

**PERI URBAN CHARACTERISTICS AND FUNCTIONAL
DEPENDENCY:
A CASE STUDY OF NORTH BANDUNG**

A thesis submitted in partial fulfillment of the requirements for
the Master Degree from Institut Teknologi Bandung and
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DOUBLE MASTER DEGREE PROGRAMME



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SCHOOL OF ARCHITECTURE, PLANNING AND
POLICY DEVELOPMENT
INSTITUT TEKNOLOGI BANDUNG**



AND

**ENVIRONMENTAL AND INFRASTRUCTURE PLANNING
FACULTY OF SPATIAL SCIENCE
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ABSTRACT

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This research is about the characteristics of urbanisation in the fringe area of major cities and their relation to the urban centre. In order to find out why and how peri urbanisation is taking place, three factors are examined. The different types of peri urbanisation, their functional relation with the city proper and the implications of peri urbanisation for the local planning practice are the three points of focus in this research. These factors are evaluated on three different levels.

Academic literature on the factors of peri urbanisation in East Asia is reviewed to provide a theoretical framework. This framework serves as the basis for further examination of the Indonesian situation and the case of North Bandung in particular. The Indonesian planning system and the characteristics of peri urbanisation are reviewed to put the case of north Bandung in a wider context.

In the case of Bandung, four areas in the fringe of the city are selected. In these areas, the factors of peri urbanisation are examined using land use data from the local governments and observations in the field. The findings of this research indicate that many of the peri urban developments in Bandung City come in the form of high class residential areas. Developers make large investment in infrastructure to connect the developments with the urban centre. The developments extend into several administrative regions, causing problems for the local planning practice in infrastructure provision and environmental management.

Keywords: Peri Urbanisation, Functional Dependency, Administrative Regions, Indonesia, Bandung.

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Preface

Having lived and studied in Indonesia for over a year, I have been given the opportunity to gain insights in the country that go beyond a tourists' perspective. Coming from a strictly planned and organised country, I can say that studying and observing the Indonesian situation was an eye opening experience. It is therefore that I have chosen to do my thesis research here. Gated communities drew my immediate attention since it is a phenomenon that is unseen in the Netherlands. The topic of large scale land conversions in North Bandung was therefore an easy choice for my research. However, finding the right angle for this topic was not that easy. It is therefore that I would like to thank my supervisors in guiding me in this, as well as for providing me with the freedom to undertake this research. I would also like to thank my friends for making a foreigner feel welcome in their country. Last but not least I want to thank my family for their moral support.

Bandung, Augustus 2010

Bas Dekker

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Chapter 1

Introduction

1.1 Background

Urbanisation is the expansion of urban populations and the cities they inhabit. According to reports from the United Nations Population Fund (UNFPA), urbanisation is most rapid in developing countries. Being centres of economic activities, cities attract people from rural areas with the prospect of higher wages and better standards of living (UNFPA, 2007, p.15). Many migrants settle in the fringe areas of the city. With a lack of adequate services and amenities and a higher amount of irregular settlements, the land value and therefore the rent is often lower in these areas (Jäger, 2003). The uncontrolled settlement on the edge of cities can cause so-called urban sprawl. These days, many major urban centres have lost their 'city-identity' because of this urban sprawl and it is often difficult to determine what the actual boundaries of a city are (Webster, 2002). Not only do cities expand because of the settlement of migrant workers, many developments in fringe areas of cities are initiated by real estate developers and speculators. Urban areas are often surrounded by rural land which tends to have a lower value and therefore changing rural land to a use with a higher value provides an interesting investment opportunity (Jäger, 2003). While many of the city-edge-landscape remains rural, its character can change rapidly by the aforementioned factors. Small scale farming, industrial estates, squatter settlements and luxurious housing complexes are all types of land use that can be found in peri-urban areas. Planning for these so called 'peri-urban areas' can become extra burdensome since they often extend the administrative boundaries of the core city, thereby becoming the responsibility of multiple local governments. Many local governments pursue their own political agendas (Sieverts, 2003, p. 8),

creating a 'tragedy of the commons' situation. In planning for the peri urban areas lies a large opportunity for regional governments to coordinate these local governments on issues that require cross border cooperation. However, in practice, regional governments prove to be powerless due to decentralized government functions (World Bank, 2003, p.80). In many cases, expansion of the urban area does not follow the regulations in local land use plans and urban functions do tend to exist beyond a city's administrative boundary. In fact, the administrative boundary of a city can all too often only be seen on a map and it no longer represents a natural physical border. Functional regions and administrative regions rarely have the same outline.

This research will explore several aspects of peri urban areas by looking at their land use patterns, functional dependency and implications for the local planning practice. Together, these factors determine a level of urbanisation in the fringe area of a city. By examining these factors, this research hopes to provide insight on the drivers and forms of peri urbanisation as well as their locations. Gaining a better understanding about why and how peri urbanisation is happening will help planners, politicians and other government officials involved in urban management in developing strategies to reduce its negative impacts. By examining the aspects of peri urbanisation in a specific case, this research hopes to add to the empirical knowledge about peri urbanisation in developing countries in East Asia.

There are several political, physical and economical characteristics of North Bandung which make this case interesting for a study about peri urbanisation:

- I. Political characteristics: The peri urban area of North Bandung is largely situated in a preservation area which serves as the main water catchment area for the Bandung Metropolitan Area (BMA), requiring special attention and regulations regarding land development.
- II. Physical characteristics: The peri urban area of North Bandung is located on hilly terrain, making it vulnerable to soil degradation and erosion when the land use is changed.

III. Economical characteristics: The peri urban area of North Bandung has an agreeable climate with great views of the city and its surrounding mountains, making it an attractive area for investors and land developers to exploit these natural features.

Taking these three contextual factors into account, it becomes clear why the case of North Bandung is worth researching, not only to understand this particular case but also to provide insight in other cases of rapidly urbanising regions throughout East Asia. Although Bandung is a secondary urban centre in Indonesia and Jakarta is receiving most of the foreign investments (Firman, 2009a), urban expansions in the fringe area of this city are thought to be an effect of an increasing level of globalization (Hudalah, 2010, p. 43). The increased flow in global capital indirectly causes the emergence of a large middle class (Kampen & Naerssen, 2007, McGee, 2002). Therefore, the case of Bandung can be seen in a wider context of peri-urbanising cities in East Asia, influenced by globalization. Kampen and Naerssen (2007) explain how globalization ‘changes the function of national states; by stressing the development of sub-national regions’. Leaf (2002) also attributes peri urban changes as effects of globalization, using examples from China and Vietnam.

In this chapter, the goals of this research, together with the applied research methods are explained.

1.2 Problem statement

Planning is forecasting, predicting and anticipating to future changes. To do this, plan makers and politicians need the right authority and jurisdiction to carry out plans. Characteristics of urban sprawl are that it usually does not follow local regulations and plans and it often extends beyond cities’ administrative boundaries, making it difficult to control.

It is assumed that land use patterns extend beyond administrative boundaries in areas characterized by high urban growth and weak cooperation between local

governments (UNFPA, 2007, p.48). These urbanised areas on the edge of the city are to a certain extent functionally dependent on the city proper. Therefore, connectivity to the urban centre is thought to be a major determinant of development in the periphery of cities (Webster, 2002). There is, however, little knowledge about the relation between city connectivity and the different land use patterns in peri urban areas.

1.3 Research objectives and questions

There are several objectives that this research will address. The first objective is to understand what the characteristics of peri urbanisation are. The second objective of this research is to gain insight on how peri urban areas are functionally dependent on the city proper. The last research objective is to understand what the implications of peri urbanisation are for the local planning practice. Hopefully, by reaching these objectives; politicians, researchers, planners and other participants in the planning process are given some thought on the different forms of peri urbanisation and how they are functionally related to the urban centre. Hereby, the goal is to gain insight on the effects of peri urbanisation and their implications for the local planning practice.

Based on the research objectives above, this research will develop along the lines of the following research questions:

1. What are the characteristics of peri urbanisation in East Asian cities?
2. How is urbanisation in the fringe areas of a city functionally dependent on the urban core?
3. What are the planning implications of peri urbanisation?

1.4 Significance of Research

Much has been written on the forces behind peri urbanisation (Webster, 2002; Leaf, 2002; Firman, 2009a; Hudalah, 2010). This research aims to contribute to academic knowledge by exploring the linkage between peri urban development and their connections with the city. Urbanised areas in the periphery of a major city

are thought to be more or less functionally dependent on the city proper (Webster, 2002). This functional dependency is represented by a high level of connectivity to the city proper. The extent to which a certain land use is functionally part of the city will result in a location choice with higher access to the urban centre (Harvey, 1987 in Kivell, 1993, p. 15). Understanding the forces behind peri urbanisation will help plan and policy makers in reducing the negative impacts for the urban and ecological environment. This research is largely descriptive and its aspirations are therefore humble. The ultimate goal is to add to the empirical knowledge on the subject of peri urbanisation.

1.5 Research methodology

To answer the research questions, this research is divided into several methodological steps.

The first step in this research is the literature review in which a theoretical framework will be developed. This framework focuses on three aspects of peri urbanisation. The first one focuses on the physical characteristics of peri urban areas. It provides an overview of the different types of land uses. Some contextual aspects of peri urban land uses are mentioned (e.g. government roles, capital investment etc.). These will not be further examined in the case study but merely serve as background information. The second aspect is the functional dependency of peri urban land uses. It shows how they are functionally related to the core city. The last aspect that is examined in this research focuses on the implications of peri urbanisation for the local planning practice. The theoretical review will be based on academic sources such as books relating to the topic and articles published in scientific journals.

The second methodological step in this research is a description of the process of peri urbanisation in Indonesia, using the same three factors that were discussed in the theoretical framework. Academic literature on empirical cases of peri urbanisation in Indonesia are reviewed, together with some policy documents. By focusing on the Indonesian situation, this step provides some insight on the

contextual factors explaining the ‘what’ and the ‘why’ of peri urbanisation in this country. These contextual aspects are important for the third methodological step

The third methodological step in this research involves a case study. Again, the three factors of peri urbanisation will be examined, only this time in the specific case of the northern part of Bandung City. Along the administrative boundary of Bandung Municipality, four areas are selected using images obtained with the Google Earth software and land use plans from the local planning agency (Bappeda). This line is taken as a rough indicator of what is thought to be the peri urban area of Bandung. Two areas are selected for their relative good connections with the urban centre, represented by a number of roads. The other two areas are selected for their inaccessibility, due to their topography. By doing observations in the field and interviewing people from the local community, the three factors of peri urbanisation are examined.

At the end of this research, the findings are combined and the theory on peri urbanisation is compared with the findings from observations in the field. Resulting from this, there are some lessons to be learned. An overview of the research methodology can be seen in the following figure (fig 1.1).

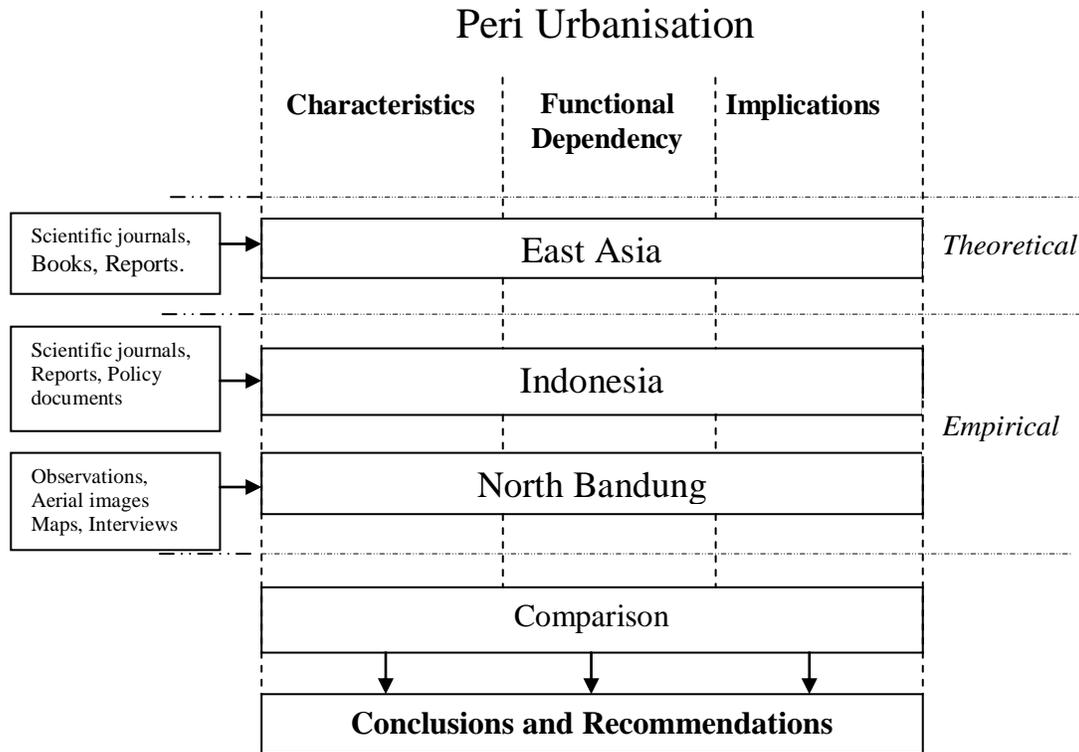


Figure 1.1: Research Methodology

Methods

For the case study, observations in the field were done by visiting the areas of interest and looking at which land uses were most prevalent in a specific location. This was later verified by using the Google Earth images and land use maps from the local planning board. The availability of the maps was the determining factor in selecting them. The photos in this research are merely used to support the observations and no statistical or quantitative data is used for doing the field research. Interviews were done with people from the local communities. Participants were selected based on their willingness to talk. The form of the interview was rather informal. No names are used in this research and the information obtained through conversations merely serves as background information.

1.6 Structure of the thesis

Aside from chapter one that has been presented, this research consists of 4 chapters. The structure of the chapters and the content can be described as follows:

Chapter 2: Theoretical perspectives on peri urbanisation

This chapter discusses some contemporary theoretical perspectives on the subject of peri urbanisation, mainly focused on East Asia. It provides the basis of the further exploration on the Indonesian situation and the case of North Bandung in particular.

Chapter 3: Peri Urbanisation in Indonesia and North Bandung

In this chapter, peri urbanisation in the Indonesian situation is explored. This chapter follows the same outline and discusses the same factors as chapter 2. The function of this chapter is to provide a context for the case study of chapter 4.

Chapter 4: Peri Urbanisation in North Bandung: A case study

In this chapter, an overview of the findings in the case of peri urban areas in North Bandung is given. The three factors of peri urbanisation are examined for this case.

Chapter 5: Conclusion and Recommendations

In the last chapter of this thesis, an overview of the research findings is provided and a comparison is made of the findings in chapters 2, 3 and 4. At the end of this chapter, some recommendations are made.

The research structure in the following figure (fig. 1.2) provides an overview of the content of the chapters.

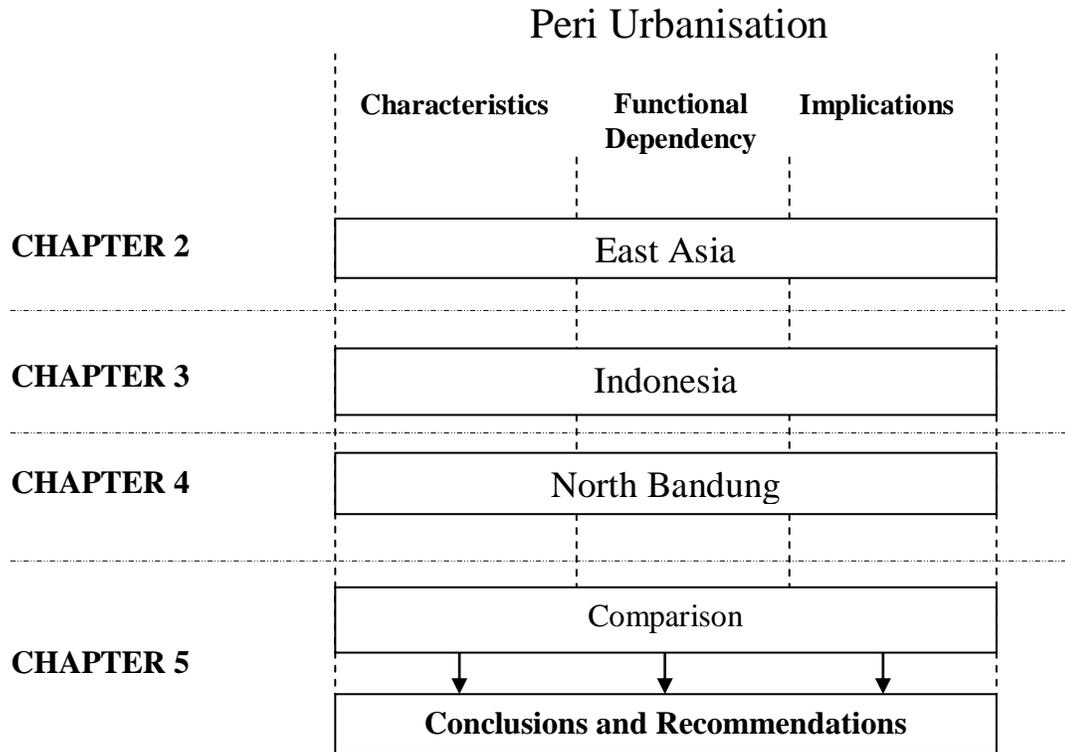


Figure 1.2: Research Structure

Chapter 2

Peri Urbanisation

Theoretical Perspectives

In this chapter, the theoretical background of the topics addressed in this research is discussed. This is done by using contemporary literature from academic sources such as books and articles from peer reviewed scientific journals. The purpose of this theoretical framework is embedding the research into a wider context. In order to draw general conclusions based on site specific observations, as is the case in empirical research, one needs to understand its' context first. The case of the land use patterns in peri urban Bandung fits into a wider context of peri urban land use in East Asia. Therefore, a general overview of the East Asian perspective is the first topic discussed in this theoretical framework. In paragraph 2.2, the characteristics of peri urbanisation in East Asia are discussed. Paragraph 2.3 deals with the functional dependency of peri urban land uses and the way this influences location choice. In paragraph 2.4, the implications for the local planning practice and the key fields involved in peri urban planning are described.

2.1 Introduction

Much has been written on the fading distinction between urban and rural. Former agricultural lands are transformed into residential or industrial areas and it becomes more difficult to determine where the city stops and where the countryside begins. Peri urbanisation is a much used term for this phenomenon and according to Webster (2002) it refers to “a process in which rural areas located on the outskirts of established cities become more urban in character, in physical, economic, and social terms, often in piecemeal fashion”. Peri urbanisation is a global phenomenon and scholars have undertaken empirical research on cases of peri urbanisation in countries throughout East Asia (e.g. China (leaf, 2002; Lin, 2001), Indonesia

(Goldblum & Wong, 2000; Firman, 2000, 2009a; Hudalah, 2010) the Philippines (Webster, 2002), Thailand (Webster, 2002) and Vietnam (Leaf, 2002)).

Scholars attribute the rapid change of the landscape on the edge of East Asian cities to the forces of globalization. Due to a higher mobility and a revolution in communication technology, the world is becoming more globally integrated. A great deal of the global capital is flowing around the globe on a scale that has never been seen before. Global capital movement is an influential factor on urban growth (Wu & Radbone, 2005). McGee (2002) explains how globalization influences peri urban changes in three ways. The first one is the relocation of industrial activities from developed countries to countries with lower production costs. Second is the technological revolution which shortens transaction times and enhances the flow of capital and information. Last is a change in consumption patterns. This can be seen in the emergence of a global lifestyle. The development of shopping malls, fast food restaurants and the increased demand in family housing change the urban interface in the fringe of East Asian cities. Much of the urban expansion is happening in the periphery of existing cities. There are several characteristics of peri urban areas which make them grow faster than existing city centres. The availability of large plots of land against a relatively low price, the accessibility to the services provided in a nearby city and the encouragement of state policies are some of the reasons why urban expansion is most rapid in these areas. The following paragraph will provide an overview of the characteristics of urbanisation in the fringe areas of major cities.

2.2 Characteristics of peri urbanisation

According to Webster (2002), one of the main triggers for large scale peri urbanisation in East Asia are the inflow of global capital through Foreign Direct Investments (FDI). In most cases, the manufacturing sector is the main target for FDI. Investments in manufacturing are driven by the need for lower production cost. Webster (2002) explains that the foreign investments in manufacturing are usually allocated to peri urban locations because those are the areas where large plots of land are still available. This large amount of land is needed since both investors and local governments prefer to group manufacturing firms in industrial estates. A high level

of services provided by the nearby city is another major draw card for investors to locate their factories in peri urban areas. Nowadays, many public policies are directed to locate manufacturing firms in peri urban areas to reduce the externalities of having factories in densely populated urban areas. These policies require the provision of the infrastructure such as rail-transport, access to ports, highways and telecommunication facilities. Peri urban areas provide manufacturers with a large pool of cheap labour. The workers can be from the local community or migrants looking for better jobs in the periphery of the city (Webster, 2002).

Besides the manufacturing sector, the development of residential areas is another example of the rural to urban land conversions taking place in peri urban areas. In the case of Indonesia, this phenomenon is extensively described by Firman (2000, 2009a). Rural land on the fringe of large cities is acquired and transformed into residential areas for several reasons. The main reasons are to escape the hectic of the city and to create a living environment in which the negative aspects of city life can be controlled. Less pollution, traffic congestion and a higher level of safety are the main reasons for people from mainly higher income groups to move to so called 'gated communities'. According to Firman (2000), residential development in the fringe areas tends to become 'land business undertaking'. This refers to a process in which cheap agricultural land is acquired for the sole purpose of speculation. Land owners have no intention to develop the land and wait for the land value to rise before it is sold. In this way, land is left unused for a long time. If FDI was the main trigger of developments in the manufacturing sector in peri urban areas, it is so to a lesser extend in the property sector as previously described. However this does not necessarily mean that residential development in the areas beyond the core cities are initiated locally. They are mainly results of external investments through inflowing capital from outside the region. This can be through either domestic investments or through foreign direct investments (FDI).

Despite the increasing amount of industrial activities and residential estates for middle and higher income classes, a large portion of the land uses in peri urban areas remain rural in character. Areas around urban centres often play an important

role in the provision of food for the populations living in cities. Productivity is higher since transportation and storage costs are generally lower in when the production sources are near to urban areas. Therefore, areas surrounding the build-up environment of cities are often rural (DANIDA, 2000).

Another distinct characteristic of peri urban areas are the high amount of irregular settlements. These settlements are built by migrants moving to the city in search of a better lifestyle. Sieverts (2003, p. 4) explains this process as follows:

“an old city functions as a centre of attraction for city migrants who leave their villages for the widest possible range of reasons – usually there are several – ranging from overpopulation or lack of basic foodstuffs, caused by unemployment, to the promise of emancipation offered by migration to urban centres. Such migrants look for a place of settlement in which they have access to the blessings of the city but can still operate a modest semi-urban agricultural economy, the consequence of these decisions, each of which is logical in its own terms, is a less structured, more open settlement between city and country, which develops further with its own workplaces and facilities into a more or less independent *zwischenstadt*.”

Peri urban areas are characterized by their rapid transformation from a traditional rural character to more urban forms of land use (DANIDA, 2000). These land uses are in many cases not homogenous in their character. This paragraph has provided several examples of peri urban land uses; high and middle income residential developments, industrial estates, informal settlements for migrant workers and rural communities are four main types of land uses that can be found in the periphery of major cities in East Asia. The next paragraph provides an overview of how these peri urban functions are related to the core city.

2.3 Peri urbanisation: functional dependency and land uses

The words ‘urban expansion’ indicate a certain relation between the urban functions and their proximity to the urban core. Classic theories on location choice use the distance to the urban core as a determinant for land price and urban functions

(Kivell, 1993, p. 18). Harvey (1987) explains why urban centre connectivity is important in the choice for urban land use. These urban centres, or CBD's, can be considered as the most accessible point and the focus for labour and retail markets and transport (Harvey, 1987 in Kivell, 1993, p. 15). It is therefore that urban expansions in the fringe of major cities are thought to belong to the same functional region as the core city. The Organization for Economic Cooperation and Development (OECD) defines a functional region as follows:

“A territorial unit resulting from the organization of social and economic relations in that its boundaries do not reflect geographical particularities or historical events. It is thus a functional sub-division of territories. The most typical concept used in defining a functional region is that of labour markets” (OECD, 2002 p. 11).

Access to labour markets is probably the clearest example why peri urbanisation occurs. Middle and high income residential areas in the fringe of the city depend on their proximity to the urban core. Most people living in the housing estates on the fringe of cities are working in the core city (Webster, 2002). In the case migrant workers settling in periphery of the city, the job opportunities in the urban centre and the relatively easy connection to the city are the reasons for their settlement location (Sieverts, 2003, p. 4) and industrial estates located in the periphery of major cities in East Asia are depending on their access to the city for their high amount of amenities and services and the skilled labour pool (Webster, 2002).

Roads represent the level of connectivity between peri urban areas and the core city. McGee (2002) explains that spatial planning practices are altering and shaping urban regions by developing road systems. By doing this, the interactions between rural and urban are being reshaped. Many nations in East Asia are developing freeway systems and in the case of China, Webster (2002) explains how access to the nearest freeway access is now the main indicator of accessibility to the urban core.

Altogether, a main indicator of peri urbanisation is the level of connectivity to the city centre, represented by roads. However, connectivity becomes less important when peri urban areas are becoming functionally independent. Sieverts (2003, p4) gives an example of how this process works. The fringe areas of the city are locations where both the openness of the countryside can be enjoyed while the comforts of the city are within reach. These features attract house buyers and the peri urban area becomes more residential, which in turn attracts other consumer provisions and workplaces. In this way, an initially residential area is slowly evolving into a self providing functional region with mutual dependency between itself and the original city.

When functionally specialized areas have emerged, the accessibility to these areas will play an important role in the location choice of urban functions. Harvey (1987) explains that functionally specialized areas have the benefits of agglomeration economies. They provide a special labour supply or a certain social status or reputation for households which make the choice for that particular location advantageous over another (Harvey, 1987 in Kivell, 1993, p. 15).

Peri urban areas often consist of a large array of different functions, depending not only on demographic and geographic features, but on cultural differences across countries as well. However diverse, Sieverts (2003, p. 3) points out that peri urban areas all over the world, share common characteristics:

“A structure of completely different urban environments which at first sight is diffuse and disorganized with individual islands of geometrically structured patterns. A structure without a clear centre, but therefore with many more or less sharply functionally specialized areas, networks and nodes.”

In the peri urban areas with its rural and urban features, its functionally specialized areas and extensive infrastructure networks, it is thought that the landscape is the binding element. Sieverts (2003, p. 9) explains that the landscape is the glue that binds together these polycentric, highly varied urban areas by using the metaphor of an ‘archipelago in the sea of an interconnected landscape’. This

landscape can in itself be a factor in the location choice, together with other historical of site specific characteristics (Harvey, 1987 in Kivell, 1993, p. 15).

2.4 Political status of peri urban areas and implications for local planning practice

After reading this introduction on Peri urbanisation, one could argue that peri urban development does not necessarily have to be negative. It is clearly in the best interest of the private sector to locate their developments in the fringe areas of major cities. However, there are some characteristics of peri urbanisation that are associated with negative impacts. These are clearly not in the best interest of society in general. Webster (2002) shortly summarizes these negative effects of peri urbanisation as “Rapid environmental deterioration; large-scale, often haphazard, land conversion; and infrastructure backlogs”. A negative effect of peri urbanisation in the form of high class residential developments is the socio-economic segregation it can cause. The clearest examples of this are the ‘gated communities’ which are physically separated from their poorer neighbouring communities by walls and fences (Firman 2004, Leisch, 2002).

The conflict between market interests and the collective interests of society is the justification for government intervention through planning (Friedman, 1987 p. 29). The way in which planners attempt to deal with this conflict is by guiding physical changes to meet society’s needs. Harvey (1985) describes tasks of planners as follows:

“Professional planners find themselves confined, for the most part, to the task of defining and attempting to achieve a ‘successful’ ordering of the built environment. In the ultimate instance the planner is concerned with the ‘proper’ location, the appropriate mix of activities in space of all the diverse elements that make up the totality of physical structures- the houses, roads, factories, offices, water and sewage disposal facilities, hospitals, schools, and the like – that constitute the built environment.” (Harvey, 1985 p. 176)

If it is a planners' task to achieve a 'successful' organization of the built environment, then why are peri urban areas still facing the problem of uncontrolled urban growth? What makes planning for these areas difficult? One reason could be the fact that peri urbanisation often extends beyond administrative city boundaries. This is the case when a functional city region becomes bigger than its administrative boundaries. Sieverts (2003, p. 8) explains that "Planning across local authority boundaries is restricted due to sovereignty and public expenditure limits". Poor communication between local governments and the fact that local authorities each have to pursue their own interests further contribute to the problem.

For planning purposes, it is most desirable that administrative regions have the same outline as functional regions. When this is not the case, planning problems might occur due to tensions between local governments of the different administrative regions. According to Anderson (2002) there are some examples of policy fields which are affected by discrepancies between functional and administrative regions. Labour market policy influences the entire functional region since it extends administrative municipal boundaries due to commuting. A person can live in one administrative region, but work in another. Another clear example of a planning problem for functional regions which extend administrative boundaries is the supply of infrastructure. Functional regions reflect a certain patterns of interaction. It is therefore that infrastructure should be provided according to these patterns. However, it is often difficult to reach agreement between local governments of municipalities inside a functional region (Anderson, 2002). There are some characteristics of functional regions which make it difficult for administrative regions to adjust to their size. There are different types of functional regions with different sizes. For example, people work in one region, but go shopping in other regions. This makes it impossible for one administrative region to cover all functional regions. Another characteristic of functional regions is the fact that they are not constant in their size. Labour markets expand as new companies settle in fringe areas of cities, making it possible for commuters from further away to work here. Functional regions can also shrink in size. This can be the case when new

employment opportunities in the rural municipalities make it unnecessary for workers to commute to the city (Anderson, 2002).

In the case of a major city with surrounding rural municipalities, it becomes difficult for a city administration to plan for urban development beyond their administrative boundaries. First and main reason for this is that the city government has no jurisdiction or authority to plan across their borders. Public services like the provision of water, sewage systems, solid waste collection and other infrastructures all depend on regional tax collections and are therefore impossible to provide outside the administrative regions. On the other side, governments of local communities that surround the urban areas have little or no incentive to provide these services to accommodate peri urban developments. Not only becomes planning problematic when functional regions are bigger than their administrative counterparts, administrative borders can also extend the area of a functional region, which is not an optimal situation due to the unnecessary bureaucracy it involves and the ineffectiveness of local planning practice (Note: reasons for decentralization of government functions). Expansion of the administrative city boundaries to better accommodate the urban built-up area requires a highly centralistic form of government. For neighbouring rural communities, the expansion of urban administrative regions will mean the loss of urban functions which often generate high income from tax collection.

A more optimistic view on the role of local governments in the context of the decentralization is held by DANIDA (2000). They provide some views on how local governments can take a leading role in establishing good interactions between the city and the countryside, which is thought to be the basis for regional development. Local governments can facilitate these positive interactions and limit the negative exchanges by taking a leading role in decision-making on physical transport and communication infrastructure. Although, wider alliances are necessary to gain access to financial resources, which local governments usually lack. Another important field for local government intervention is the management of natural resources and waste. But once again, wider alliances with other local, regional or national governments

are needed since waste and resource management often includes much wider areas than those of local government jurisdictions. Crucial to local development planning and practice is the national land administration practice, even though this is not the responsibility of local governments but is reflected by national level policies (DANIDA, 2000).

2.5 Summary

Chapter two has provided an overview of different aspects of peri urbanisation coming from recent academic literature, mainly using examples from East Asia. These three aspects are:

1. Peri urban characteristics. Peri-urbanisation expresses itself through specific land-uses. These are found to be: industrial estates, middle and high class residential areas and squatter settlements.
2. Functional dependency. There are two forms of peri urbanisation and its land uses. Those that are:
 - A. Functionally dependent on the urban core. In that case, the emphasis in the location choice is on transportation connections to the urban centre.
 - B. Functionally independent. In that case, accessibility within the functional region becomes important, as well as site specific features (e.g. Land price, associated reputation, historic value) that determine location choice.
3. Implications for planning practice. Besides environmental problems associated with peri urbanisation, the main planning issues in dealing with peri urbanisation are the provision of infrastructure, water and sewage systems and solid waste management. This is mainly caused by the fact that peri urban areas often extend beyond administrative boundaries.

These aspects of peri urbanisation form the basis of a further exploration on the Indonesian situation (Ch. 3) and more specifically, the case of the northern part of Bandung City (Ch. 4).

Chapter 3

Peri Urbanisation

Indonesia and North Bandung

This chapter focuses on peri urbanisation in Indonesia and North Bandung. It starts with an introduction on Indonesia and the city of Bandung, followed by an overview of the planning practice in Indonesia in paragraph 3.2. After that, the three aspects of peri urbanisation as discussed in the previous chapter are examined for Indonesia and North Bandung in paragraph 3.3, 3.4 and 3.5. The purpose of this chapter is to provide a context for the case study in chapter 4.

3.1 Introduction

Indonesia is a country in south East Asia with approximately 240 million inhabitants. The country consists of about 17 thousand islands and the main centre of political and economical power is Java, the island where almost half of the population lives. Jakarta is the capital of the nation and an estimated 20 million people live in the greater Jakarta region. Other major cities on Java are Surabaya and Bandung, with both metropolitan areas containing over 5 million people. Indonesia knows a long history of colonial rule but in 1945, when independence was declared, the country became a republic. Indonesia's central government is seated in Jakarta, from where the country is administered. Furthermore, Indonesia is divided into 30 provinces which are all subdivided into several districts or city regions (CIA, 2010).

Bandung is the third largest city in Indonesia. It is the administrative capital of West Java and is located at an altitude of approximately 700 meters above sea level. The greater Bandung Metropolitan Area (BMA) contains approximately 7 million inhabitants. Bandung City lies in a basin surrounded by volcanic mountains. The landscape of North Bandung is characterized by the slopes and foothills of the

mountains in the north. This area is generally referred to as North Bandung Area (NBA) and is delineated in the south by the contour of 750 meters altitude. NBA falls within four administrative regions: the West Bandung District, Bandung District and the Bandung and Cimahi Municipalities.

Development in the North Bandung Area has been controversial since it was declared a conservation area in 1982 by the governor of West Java (Governor's Decree, 1982 in Natalivan, 2004). In figure 4.1, the contours of the NBA can be seen. NBA serves as the main water catchment area and it is estimated that, due to its geological characteristics, NBA provides approximately 60 percent of the region's groundwater need (penataan kawasan punclut, 2004 in Hudalah, 2010).

Bandung City and the surrounding hills with their pleasant atmosphere are becoming the main tourist attractions in West Java Province. During the weekend, thousands of people from Jakarta come to Bandung and visit its shopping malls, restaurants and hotels. Through a recently developed system of toll roads, Bandung is now only several hours driving away from Jakarta. The heightened accessibility of Bandung is causing traffic congestion during the weekends (Firman, 2009a).

Before looking into the characteristics of peri urbanisation in Indonesia and Bandung, an overview of Indonesian planning practice is given to understand the political context in this country.

3.2 Planning in Indonesia

Hudalah (2010) provides a general overview of the planning system in Indonesia of which a short overview will be presented here. Indonesia has a hierarchical planning culture in which plans are made at different scales at all levels of government. General spatial plans (RTRW), detailed spatial plans (RDTR) and detailed engineering design (RTR) are the types of plans made by central, regional and local governments (Hudalah, 2010). Figure 3.1 provides a schematic representation of the planning structure in Indonesia.

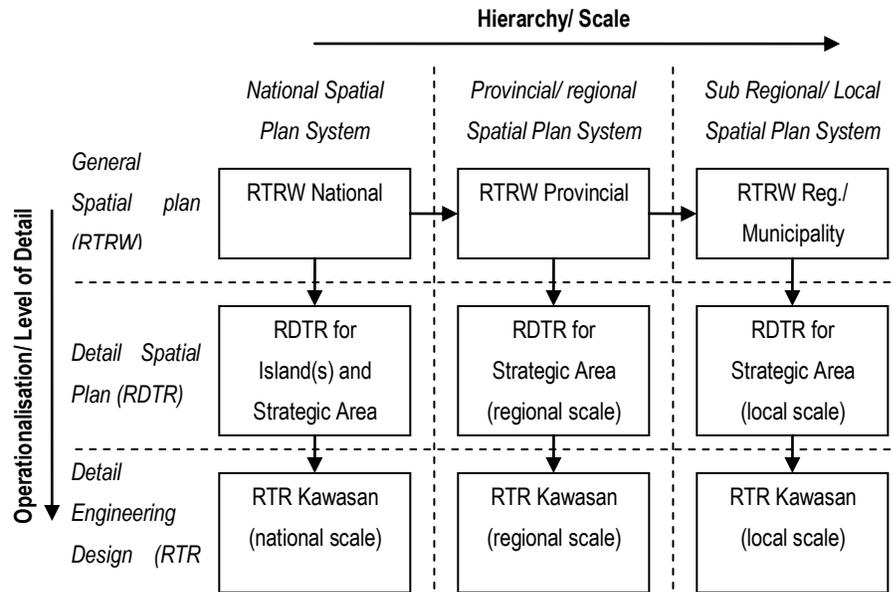


Figure 3.1: Spatial planning system in Indonesia (Hudalah, 2010 pp.48).

Based on the classification of planning approaches used by the European Commission (1997), one could argue that Indonesia traditionally uses the integrated comprehensive approach, since the planning culture is characterized by its' hierarchical structure which focuses on public sector activities across different sectors. However, the adoption of a new spatial planning law in 2007 indicates a shift away from the integrated comprehensive approach (a left over from the Dutch colonial era) towards a land use management approach as can be seen in North American countries. This doesn't mean that the hierarchical structure is abandoned but the usage of zoning and planning codes has become more important to stimulate growth management and development control. (European Commission, 1997, p. 36-37; Hudalah, 2010, p. 48)

In 1998, Indonesia faced a severe financial and economic crisis which pushed the country into a transitional phase. Since then, Indonesia's government has seen many reformations which are characterized by an increase in regional autonomy and fiscal deconcentration. Main arguments for this were to make governments more accessible to people by granting regional autonomy and higher equity in spending of

public funds by local governments which are more connected and have a better understanding of local development needs (Firman, 2009b).

According to Hudalah (2010, p. 49), there are some formal and informal institutional forces that need to be explained in order to understand Indonesian spatial planning. The formal institutional forces focus on government structure and land and property rights. The constitution of Indonesia from 1945, states that the uses of land, water, space and natural resources are to be controlled by the state, to ensure their greatest benefit to the Indonesian citizens. This law is followed by the 1960 agricultural law which allows the state to regulate the legal ownership of the land and to cultivate the land. The protection, maintenance and equitable uses of the land are elements which are also adopted in this law. The spatial planning law of 1992 is another formal institutional force which requires all levels of governments to direct spatial developments in their regions. Planning control instruments are necessary for this, since preparing spatial plans is often not enough to control changes in land use (Hudalah, 2010, p. 50-51).

Informal institutional forces that shape Indonesia's planning and political system originate from the vast cultural differences that exist within the nation. Main influence is thought to be the Javanese culture, which is dominant in Indonesian politics. This strong hierarchical culture enables a paternalistic type of government which is reflected in planning practice by its discretionary character (Cowherd, 2005). The extensive bureaucratic procedures and large amounts of rules and norms that characterize Indonesian decision making are thought to be remainders of the Dutch colonial era (Cowherd, 2005).

3.3 Characteristics of Peri Urbanisation in Indonesia

Webster (2002) mentioned that most developments in the fringe areas of major cities in East Asia are in the manufacturing sector, often triggered by foreign direct investments. However, this is not necessarily the case for Indonesian cities. The Indonesian context of Peri urbanisation is described by Firman (2009a), who found that, in the fringe areas of major Indonesian cities like Jakarta and Bandung,

rural land is mostly transformed into residential types of land use catering for middle and high income groups. The residential estates or 'new towns' can reach a size of several thousand of hectares. These so called 'gated communities' are meant to fulfil a desire for a better lifestyle, a certain prestige and a high level of security that is difficult to obtain in normal urban life (Firman, 2004).

The process of what Firman (2000) calls the 'land business undertaking' starts by real estate developers obtaining the exclusive rights from the local authorities to buy up large plots of land. This rural land is either bought directly from farmers or by the use of so called 'land brokers'. Farmers often have no way of objecting to these rich and thereby powerful developers who often directly or indirectly intimidate them (Moeliano, 2009). Contributing to their weak position is the generally weak or absent land administration practice in Indonesia which leaves land rights and ownership often unclear (Firman, 2000). Large transformations of rural to residential uses of land were initiated during the property boom of the 80's and early 90's. The South East Asian economic crisis of the late 90's halted the development of new towns considerably, but research has indicated that the Jakarta and Bandung metropolitan regions have been developing rapidly in the mid-2000's as they were before the economic crisis (Firman, 2009a). Land development is generally seen as a safe investment opportunity in Indonesia, attracting land speculators to buy up land without the intention to further develop it. This creates large plots of unutilized land in the periphery of cities like Bandung and Jakarta (Firman, 2000).

The peripheral area of North Bandung is subject to some major land use changes. Even though it has been declared a conservation zone by the provincial government, many high class residential estates are being developed in this area with permits granted by the local authorities (Moeliano, 2009).

3.4 Peri urbanisation: functional dependency and land uses in Indonesia

The previous paragraph showed that the main types of peri urban land uses are middle and high class residential developments in the form of gated communities

and new towns. Winarso (2002) explored the relation between location choice and the connections to the urban centre in the case of the Jakarta Metropolitan Region (JMR). His findings showed that in the case of middle and high class residential developments, the main factor in locational decisions was not the distance or accessibility to the city centre, shopping centre, main roads or public transportation. Land price was found to be a much larger determinant of a land developer's location choice. When larger plots of land are acquired at a relatively lower cost, the accessibility to the urban centre proves to be a less important factor. With larger plots, it becomes easier for land developers to provide their own services and facilities such as schools, offices, hospitals and even shopping centres. Winarso (2002) explains that:

“The provision of such services, which can boost the project's land price, is possible if developers are able to acquire large areas of low-priced land, facilitating economies of scale. Having purchased cheaper land, hence reducing production costs, gives developers more opportunities to provide services than had they purchased more expensive land closer to Jakarta.”

What is more important in the case of high class residential developments in Jakarta is the special accessibility to these services, represented by good streets and road networks in the projects (Winarso, 2002).

Bandung

Like in Jakarta, peri urbanisation in the Northern part of Bandung City mainly takes the form of middle and high class residential development. North Bandung has certain features that contribute to the high economic potential of the area. The proximity to Bandung City as a service centre, the higher altitude with its agreeable climate and great views and the availability of large plots of undeveloped agricultural land make that North Bandung Area becomes an interesting investment opportunity for land developers. The proximity to the urban centre is thought to play a bigger role in location choices for land developments in the fringe area of Northern Bandung. Many houses on the estates are owned by people from Jakarta that use them as their second or even third home. The residents that do live in houses in these

new towns usually work in the city and these new towns are so called ‘dormitory towns’; socioeconomically dependent on the city proper (Firman, 2009a).

3.5 Political status of peri urban areas and implications for local planning practice in Indonesia

There are some implications of peri urbanisation for the local planning practice in Indonesia. As we have seen in chapter two, problems in urban management mainly arise when urban functions extend beyond administrative city boundaries. This is also the case in Indonesia.

Decentralization policies in Indonesia have created 30 provincial and over 400 local governments or districts (World Bank, 2003). At the district level, there are two types of administrative units: the city or municipal government (Kota) and the regencies (Kabupaten). Both administrative units are autonomous under the decentralization policy. The division between cities and regencies doesn’t necessarily mean that the cities are urban and the regencies are rural. Regencies can contain considerable urbanised areas which are mostly expansions from the adjacent municipalities (Sarosa, 2006). For this reason, metropolitan wide management is thought to be crucial to accommodate the need for strategic collaboration among local and provincial governments. This collaboration is necessary to facilitate local economic development, natural resource and environmental management and large scale infrastructure investments. However, there seems to be little vertical and horizontal coordination between administrative regions. There is a large opportunity for the regional governments in facilitating this coordination, without imposing top-down views on the local planning practice (World Bank, 2003 p. 80).

Before the decentralization era, adjustment and expansion of administrative boundaries for municipalities were not uncommon. Increasing growth of urban populations and the role of cities in general, particularly those with the status of municipality were creating disharmony between the administrative boundaries of existing cities and the functional boundaries of physical urbanised area (Government

of Indonesia, 1987). In order to improve local planning practice and urban governance, administrative boundaries were sometimes redrawn.

After the decentralization, when local governments gained more autonomy, the readjustment of municipal administrative boundaries became less frequent. Even though urbanisation across local administrative boundaries still occurs, these urbanised areas will not be made an administrative part of the city anymore. Instead, urban areas outside the municipal administrative boundaries are now simply classified as 'urbanised regions'. Firman (2009b) explains that urban development outside municipal boundaries have become local authority affairs after the decentralization, which results in a planning practice that suits local needs and desires. This often results in overexploitation of local resources, including water and land. This is done in order to maximize local government income. Urban functions generate a relatively high income for local governments. In the case of North Bandung, the district government receives money for granting building permits to developers and higher property tax revenues (Moeliano, 2009). For these reasons, it has now almost become impossible to readjust administrative boundaries. Firman (2009a) states that the parochialism attitude of many local governments contributes to the lack of cross border cooperation on issues like water- and waste management and infrastructure provision.

One force that undermines the role of government and thereby planning practice in Indonesia is the emergence of globalizing neo-liberal ideas. According to Hudalah (2010, p. 55), the effect of neo liberalism in Indonesian planning manifests itself through a weakened capacity of governments to realize plans. He explains that "there is no clear, specific requirement for the government to invest or to finance the proposed land clearance and development. In principle, the government, private sector, and the community have the same opportunity to be involved in the development process in order to realize the formulated plans" (Hudalah, 2010 pp. 55). Other policy fields where market forces are gaining importance are the housing sector and the water management system (Hudalah, 2010, p.56).

Bandung

In 1987, Bandung was recognized as a development centre for tourism, industry, trade, service and distribution. The rapid economic development, along with the pressure of a growing population, created problems for Bandung Municipality in managing its city; especially with regard to spatial arrangements, urban environmental quality, location provision in the interest of development and the provision of urban facilities and utilities (Government of Indonesia, 1987). To better accommodate the urban growth of Bandung Municipality, it was deemed necessary to expand its administrative boundaries. In 1987, the total area of Bandung Municipality was increased from 8098 hectares to approximately 17 000 hectares. This was done by inserting a portion from the Bandung Regency (Government of Indonesia, 1987).

Nowadays, the adjustment of administrative city boundaries is out of the question and the North Bandung Area extends into several administrative regions. Since there is no metropolitan institution, the West Java Province is the lowest government level on which inter-local planning issues can be coordinated. Provision of transportation, an integrated infrastructure system and the coordination of environmental issues such as excessive groundwater extraction and deforestation are examples of planning issues that need coordination from a higher level. However, this often proves to be problematic in reality. Hudalah (2010, p. 42) explains that provincial governments have been weak in managing inter-local affairs due to a lack of power and resources. The extension of the North Bandung Area over several administrative regions make that planning for peri urban development becomes extra burdensome.

The physical characteristics of North Bandung make that the area becomes extra vulnerable to the effects of peri urbanisation and thereby land use change. North Bandung is a hilly terrain with various slopes, rivers and upland basins. Developments in this area have several negative impacts. Soil degradation and erosion are caused by a greater runoff and intensified land use (Tollan, 2002). This can cause flooding elsewhere in the region as rainwater runs off faster. Besides that,

North Bandung serves as the main water catchment area in the region and deforestation and intensification of land use can affect the capacity of the soil to store water. Increasing urbanisation in this area can also be the cause for decreasing ground water levels due to higher extraction.

3.6 Summary

Chapter three has provided an overview of different aspects of peri urbanisation in Indonesia and more specifically, Northern Bandung. According to the literature, a large part of the land uses in peri urban areas in Indonesia and Bandung are middle and high class residential areas, in the form of new towns and gated communities. The residential estates in Jakarta seem to be less functionally dependent on the city centre. Location choices for the developers will largely depend on the availability and land price. In Bandung, where the residential estates are smaller in size, they are thought to be more functionally dependent on the core city. How this results in the location choices for residential developments will be examined in the next chapter. Implications for the planning practice in Indonesia and Bandung result from the dispersed political landscape that has emerged during the reformation era. Problems associated with the peri urbanisation are a lack of infrastructure and transportation provision and environmental problems such as excessive groundwater extraction and deforestation.

Chapter 4

Peri Urbanisation

a Case Study of North Bandung

This chapter contains a case study of peri urbanisation in the northern part of Bandung City. In the first paragraph, an explanation of the case selection is given. In the following paragraphs, the selected areas are described based on the three aspects of peri urbanisation as listed in chapter 2. The purpose of this chapter is to gain insight in the three aspects of peri urbanisation in a real-life situation.

4.1 Case Selection

The North Bandung Area (NBA) is delineated in the south by the contour of 750 meters altitude. A large part of Bandung Municipality falls within the NBA, mainly in the northern part of the city and some parts in the east. The focus of this case is on areas along the administrative border in the northern part of Bandung Municipality because these are the areas that both; fall *within the NBA* and are in the *proximity of the city's* main urban functions (Fig 4.1).

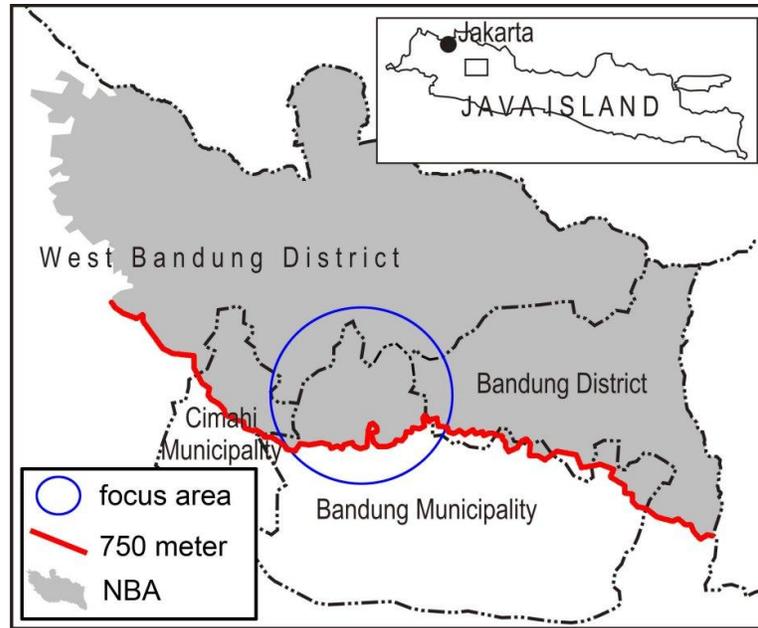


Figure 4.1: North Bandung area with focus area (edited from Hudalah, 2010 pp. 20).

In this research, several aspects of peri urban areas are explored. The land uses in the periphery are to some extent functionally depending on the urban core. Locations with an easy access to the urban centre are thought to be preferred by land developers whose developments functionally dependent on the city. In this case study, four areas are selected, two of which have a generally easier access to the city centre. Areas I (Setra Duta) and II (Gegerkalong) have a number of roads connecting them with the rest of the city. The other two, areas III (Cipaku) and IV (Punclut), are more disconnected from the urban core by natural borders such as mountain slopes, valleys and rivers. Therefore, there are fewer roads connecting these two areas to the rest of the city. The administrative city boundaries of Bandung are taken as a line along which the four areas are selected. This line is a rough indicator of what is thought to be the peri urban area of Bandung City. By looking at land uses inside and outside this administrative boundary, the role of both the municipal and district governments in peri urbanisation can be discovered. Urban expansions beyond this border will have some implications for the local planning practice. These will be briefly described for each individual area.

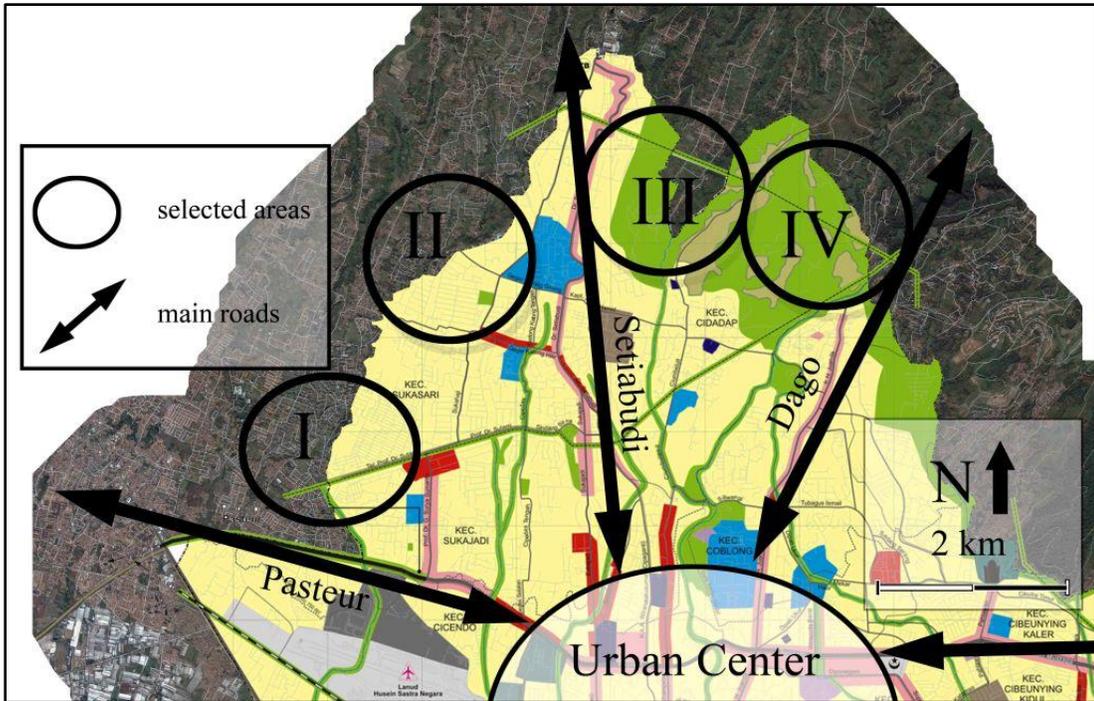


Figure 4.2: Contours of northern part of Bandung City with selected areas and main roads.

In this chapter, each of the selected areas is further examined. The first characteristic of the described area is a classification of land use patterns inside and outside Bandung Municipality, followed by the functional dependency of these land uses and their urban centre connections. After that, a short notice on the implications for the local planning practice will be given.

4.2 Setra Duta area

The first selected area is located along the western border of the northern part of Bandung City. This area will be further referred to as the Setra Duta area. It borders Cimahi Municipality in the west. Areas on both sides of the administrative border are relatively densely populated.

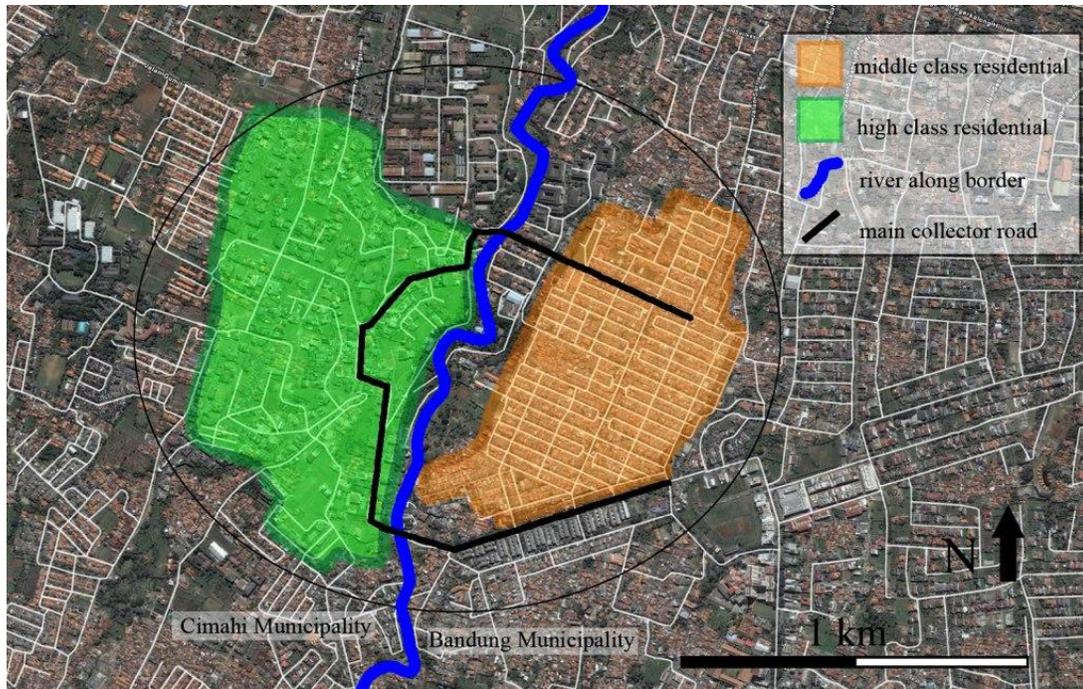


Figure 4.3: Setra Duta area with main types of land use.

4.2.1 Land use inside Bandung Municipality

The predominant type of land use inside Bandung Municipality in the Setra Duta area is middle class residential (fig 4.3). Houses in this area follow a planned street pattern and the average size of a house is bigger than in the surrounding kampong areas. Along the main streets are a lot of activity; street vendors, small shops and restaurants can be found along the main collector road inside the Bandung Municipality. The quality of the roads varies from place to place; some parts have potholes and some are newly paved. This area is also served by a public transport system in the form of Angkutan Kota (Angkot), small mini vans that follow a certain route. On the south side of this area is a public housing complex (Rumah Susun) (fig 4.4). These consist of four story apartment buildings and they serve a low income group. Outside the arranged street patterns of the middle class residential area and the public housing complexes are the informal settlements of the kampong area.



Figure 4.4: Land use inside Bandung Municipality in the Setra Duta area. Low class residential (left) and middle class residential (right) areas.

4.2.2 Land use outside Bandung Municipality

The predominant land use type in the Setra Duta area outside the Bandung Municipality is high class residential (Fig. 4.5). The Setra Duta housing complex is a gated community catering for the highest income groups. Access roads to this complex are guarded by security posts and most houses on the estate have a large fence with private security guards. There are no street vendors in this area and there is no public transportation system to serve the roads in this area. The quality of the roads is very high within the complex (Fig. 4.5), wide lanes lined with palm trees and no apparent lack of maintenance make that the street view is in large contrast with the average Indonesian street. Outside the Setra Duta complex are some scattered kampong areas which are more oriented towards Cimahi Municipality.



Figure 4.5: Land use outside Bandung Municipality in the Setra Duta area. High class residential area highly secured houses (left) and high quality streets (right).

4.2.3 Functional Orientation

The Setra Duta area has easy access to Bandung City with connections to Pasteur Street in the south and Setiabudi Street in the east. The gated community outside the Bandung Municipality is physically separated from the city proper by a river. This river is crossed at some points and the main collector road that runs through the area makes that the Setra Duta housing estate has good connections with the road network inside Bandung City. Since the Setra Duta housing estate is separated from the outer region by walls and there are no utilitarian services on the complex, it is clear that this housing development is functionally dependent on Bandung City and its services.

4.2.4 Implications

The difference in land use between the area inside and outside Bandung Municipality in the Setra Duta area are clearly visible when crossing the administrative boundaries. The quality of the streets, the level of activity on them and the housing types are the biggest contrast. Apart from the social segregation between the areas and the problems this entails, there are some obvious planning implications, particularly for Bandung Municipality.

It is clear that the Setra Duta housing estate is functionally part of Bandung City. However, due to its location outside city limits, Setra Duta is not contributing to the provision of road infrastructure, even though this area generates traffic for the access roads to the city centre of Bandung. Extra pressure on the road system causes faster decay of the roads and additional traffic congestion and air pollution in a high density population area. On the other side, Setra Duta complex being functionally part of Bandung Municipality creates jobs for the lower income groups living in the border areas. Housekeepers, security guards and chauffeurs are examples of job positions that are held by people living in the lower class residential areas just across the border inside Bandung City. Since Setra Duta complex is functionally separated from the Cimahi municipality, the only reason for the local government to have granted permits to the developer of the complex could be the high tax revenues it generates.

4.3 Gegerkalong area

The second selected area is also located along the western border of the northern part of Bandung City. It is situated just a little north of the Setra Duta area. This area will be further referred to as the Gegerkalong area. It borders Bandung Regency in the west. Areas on both sides of the administrative border are relatively densely populated, although the area in West Bandung Regency has a more rural character. The Gegerkalong area outside Bandung City is located on a hill with valleys on both sides, the eastern valley being the border with Bandung City, the western valley in West Bandung Regency.

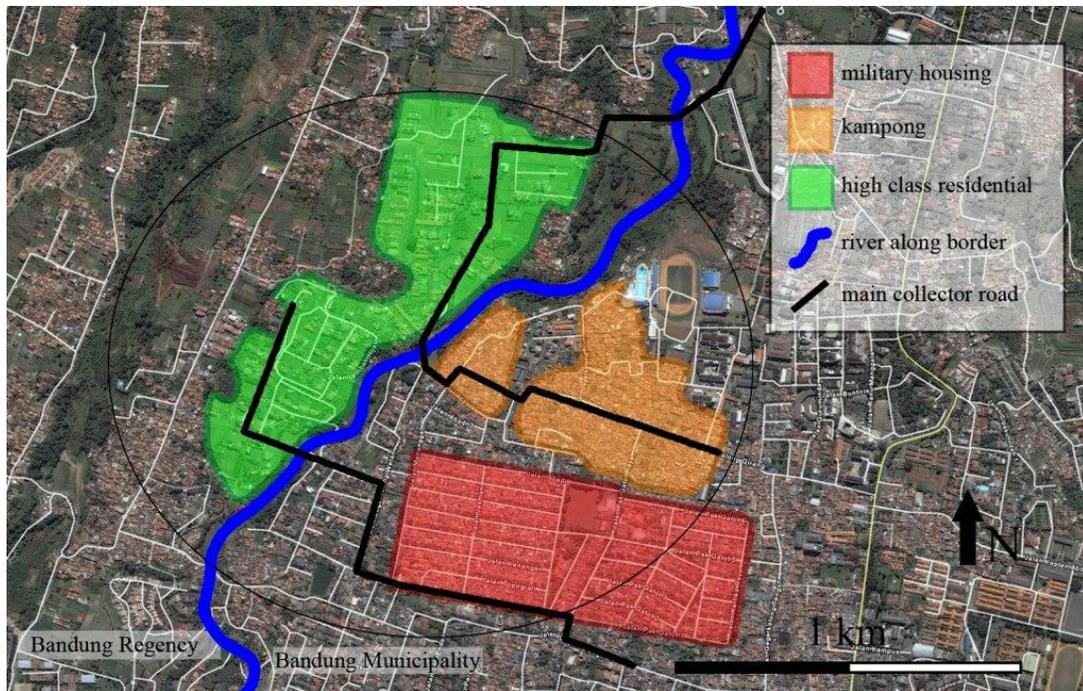


Figure 4.6: Gegerkalong area with main types of land use.

4.3.1 Land use inside Bandung Municipality

The main types of land use inside Bandung Municipality in the Gegerkalong area are the squatter settlements in the north and a military housing complex with average size houses which can be characterized as middle class (Fig. 4.6). The military housing complex follows a planned street pattern and the roads serving these areas are in relative good condition. However, some roads just outside the complex are filled with potholes (Fig. 4.7).

The kampong area in the north is a lively neighbourhood with a lot of activity, especially along the main collector road. Due to its proximity to a major university campus, many utilitarian services can be found in this kampong area. Boarding rooms, copy shops, small restaurants and food stalls are examples of commercial activities along this road. The main collector road running through the kampong area is in poor condition. Crammed in the kampong area is a gated community called ‘Abadi Regency’, which can only be reached by a narrow entrance gate guarded by security (Fig. 4.7).



Figure 4.7: Land use inside Bandung Municipality in Gegerkalong area. Streets in poor condition (left) and a gated community with only one entrance road (right).

In general, one could say that the Gegerkalong area inside Bandung Municipality has mixed types of land use. Kampong areas, military housing, a gated community and a university campus make this a diverse area.

4.3.2 Land use outside Bandung Municipality

The predominant land use in the Gegerkalong area outside Bandung Municipality is high class residential (Fig. 4.8), very much similar to the land use pattern observed in the Setra Duta area outside Bandung Municipality. There are two housing estates located in this area. Parahyangan Permai Estate is located in the south and the bigger Pondok Hijau Indah Estate is located in the north. The latter extends into the Bandung Municipality in the North. The orientation of these housing estates is clearly directed towards Bandung City. There are three main access roads to these complexes, which are all guarded and as in Setra Duta, most houses have large fences with private security guards. The gated communities in the Gegerkalong area are located in the West Bandung Regency and on the west side, outside the walls; a local road runs in north-south direction. Along this road, as elsewhere outside the walls of the housing estates, scattered kampong areas can be found where people sustain a semi urban lifestyle with some agricultural fields in the open areas (Fig. 4.8). Inside the gated communities, there are no street vendors and no public

transportation system to serve the area, which would probably be redundant, considering the high standard of living.



Figure 4.8: Land use outside Bandung Municipality in the Gegerkalong area. High class residences (left) and small scale farming outside the walls of housing estates (right).

4.3.3 Functional Orientation

Gegerkalong has easy access to Bandung City. There are several streets running in the direction of Setiabudi Street in the east, which serves as a major artery road in the northern part of Bandung City.

As can be seen in figure 4.6, a river runs along the border that separates Bandung Municipality from Bandung Regency. This river is crossed at two locations in the Gegerkalong area and via one major new road just north of this area. The main collector roads that run through the area make that the housing complexes in the West Bandung Regency are well connected to the road network in Bandung City. As in Setra Duta, the housing complexes in the Gegerkalong area are physically separated from the outer regions by walls and their functional dependency is on Bandung City as a service centre.

4.3.4 Implications

The observed difference in land use patterns between the area inside and outside Bandung Municipality is very similar to the area examined in the previous

paragraph. Land use inside Bandung Municipality in the Gegerkalong area is of a mixed type, generally catering for the middle and low income groups; except for the small 'Abadi Regency' gated community. Outside Bandung Municipality, in the Bandung Regency, large housing estates are found which focus clearly on their access to Bandung City. The planning implications in the Gegerkalong area are very similar to the ones in the Setra Duta area.

With their obvious orientation towards the east, the housing estates in the Gegerkalong area are functionally part of Bandung City. Being located outside city limits, the high class residential areas are not contributing to the provision of road infrastructure, even though this area generates traffic for the access roads to the city centre of Bandung. The collector roads inside Bandung City are in poor condition, and since there is no official taxing for the residents of these gated communities that contribute to the provision of road infrastructure, informal practices are stepping in. On the border of Bandung Regency and Bandung Municipality, a group of young people from the local community is collecting money from passing cars headed towards the city. This money is meant for road improvement and it is an unofficial way to make up for flaws in the system.

4.4 Cipaku area

Cipaku is the third selected area to be further examined. The Cipaku area (Fig. 4.9) is generally less accessible due to its topography. There are some steep hills and valleys in this part of Bandung Municipality and the area has a generally low population density. The administrative boundary of Bandung Municipality runs as a v-shape through this area. For the largest part, the border is following the two rivers that come together in the south.

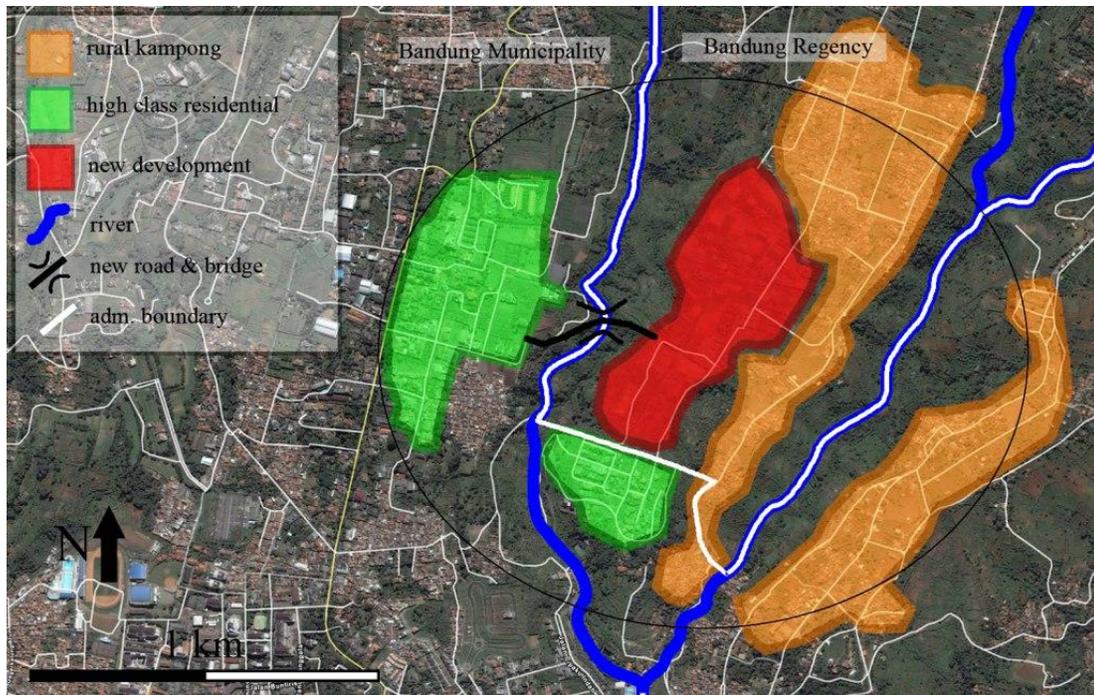


Figure 4.9: Cipaku area with main types of land use.

4.4.1 Land use inside Bandung Municipality

Inside the borders of Bandung Municipality, the Cipaku area knows several types of land use. On the west side, there is the Budi Indah housing complex and on the south side, the Bukit Idaman (Desire Hill) housing complex. Both are catering for the higher income classes. Budi Indah is located along the Setiabudi artery road and is therefore more accessible. The Bukit Idaman complex is harder to reach, and the only road leading to it is coming from the south, the road is in a poor condition, which is also the case for most houses in this complex. A great number of houses on the complex are deteriorating and some seem to be abandoned. Levels of maintenance on the complex are lower and most houses are only occupied during the weekend when the owners use them as a retreat from Jakarta. Around the housing complexes are some kampong areas and fields where a variety of crops are produced. On the east side of the Cipaku area, on top of one of the hills, there are rural communities with informal settlements. Many families in these kampongs sustain an agricultural lifestyle. A great variety of crops are produced on the slopes of this area (Fig 4.10). The road connecting this area with the centre of Bandung City is in poor

condition and it seems to become an alternative route to Lembang in the north. Along this road there are many small restaurants with simple facilities where people come to enjoy the views of the Bandung basin and its surrounding mountains. On the border with West Bandung Regency in the north, the local community is charging money from passing cars for road maintenance.



Figure 4.10: Farming on slopes

4.4.2 Land use outside Bandung Municipality

The Cipaku area outside municipal borders is almost completely separated from Bandung City. This can be readily seen in the lifestyle of the people inhabiting this area. Rural kampongs are scattered along the road and people work on the fertile slopes of this area. However, the rural character of this area will not remain for long. A large part of the area will be soon occupied by an expansion of the Budi Indah complex. The first phase of this border crossing gated community was built before the economic crisis of 1998. Now, the developer (Istana Group) is implementing the second phase of this large scale land conversion project. The new Budi Indah complex will connect with Bandung City through a road to the west. Plans are to connect the estate with Ciumbuleit Street in the east. Currently, the roads on the estate are prepared and soon the first houses will be built. The new town is divided into several plots which have names like Acasia, Magnolia, Heliconia and other sorts of exotic flowers (Fig. 4.11). The impact of such a development on the existing rural communities is severe. There is no doubt that the new town will be physically

separated from surrounding kampongs by walls and security posts, leaving only negative impacts for the local community through loss of agricultural land and further isolating them from their surroundings.



Figure 4.11: Expansion of Budi Indah complex in implementation phase

4.4.3 Functional Orientation

The Setiabudi Street, which serves as a main artery road for the northern part of Bandung City, runs in north-south direction in the west of this area. It gives the Cipaku area inside Bandung Municipality good access to the rest of the city. East of the Cipaku area runs a local road running from Ciumbuleit Street all the way to Lembang in the north. In the Cipaku area, the West Bandung Regency is separated from Bandung Municipality by two wide valleys. These valleys are crossed at some points, but the roads are steep and windy. This makes that the area is more or less isolated from Bandung City. The location of the currently existing roads is in the south. One of these roads provides access to the high class residential area south of the Bandung Regency from Setiabudi Street but it does not connect with the rural communities outside the city. The other road connects Ciumbuleit Street with the rural community in Bandung Regency but it is currently only accessible to motorcycles as parts of this road have collapsed after landslides. Although the current connections are poor, change seems to be on the way. A wide road with a bridge directly connecting Setiabudi Street with Bandung Regency is under construction (Fig. 4.9). Upon completion, the road will provide easy access to and

from the new high class residential development that is currently in the implementation phase. In the future, the new development will also be connected to Ciumbuleit Street in the east through a new road that has yet to be built. It is likely that there will be little or no connections to the outer regions from this complex, therefore, it will be functionally depending on Bandung City as its service centre.



Figure 4.12: New road with bridge connecting West Bandung Regency with Bandung Municipality.

4.4.4 Implications

Inside the Bandung Municipality in the Cipaku area, the land use pattern has two faces. On the west side is a generally higher level of development than on the east side. This might have something to do with the roads running through the area. The Setiabudi Street in the west has traditionally been the main artery road in the northern part of Bandung City and the main corridor to Lembang Village in the north. The Ciumbuleit to Lembang road connection in the east has remained relatively quiet. However, the area outside the Bandung Municipality in the Cipaku area has remained far more isolated than both parts inside Bandung Municipality, reason for this might be the physical isolation of the area. The expansion of a new high class residential estate into the West Bandung Regency will mean a big change for the rural character of the area. The fact that the area is physically separated from Bandung City is no obstacle for developers to build a gated community in this area.

The new road which will connect the development with Bandung City runs through the already existing part of this high class residential area. It will certainly increase the number of cars passing through this area. Not only will this have an effect on the surrounding area, but for the whole of Bandung as well. After all, the land development in Cipaku will mean growth of the functional region of Bandung City. However, the main problem arising from the land use change from rural to urban in the Cipaku area will be environmental degradation. Through intensification of land use, the soil in the Cipaku area will be more vulnerable to erosion and the capacity to store water will decrease through a larger impermeable surface. Social segregation can be another issue arising in this area.

4.5 Punclut area

The last area is the Punclut area located on the east side of the northern part of Bandung City. The area has a generally rural character with some forested parts. The topography of this area makes it less accessible. There are some steep hills and valleys in this part of Bandung. The area has a generally low population density. The administrative boundary of Bandung Municipality runs through a valley in the north-south direction.

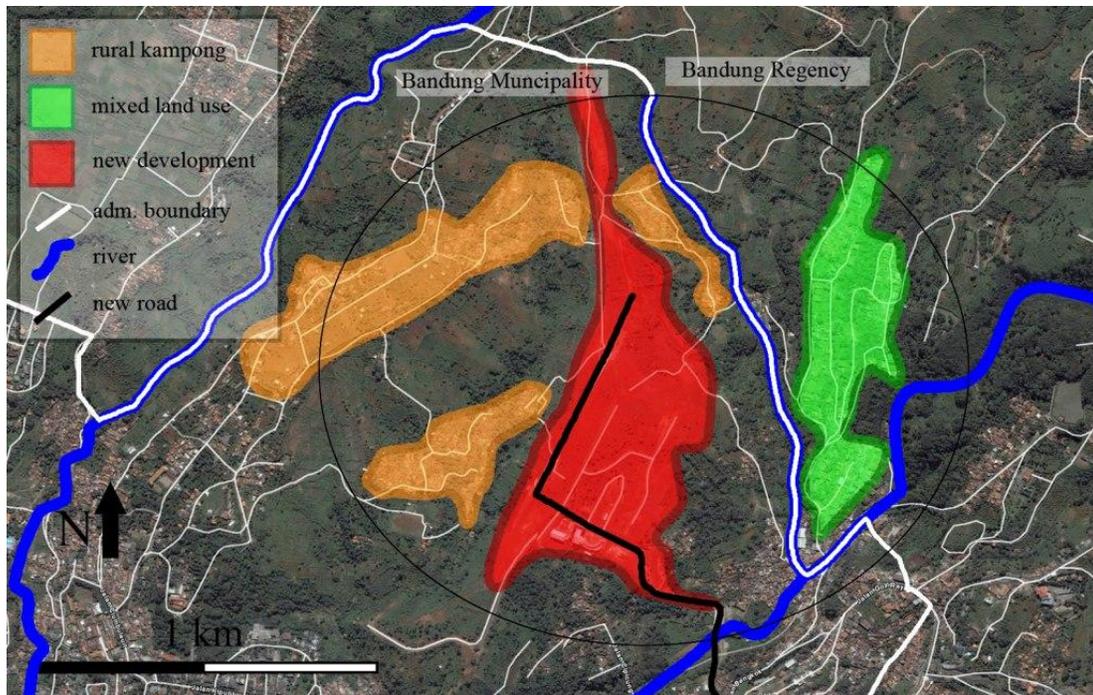


Figure 4.13: Punclut area with main types of land use

4.5.1 Land use inside Bandung Municipality

Inside the administrative boundaries of Bandung Municipality, the land use remains predominantly rural. The main rural kampong area along the Ciumbuleit to Lembang corridor is already discussed in the Cipaku case in the previous paragraph. The rest of the area inside Bandung Municipality contains even more remote rural communities not accessible by paved roads and some remaining forests. Similar to the case of Cipaku outside Bandung Municipality, the rural area of Punclut will soon be transformed into a high class residential area. The Citra Green Dago housing complex, a project of Ciputra, one of the largest Indonesian real estate developers, is currently being developed. Large part of the future road network is already constructed and few houses and an international school can already be found on the complex. The local communities are promised access to water and sewage systems, in exchange for their farmland. However, until now, these services have not yet been provided, neither has the promised road connection.

4.5.2 Land use outside Bandung Municipality

The Punclut area outside Bandung Municipality is of a more mixed character. The road running through this serves as an alternative way to reach Lembang. Along this road, several upscale restaurants, art galleries and large houses can be found. In the Punclut area, the land use along this road consists mainly of some kampongs and a housing area for staff of one of the larger universities in Bandung City. The main kampong area is located in the south, crossing the border of Bandung Municipality. The river running through this area is the only visible separation between the administrative regions (Fig. 4.14).



Figure 4.14: Border between Bandung Municipality and Bandung Regency in a kampong in Punclut area.

4.5.3 Functional Orientation

In the Cipaku area, there are no roads crossing the administrative boundaries. The area outside Bandung Municipality can be reached through the Dago Street that runs south of this area. Dago Street is the main artery road that diverts into several branches in the north. Inside Bandung Municipality, a new road network is currently under construction that will provide the Citra Green Dago complex with access to Bandung City through a connection with Dago Street. In the future, the housing

complex will also be connected to the regional road in the north, the West Bandung Regency has already constructed its part of the road and it is now waiting to be connected with the Bandung Municipality. This part of the project is currently halted due to conflicts with the local community.

4.5.4 Implications

The area inside Bandung Municipality used to have a predominantly rural character. This rural character will soon change into a more urban one. A new town is currently being built and the impacts of this might be severe for the area and Bandung City as a whole. Increased level of development might affect the capacity of the soil to store water and erosion can lead to landslides in this hilly area. New residential development in the area will increase the population density, with its main access towards Bandung; Dago Street is destined to become more congested, especially during the weekends, since this part of Bandung is a favoured getaway for leisure seekers during this time.

4.6 Summary

Table 4.1 gives an overview of the different characteristics examined in this research. Population density is estimated based on the settlement types. Gated communities and high class residential estates generally have a lower population density than the middle and low class types of urban settlements. They are therefore characterized as 'average' whereas the rural areas with some kampong settlements and a lot of open space reserved for farmland have a 'low' population density. Several types of land use are determined during observations in the field. There are the high class residential areas, also referred to as gated communities; middle class housing areas and low class housing areas (kampong), which can either be rural or urban. The connectivity to be urban centre is either good or poor, depending on whether most of the settlements in the area can be accessed by a paved road or not. This connectivity large determines the functional orientation of an area; this also depends on the type of settlements found within this area. Rural communities are to a certain extend self sustained whereas urban types of settlement are more depending

on urban services, making them functionally more attached to the urban centre. The main issues and concerns within an area are the provision of road infrastructure and environmental degradation. The provision of road infrastructure is mainly a concern for interactions between areas with a higher population density whereas environmental degradation is the main concern in areas with less development, especially in landscapes with steep slopes and rivers.

	<i>Area</i>	I Setra Duta	II Gegerkalong	III Cipaku	IV Puncut
	<i>Inside/outside Bandung City administrative border</i>				
Population density	<i>Inside</i>	High	High	Average	Low
	<i>Outside</i>	Average	Average	Low	Low
Land use	<i>Inside</i>	Low to middle class housing	Mixed land use	Kampong , high class residential	Kampong, (new development in progress)
	<i>Outside</i>	High class residential	High class residential	Rural communities, (new development in progress)	Rural communities, leisure facilities, high class residential
Connection to urban centre	<i>Inside</i>	Good	Good	Good	Poor
	<i>Outside</i>	Good	Good	Poor	Good
Functional orientation	<i>Inside</i>	City	City	City	Self sustained
	<i>outside</i>	City	City	Self sustained	City/ self sustained
Main issue		Provision of road infrastructure	Provision of road infrastructure	Environmental degradation, social segregation	Environmental degradation, social segregation

Table 4.1: Overview of selected areas along the administrative boundaries in northern part of Bandung City

There are some differences and similarities between the examined areas. Areas number I (Setra Duta) and II (Gegerkalong) show a distinct difference in land use patterns inside and outside administrative city boundaries. Some gated

communities or high class residential estates are located along the border in outlying administrative regions. The Setra Duta housing estate in area I and the Parahyangan Permai and Pondok Hijau Indah housing estates in area II are high class residential areas which are all functionally dependent on Bandung City. These housing estates are poorly integrated with their surrounding areas and the main access roads are oriented towards Bandung City. The lack of cooperation between local governments on the issue of infrastructure provision causes extra pressure on the existing road system in Bandung City. Since official tax collection from Bandung Municipality to residents of these gated communities is not possible, informal ways of collecting money for road improvement are every day practice on the border between Bandung Municipality and the outlying regencies.

Overall, areas III and IV remain less developed due to the inaccessibility of their topography. However, major changes are on the way for both areas. In the third area (Cipaku), a large expansion of a residential estate is taking place. It will extend into the outer of the West Bandung Regency. Strong separation by a physical border seems no object as new infrastructure is laid to provide this development with access to Bandung City. A similar pattern can be seen in the Punclut area inside Bandung Municipality. The rural character of this area will soon change with a new development of the Ciputra Group that is currently being built. Largely self sustaining rural communities will gain better access to urban services; this might change the traditional lifestyle of these communities as they will no longer be physically separated from their surroundings.

Although all of the areas discussed in this chapter are located in a conservation zone, mandated by the provincial government, it seems no object for both the municipal and district governments to allow large scale development. Advocates of this development argue that these high class residential areas have a building coverage ratio of merely 20 percent, leaving enough space for vegetation (Hudalah, 2010 pp. 112). However, there is a distinct difference between land covers such as forested areas and residential gardens, and with the former disappearing; the carrying capacity of the soil is likely to decrease. The main types of new

development in the fringe area on the north side of Bandung City are residential areas catering for high income groups. Key point for the success of such gated communities is the accessibility to the city centre.

Chapter 5

Conclusion and Recommendations

This research has looked at three aspects of peri urbanisation at three different levels. Chapter two described the theoretical perspectives on the aspects of peri urbanisation, mainly using examples from East Asia. Chapter three has focused on the Indonesian context and in chapter four, a case was used to examine the aspects of peri urbanisation in northern Bandung. In this chapter, comparisons are made between the three to see to what extent the aspects of peri urbanisation are different for the empirical case of Bandung and the theoretical perspectives. By doing this, the three research questions posed in chapter one will be answered.

5.1 Conclusion

Peri urbanisation is the gradual transformation of the rural character in the fringe areas of cities into a more urban character. Through an increasing development of peri urban areas, the exact location of where city stops and the countryside begins, is hard to determine. Administrative city boundaries are not clear indicators of a functional region of a city anymore as urban sprawl often extends beyond these boundaries. Globalization is thought to be one of the main triggers for peri urbanisation.

5.1.1 Aspect 1: Characteristics of peri urbanisation

The literature indicates that land uses of peri urban areas in major cities in East Asia are more varied than the peri urban land uses found in the case of North Bandung. In Bandung, peri urban development takes the form of middle and high class residential areas, whereas the literature indicates that industrial estates and

squatter settlements for migrant workers also make up part of the peri urban landscape.

In the Indonesian case, a large part of peri urbanisation is characterized by the development of middle and high class residential estates. A better lifestyle, a certain prestige and a higher level of security were found to be the main reasons for moving to a gated community. Residential developments in North Bandung are somewhat smaller than the ones in Jakarta and many houses on the estates serve as a second or third home.

North Bandung

Observations in the field in the case of North Bandung have mainly confirmed this image of peri urban land uses in Indonesia. In every selected area, middle- to high class residential areas were found; both inside and outside administrative city boundaries. Other forms of land use in the periphery of this city were the rural communities that sustain a semi urban lifestyle.

5.1.2 Aspect 2: Functional dependency

The literature indicates that peri urbanisation can be either: (A) functionally dependent on the urban core, and (B) functionally independent from the city. In the case of the Northern part of Bandung City, all middle to high class residential areas were found to be of the first form; functionally dependent on the urban core.

In the case of middle to high class residential areas in Indonesia, the accessibility to the urban core is to a lesser extent important for the developments. This is because the larger residential estates provide a high level of services on the complex. Schools, restaurants, hospitals and even entire shopping centres are located within the walls of the gated communities.

North Bandung

However, in North Bandung, high class residential areas were found to be functionally depending on the city proper. This can be seen by the orientation of the

streets and the separation from the outer regions by walls and fences. Reasons for this difference with the gated communities in Jakarta could be the fact that the housing estates are generally smaller in northern Bandung. Therefore it is impossible for developers to provide a high level of services within the complex. The residential areas in North Bandung often serve as a second home, used by people from Jakarta during the weekends. This could be another reason why developers choose not to provide utilitarian services. Inaccessibility of a certain location seems no object for big developers like Ciputra and the Istana Group to locate their development. Large investments in infrastructure are willingly made to provide the housing estates with the much needed connection to the city.

5.1.3 Aspect 3: Implications

In the literature on East Asian peri urbanisation, planning problems associated with development in the fringe areas of major cities are the provision of infrastructure, water and sewage systems and solid waste management. The expansion of urban development beyond administrative boundaries is mentioned as the main reason as to why these problems occur. Peri urbanisation in the case of North Bandung also extends beyond administrative boundaries and the only visible planning implications for this case is the lack of provision in road infrastructure.

In the Indonesian case, problems associated with the peri urbanisation are a lack of infrastructure and transportation provision and environmental problems such as excessive groundwater extraction and deforestation. Contextual factors explaining these phenomena can be found in the nature of the Indonesian planning practice. Decentralization policies in the political process have granted local authorities more autonomy. In combination with the discretionary character of Indonesian politics and the strongly hierarchical culture, local governments have a tendency to over-exploit the natural resources within their jurisdiction and there is a general lack of cross border cooperation.

North Bandung

In the specific case of northern Bandung, this over-exploitation can be seen in the development of new high class residential areas located in a preservation zone. Informal practices in the provision of infrastructure indicate the lack of cross border cooperation between local governments. The lowest level at which these metropolitan wide issues could be coordinated is the West Java Province. However, in practice, the provincial government proves to be largely powerless.

5.2 Recommendation

After exploring peri urbanisation in East Asia in general and having looked at the case of Bandung City in particular, it becomes clear that peri urbanisation is a highly diverse phenomenon. Even though there are some general forces that trigger peri urbanisation, the location, composition and patterns of peri urban development, as well as its implications, vary greatly among countries and even cities within countries. Contextual aspects such as cultural background and political system are of great influence on the level and speed of urban sprawl beyond administrative city boundaries.

The case of peri urbanisation in North Bandung can be seen as a result of globalization. An effect of the increased flow in global capital is the emergence of a large middle class. This is a much wider phenomenon that can be observed in developing countries throughout East Asia. It is therefore that observations from this particular case can be of interest for other primary and secondary cities in this region.

Since many peri urban developments are functionally dependent on the core city and urban functions do extend beyond administrative city boundaries, metropolitan wide management is crucial in providing coordination on the provision infrastructure and environmental protection. Local communities are largely marginalized and they are often powerless against real estate developers. A better land right administration system will improve the legal basis of residents in the local communities. Financial considerations seem to be much more a consideration in the development of high class residential areas than for example the local land use plans. Therefore it is recommended to apply a stricter form of control on urban expansions

in the fringes of cities. However, corruption could be a factor that undermines the law enforcement practice.

This research should be seen as an exploration on the case of peri urbanisation in Indonesia with a specific focus on North Bandung. Specific environmental problems and implications for the local planning practice are merely touched upon and it would make an interesting case for further study/research to discover the exact impacts of peri urbanisation for a specific region. It is recommended to always include the political background and planning culture in a research about peri urbanisation, because peri urbanisation cannot be seen separately from these contextual aspects.

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