



INDONESIA



JAKARTA

<i>Size of the country</i>	1 919 300 km²
<i>Climate</i>	Tropical and equatorial
<i>Population</i>	212 M
<i>Population density</i>	110 inhab/km²
<i>Population growth rate (1993 – 1999)</i>	1,6%
<i>Part of urban population</i>	35%
<i>Life expectancy at birth</i>	65
<i>Infant mortality (per 1000 live birth)</i>	43
<i>Access to improved water sources (% of population)</i>	62
<i>Ethnic groups, their percentages in the population</i>	Javanese: 60%, Chinese: 5%
<i>Official languages</i>	Bahasa Indonesia
<i>Religions</i>	Islam: 87%, Christian: 9%, Buddhism: 2%
<i>Gross domestic product</i>	120 billion USD
<i>Gdp per capita</i>	580 USD
<i>Inflation</i>	6,3%
<i>Gdp growth rate</i>	6,8%
<i>Gdp repartition in different sectors</i>	Agriculture: 17,4%, Industry: 43,1% (manufacturing: 25,4%), services: 39,5%.
<i>Unemployment rate</i>	20% (1998)
<i>Tourism</i>	6M visitors (1997)
<i>Population of the urban area of Jakarta</i>	10,6 M

JAKARTA, PARASITE CITY AND CITY OF PARASITES

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Introduction

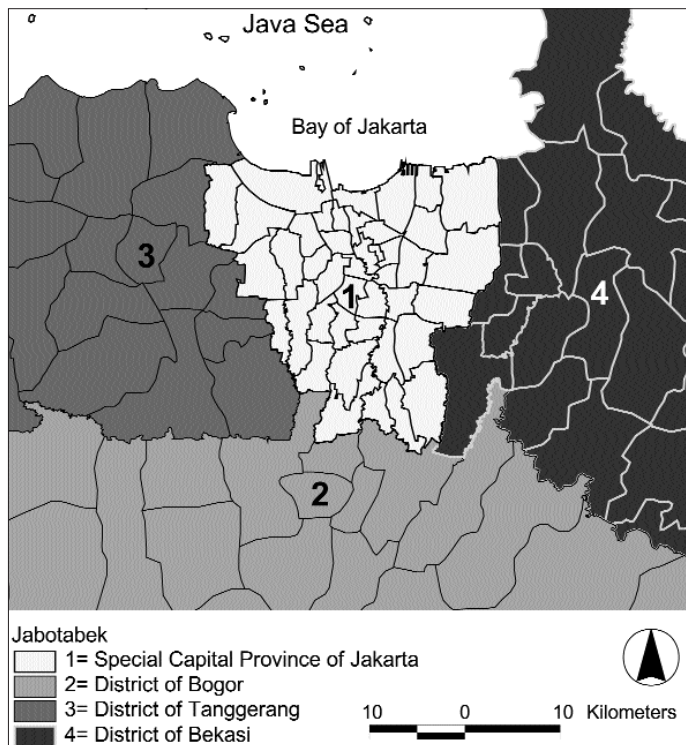


Figure 1: Jakarta as a part of Jabotabek (Jakarta, Bogor, Tangerang and Bekasi)

Jakarta is the capital city of the Republic of Indonesia. It is located on the western part of the Island of Java. To the north, Jakarta is bordered by the Java Sea, and to the south, it is bordered by the District of Bogor in West-Java Province. To the west and east, Jakarta is bordered respectively by the District of Tangerang (Banten Province) and the District of Bekasi (West-Java Province). Along with Jakarta, these districts presently form an agglomeration known as Jabotabek, the abbreviation for Jakarta-Bogor-Tangerang-Bekasi (Figure 1).

In 1997, the population of Jakarta was 8,853,102. The total area within the jurisdiction of the Provincial Government of the Special Capital Province of Jakarta covered 692.20 sq. km.

Jakarta has received several names intended to reflect its characteristics. In the 18th century, Batavia, as the city was then known, was called "the Queen City of the East." At that time, its perimeter did not extend further than 3 kilometers from its center. Beyond that perimeter, the city was surrounded by rice fields, fruit orchards and sugar-cane fields¹.

In 1950, immediately after the independence of the Republic of Indonesia, Jakarta was known as the " Big Village. " The nickname described the Jakarta of that era as a village or " Kampung " rather than a city. In the fifties Jakarta was as yet more rural than urban. In other words, while farming was not so predominant, it was still present in Jakarta².

In the 1990s, Jakarta came to be nicknamed " Service-City. " This name designated a city in which service activities outnumbered productive activities. Even when the latter existed, they primarily took the form of secondary production where the basic inputs such as food came from outside the city. These nicknames show that Jakarta was moving from the condition of a self-sustaining city to that of a city dependent on external resources.

Since the 1950s, Jakarta has been undergoing rapid urbanization. From several studies, it appears that, ever since that time, Jakarta has faced various housing problems such as squatting, slums, encroachment on the hinterland, and industrial and domestic

waste. For example, the rapid population increase has forced the municipal government to turn cultivated land into housing, thus decreasing the city's capacity to provide food for its inhabitants. Another example is the unplanned expansion of slums, which has prevented the development of an infrastructure for waste management. Because of poor waste treatment in these slum areas, pollution of the shallow underground water is increasing, thus reducing the ability to provide safe drinking water to the population⁴.

The trend shows that Jakarta has now become less sustainable than in the past. Due to rapid urbanization, not only have the needs of its population increased but it has also jeopardized its own ability to produce such essential goods as food. Jakarta does not produce enough for its own needs but has to drain it from other places. This is truly characteristic of a parasitic nature. The following case studies will examine several aspects of this parasitic nature.

Case Study 1: The Ability of Jakarta to Feed its Population

In this section, we seek to understand whether Jakarta, if left to itself, could meet the needs of its population. To answer this question we shall turn to the concept of the ecological footprint. Ideally, the concept itself is based on the complete accountability of material processes in a given ecological entity⁵. However, due to data limitation we were only able to use two factors to calculate the ecological footprint of Jakarta. These two factors are food and non-food consumption and production.

According to these data, Jakarta should have ten times its present land area if it is to be capable of providing for the needs of its popu-

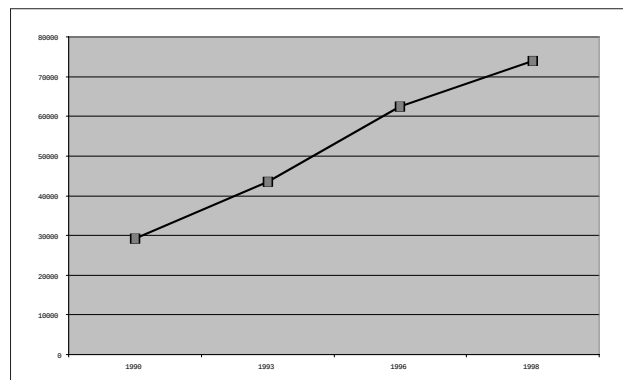


Figure 2. Ecological footprint of Jakarta (1993-1997).
Unit: sq. km

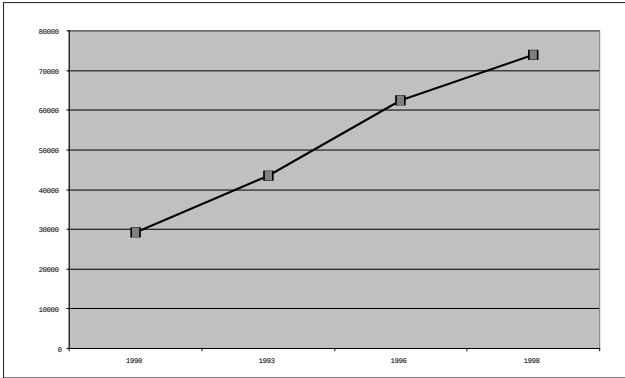


Figure 3. Food Consumption (1993-1997).
Unit: (in terms the rates of Rupiah against US\$ in each year and standardized to 9000 Rupiah/US\$ in 1999).

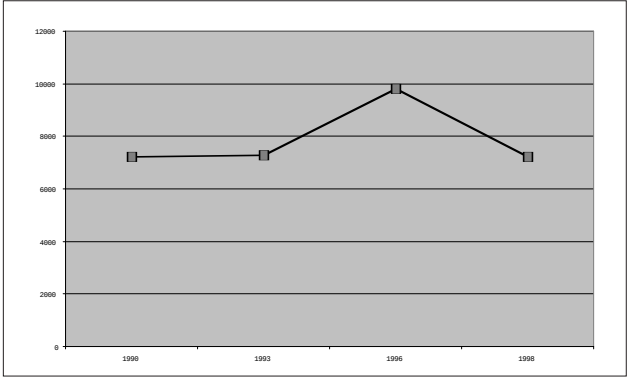


Figure 4.: Food Production (1993-1997).
Unit: billion of Rupiah, standardized for each year at the rate of 9000 Rupiah/US\$ in 1999

lation (Figure 2). The largest portion of that land would have to be devoted to food production. What makes the situation worse is that, from year to year, per capita food consumption is increasing while production capacity remains

unchanged (Figure 3 and Figure 4). Therefore, we may conclude that Jakarta itself cannot feed its population. To a large extent, it must depend on outside sources.

Case Study 2: Encroachment on the Hinterland

Jakarta has the advantage of a hinterland that is very rich in resources and includes Bogor, Tangerang and Bekasi, and the four districts known as Jabotabek. Although it cannot provide for the needs of its population, Jakarta still can rely on its hinterland. Therefore, the next question is whether Jakarta is maintaining its hinterland so as to meet the future needs of its population. The answer is uncertain. Since the 1950s, Jakarta has been encroaching on its hinterland.

From the data it appears that the area of the rice-fields in Jabotabek has been decreasing at an average rate of 2725 hectares per year in the vicinity of Jakarta (Figure 5). The data also show that densely inhabited sub-districts (DIS) have been spreading at the rate of 1600 hectares per year (Figure 6). The remaining loss of 1125 hectares of rice-fields per year has to be accounted for by other functions such as industries and highways. We can therefore also conclude that the spatial spread of Jabotabek has been affecting the potential and capacity for food production in Jakarta's hinterland.

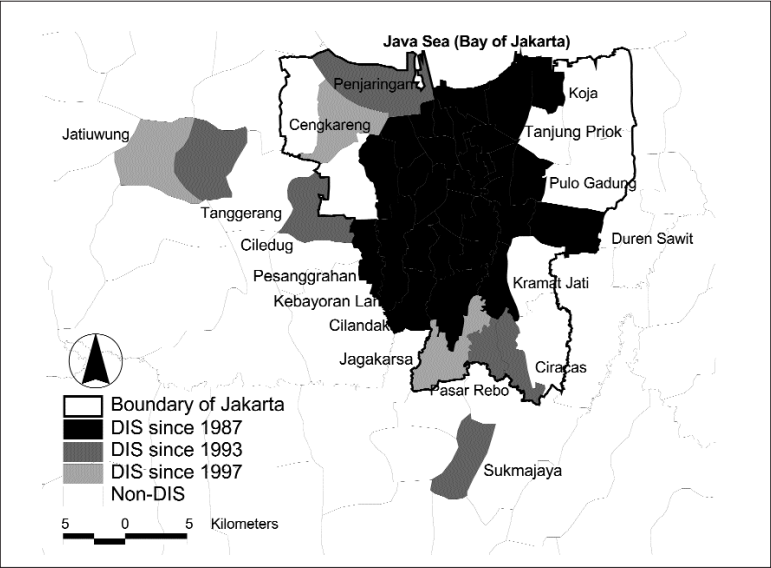


Figure 5. The Receding Rice-fields in Jakarta's Hinterland

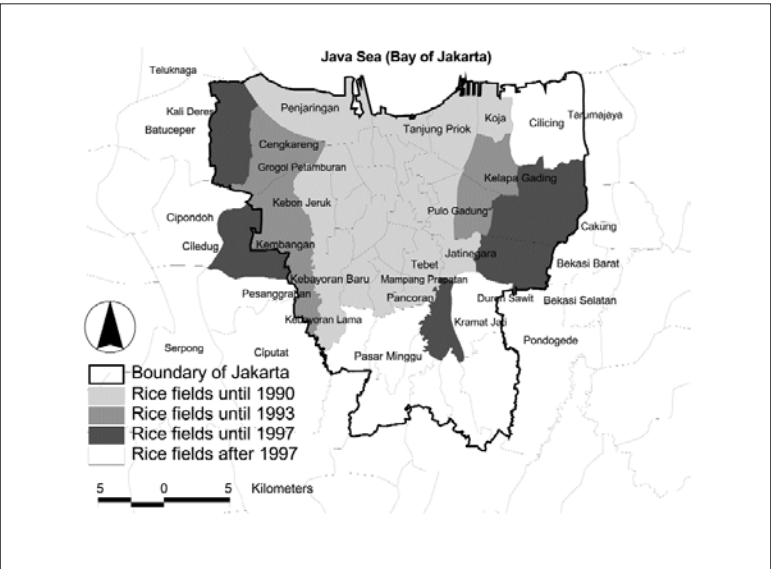


Figure 6. The Expansion of Densely Inhabited Sub-Districts (DIS)

Case Study 3: Slum Areas in Jakarta

In Java, the per capita amount of farmland has become too small to produce enough goods to support the livelihood of farmers⁶. Small farmers in rural areas have found it more profitable to go and work in the city than to till the land. Endowed with huge capital resources, a large city like Jakarta attracts people from the rural areas. The centralized development policy of the New-Order regime has reinforced this tendency. However, the movement of the population from the rural areas has not been balanced by the proportionate creation of new job opportunities. The difficulties are compounded by the fact that the people who come from the rural areas do not possess enough education and skills to compete for good jobs in the city. Most of them try their luck at making a living in the informal sector. Since they earn low wages, they usually live in informal housing and slums. The living conditions in most of this informal housing are usually

below standard. For instance, most shelters and lodgings in slum areas do not have adequate clean-water and waste disposal facilities.

In Jakarta, an area can be categorized as a slum if it has a high density of population and consists mainly of houses built of non-durable material without adequate streets, water supply and a sewage system. Furthermore, an area can be categorized as a slum if it has developed without the permission of the municipal government. In other words, a slum is generally an illegal settlement. Figure 7 shows the distribution of slum areas in Jakarta in 1996. Several sub-districts have a high percentage of slum areas. The majority of slum areas are concentrated in the Kalideres, Cengkareng, Pademangan, Senen, Cilincing, Cakung, Jatinegara, Kebayoran Lama and Jagakarsa sub-districts. These sub-districts are located on Jakarta's east-west and north-south axes.

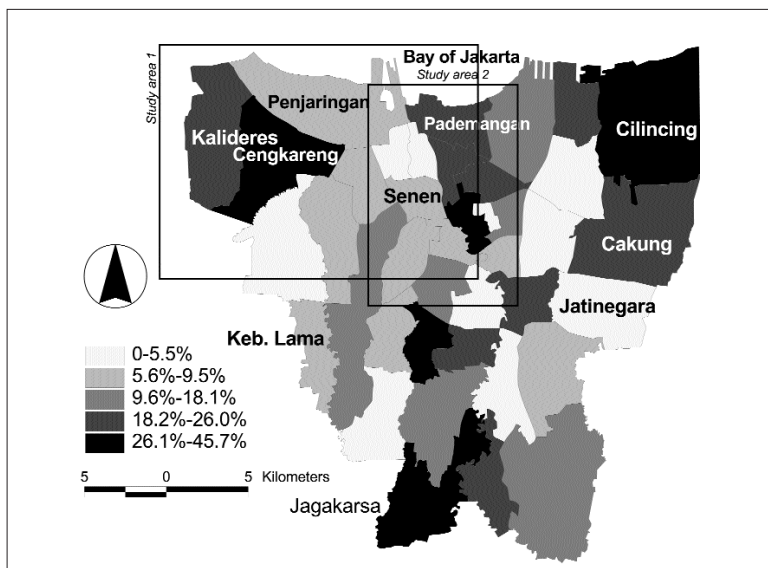


Figure 7. Percentage of Slum Areas in Jakarta (1996)

Case Study 4: Seawater Intrusion and Underground Water Pollution

In the previous case studies, we have discussed the impact of Jakarta on its hinterland. In the following section, we shall ask whether the population maintains the resources that exist within Jakarta itself. From the available data, we can state that at the micro level the inhabitants are not preserving existing resources. Two examples will illustrate this statement. The first one is the problem of the intrusion of seawater and the second one is the pollution of underground water.

The major sources of water in Jakarta are precipitation and surface water. In the past, it was assumed that the underground water of Jakarta had its source in the Bogor, Puncak and Cianjur regions (known as Bopuncur). However, more recent geological data have established the existence of a fault line between the underground water system of Jakarta and that of the Bopuncur region.

Although there are laws that regulate the surfacing of land with non-porous materials (such as concrete and asphalt), they have failed to prevent the increase of non-porous surfaces in Jakarta. Consequently, the covered surfaces have prevented precipitation that would renew the underground water system of Jakarta. According to existing regulations, any activity that implies the tapping of underground water requires due permission from the municipal government. Taxes for tapped underground water should be paid accordingly. However, in practice, the inhabitants of Jakarta hardly abide by this regulation, especially in the slum areas. According to a study conducted by a team of researchers from the Bandung Institute of Technology, there is a correlation between population density and the depletion of the groundwater table⁷. The maps in Figure 8 and Figure 9 shows that, during the 1995-1999 interval, there was a steady decrease in the water table in Study

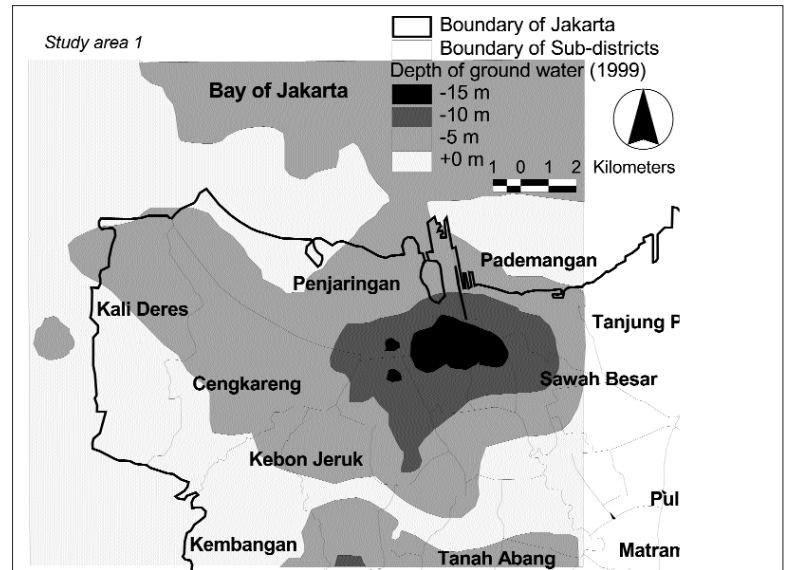


Figure 8. The Contour of the Groundwater Table in 1995

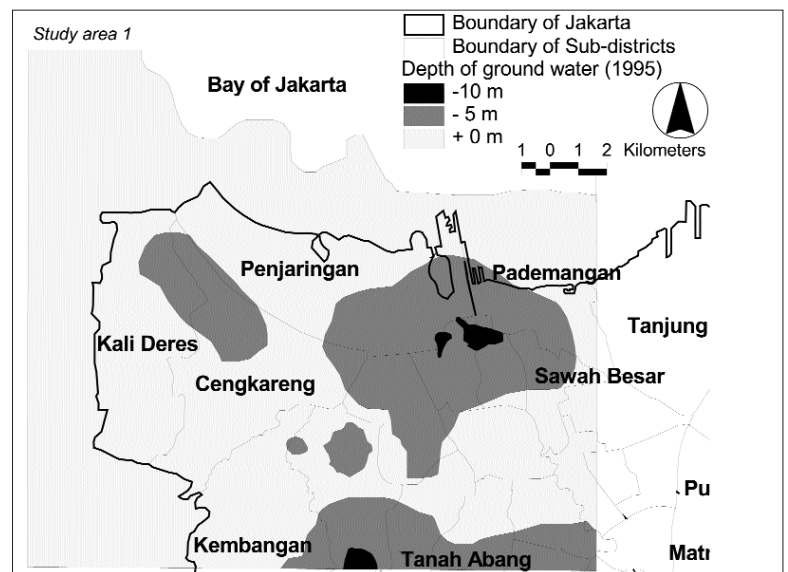


Figure 9. The Contour of the Groundwater Table in 1999

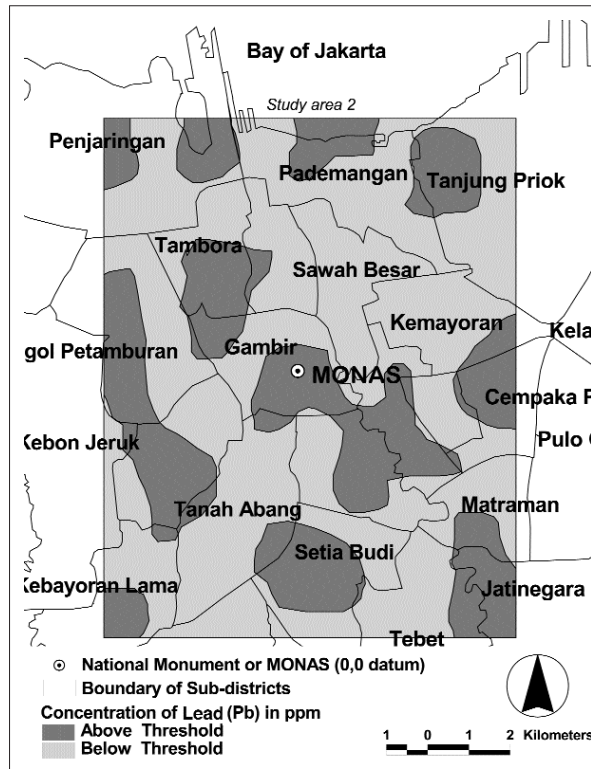


Figure 10. Pollution of Underground Water Sources by Lead (Pb)

Area 1 (Figure 7). Finally, in 1999, the pressure of underground water gave way to sea water, thus opening the groundwater enclosure to sea-water intrusion and destroying Jakarta's capacity to provide fresh water for its inhabitants.

There is no integrated waste-treatment system in Jakarta. Of the waste produced by households, 90 per cent is treated locally and individually by using seepage septic tanks. According to existing regulations, every industrial entity should treat its own wastes before discharging them into the environment. Yet, waste treatment operations are often considered as being too expensive. In practice, many factories simply do not operate a waste-

treatment plant. The most direct consequence, which was confirmed by the study of Erwin et al. (1996), is the pollution of Jakarta's underground water by heavy metals such as lead, mercury, manganese, etc. The maps in Figure 10 and Figure 11 show the location of Study Area 2 where the lead and manganese content in the water tapped underground is above the minimum permissible level for human consumption. From these data, we conclude that, internally, the city not only has limited sources, but it is not maintaining the quality and durability of these limited sources.

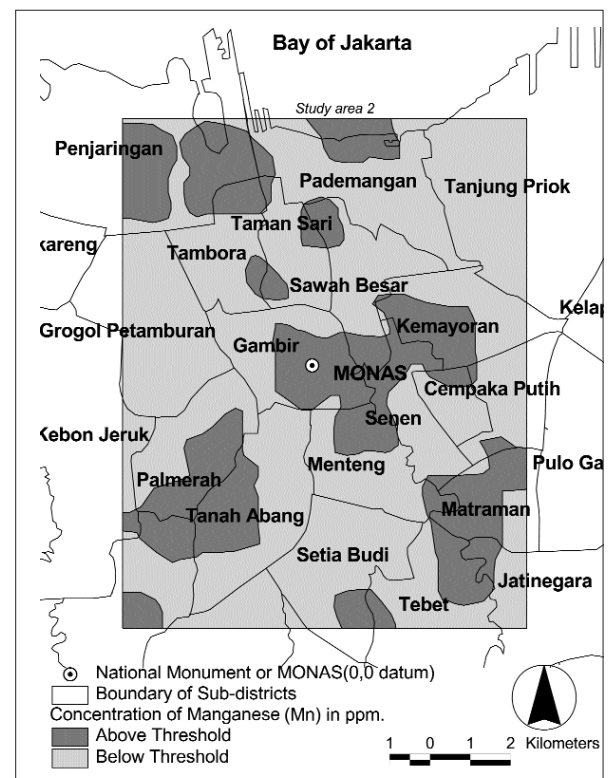


Figure 11. Pollution of Underground Water Sources by Manganese (Mn)

Implementing a Policy of Sustainable Development

The environmental problems that Jakarta is facing can be stated in terms of land ownership policy, environmental management and urban development. The existing legal tools are inherently related to these three aspects. Yet, the ideals and norms they embody fail to be matched by a corresponding rigor in their implementation. This results in expanding encroachment on farmland and deteriorating environmental conditions in Jakarta.

In the history of Indonesia, land has been one of the most important determinants of politics and development. In the past and in the present — this may hold true in the future — land has been closely related to wealth. In the past, the ownership of land in Indonesia was not evenly distributed. Some people owned large tracts of land that were worked by landless peasants. One of the proclaimed ambitions of Indonesian independence was to free humankind from the exploitation of man by man. In this spirit, in 1960, fifteen years after the declaration of independence, the Basic Agrarian Law (UUPA No. 5/1960) was promulgated and immediately became the basic text for the regulation of land use and ownership. The aim of UUPA No. 5/1960 was to limit land ownership and distribute land to the people. The adoption of UUPA No. 5/1960 can therefore be considered as promoting a land-reform movement. The intention of the law was to return the land to those who tilled it. In the 1960s, the Indonesian Communist Party (PKI) actually linked the law to the proletarian revolution. The party used UUPA No. 5/1960 as a political tool to reach the hearts of the landless peasants. UUPA No. 5/1960 also served as a pretext in many cases of land seizure. At that time most local governments, as landowners, often became the targets of land occupation. Therefore, in the 1960s UUPA No. 5/1960 had become the symbol of the proletarian movement.

After the military coup in 1965, the New Order regime (Orba) postponed the implementation of UUPA No. 5/1960. However, the regime did not transfer the regulatory functions of UUPA No. 5/1960 to any other law. There was thus a very opaque form of land management in the era of New Order regime. Land became a commodity and an object of speculation. For almost two decades, the New Order regime ignored land issues. Instead, it put the emphasis on the process of industrialization. Only after two decades in power did the regime realize that even the development of industries required land. Unfortunately, the commercialization of land had produced new land problems in Indonesia. In a large city like Jakarta, the provision of land for development had become very complex. Instead of reviving UUPA No. 5/1960, the New Order regime started converting farmland outside the city into land for other activities such as industries. This policy spurred the phenomenon of farmland encroachment that was discussed in the previous sections.

In the 1980s the transformation of land at the periphery of the city generated a "city-bias" phenomenon. Farmland was sold by the farmers to urban residents and, inevitably, farmers joined in the movement of in-migration from the rural areas to the city. The influx of low-quality labor from the rural areas to the city was the most direct cause of the development of an informal economy and the proliferation of sub-quality housing. Since UUPA No. 5/1960 prohibited the transfer of ownership of farmland to people living in the city, the city bias may have been averted if the New Order regime had not postponed the implementation of the law. If UUPA NO. 5/1960 had been implemented in accordance with its true spirit of fair distribution of land ownership, it could have prevented the process of land hoarding. In other words, the implementation of UUPA No. 5/1960 could have prevented — or at the very least limited — the encroachment on fertile farmland by housing and industries.

Another failure of the New Order regime was its emphasis on industrialization. The regime considered industrialization as the mainstay for growth-oriented development. In the first two decades of the regime, environmental issues were simply neglected. At that time, the perception that Indonesia was endowed with rich natural resources determined a policy of exploitation and utilization of these resources to the fullest extent possible for the sake of economic growth. This perception is at the root of today's numerous environmental problems. In the hinterland of Jakarta, the growth-oriented policy of the New Order regime has contributed to further encroachments on fertile farmland. In the inner city, the absence of environmental monitoring and standards caused serious air, water and land pollution. All the issues discussed in the previous section can be seen as one of the results of an over-emphasis on sheer growth. Before 1982, the only law that catered to environmental issues was the "Hinderordonatie" passed in 1940 and "Reglement" N° 341 passed in 1930. The then Dutch colonial government enacted both laws. Since the law focused on the visible environmental obstacles, it could not deal with the unperceived but increasing threats posed to the environment such as ground-water pollution. In 1982, Law N° 4 on environment management was adopted. The new law stated that every human activity should be based on the effort to establish environmental sustainability. However, the law did not mention how sustainable activity should be achieved. The text actually had two shortcomings. First, it only dealt with definite cases. It did not deal with the cumulative effects of an activity over time and their potentially negative impact on the environment. For this reason, in 1986, the Indonesian Government introduced Government-regulation N° 29. The regulation stated that, in order to promote a sustainable environment, every activity should be based on an analysis of environmental impact (AMDAL).

The analysis should give a detailed description of the possible impact of the activity on the environment. It should also include a prediction of the cumulative effects of given activities on the environment. Second, the 1982 law only addressed activities or environmental cases that were formally reported. The law did not take note of the fact that in Indonesia informal activities took precedence over the formal sector. For instance, due to rapid immigration to urban areas, informal housing often represented 85 per cent of the available housing. In Jakarta, this figure could reach 95 per cent. In relation with the informal sector, although the government has adopted various formal environmental standards and measures, law-enforcement can only be based on the awareness of the population at large. Therefore, in Indonesia, any improvement in environmental problems depends more on how education will succeed in promoting environmental awareness among the people. With the regular influx of less educated people into Jakarta, this issue has become a crucial challenge for the local government.

Another problem that Indonesia has to face is the difficulty of monitoring the environmental process. The 1982 Law and the 1986 Government Regulation clearly state that environmental monitoring should be performed by government institutions. It excludes monitoring by NGOs or by citizens at large. With limited resources, the government has neglected to carry out careful and continuous environmental monitoring. Consequently, most environmental problems come to be known only after it is too late for a satisfactory solution. With serious and regular environmental monitoring, heavy metal pollution and the intrusion of seawater into the ground-water table in Jakarta could have been identified and prevented well before the studies mentioned in the previous section made them obvious.

The main law that regulates urban development in Indonesia is Law N° 24 that was passed

in 1992. The law is the reference for the planning and management of space utilization in Indonesia. The term "space" herein covers not only land, but also the air space and the sea. Briefly, the 1992 law states that the utilization of space should be managed so that it is sustainable. Therefore, the idea of sustainable development exists within the law. After the introduction of Law Number 24/1992, every city in Indonesia was required to base its urban development plan on the provisions of the new regulation. Theoretically, therefore, urban development in Indonesia would be based on the idea of sustainability. However, some cities like Jakarta already had their own urban development plans. They therefore had to revise these plans. The modification of the development plans to make them conform to the ideal of the law was not an easy task. The required changes could disturb on-going developments. In Jakarta, the provincial ordinance for the regulation of urban development between 1991 and 2005 (RBWK 2005) had been adopted in 1990⁹. Therefore, RBWK 2005 could not be fully modified. For example, RBWK 2005 emphasized that development should be oriented along an east-west axis. In RBWK 2005, development along the north-south axis was to be limited. At that time, the hinterland south of Jakarta was considered as a source of water for Jakarta and the area had to be protected against urban development. The coast along the Bay of Jakarta in the north was considered as a waterway that needed to be preserved for the prevention of floods. However, the emphasis on the development of the east-west axis did not allow for the fact that the food-producing farms were actually located along this axis. At present, due to this emphasis on development along the east-west axis, fertile land has been transformed into dormitory towns for Jakarta's inhabitants. The encroachment on rice fields discussed in the previous sections can be traced to the provisions of RBWK 2005.

Another shortcoming of RBWK 2005 is its exclusionary nature. RBWK 2005 prohibits the mixed-use developments that generally characterize a compact mode of development. Consequently, the nature of urban development in Indonesia does not follow the principle of a compact city. The urban texture of Jakarta tends to be loose and to utilize all the possible and available land for development. The loose and exclusionary characteristics of urban development have led to urban sprawl in Jakarta. Finally, the priority given to the east-west axis made this sprawl eat up large tracts of productive farmland.

Monitoring the implementation of RBWK 2005 is another problem that the municipal government of Jakarta has yet to face squarely. According to the regulation, one of the functions of the municipal government is to monitor its implementation. However, limited human resources have hindered the monitoring process, and the ideals embodied in RBWK 2005 have often been compromised. For example, although it is stated that development along the north-south axis should be limited, the municipal government, in practice, has approved housing construction and other urban development projects along this axis. The development of the Bay of Jakarta Water-Town is an example of how RBWK 2005 has been ignored¹⁰. The development of much elite housing in the southern part of Jakarta is another case of violation of the provisions of RBWK 2005.

The municipal government had already laid down many environmental standards and procedures to monitor the implementation of RBWK 2005. For example, the Governor Decree Number D IV-a (12/1/49/1974), introduced as early as in 1974, laid down that every activity that tapped water from the ground should be reported and recorded in the municipal government office. Tapping underground water is subject to the payment of a tax that depends on the depth and quantity of the water to be tapped. In practice, cases of the tapping under-

ground water have seldom been reported. This means that little tax has ever been derived from such activities. Excessive tapping is never fully monitored. The intrusion of seawater into the underground water table examined in the previous section has its roots in the excessive tapping of ground water in Jakarta.

RBWK 2005 is also designed to regulate land coverage. For example, the limitation of Building Coverage (BC) and Floor-Area-Ratio (FAR) are a mechanism through which RBWK 2005 was to limit the coverage of land surface in order to ensure that rainwater could seep down and renew the underground reservoir. In practice the objectives of RBWK 2005 have never fully materialized. Building Coverage has often been compromised. For example, due to the lack of monitoring in the construction process, building basements usually trespass beyond the limits of the visible ground floor, thus enlarging the actual building coverage. The prescribed Floor-Area-Ratio is another mechanism that is often violated by developers. With its orientation on growth, the New Order regime has tended to be very lenient about violations of the Floor-Area-Ratio standards by large developers. For example, a developer may readily agree to pay fines in exchange for having violated the Floor-Area-Ratio standards. Whether this can be seen as a contradiction or not, there is a government regulation in Jakarta by which

permits are issued for buildings that violate the Floor-Area-Ratio standards in return for the mere payment of a certain fine. Fines, however, are considered to be different from taxes. Taxes should always be recorded in the government accounts, while fines can go completely unrecorded. Therefore, fines are liable to lead to corruption, thus further weakening the monitoring process.

From the discussion on the development policy and its implementation in Jakarta and Indonesia at large, a connection can be established between urban development and the related factors of land and environmental policy. First, the postponement of UUPA Number 5/1960 left the uneven distribution of land unaltered and contributed to more rural-urban disparities. As a result, the rural population began to migrate to the city and add to the population problems that large cities like Jakarta were already facing. Compounded with inadequate environmental monitoring, the slum areas that were formed with the influx of the rural population to the city greatly increased local environmental problems. The growth-oriented development policy favored industrial rather than agricultural development. Opening land to urban development initiated a process of extensive encroachment on the most fertile farmland around Jakarta further diminishing the food-producing potential of its hinterland.

Conclusion

From the previous discussion, we can conclude that, like any other city, Jakarta has lived above its means. Jakarta has been spreading over its hinterland and polluting itself. These facts alone suffice to label Jakarta as a parasitic city and a city of parasites. We should examine whether there were any efforts made to maintain the resources that exist in Jakarta and its hinterland. The local and national authorities have acknowledged the need for a form of sustainable development, which they have enshrined in their development policy and in laws meant to protect the land and the environment. Yet, Jakarta's authorities have not fully complied with the policies designed by themselves. Unless Jakarta implements a vigorous policy of sustainability, it may turn itself into a parasitic city and a city of parasites.

To break the self-defeating cycle of growth, land encroachment and slum expansion, several options lie at hand. First, UUPA Number 5/1960 should be revived and fully implemented in accordance with its original spirit, i.e. the distribution of land to those who till it. Second, environmental policies and regulations should be implemented in earnest. The inherent limitations of government institutions that have hindered the full implementation of environmental policies should be counter-balanced by participation by the community at large. Third, urban development should be based on a balance between a growth-oriented approach and resource conservation concept. One can hope that, through such measures, Jakarta will begin to live within its means and stop polluting and encroaching on the environment.

Notes:

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3. Damais, *Karya Jaya*.
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8. Erwin, I., and Arief, R., " Analisis Penurunan Muka Tanah pada tahun 1995-1999 di Jakarta " [The Analysis of Soil Settlement Between 1995-1999 in Jakarta] (Jakarta: Lembaga Penelitian Universitas Trisakti, 1999).
9. RBWK 1991-2005, Rencana Bagian Wilayah Kota 1991-2005 [The Urban Area Plan 1991-2005], (Jakarta, Pemerintah Daerah DKI Jakarta, 1990).
10. The Water-Town project was not in the 1991-2005 urban-area-plan. The project was imposed by the New Order Regime. The regime only cared for its potential economical benefits but it ignored its environmental consequences like flooding.