place. Makassar (Sulawesi) has increased to sixth place replacing Palembang (Sumatera), which dropped to tenth place. Bandar Lampung (Sumatera) and Batam now have over a million inhabitants and rank twelfth and thirteenth respectively, replacing Bogor (Java).

The development of cities on Java

In terms of the development, urbanization process, and the growth of its cities, Java has very distinct features; it is the most densely populated island and has the largest urban population in Indonesia. It is also the island with most cities, i.e., 24 in 2000, a number that increased to 30 cities in 2015. Indonesia's largest cities are also concentrated in Java as in 2015, eight out of thirteen cities with a population over one million are located in Java. The island's distinct characteristics are also evident from its new cities, which all have a population of more than 500 thousand inhabitants. Moreover, one of the new cities had over one million inhabitants when it was created, i.e., South Tangerang, located adjacent to Jakarta. The city was created by splitting from *Kabupaten Tangerang*, a non-urban region bordering Jakarta. South Tangerang can be considered as an extension of Jakarta's urban development.

At least two intertwining factors distinguish Java from other regions. The first is Java's greater population size compared

to other regions in Indonesia. Hugo et al. (1987) estimated that Java has housed about 30 to 50 % of Indonesia's total population in the early 1600s. This larger population size is attributed to the island's geography as Indonesia's most fertile large island. From a toponymic point of view, the name of Java and/or "*Jawa*" (the Indonesian spelling of Java) comes from the Sanskrit word of "*Yava*", which means seed, grain, or rice. Therefore, Java's fertile lands facilitated the concentration and growth of a large population on the island. The proportion of the national population increased to about 60 to 70 percent in the 1800s after important regional infrastructure improvements (Hugo et al., 1987). After this development, Java represented 72.2% of the total population of the *Nederlands-Indië* in 1900 (Hugo et al., 1987), the name of Indonesia in the colonial era. Afterwards, the proportion started to decrease to 71.2% in 1920 and 68.7% in 1930 according to two censuses in the colonial era (Hugo et al., 1987).

The second factor is Java's superior infrastructure. The island was home to seaports before the arrival of European colonial power and was the first island to receive a regional road network. From 1808 to 1811, Herman Willem Daendels, the Dutch Governor General at the time, introduced new regional road throughout Java known as "*de Grote Postweg van Java*" or the "Great Post Road" of Java (Nas and Pratiwo, 2002). The road connected Java's western and eastern parts, and links the large cities of Java, like Batavia (now Jakarta), Surabaya, Bandung, Semarang, Yogyakarta, and Surakarta. This infrastructure development also benefitted secondary

cities in many parts of the island like Bogor and Cirebon in West Java, Tegal, Pekalongan, Salatiga and Magelang in Central Java, and Madiun and Kediri in East Java. Today, the road has been upgraded and is the main regional road in Java. Its introduction in the early 1800s also allowed for more structured regional economic development in terms of plantations that were widely developed, especially in the northern parts of Java. In 1867, Java got a railway transportation system, which initially developed separately in the western, central, and eastern parts of Java for transporting the products of the plantations (Hugo et al., 1987). Between 1880 and 1900, the system was rapidly developed into an integrated system connecting all of Java, enabling Batavia (Jakarta), the colonial capital, to replace Surabaya as the largest city of the island at the beginning of the 20th century (Hugo et al., 1987).

In the contemporary era, one of the metropolitan in Java is Jakarta, Indonesia's largest city and capital. As shown in Table 1.4, the city had a population of 8.4 million in 2000, which increased to 9.9 million in 2015 (excluding the Administrative District of Thousand Islands, the non-urban region in the Province of DKI Jakarta). The city is located on a bay on the northwestern coast (see Figures 1). The city was established as the port city of Sunda Kelapa of the Sunda Kingdom in the 4th century and was renamed Batavia when it functioned as the capital of the Dutch East Indies. The name was changed to Djakarta during the Japanese occupation from 1942 to 1945. Its spelling was changed into Jakarta when Indonesia applied a new spelling system in

1972. Today, Jakarta has a special provincial administrative status and is made up of five cities (North, West, South, East, and Central Jakarta) and one administrative *kabupaten* of the thousand islands region (*Kepulauan Seribu*) in the Jakarta Bay.

On Java, large cities with 500 thousand to one million inhabitants are the city type that has increased most, from two cities in 2000 to six in 2015 (see Table 1.4). Three of the four new cities, i.e., Tasikmalaya (West Java), Serang (Banten) and Cimahi (West Java), were created by the splitting from large urban centers in their mother *kabupaten*. Meanwhile, the other additional large city was Surakarta, which grew from a small city type to the large one as its population increased from 489 thousand inhabitants in 2000 to 552 thousand in 2015.

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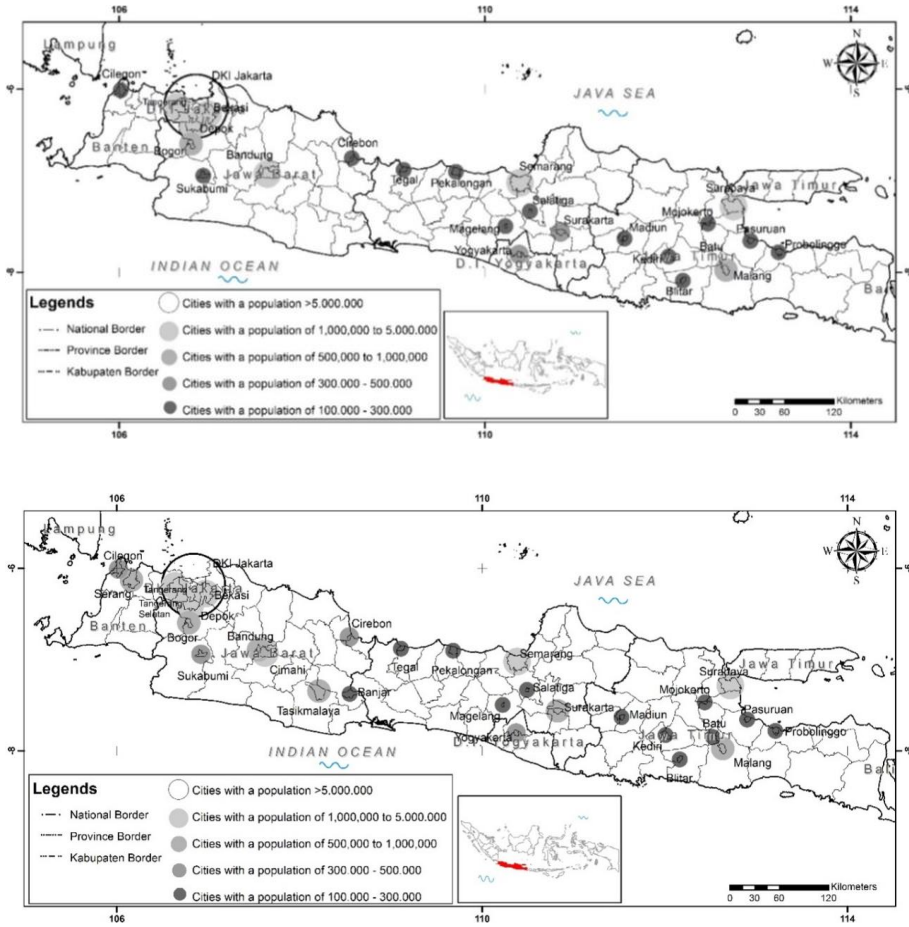


Figure 1.1 The Development of Cities in Java 2000 (above) – 2015 (below)

As shown in Table 1.4, Java only saw an increase in the category of small cities with 300 to 500 thousand inhabitants, from two to four cities, while the smaller category even experienced a decrease from thirteen to twelve cities. Two new larger small cities (cities with a population of 300 - 500 thousand) were created, i.e., Batu in East Java and Banjar in West Java, by splitting from their mother *kabupaten*. Meanwhile, Probolinggo grew from a small city to a larger small city, as its population increased from 193 thousand inhabitants in 2000 to 226 thousand in 2015.

Many of Java's large cities grew from port cities on the northern coast, i.e., Jakarta, Surabaya, and Semarang developed from ports to become metropolitan (Figure 1.1 and Table 1.4). Jakarta even spread out and created some metropolitans and large cities around it like Bekasi, Depok, Tangerang, South Tangerang, and Bogor. In addition, Cirebon, Tegal, and Pekalongan were also established as ports. However, different from the metropolitan, most of the large cities in Java are not coastal cities. Serang in Banten is the only one of six cities in the category of 500,000 to 1,000,000 that is a coastal city. It is located in the northwestern edge of Java; about 90 km west from Jakarta, in close proximity to Cilegon, a larger small city located about 10 km west of Serang (see Figure 1.1).

From a spatial perspective, most of the small cities in Java are not located in coastal areas; only six out of thirteen smaller small cities (cities with a population of 100 - 300 thousand) are located in coastal areas, while none of the larger small cities (cities with a population of 300 - 500 thousand) are located in coastal areas. The six smaller small cities that are located in coastal areas are Cilegon and Cirebon in West

Java, Tegal, and Pekalongan in Central Java, and Probolinggo and Pasuruan in East Java. Interestingly, only the small cities that are located in the western part of Java (Cilegon and Cirebon) have developed into a larger city class between 2000 and 2015 (see Figures 1). Combined with the phenomena of the growing megacity of Jakarta, this highlights that the urbanization process is most intensive in the western part of Java.

Table 1.4 The Development of the Largest Cities in Java, from 2000 and 2015

No	Cities	Population (2000)	No	Cities	Population (2015)
1	DKI Jakarta	8,384,853	1	DKI Jakarta	9,963,129
2	Surabaya	2,588,816	2	Surabaya	2,805,906
3	Bandung	2,141,837	3	Bekasi	2,381,053
4	Bekasi	1,639,286	4	Bandung	2,339,463
5	Semarang	1,345,065	5	Depok	1,631,951
6	Tangerang	1,311,746	6	Semarang	1,621,384
7	Depok	1,146,055	7	Tangerang	1,566,190
8	Malang	749,768	8	South Tangerang	1,219,245
9	Bogor	743,478	9	Bogor	982,469
10	Surakarta	488,834	10	Malang	808,945
11	Yogyakarta	395,604	11	Tasikmalaya	678,027
12	Cilegon	295,766	12	Serang	613,356
13	Cirebon	269,186	13	Surakarta	552,118
14	Pekalongan	261,469	14	Cimahi	513,176
15	Sukabumi	252,293	15	Yogyakarta	407,617
16	Kediri	242,211	16	Cilegon	387,543
17	Tegal	236,260	17	Sukabumi	320,970
18	Probolingo	192,561	18	Cirebon	316,126
19	Pasuruan	168,164	19	Pekalongan	298,386
20	Madiun	163,953	20	Kediri	280,780

Sources: 2000 Census and 2015 Intercensal Population Survey.

Three metropolitans (Bekasi, Tangerang, and Depok) are located in the hinterland of Jakarta (see Figures 1 and Table

1.4). Together with Jakarta, the new metropolitan South Tangerang, and Bogor, a large city with a population between 500 thousand and one million and their surrounding areas, these cities form the Jabodetabek (Jakarta-Bogor-Depok-Tangerang-Bekasi) Metropolitan Area, the largest metropolitan area in the country with a population of about 18.2 million in 2000 and nearly 30 million in 2015. These developments emphasize that Indonesia's urban population is concentrated in the northwestern coastal region of Java.

The other metropolitans in Java are Surabaya, Bandung, and Semarang. These three cities are the capital city of their respective provinces, i.e., East Java, West Java, and Central Java. Among the three, only Bandung is not located on the coast (see Figures 1 and Table 1.4). Similar to the spatial pattern that occurs in Jakarta, these three metropolitans also form extended urban regions with cities and districts in their surrounding areas. Surabaya saw a population increase from 2.6 million in 2000 to 2.8 million in 2015. The city is the core of a large metropolitan area that grew from about 5.3 million in 2000 to about 7 million in 2015. Meanwhile, the population of Bandung increased from 2.1 million in 2000 to 2.4 million in 2015. This city also forms a large metropolitan area with an urban population that increased from 4.8 million in 2000 to nearly 7 million in 2015. Semarang is the smallest metropolitan outside Jabodetabek with a population of 1.3 million in 2000 that grew to 1.6 million in 2015. This city also forms an extended urban metropolitan region with about 2.3 million inhabitants in 2000 and 3.2 million in 2015.

The extended urban spatial formation is an important feature in urban development in Javanese cities. The extended

pattern of urban physical development has occurred not only in very large cities but also in the much smaller ones. In the large cities category, i.e. cities with a population of 500,000 to 1,000,000, this pattern can also be seen in Malang in East Java that had a population of 750 thousand in 2000 and 809 thousand in 2015 (Mardiansjah, 2013) and Surakarta in Central Java that had a population of 489 thousand in 2000 and 552 thousand in 2015 (Rahayu and Mardiansjah, 2018; Pradoto et al., 2018; and Mardiansjah et al., 2018). Meanwhile, in the much smaller cities, with a population less than 500 thousand, this pattern is also evident in Cirebon in West Java, which grew from 269 thousand inhabitants in 2000 to 316 thousand in 2015 (Fahmi et al., 2014) and Tegal in Central that had a population of 236 thousand in 2000 and 276 thousand in 2015 (Mardiansjah, 2013).

The data shows changes in the ranking of the five largest cities in Java between 2000 and 2015. In 2015, Bekasi, which was previously ranked fourth, replaced Bandung as the third largest city (see Table 1.4). Semarang, which, in 2000, was the fifth largest city in Java after Jakarta, Surabaya, Bandung, and Bekasi, is not in the top five anymore in 2015 as it has been replaced by Depok which saw a population increase from 1.2 million inhabitants in 2000 to 1.63 million in 2015. Moreover, there have also been changes in the five largest cities outside the Jabodetabek Metropolitan Area in this period. The four largest cities, Surabaya, Bandung, Semarang and Malang have not changed, but in 2015 Tasikmalaya replaced Surakarta, which was the fifth largest in 2000.

These phenomena are interesting because Depok, Tasikmalaya, and Serang, as well as Bekasi and Tangerang, could be considered as new cities. Depok split from

Kabupaten Bogor in 1999, while Tasikmalaya split from *Kabupaten* Tasikmalaya in 2001 and Serang split from *Kabupaten* Serang in 2007. Meanwhile, Tangerang and Bekasi are also new cities as they split from *Kabupaten* Tangerang in 1993 and *Kabupaten* Bekasi in 1997 respectively. Interestingly, all of these new cities are located in the western part of Java, as they are all located in the province of West Java except for Serang, which is located in Banten. Therefore, the creation of new large and even new metropolitan in the western part of Java indicates that this region is the most urbanized and most dynamic region in Java as well as in Indonesia. The western part saw an increase from eight cities in 2000 to thirteen in 2015, in the list of the 20 largest cities in Java. Moreover, as Table 1.4 indicates, the main concentration is the Jabodetabek Region, which contains five (of eight) metropolitan of Java. These phenomena indicate the great dynamics of the urbanization process in the western part of Java, especially in the Jabodetabek Region.

Conclusion

This chapter has presented the dynamics of Indonesia's urbanization process, which is concentrated in Java leading to the rapid development of cities on this island. Java's large population led to a high population density and, consequently, a large urban population. This combination of high population density and a large urban population has stimulated the development of many cities in various categories from small size to large and very large cities, including megacities and some large metropolitan regions. This phenomenon indicates that Java has experienced an intensive and extensive margin of growth, as explained by

Fan (2013) and Cordoba (2008), transforming Java into a dense “urban island”.

Furthermore, the growing urban agglomeration surrounding the capital of Jakarta develops continuously because the region has been the center of political power for hundreds of years since the colonial era up to contemporary Indonesia. The great financial support from the governments throughout history, including from the Dutch Colonial Government and the national government in the independence era has provided a fertile environment Jakarta's as a place for the development of urban activities that provide the way for rapid urbanization, eventually generating urban primacy. However, Java has also experienced extensive growth of smaller cities from the west to east of the island.

Lastly, the explanation of how the twenty biggest cities in Indonesia tend to converge toward the western part of Java indicates that regional and national policies, particularly urban activities such as the development of industries and service centers strongly influence the formation of Java's urban system. The primacy of the Capital that is followed by the increasing number of smaller cities in Java, as well as high density, indicate the necessity to expand urbanization as well as urban development processes of the country to the other islands.

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