

# **SPATIAL URBAN METABOLISM FOR LIVABLE CITY**

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# Introduction

- This paper articulates the concept of livable city for Malaysia
- The discussion will pin on the concept of urban metabolism to look into the process of internal urban development and consequently to identify the spatial aspects of livable areas as opposed to vulnerable areas in the city.
- Then move to discuss the factors shaping the livable and vulnerable areas before ending the paper with suggestions to take steps to sustain the livable areas and to ameliorate the vulnerable areas.

# Linking Livable City Concept to Spatial Urban Metabolism

- Livable city as a vocabulary has been actively in circulation in Malaysia in the last few years. It has been linked to the increasing vibrancy and congeniality of the city following its improved quality of life.
- The city is also seen as being healthy, safe, economically growing, and socially, culturally and politically vibrant within its green ambience.
- The concept of livability does not appear directly in the Malaysian (Bumiputra, Chinese, Indians, others) vocabulary.

# Urban Metabolism

- The concept of urban metabolism was introduced by Wolman (1965), and later elaborated and expanded by Newman and Kenworthy (1999) and Newman (2004).
- Wolman (1965) viewed the urban environment as an ecosystem and began measuring the 'metabolic' activities. Based on his works, the concept of urban metabolism can be widely used to determine the livability of the study area as well as a vulnerability area.

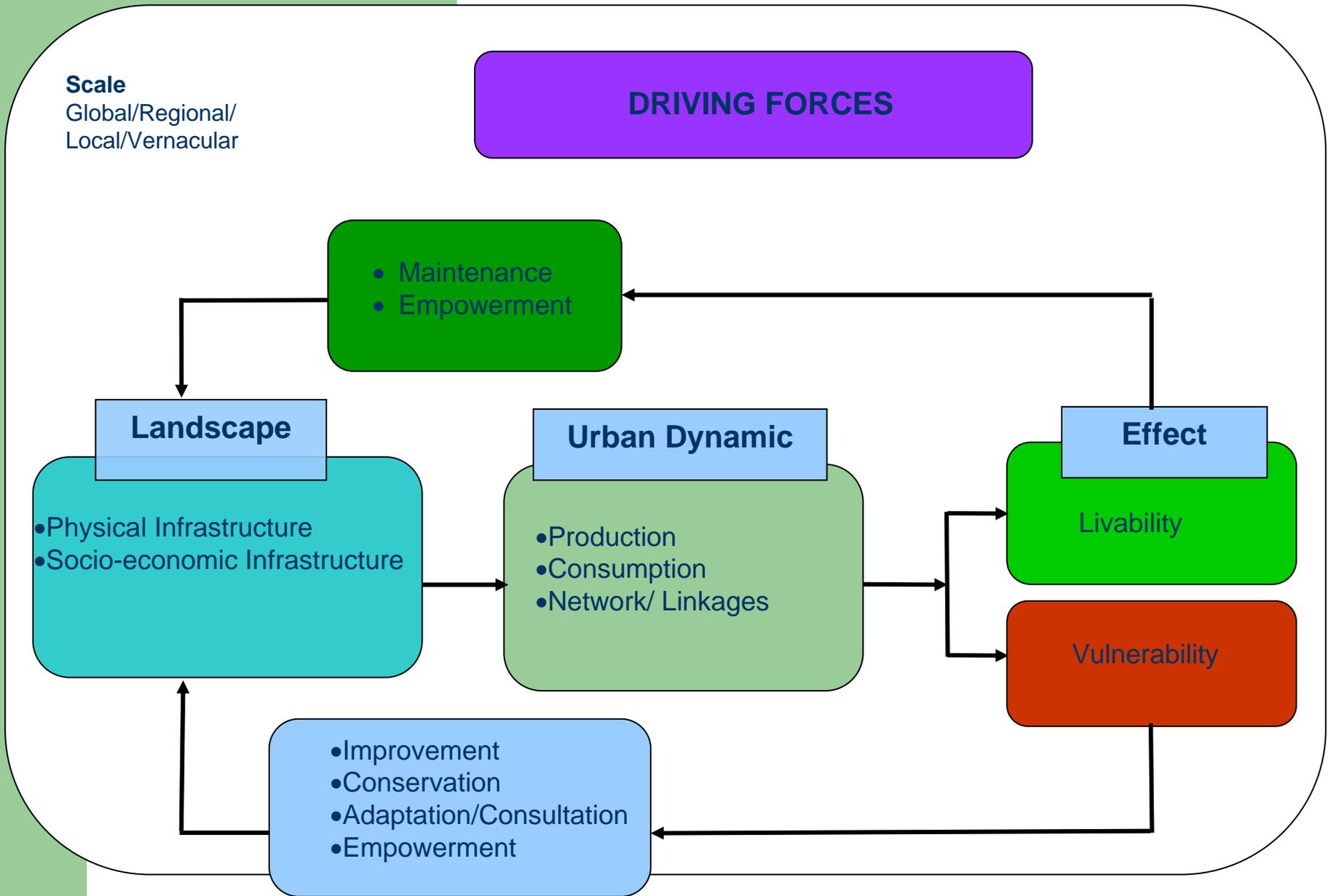


Figure 1: Simplified Model of Spatial Urban Metabolism for Livable City

# The Data

- Data for the analysis are drawn from three sources, namely; a) water consumption by households from the Department of Water Supply, Seremban municipality. The Department was generous enough to supply us with a ten year water consumption data by households and by neighborhoods. b) The data on dengue were extracted from the records held in the Health Department, Ministry of Health Seremban branch. The data are listed by neighborhoods for over ten years. c) The crime cases at the Seremban municipality we extracted from records of crimes committed in the city area from Police Department for about 10 years. d) Several field visits were also undertaken to observe the areas with high incidences of crime and dengue cases as well as the full green state of the art housing neighborhoods. With the time series data, the change in the distribution patterns, the spatial direction of change and the linkages in the direction of changes can be grasped.

# The Study Area





THAILAND

VIETNAM

PHILIPPINES

CAMBODIA

MALAYSIA

BRUNEI DARUSSALAM

MALAYSIA

SINGAPORE

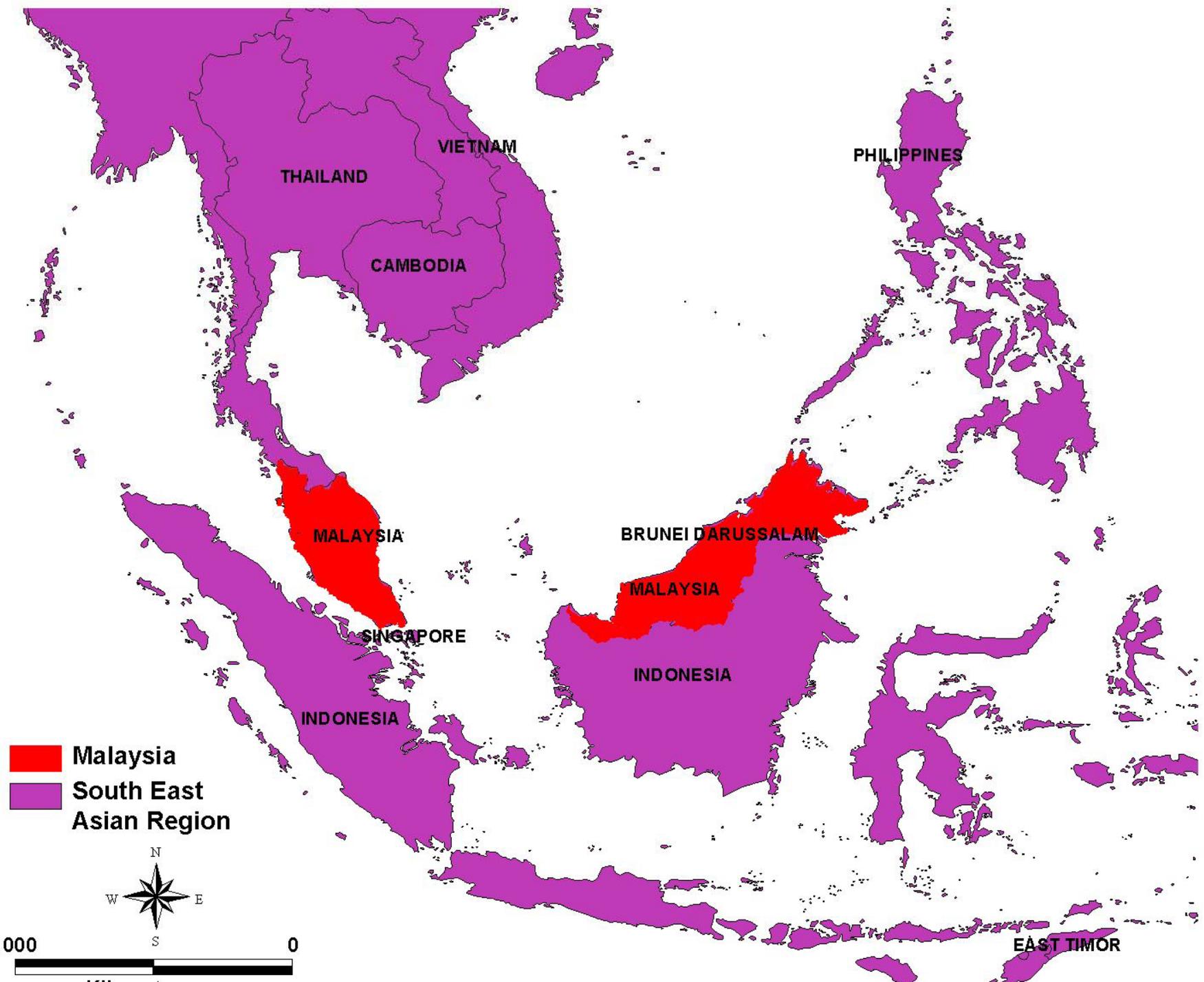
INDONESIA

INDONESIA

EAST TIMOR

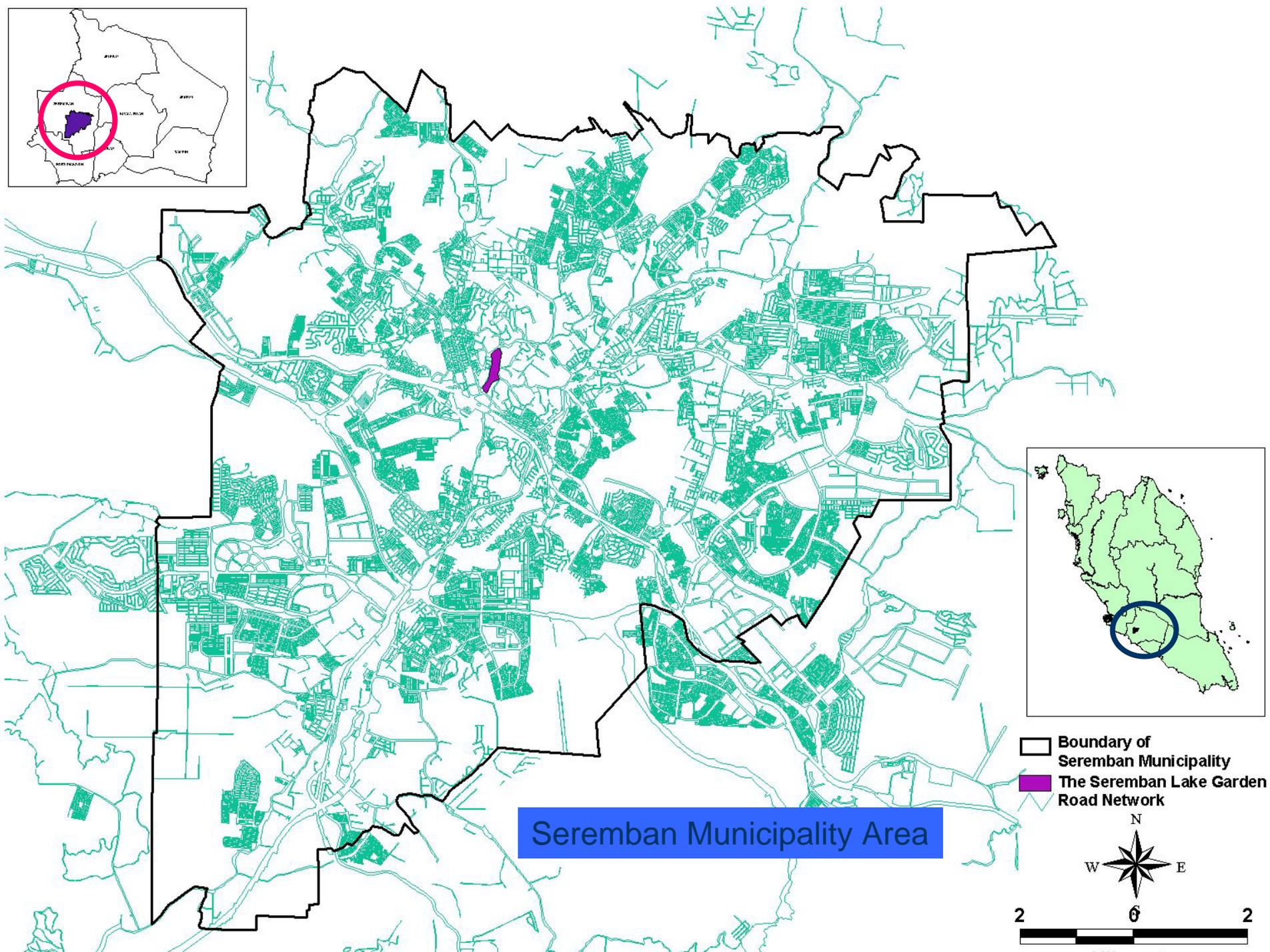
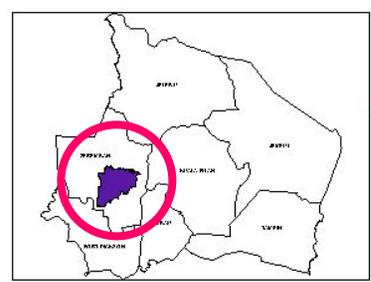
South East Asian Region





**Malaysia**  
**South East Asian Region**

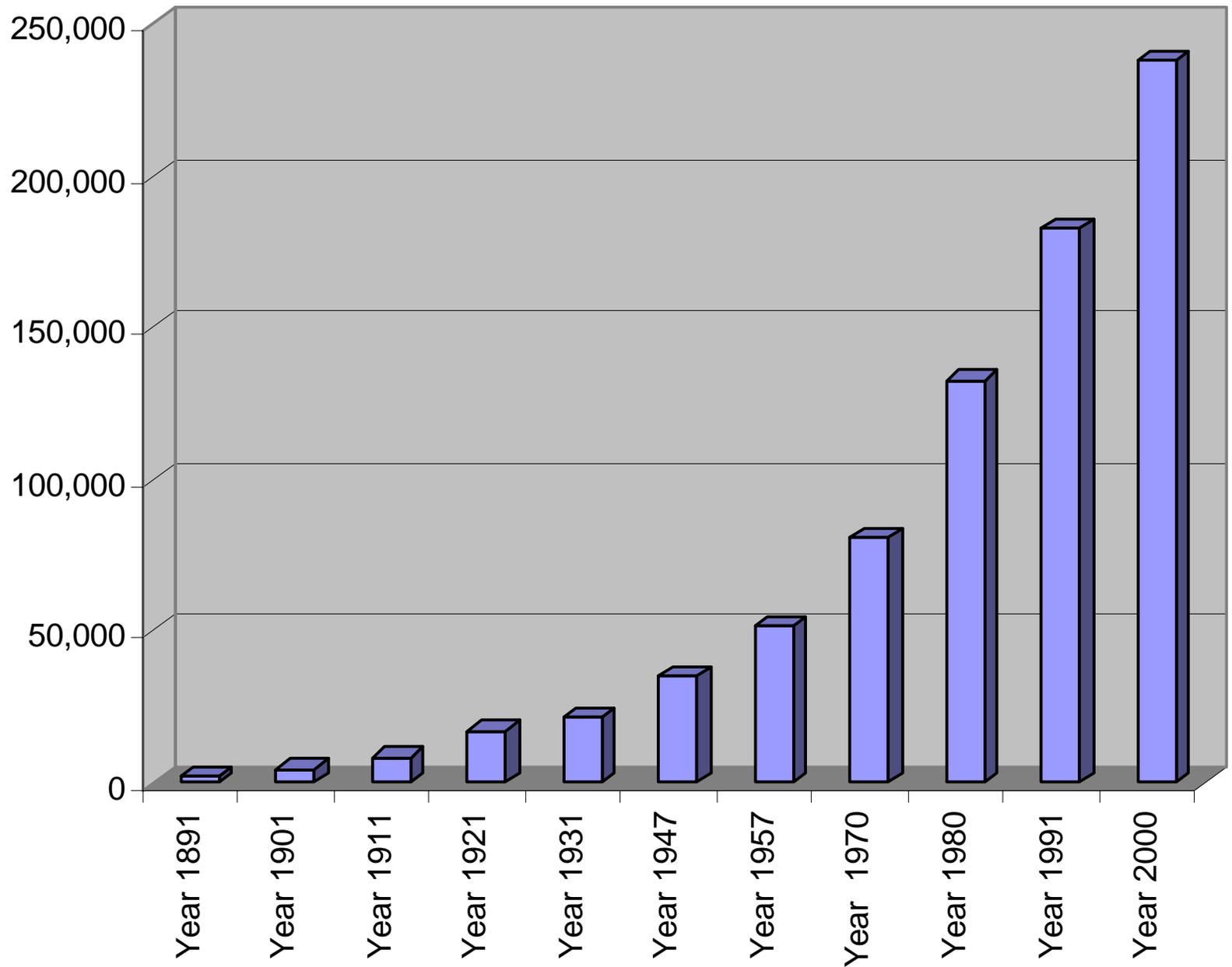




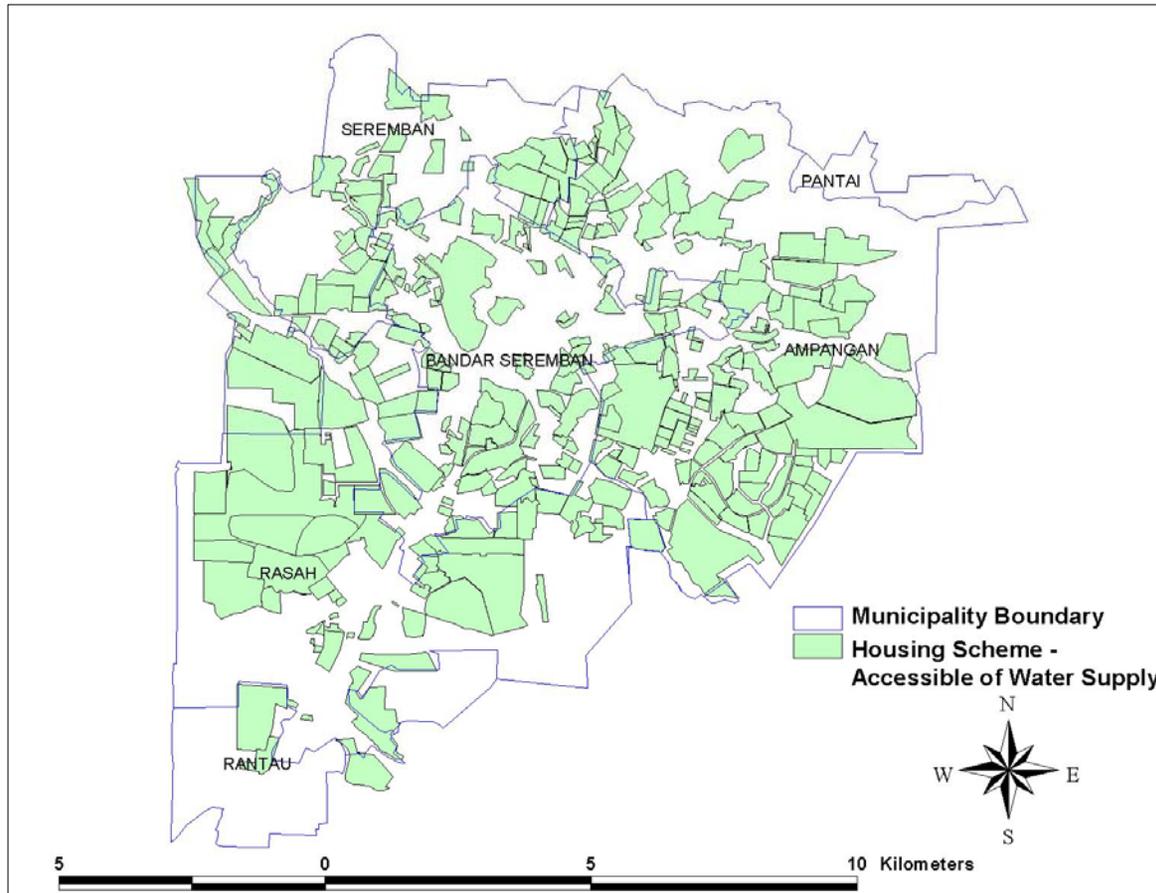
- Boundary of Seremban Municipality
- The Seremban Lake Garden
- ⋄ Road Network

Seremban Municipality Area

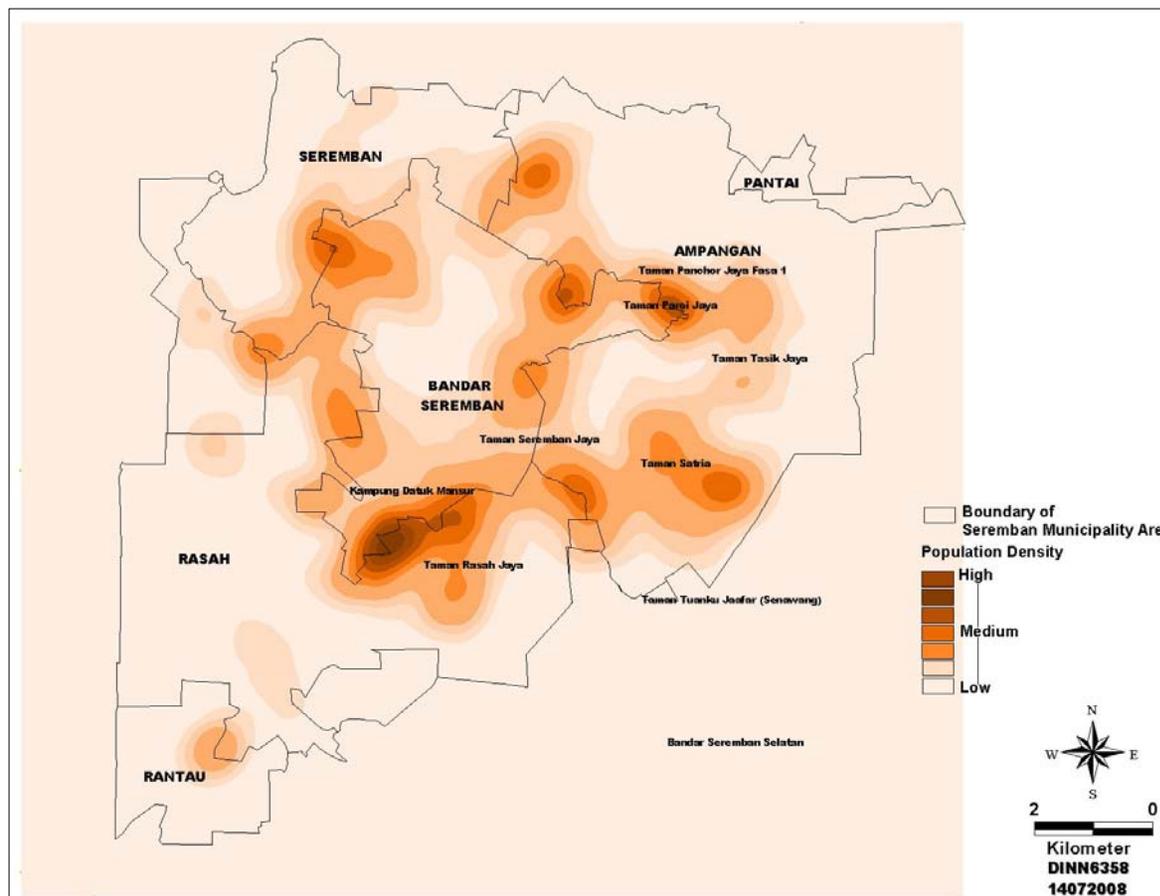




**POPULATION OF SEREMBAN, 1891 - 2000**

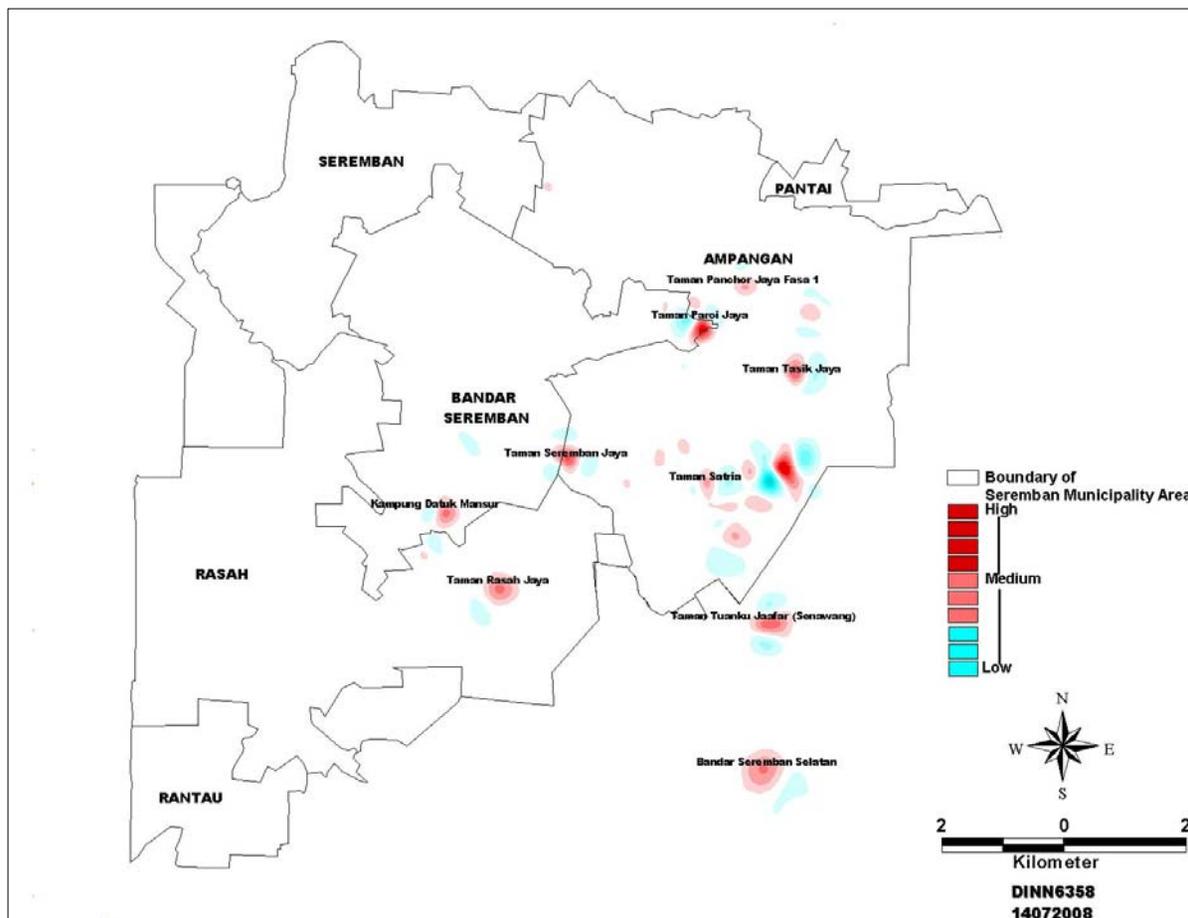


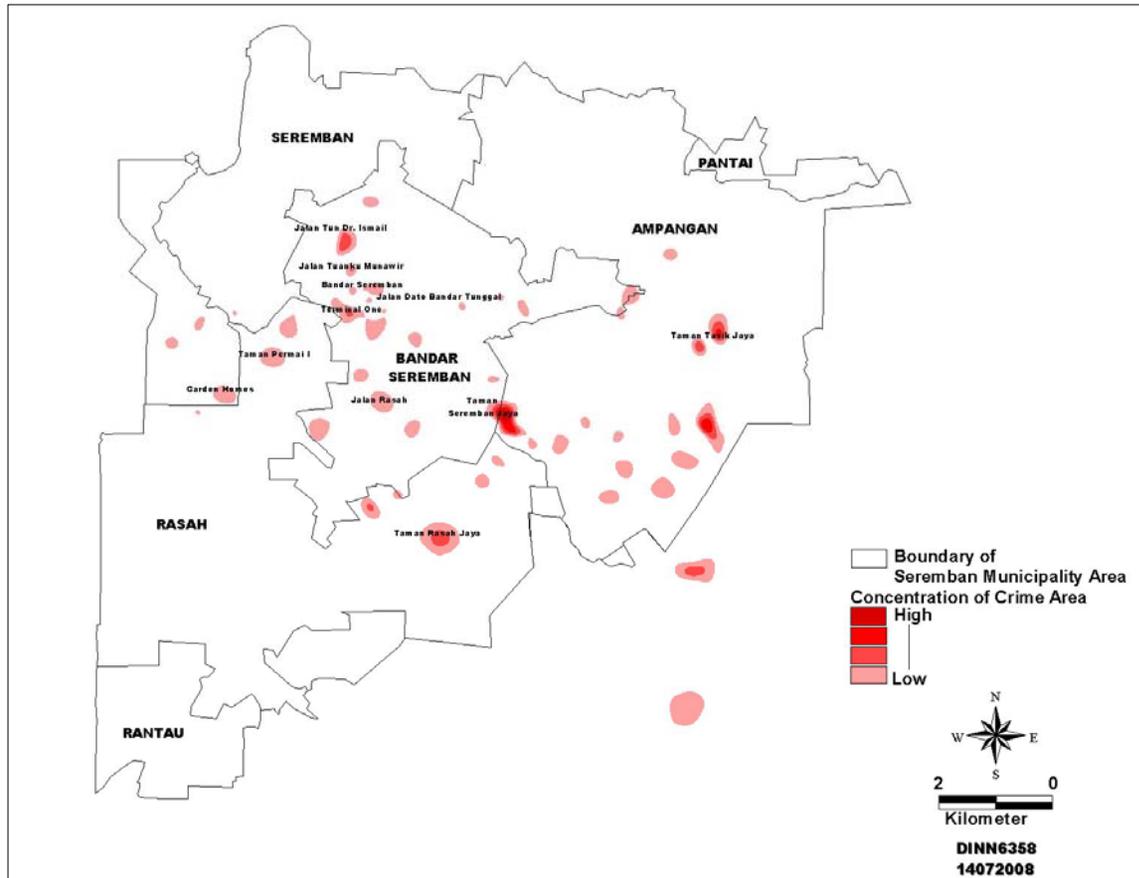
## Total Water Consumptions and Housing Scheme in Seremban Municipality Area



Population Distribution and Density in Seremban Municipality Area, 2000

# Dengue Distributions in Seremban Municipality Area 1996-2007





Concentration of  
Crime in  
Seremban  
Municipality Area,  
1996 – 2007

# CONCLUSION

- The use of urban metabolism to organize and analyse the livability and vulnerability of the Seremban municipal space proves useful. Linking it with the availability of physical, social and governance infrastructures helps to identify sub-areas that are vibrant and growing with least problems in contrast to sub-areas that are facing many issues. The latter sub-areas especially require a more integrated action involving the local people and the municipality in a new partnership.



**THANK YOU**  
***TERIMA KASIH***

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