Growth of Urban Sprawl in Fringe Areas
(Case Study: Semarang City)

Bambang Setioko

ABSTRACT

Rapid population growth in urban areas affects the transformation of global settlement. One of the phenomenal urban trends in the 21 century is a change city to metropolitan cities. By the year 2015 the United Nation predicts there will be 358 metropolitan cities, no less than 153 will located in Asia. Currently Indonesia faces urbanization tension. Statistics show by 2008 in the first time urban population reached 50.5%. At the year of 2020 is expected there will at least 18 metropolitan cities, including Semarang City.

Internal structure of metropolitan cities is different to small cities. Now a day's internal structure of metropolitan city have becomes extraordinarily intricate. Metropolitan city become an archipelago of enclaves. Urbanization has occurred in fringe areas, called peripheral urbanization. The role of central city decreases while fringe areas increase.

Semarang as a port and ex-colonial city just has been on the earlier stages of spatial and structural evolution. Under Dutch colonial authority, Semarang administrative boundary had been expanded three times, by the year of 1886, year of 1894 and year of 1902.

By the year of 1976 once again the city administrative boundary was expanded. The municipal administrative area boosted from 99, 60 km2 to 373, 67 km2, becomes the second largest city after Jakarta. The zone which lies between old and new administrative boundaries often called extended area or fringe area. At the last of 20th century, most of housing estate was located in this area. Sharp increase of motor cycle possession makes longer travel distances, greater freedom of choice destination and extends scale of accessibility. This condition triggered development in fringe areas. However,

7 Department of Architecture, Diponegoro University, Semarang, Indonesia
it can be said in general urban sprawl in Semarang is fuelled more by fast growing housing estate due to the big amount of housing supply.

The growth of fringe areas has dualistic character; formal and informal; and dominated by sprawl development. There are un-planned kampong, indigenous settlements and new planned settlements. Most of them are incrementally spreading, mixed and growth simultaneously. Sustainable development means development which meets the needs of the present without compromising the ability of the future generation to meet their own needs. This principle becomes a main concept of housing policy and strategies, in order to reach sustainability of growth in fringe areas of Semarang city. Sweeping existing indigenous rural housing settlements and replace with new exclusive real-estate housing does not demonstrated proper solution which increases prosperity and sustainability.

Keywords: fringe area, sprawl-development, sustainability.

1. INTRODUCTION

In the global context, urban population growth has become a strategic issue. During the period of 1920 - 1980’s world urban population increased by fifth fold from 360 million to 1.807 million people. By the end of 2000, the urban population reached 78 percent becomes 3.208 million. In the same period, urban population in developed countries rise up 300 percent, however urban population in developing countries increase nearly 1000 percent from 100 million to 972 million people. The United Nation estimate the urban population of the developing countries in the year of 2020 will reach 2.116 million people (Hauser, 1982).

According to Janice Pearlman (Firman, 1991), the increasing urban population percentage in the world follows four transformation phenomena of global settlements during 21st century. The transformation phenomena’s are: [1] transforming from rural to urban. [2] Transforming from developed to developing countries. [3] Transforming from formal socio economic activity to the informal one. [4] Transforming from cities to megacities. The United Nation has been predicted by the year of 2015, it will be 358 million cities in the world and 153 million cities are located in Asia. Urban area development is very rapid and it grows horizontally, occupied rural surrounding areas. City has gigantic scale cover hundreds kilometres square and very hard to distinguish the border between rural and urban area, so it might be call “the borderless city”.

Currently Indonesia faces urbanization tension. Statistics show by the year of 2008 in the first time urban population reached 50.5 percent. By the year of 2002, this share is expected to reach 61.68 percent. In 1971 only three cities were classified as metropolitan cities: Jakarta, Bandung, and
Surabaya. During 1990 - 2000, four other large cities expected to move up to the metropolitan classification. By the year of 2020, the total number of metropolitan cities is expected to be eighteen including Semarang city (Bulkin, 1995).

This paper will discuss and explore the trend of spatial transformation and housing growth in fringe areas with the awareness of experiences from developed countries. The main idea is deeply understanding of urban growth trend through the identification gradual change of urban form. The result could be taken into consideration to make physical planning in the future. Furthermore, this understanding will become a platform for effective urban housing policy on Semarang city.

2. URBAN SPRAWL IN DEVELOPED COUNTRIES

The growth on fringe areas of the cities is becoming world-wide phenomenon. Fast growing urban fringe areas occurred both in developed countries as well as in developing countries. It’s a paradox phenomenon. Ever-expanding metropolitan region; that is most suitable occurred in the developed and wealthy countries; is often portrayed as an inevitable feature of large cities in the developing countries. As a matter of fact physical growth in fringe areas is dominated by sprawl development. Sprawl can be describes as un-planned, scattered, low density, un-structural development at the urban fringes. Urban sprawl linked to inconsistency of urban development strategy, social economy and democratization of society improvement and inequity problem. Anti sprawl reformers told that sprawl caused degradation of life and living environment. From economic point of view urban sprawl consumes valuable, limited land resources, including farm land and reduces food productivity. Sprawl also cost more than compact development. Urban sprawl was not only ecologically but socially destructive. In North America the declining centrality of urban core and increasing fringe areas has occurred in the most metropolitan cities. Statistical data of urban population density can explain that phenomenon. In US if current trends continue, about four-fifths of nation growth in the decade ahead will be living in suburbs (Gillham, 2002). During the period of 1960s - 1970s the white middle class migrate out of the city centre into the fringe areas, seeking safer neighbourhood and better environment. According to the 2000 census the phenomenon “white flight” has still occurred, making social, racial and income segregation more pronounced than ever before. Hal and Hay (1980) summarized the growth trend moving: [1] from larger to smaller metropolitan areas; [2] from metropolitan cores to fringes; [3] from urban to rural areas; [4] from older manufacturing areas to newer service areas (Kivell, 1993). When suburbs were booming and urban core seemed to be collapse, inner city was portrayed as poor and filled with minorities lived in shanty towns. In the contrary fringe areas describe as being white
and affluent. Gentrification at the urban core and sprawl development at the fringe areas have been flipsides of the same coin.

3. PHYSICAL GROWTH OF SEMARANG CITY

History of Semarang starts on 1547 AD as a trade and port city. At this time the city of Semarang still a small city, consists of several groups of indigenous Javanese settlement, Chinese settlement and a Dutch fortress. In this early period Semarang population growth rate was insignificant. At the mid of eighteenth century Semarang flourished as an entrepot of exported commodities from outer island to be sent to foreign countries. Many foreigners such as Dutch, Chinese and East Asian people (Indian and Gujarat) migrated to Semarang for trading. As a result the city grew very fast, and Semarang becomes the third largest harbour on Java Island. Under Dutch colonial authority, Semarang administrative boundary has been expanded three times, by the year of 1886, year of 1894 and year of 1902 (Colombijn, 2005).

The city economic development had created dense residential area in urban core surrounding Regent’s (Bupati) palace. The city centre was still the Dutch quarter (now namely Old City) equipped with luxury urban amenities with elegant urban design resembled of small city in Europe. On the contrary; the area of indigenous Javanese, Chinese, and Arab settlement sprawled along Mataram Street; were lack of urban facilities and urban amenities. The inhabitant lived in scattered slums houses, had narrow and disordered dirt paths. At that time those areas were considered as villages on fringe areas.

By the year of 1901, urban disaster was occurred. Many diseases such as dysentery, typhus, cholera stroke the slum areas caused many victims (Liem, 1933). Ethical movement and high mortality rate forced municipal government change strategy of city development. Physical growth of the city directed to the hilly area in the South named Nieuw Tjandi (Candi Baru); avoid swampy area which lies in the North. Ir. Thomas Karsten, person in charge as advisory for Semarang city planning change radically the old concept of racial separation that divided former urban settlements into Dutch, Chinese and indigenous Javanese districts. In his new concept, Thomas Karsten divided zoning area base on economic classes rather than ethnic segregation. But in fact the three ethnic groups were also divided into three economic classes. The Dutch and a few rich Chinese were in the highest economic class, in the middle-class category were Chinese and the majority of the Javanese were in lowest class category (Pratiwo in Colombijn, 2005).

After independence, Semarang city becomes the capital of Central Java Province. By the year of 1976 once again the city administrative boundary
was expanded. The municipal administrative area boosted from 99,60 km² to 373,67 km², becomes the second largest city after Jakarta. However, Semarang city still does not have an advance level of growth, with the growth rate of 1,41% over 2007. By the year of 2008, the built-up area is only about 36% of the entire municipal administrative area, and the net density is about 108 inhabitants per hectare. The zone which lies between old and new city administrative boundary mostly has rural characteristics. This area often called extended area or fringe area. At the last of 20th century, most of housing estate was located in this area. One of several reasons this phenomenon triggered by sharp differentiation between land price in urban core and urban fringe. In addition sharp increase of motor cycle possession makes longer travel distances, greater freedom of choice destination and extends scale of accessibility. This condition triggered development of remote areas in country side. Due to the lack of land pricing policy, detail planning and law enforcement, the growth of fringe area was dominated by sprawl development.

Figure 1. Map of Semarang City year by year
Source: Local Planning Development Agency (Bappeda Kota) Semarang
4. SEMARANG URBAN FRINGE AREAS

According to the study conducted by the “Department of Human Settlements and Regional Infrastructure” (2003) for urban and suburban areas of Semarang city, it can be said generally urban sprawl in Semarang is fuelled more by fast growing housing estate due to the big amount of housing supply. Based on statistical data of 2007 the population in city centre has negative growth rate while in urban fringe has high percentage. The condition demonstrates parts of inhabitants move from city centre to fringe areas. For five years (2002-2007) the population who inhabited city centre tended to decreased and urban fringe increased.

Comparing to other metropolitan city, building density in city centre is low category. City centre and fringe areas are grew simultaneously. Unstructured urban sprawl was scattered in fringe areas like archipelago of enclaves. Physically fringe areas consist of many types of settlement. Planned settlement developed by housing estates mostly occupied by middle and high income groups equipped with luxury urban amenities. In the contrary indigenous rural settlements grow in natural pattern lack of urban services and are categorized as un-planned settlement. Both settlement lay side by side. It can be said that fringe area has dualistic characteristics, a mixing between planned settlements and un-planned settlements. Un-planned settlements have informal and traditional characteristics inhibited by lower income class; however planned settlements have a formal-modern
characteristic inhibited by high income class. They are growing simultaneously.

Even though urban fringe has rapid growth municipal authority cannot gives enough attention yet. At present municipal authority do not have enough financial resources to improve basic infrastructure and municipal services to adequately meet the rapidly demand. Limited budget is a big constraint to build urban infrastructure and urban facilities in fringe areas. Most of budget proposed for city centre development and maintenance of old urban infrastructure.

According to the study held by Mustaqin (2002), most of inhabitants depend on city centre services, especially shopping facilities. These low income and poor groups contribute to forming new shanty areas without access to basic services such as water and sanitation, and at risk from environmental hazards such as floods and landslides.

5. CHALLENGES FOR SUSTAINABLE CONCEPT OF HOUSING POLICY IN SEMARANG URBAN FRINGE AREAS

The growth of fringe areas is inevitable phenomenon. It appears that urban sprawl in fringe areas has been a feature of urban life of most metropolitan cities in developed countries as well as in developing countries. Urban sprawl, like everything about the growth of cities, is very complex. This phenomenon becomes urban trend in this century. Experiences in developed countries clearly show how the anti sprawl concept; such as smart growth, urban growth boundaries, edges city etc; can’t successfully prevent rapid growth of urban sprawl in fringe areas.

Unlike North American cities, urban sprawl in fringe areas of Semarang doesn’t triggered social and racial segregation. The fringe areas are a mixing place between planned settlements and un-planned settlements. It has dualistic characteristic. They are growing simultaneously. The statistical data published by Local Development Planning Agency of Semarang City shows during the period 2002-2007 population in fringe areas increase remarkably in the contrary city centre has negative percentage growth rate. Most of new inhabitants lived in fringe areas coming from city centre districts.

According to the geological study held by Ir. Muroji (2005) the ground level of city centre will decline 1 cm per year caused by land subsidence. By the year of 2025 two third of city centre expected will go down below water sea level and suffered form environmental hazard like tidal flood which strike once a month. If municipal authority does not anticipate this kind of urban disaster in short period most of city centre area becomes shanty areas. Such condition force people moved out of the city centre to find better living
environment and cheaper land. Part of the city area which match to the hope of inhabitants only available in fringe areas.

According to the World Commission of Environmental Development, sustainable development means “development which meets the needs of the present without compromising the ability of the future generation to meet their own needs”. (WCED, 1987).

This principle becomes a main concept of housing policy and strategies, in order to reach sustainability of growth in fringe areas. The rapid development of housing estate in fringe areas should be reduced and development of un-planned settlement (indigenous rural settlement) has to stimulate. So the balance growth of social structure will develop naturally. Balance growth will shape social structure. Jenks (2002) implied in his book that urban form as the spatial configuration of social structure. To sweep existing indigenous housing settlement and replace with new exclusive real-estate housing does not demonstrated proper solution which increases prosperity and sustainability.

Comparing to other metropolitan cities, Semarang has low population density. As far as net density in city centre are low, infill development could be easily launched.

6. CONCLUSION

From the discussion above, we can conclude that:
- The development of city’s role from ex-colony port-city to regional primary city in Central Java, stimulate transportation network and changing urban form of Semarang city from compact city becoming spread city. The preview internal city’s structure which is very simple, now a day’s turns into intricate.
- After independence era, human settlement grows to the South and to the East, follows the growth of road and transportation network. The fast development of urban fringe areas is dominated by the housing estate, but the net density of urban centre is still low.
- Gentrification process has been occurred in the preliminary phase. Since urban centre gradually becomes shanty areas caused by land subsidence, inhabitant who lived in urban centre areas tends to move out of the city centre to find better living environment in urban fringe areas. This process is supported by the increasing a large amount of new housing estate where located at fringe areas. The main activities at urban core have been move sporadically and incrementally to fringe area.
- The urban fringe area is dominated by sprawl development and it has dualistic characteristic, a mixing between planned settlements and un-planned settlements. Un-planned settlements have informal
and traditional characteristics; however planned settlements have a formal-modern characteristic. They are growing simultaneously.

- Improving social cohesiveness is better solution to shape balance of social structure. It will minimize the destructive aspects of sprawl development. To sweep existing indigenous rural housing settlement and replace with new exclusive real-estate housing does not demonstrated proper solution which increases prosperity and sustainability.

7. REFERENCES


