

Coping with Farmland Conversion at Urban Fringe Area
(Case Study Randstad, The Netherlands and Yogyakarta, Indonesia)

Thesis

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Abstract

This study deals with farmland conversion at urban fringe area in The Netherlands and Indonesia. The objectives of this study are to assess the institutional contexts of land policies, to identify the land policy goals and instruments, and to identify the similarities and differences of land policies in coping with farmland conversion between these countries.

Farmland conversion occurred at the high risk in The Netherlands in 1960s and 1970s. The factors that cause the agriculture land conversion are urban expansion, population and economic growth, and government policies. Similarly, land conversion occurred at large scale in Indonesia since 1980s. The conversion of land for settlement is in the highest rank between these countries, followed by industrial and recreational area. Evidence shows that The Netherlands is more success in coping with farmland conversion due to the steadily declining trend of land conversion. Otherwise, land conversion at urban fringe area in Indonesia increases.

This study concludes that the success in keeping farmland at the countryside depends on institutional, fiscal and social aspects of such land policies. The success of The Netherlands than Indonesia in keeping its countryside is because of better institutional, fiscal and social aspects of its land policies. Institutionally, land policies in The Netherlands are more comprehensive in term of their objectives, orientation and institutions than that of Indonesia. Due to the high institutional capacity building, the governments are able to close relationship between the regulations and the implementation of such policies. Fiscally, land policies in The Netherlands are highly supported by the government budget. Socially, land policies in The Netherlands enjoy support from multi stakeholders. This study recommends that Indonesia can learn from the success of The Netherlands in maintaining its farmlands at the countryside. However, Indonesia should aware that there is no guarantee that copying success technique in other countries will result in success for a country. Differences on culture, social political circumstances, and different factors that cause land conversion can be as judgment of this failure.

Keywords: farmland conversion, The Netherlands, Indonesia

Preface and Acknowledgements

Farmland conversion is common phenomena in both developed and developing countries. This study deals with farmland conversion at urban fringe area in The Netherlands and Indonesia. The objectives of this study are to assess the institutional contexts of land policies, to identify the land policy goals and instruments, and to identify the similarities and differences of land policies in coping with farmland conversion between these countries.

This study consists of six chapters. The first chapter discusses the introduction that consists of background, problem description and research objectives, research methodology and framework, and report structure of this study. The second chapter reviews the theoretical framework. The third chapter describes farmland conversion in The Netherlands and its policies to overcome this problem. Then following chapter portrays farmland conversion in Indonesia and its land policies. The fifth chapter is evaluation and lesson learned from the case study. Finally, conclusion and recommendation are illustrated in the sixth chapter.

Finally, I would like to express my gratitude to Prof. Dr. Peter Ho (RUG) and Ir. Haryo Winarso, M.Eng, Ph.D. (ITB) as my supervisors for their advices and guidance throughout this study. Moreover, I would like to show my appreciation for Prof. Gerald Linden (RUG), all staff lecturers in RUG and ITB, Eric Koomen (Vrije Universiteit Amsterdam) who gave me some papers related to the subject of this study, and also my friends Delik Hudalah and Jarot Indarto for their helping and discussion.

Contents

<i>Abstract</i>	<i>i</i>
<i>Preface and Acknowledgement</i>	<i>ii</i>
<i>Content</i>	<i>iii</i>
<i>List of Figures and Tables</i>	<i>iv</i>
<i>Chapter 1 Introduction</i>	
1.1. Background	1
1.2. Problem Description and Research Objectives	5
1.3. Research Methodology and Framework	8
1.4. Report Structure of Study	8
<i>Chapter 2 Theoretical Framework</i>	
2.1. Causes of Farmland Conversion	10
2.2. Impacts of Farmland Conversion	12
2.3. Techniques to Cope with Land Conversion	14
2.4. Criteria to Evaluate Land Policies	17
2.5. Lesson Learned	19
<i>Chapter 3 Farmland Conversion in The Netherlands</i>	
3.1. National Context	21
3.2. Farmland Conversion	22
3.3. Land Policies	26
<i>Chapter 4 Farmland Conversion in Indonesia</i>	
4.1. National Context	32
4.2. Farmland Conversion	33
4.3. Land Policies	40
<i>Chapter 5 Evaluation and Lesson Learned</i>	
5.1. The Effectiveness of Land Policies in The Netherlands and Indonesia	46
5.2. Comparison of land policies in The Netherlands and Indonesia	53
5.3. Lesson Learned	58
<i>Chapter 6 Conclusion and Recommendation</i>	
6.1. Conclusion	59
6.2. Recommendation	63
<i>References</i>	<i>64</i>
<i>Appendixes</i>	<i>68</i>

List of Figures and Tables

List of Figures

Figure 1.	Research Framework	9
Figure 2.	Causal Loop Diagram of the Urban Development	11
Figure 3.	The Land Utilization in The Netherlands 1981-2000	23
Figure 4.	Map of Randstad Area	24
Figure 5.	Farmland in The Netherlands	24
Figure 6.	Urbanization in Randstad and the Green Heart, 1962 and 1995	26
Figure 7.	Overview of the Dutch Spatial Planning System	30
Figure 8.	Land Area by Utilization in Indonesia 2004	33
Figure 9.	Map of Java Island and Yogyakarta	36
Figure 10.	Farmland Conversion to Residential Use in Yogyakarta	37
Figure 11.	Farmland Conversion in Yogyakarta in 1987-1996	37
Figure 12.	Settlement Growth 1994-2000 in Yogyakarta	38
Figure 13.	Farmland in The Netherlands and Indonesia 1975-2002	47

List of Tables

Table 1.	Land Use Change in The Green Heart and The Netherlands 1981-2000	25
Table 2.	Farmland Conversions in Indonesia Between 1981-1991 & 1999-2002	34
Table 3.	Institutional, Fiscal and Social Aspects of Land Policies	49
Table 4.	The Effectiveness of Land Policies in The Netherlands and Indonesia	54
Table 5.	The Comparison of Land Policies between The Netherlands and Indonesia	57

Chapter 1

Introduction

This chapter represents the flows of this study. It discusses the background, problem description and research objectives, research methodology and framework, and report structure of the study. Firstly, the background provides a general description of farmland conversion phenomena including the debates on farmland conversion, the reasons of the study and research questions. Then, research methodology corresponds to the guidance in answering the research questions and analysis. Finally, the report structure draws the plot of the story that can be followed.

1.1. Background

Farmland conversion at urban fringe whether should be maintained or could be converted to other uses is still debatable. This debate shows the dilemma tension on land conversion. This debate can be seen from several perspectives such as the positive and negative impacts, revenue versus cost, libertarianism versus police power, and pro ruralism and pro urbanism.

Firstly, farmland conversion at urban fringe area has both positive and negative impacts. According to Bentinck (2000), who examined urbanization in Samaipur, India - the positive impacts of urbanization are improving housing conditions, better amenities and services, and higher living standards. On the other hand, land conversion also has negative impacts including loss of prime agricultural land, loss of agricultural jobs, loss of investment in irrigation infrastructure in the areas, and natural landscape destruction and excessive exploitation of groundwater. Moreover, land conversion has been blamed for flooding in some areas, the decreasing of quality of life owing to the lost of landscape and pollution both land, water and air.

Secondly, in one hand, the conversion of farmland can increase the revenue of the government. This can be explained that land taxes for real estate and industrial uses after the conversion of the agricultural land promise higher revenue than that of agricultural users. On the other hand, preserving farmland from conversion especially for abandoned farmland country can be unwarranted and costly (Harris, 1956 in Yunus, 1984).

Thirdly, farmland conversion delineates the dilemmas between “libertarianism and police power”. Libertarianism believe that people have rights to choose wherever they want to live and do whatever they intend with their land (Russwurm, 1987 in Yadav, 1987). Anyone who own property has legal right to do whatever he/she wants to do with his/her property (Elegido, 1995) including converting farmland to other uses such as residential areas, industrial areas, business site, etc. However, the opponents of police power urge that libertarianism is fail in considering externalities of social economy aspects of land

conversion as previously discussed on the negative impacts. Therefore, it is also generally accepted that agricultural land shall be maintained.

Fourthly, pro ruralists view that farmland conversion has negative impacts on agricultural production. Hence, the farmland should be kept to maintain food production. Otherwise pro urbanists urge that farmland conversion to urban uses is logical consequences of urban growth. The decreasing of agricultural production can be solved by intensification and technological production. Therefore, conversion of farmland doesn't matter.

The author agrees that the conversion of farmland especially fertile and prime land should be prevented. The reasons are:

1. *long term perspectives*. Evidently, the trend of population in the world is still growing rapidly. Hence, we need security of food for recent and next generation. The decrease of farmland will be danger for food security.
2. *social-economy impacts*. In Indonesia, many people are still working and merely depending on agriculture. The conversion of farmland causes some people especially agricultural labor loss of their jobs. Some are able to find other jobs and earn more money otherwise the others become unemployment.
3. *ecological and environmental perspectives*. Farmland contains rich biodiversity and ecosystems. Loss of farmland means loss of ecosystems that sometimes are valuable. Moreover, land conversion creates environmental problems such as land and water pollution, and loss of beautiful landscape. The quality of life can also decrease due to the loss of open space. Spatially, small-scale development, uncontrolled farmland conversion has potency to create the fragmentation of land and slum areas in the coming years.

This study deals with farmland conversion at urban fringe area in The Netherlands and Indonesia. Farmland at urban fringe area is one of the most critical resources and always under pressure to be converted to other uses. On the one hand, land is a vital resource that can supply human needs such as food for both current and next generations. For that reason, keeping land for agricultural activities is important. On the other hand, the adding population always requests the development of land for settlements, economic activities and infrastructures to fulfill their needs. Consequently, conflicting demands of land in the fringe area is unavoidable. Therefore, managing farmland at urban fringe area from conversion is a big challenge.

Land conversion at urban fringe area is not a new phenomenon and has become a worldwide fact. In the 1930s, England and Wales lost 240,000 ha of farmland every year, but it decreased to 15,000 ha per year during 1945-1965 (Grigg, 1995 in Firman 1997). Farmland conversion happens at large scale in Indonesia. World Bank (1988) estimated that 13 % from 3.4 million hectares irrigation farmland would have been changed from paddy field to other functions in 2010 (Anwar, 1993:35). Sutomo stated that farmland has been decreased 563,159 hectares in 1999-2002, in average 187,720 hectares per year (Agus and Irawan, 2006).

Based on some facts of land conversion above, many experts have conducted studies on that subject. Darin-Drabkin (1977: 23) signed a danger of running out of land in the future due to the growing needs of land for urban settlement, transportation and recreation requirement, as well as for agriculture to supply food for a permanently growing population. Bryant et al., (1982) examined criticality of the land in the city's countryside that delineated dilemmas between short-term market values (land as a commodity) versus longer-term resource values (land as a resource). Grigg (1995 in Firman, 1997) discussed that the main reason for the conversion of agricultural land to urban uses was the recovered rent. The land market usually allocated land to uses that resulted in higher return. Additionally, farmland conversion can also be seen as part of 'conflict interest' in the land use. According to Alterman (1997) the conflict over land use was interrelated with degree of urbanization, population growth, and population density. Generally speaking, these authors elaborated the causes, the impacts, and the alternative solutions that could be taken to overcome farmland conversion problems.

Many alternative techniques have been suggested to prevent farmland conversion at urban fringe area. Schwartz and Hansen (1975: 165) discussed two methods for preserving agricultural land at urban fringe area in California by using value assessment and Transferable of Development Rights (TDR). Fisher (1982 quoted in Bhadra, 1993) noted several measures to influence the rate of agricultural land conversion such as agricultural zoning, agricultural districting, public purchase or private transfers of development rights, estate tax relief, tax rebates and comprehensive growth management. In more general, Kivell (1993) suggested public ownership, regulatory measures such as land use plans and building permits, and fiscal measures as three techniques of government intervention on land policies that could also be used to control development on agricultural land. The implementation of these techniques will be examined further for the Netherlands and Indonesia case.

In Indonesia, the pressure on agricultural land at urban fringe areas is high. Therefore, the government has to manage farmland from conversion. However, the government still faces difficulties in preventing the conversion of agricultural land because of many problems in its land policies. Many studies have been conducted to improve Indonesia land policies. Firman (2004) suggested changing the role of government in urban land use at all levels, encouraging the role of private sectors and strengthening the capacity of local government in land use management. Moreover, land development permits should be granted primarily in relation to urban land use plan and land taxations instruments should be employed. Data and information on land should be improved. Menezes (1988 in Firman, 2004) suggested using property taxes as effective instruments of urban land policy. Unfortunately, many Asian countries including Indonesia have been unsuccessful to use taxation or fiscal measures as effective tools of land policies instead using them as major source of increasing revenue.

Learning success experience from other country can be one of ways in coping with land conversion. Rose (1991 in Dolowitz and Marsh, 1996) stated that “Every country has problems, and each think that its problems are unique...However...policy makers in cities, regional governments and nations can learn from their counterparts elsewhere responded”. Indonesia can learn from The Netherlands because this country is known for its success in maintaining its farmland at urban fringe area. Dieleman and Musterd (1992:1) described:

“... travelers from abroad arriving at Amsterdam’s Schipol Airport are more likely to get impression that they have landed in green, water-rich agricultural and recreational area rather than in the middle of metropolis. They will search in vain for the skyline of towering office buildings, so characteristic of the modern big city. Nevertheless, the urban structure is very compact, in spite of the lack of office towers. And the separation of urban and rural land is uncommonly sharp”.

Additionally, there are some reasons why land policies in the Netherlands are better than that of Indonesia based on institutional, fiscal and social point of views. Institutionally, land policies in The Netherlands are more comprehensive in term of their objectives, orientation and institutions. Moreover, there is close relationship between the regulations and the implementation of such policies. Otherwise in Indonesia, land policies are fragmented and the implementation is far from the expectation. Fiscally, land policies in The Netherlands are highly supported by the government budget. For instance, the government allocates amount of money to buy farmland for environmental considerations. Whilst in Indonesia, land policies are mostly intended to increase revenue. Socially, land policies in The Netherlands enjoy public support. In The Netherlands, the trust of the people to government is high. Planning is highly accepted by the public. Moreover, consensus-building and public participation are well established. On the other hand, the characteristics of land policies in Indonesia are top down so that they less receive public support. Due to the low trust to the government, sometimes plans are just written document rather than to be implemented.

The purpose of this study is to review the land policies of The Netherlands and Indonesia in coping with farmland conversion. For this purpose, this research is addressed to main questions: What are the similarities and differences on land policies to cope with farmland conversion at urban fringe area in The Netherlands and Indonesia? What are the lessons that can be learned for Indonesia from The Netherlands? Those main questions are divided into three sub main questions:

- What are the institutional contexts of land policies in The Netherlands and Indonesia (centralized versus decentralized system, integrated versus fragmented, etc)?
- What are the land policy goals and instruments in The Netherlands and Indonesia in coping with farmland conversion phenomena?
- What are similarities between Dutch and Indonesia land policies and where do they differ from each other?

1.2. *Problem Description and Research Objectives*

Farmland conversion that can be defined *the changes of land use from agricultural uses to urban uses* becomes widespread phenomena. It acutely occurs at urban fringe area, *a transition zone between urban land uses and the area devoted to agriculture*. It grows to be part of daily life, common problem and unavoidable process. Firman (1997) stated that agricultural land conversion appeared to be an unavoidable part of the modernization process and in the last decades had often been judged as a critical problem arising from urban and regional development, linked to issues of inappropriate planning, pitiable realization and failure in land development management. This expression signs the complexity of the causes and the consequences of farmland conversion phenomena.

Many factors are influencing the conversion of farmland at urban fringe area. According to Pierce (1981 in Firman, 1997) there were seven major factors which might affect land conversion; namely, population change, dominant economic function, city size, average residential land values, population density, geographical region, and the agricultural potential of the land. Bryant et al., (1982:38) stated that the conversion of land related to ‘land values and the role of ‘proper’ planning on land-use. The more market value is accepted, the higher is the probability to convert land. Conversely, the greeter the degree of acceptance of land use planning, the less the conversion of land will be. Briefly, the causes of farmland conversion are too complicated; therefore, this discussion will try to be more focused on urban expansion, economic and population growth, and government policies.

The demand of land at urban fringe area increases in line with urban expansion, population growth, economic growth, and government policy. Kustiwan (1996) stated that the conversion of land at urban fringe area couldn’t be separated from the growing of the city called urban expansion. Kivell (1993) urged that population growth in the developed nations was a prime cause of urban expansion. Put simply, more humans require more land. Recently, more and more people live in urban area than in rural area. In Indonesia, urban population was 30 % and 42 % of total population in 1990 and 2000 and was expected to be 50 percent by 2010 (Firman, 2004). Based on Indonesian case, Firman (1997) stated that land conversion in Indonesia had been the result of investment development, which had created an increased demand for land in which other economic activities could be located. Government policies have influenced significantly on farmland conversion occurred. In one side, government policies can keep farmland from conversion by establishing such growth management policies, on the other side they also can fasten land conversion, for example by changing the land use from agriculture use to other uses, giving the permits of industrial estate and residential development, building roads and other infrastructures on farmland.

Farmland conversion has consequences on social, economy, environment, and spatial aspects. The social economy impacts can be the loss of prime agricultural land, loss of agricultural jobs, loss of investment in irrigation infrastructure in the areas and included the influx of people from urban areas to fringe areas. The environment impacts can be

identified for instance on natural landscape destruction and excessive exploitation of groundwater. Walker and Solecki (1995 in Kustiwan, 1996) showed that urban area encroachment into nonagricultural land might account for substantial portion of loss of natural areas. Consequently, people face the decreasing of quality of life in consequence of the lost of landscape and pollution both land, water and air. Spatial impacts related to the changing of the use of land at urban fringe area from agricultural uses to urban functions. Due to these negative consequences, such effective land policies shall be implemented.

Obviously, the effectiveness of such policies is influenced by the institutional, fiscal and social aspects of land policies. Therefore, reviewing these aspects of land policies will be useful knowledge to understand why The Netherlands succeeds in coping with farmland conversion otherwise Indonesia is fail. The institutional aspects that will be discussed are including whether land policies are decentralized or centralized. Fully decentralized land policies have advantages in which the local governments can manage their land based on their desires. However, the disadvantage is that the local governments have potency to manage their land based on short-term interest such as attracting investments. This has consequence on the ignorance of long term interests such as environment and conservation considerations. Moreover, highly decentralized may create difficulty in coordination among local governments and other competent institutions. On the other hand, centralized land policies often have difficulty due to the mismatch needs between central and local levels.

The other important things in institutional aspects are comprehensiveness of land policies and institutional capacity building of government institutions. Bryant, et al, (1982) urges that comprehensive land policy using different measures, might create a basis for ensuring land for future urban growth according to the changing needs of society. Otherwise fragmented land policies will have possibility in the contradiction among institutions that will result in ineffective of such land policies. Institutional capacity building has important role in the success of the implementation of land policies. The institutional capacity building involves the capacity of human resources including coordination among institutions. Without enough capability of human resources, the gap between regulations and the implementation will be far. Moreover, the lack of coordination among government institutions can be one of the major weaknesses that result in the ineffective of such land policies.

The financial and social factors also play an important role in the implementation of land policies. Financial difficulties are often blamed as the main obstacles to the implementation of such land policies. Also, there will be different consequences between financial mechanism to control development and revenue mechanism. Socially, the implementation of land policies will not be effective without public support. The acceptance of land policies depends on the social, political, and culture of the society in such countries. The greater the degree of acceptance of government intervention on land, the easier land policies will be implemented. Otherwise, the higher the individual property rights on land accepted, the more difficult land policies will be implemented.

Besides institutional contexts above, land policy goals and instruments are also important to be discussed to understand land policies in The Netherlands and Indonesia. Every country has its own goals and objectives in keeping its farmland at the countryside. The goals vary from food security, environmental aspects, and quality of life to countryside as part of national character or identity. Due to the complexity of farmland conversion problems, there are many ways that can be used to prevent the agricultural land from conversion such as the government intervention on land policies. According to Kivell (1993:33) the government intervention on land can be simplified into three broad headings: public ownership, regulatory measures and fiscal measures. Public ownership correlates with political ideology of each country. Socialist countries such as The Netherlands highly concern with public or community ownership on land, while liberalist countries such as United States emphasize on individual and private landownership. Regulatory measures as development control on land can be in the form of land use plans and land development permits and varies from country to country. The Netherlands for instance is known for its strict regulation on land use and building permits. Indonesia has implemented spatial planning and land development permits to control development. However, these haven't had as effective as in The Netherlands yet. Fiscal measures are in the form of taxes or subsidies on land development. Land taxation, for instance, could serve as an instrument to administer land utilization, including the process of land conversion. In some countries, land taxation can be useful and effective tool on land policies. Therefore, learning such practices from other countries in coping with farmland conversion can enhance our knowledge in this subject.

Hopefully, after reviewing land policies in The Netherlands and Indonesia, this study will find what are the similarities and differences of land policies in coping with farmland conversion at urban fringe area. The similarities and differences will be judged by reviewing policy goals, structure and content; policy instruments and administrative techniques; institutions; ideology; ideas, attitudes and concepts; and negative lessons based on objects of policy transfer by Dolowitz and Marsh (1996). Based on the similarities and differences of this study, this study will try to draw the lesson learned including what are the success and failure of the implementation of such land policies. Then, it will discuss the possibility to transfer the knowledge to solve farmland conversion problems in Indonesia.

Based on the background, research questions and problem description above, the goal of this study is to understand land policies on coping with farmland conversion at urban fringe area in The Netherlands and Indonesia. The goals can be achieved by several objectives:

1. to assess the institutional context of land policies in The Netherlands and Indonesia.
2. to identify the land policy goals and instruments in The Netherlands and Indonesia to cope with farmland conversion phenomena and the possibilities of policy transfer as lesson that can be learned from The Netherlands to Indonesia
3. to identify the similarities and the differences of land policies in Dutch and Indonesia .

1.3. *Research Methodology and Framework*

This study is carried out by means of literature study. For that reason, literatures written by many experts such as Darin Drabkin (1977), Bryant, et al. (1982), and Philip Kivell (1993), and journals published by Land Use Policies, Urban Studies and other electronic journals will become the main source of information. Thus, secondary data from Central Bureau of Statistics of The Netherlands and Indonesia and other sources will be used to support the analysis. Furthermore, this study tends to utilize a descriptive approach.

To achieve the goals above, this study is divided into 4 steps (*see Figure 1*):

- Firstly, reviewing some literatures, journals and other resources to identify the causes, the trends, and the impacts of farmland conversion. In addition, it also discusses the techniques, policies and views in coping with farmland conversion at urban fringe area.
- Secondly, reviewing land policies in The Netherlands and Indonesia. It will try to understand the institutional and social aspects of land policies by gathering information from several literatures.
- Thirdly, evaluating and drawing some lessons learned shall be done after examining the case study. To evaluate the instruments of land policies, some criteria suggested by Zulkaidi (2005) such as problem solving, prevention, minimum effect, coordination and participation will be used. These criteria will be scored or weighing by three categories: strongly applied (++), weakly applied (+) and not applied (O). Moreover, in this step, what are factors of success and failure on coping with farmland conversion will be examined. Then, some lessons learned are illustrated in this study.
- Fourthly, concluding some remarks and proposing some recommendations in coping with farmland conversion at urban fringe area are the last stage of this study.

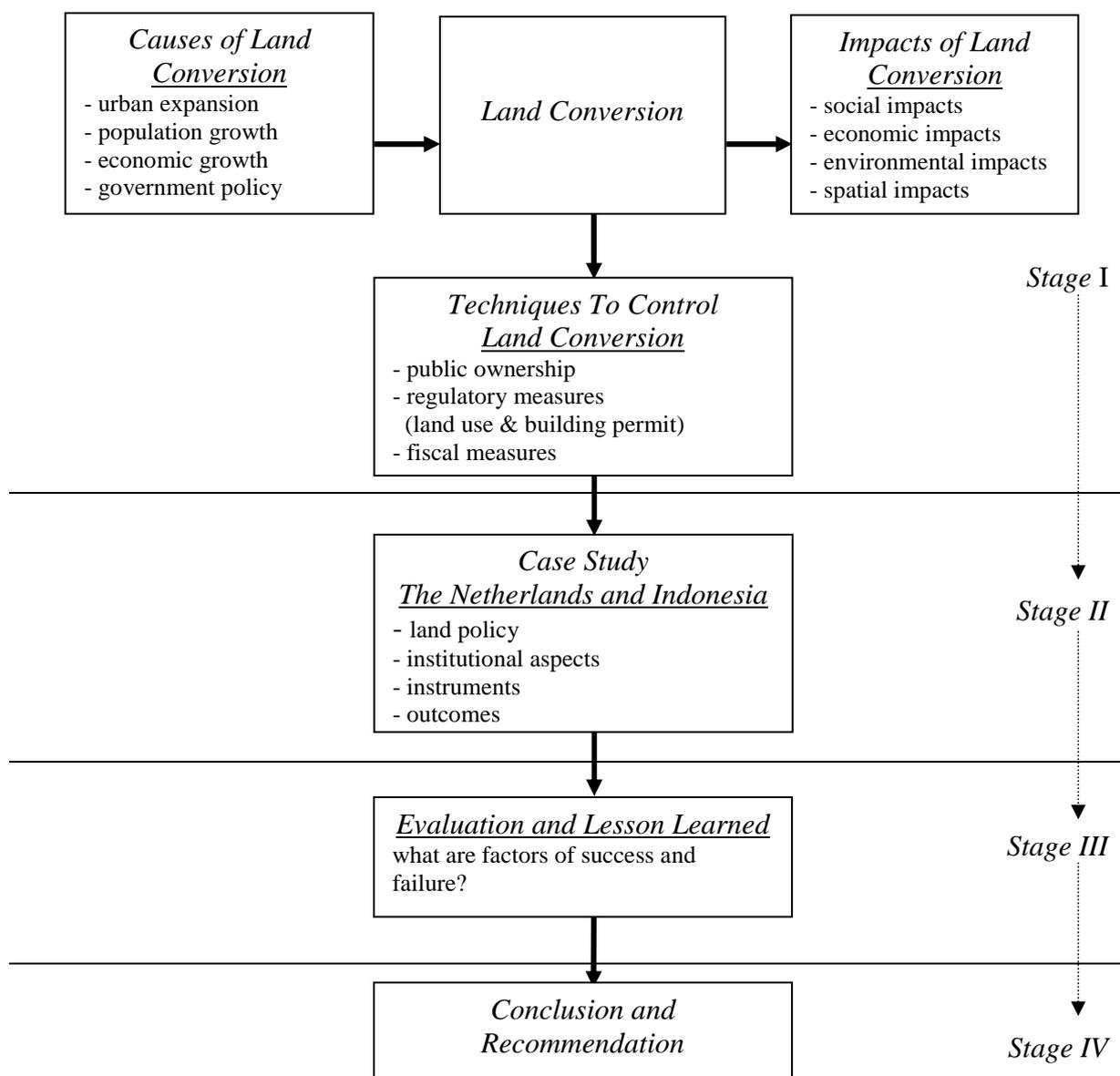
1.4. *Report Structure of Study*

The report of this study consists of six chapters. Chapter 1 is introduction. This chapter discusses the background, problem description and research objectives, research methodology and framework, and report structure of this study. It illustrates the flows of this research. Chapter 2 describes the theoretical framework. This chapter reviews the causes, the impacts of farmland conversion and the policies on managing farmland conversion at urban fringe area based on books, journals, and websites. It also reviews the criteria to evaluate land policies and the policy transfer theory. It represents the body of this research. Chapter 3 reviews land policies in the Netherlands. It depicts the general description of The Netherlands including history, institutional contexts, objectives and the instruments of land policies. It elaborates further the policies taken in managing farmland conversion. It also provides short discussion of land policies in Randstad Area. Chapter 4 does similar thing with chapter 3 for Indonesia case and discusses case study of Yogyakarta area. Then, Chapter 5 is evaluation and lesson learned. It discusses the effectiveness of land

policies and draws what lesson can be learned. It points out what factors of the success and failure on coping with farmland conversion at the countryside. Chapter 6 is conclusion and recommendation. Based on the previous chapters, some remarks and recommendations are covered in this chapter.

Based on the short discussion above, the research framework and the stages of the research can be described on the flowchart below (see Figure 1):

Figure 1. Research Framework



The following chapter discusses the theoretical framework that starts with reviewing the causes and the impacts of land conversion. Then, it elaborates the techniques to cope with farmland conversion problem and defines some criteria to evaluate the effectiveness of such land policies.

Chapter 2

Theoretical Framework

This chapter starts with identifying the causes, the impacts of farmland conversion and the techniques or policies to manage farmland conversion at urban fringe area derived from literatures. Subsequently, it discusses the criteria to evaluate land policies. Finally, it reviews the policy transfer theory.

2.1. Causes of Farmland Conversion

Many experts have proposed several arguments concerning the causes of farmland conversion at urban fringe area. Lein (2003:155) hypothesized that land market forces and the personal motivations of private landholders coupled with local government growth strategies have contributed to the gradual but steady conversion of land from agricultural uses to urban. Of course, it is possible that different places will have variety causes of farmland conversion. Bryant, et al. (1982:38) pointed out that the competition of land is the main reasons of land conversion process and modified by planning and public intervention generally. Firman (1997; 2000) examined that land market in Indonesia reflects the recent operations of large private developers, often acting speculatively and trying to extract the highest possible rents. Furthermore, land conversion in Indonesian cities has largely been uncontrolled. The process tends to become a 'land business undertaking'.

This study tries to be more focused on urban expansion, population growth, economic growth, and government policy as factors that cause farmland conversion. The reason is the tendency of this study to analyze farmland conversion at macro level so that it can utilize the secondary and aggregate data. Consequently, the analysis will be more general. However, the disadvantage is that this study probably does not offer comprehensive and in-depth analysis.

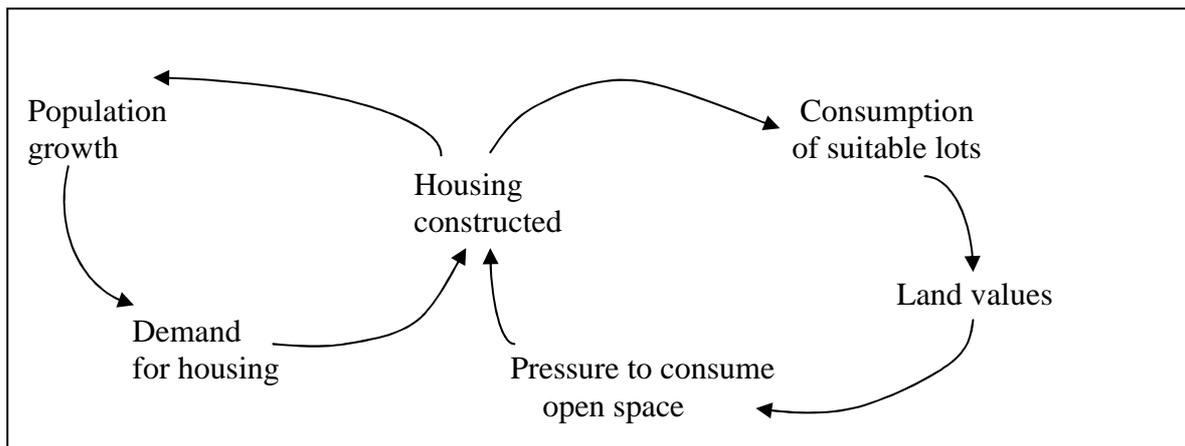
Urban expansion has been long recognized as main factor of land conversion at urban fringe area. The process of farmland conversion is often connected to physical expansion of the city growth as the effect of urbanization. Recently, more and more people live in urban area than in rural area. Darin-Drabkin (1977: 33) stated that urbanization demanded land for urban settlement, transportation and recreation requirements. Due to the scarcity of land at urban area, the city is expanded to the fringe area in which productive agriculture land is usually located.

The population growth also has important role on the conversion of farmland at urban fringe area. The demand of land at urban fringe area increases in line with population growth and urbanization. Kivell (1993:2) urged that population growth in the developed nations was a prime cause of urban expansion. Put simply, more people consume more land. The people demand on land for settlements, economic activities, social spaces and

aesthetics. Crude population growth in many developed countries has been relatively modest in recent years, but it has played a part in the process of urban expansion. Contrary to this view, Tolley (1997 in Bhadra, 1993:10) stated that the rapid rates of population growth were not the central influence driving urban growth in developing countries. However, the moderate views agree that prime farmland is more likely to be urbanized than other land as the population growth.

Related to the population growth, Lein (2003:155) described the mechanisms that contributed to the change in land use from farmland to urban. The ‘cyclical process’ (See Figure 2) starts with population growth. Firstly, population growth creates the demand for housing. Then, high demand of housing stimulates developers to invest new housing. New housing areas require suitable lots of land that increase the land value. Due to the limitation of land supply in urban area, land values force to convert open space including agricultural land at urban fringe to construct housing. This process is repetitive.

Figure 2. Causal Loop Diagram of the Urban Development



Source: Lein, 2003

Economic growth has influenced significantly on the conversion of land because it can stimulate the massive physical development in one place. Firman (2000), who examined the land conversion in Indonesia, stated that the marvelous Indonesia economic growth between 1975-1996 carried a lot of physical developments of large cities in the mid-1990s, including land conversion in the outskirts of large cities. Moreover, the economic growth will promote the increasing demand for commercial, industrial, and residential areas. Similarly, Koomen and Groen (2004), who examined urbanization pattern in The Netherlands, showed that the increase demand of commercial land use (industry, public and private offices, retails, etc) was heavily reliant on economic growth. Additionally, the economic growth will result in increasing prosperity of the people. The increasing prosperity leads to the increasing demand of bigger and better homes and recreational activities that mostly will be located at the urban fringe area.

Government policies could have two opposing role in the conversion of farmland at urban fringe area. In one hand, with its power to control development, the government can limit the development on agricultural lands and maintain them for agricultural uses. The Green Heart of Randstad, Holland is the exact example how government policies have significant role in keeping farmland and open space in this area. On the other hand, also with its authority, the government can push the conversion of agricultural land by changing the land use, issuing the building permits, and constructing infrastructures on agricultural land. Kustiwan study (1996) illustrated how government policies on privatization of industrial estates, deregulation of investment and location permit, and development of new towns and large-scale residential developments in Indonesia contributed to huge agricultural land conversion in this country.

Based on the discussion above, we can see that farmland conversion can be caused by macro and micro factors. Macro factors are external factors from the landowners (farmers) such as urban expansion, population growth, market forces and government policies. Otherwise micro factors are internal factors such as personal preferences and farmer motivations. These macro and micro factors entwine portraying the complexity of farmland conversion phenomena. These factors are interdependence and influence each other. Thus, they create intricate relationship. That is why coping with farmland conversion in urban fringe area requires comprehensive policies, involved multiple stakeholders and strong commitment from the government. Without these requisites, several techniques on coping with land conversion will not be effective and raise more and more negative consequences.

2.2. Impacts of Farmland Conversion

The impacts of farmland conversion at urban fringe area have become subject study of several experts. Apparently, farmland conversion at urban fringe area has advantage and disadvantage. Bhadra's (1993:11) study showed that the conversion of rural lands into urban uses might lead to improvement of aggregate welfare for the regional economy of Calcutta Metropolitan District. The other positive effect is that government can increase its revenue from land taxation. This can be explained that real estate and industrial tax promise higher revenue than that of agricultural taxes. According to Bentinck (2000), who examined urbanization in Samaipur, India - the positive impacts of urbanization are improving housing conditions, better amenities and services, and higher living standards. Land conversion for infrastructure and other urban facilities can improve the living standards of the people at the urban fringe area.

On the other hand, many experts have signed the negative or disadvantage of farmland conversion at urban fringe area. National Agricultural Lands Study Commission (NALS) in 1981(Bhadra, 1993:26) reported that land conversion in the United States had serious impacts on the loss of food and fiber production in the future. The United States

would not have enough land for production of food and fiber if land conversion to urban uses were not stopped. Recently, Indonesia is rice-importing country due to massive land conversion. Additionally, Firman (2000) stated that land conversion had both direct and indirect consequences. The direct impacts embrace the decrease of main farmland, decrease of agricultural occupations, loss of investment in irrigation infrastructure in the areas, deterioration of natural landscape, and disproportionate exploitation of groundwater. The movement of urban people to urban fringe area is one of indirect impacts of farmland conversion.

Obviously, land conversion has impacts on social, economic, environmental and spatial aspects. Socially, Bryant, et al., (1982: 64) revealed that land conversion could change land ownership pattern, changing distribution of land uses both economic and cultural and between changing activities. The influx of urban people to fringe area can give positive and negative impacts to the original inhabitants. In one side, urban people can learn the local culture or local wisdom from original inhabitants and vice versa. In the other side, the interaction among them can weaken the local culture.

Economically, as previously discussed, Firman (2000) signed the negative impacts of land conversion including the loss of agriculture jobs. The loss of jobs can create social problems in the community. In the same way, Yunus (2001) observed the changing of occupational structure in Yogyakarta area due to farmland conversion. The decrease of farmland, the rapid growth of fringe area encourage farmers to find other jobs to substitute the decrease of income from agricultural sectors. Some are more prosperous because of earning double income, and the others are more suffering.

The other negative impact of farmland conversion is environment. Bryant, et al., (1982: 24) noticed several impacts of land conversion such as deterioration of ecological resources, pollution, loss of landscape amenities and the potency for future uses. Moreover, the ecological impacts embrace the changes of land characteristics for the maintenance of fresh air, water resource, vegetation and wildlife, ground water recharge areas, floodplain and unusual natural ecosystems. As well, Ruiters (1996, in Bentinck, 2000:27) warned that urbanization was “a predator of its environment”.

Spatially, land conversion has impacts on the fragmentation of farmland. Fragmentation of land creates negative impacts on land use planning at urban fringe area. Bryant, et al., (1982: 40) identified four disadvantages of land fragmentation that were driving up land value, increasing the number of owners who had to be dealt by municipality, making future large-scale land assemblies difficult, and keeping productive farmland at urban fringe area difficult. Therefore, fragmentation of land creates some difficulties in planning, implementation and evaluation of land use.

Besides the fragmentation of land, land conversion will change the allocation of land use. Competing the land use in the countryside occurs. Visibly, the land tends to be owed for urban functions including residential, commercial, infrastructure uses than agricultural

purpose. Densification of buildings in agricultural area takes place. Therefore, such techniques shall be used to cope with the complicated impacts of land conversion.

2.3. Techniques To Cope With Land Conversion

There are many techniques that have been proposed by experts for controlling and managing the land conversion at urban fringe area. Schwartz and Hansen (1975: 165) discussed use-value assessment and transferable development rights (TDR) as methods to cope with farmland conversion in California. Use-value assessment was related to California Land Conservation Act (CLCA) of 1965. This Act gives authority to local government to offer use-value assessment in negotiating for a contract with the landowners in order the landowners are willing not to develop their land for minimum periods (10 years in most counties) except for agriculture intentions and open space. Likewise, transferable development rights have objectives for preserving agricultural land, historic landmarks and other open space lands. This is supposed to keep land for long-term interests.

However, the methods above tend to American orientation that probably does not match to The Netherlands and Indonesia situation. Therefore, the other methods that are more general are needed. The author assumes that Phillip Kivell (1993) proposed more common instruments on land policies. Kivell defined public ownership, regulatory measures and fiscal measures as instruments of land policies. Moreover, the other consideration to use the Kivell works is based on some real facts. First, countries, whose land is mostly owned by the public (government), are able to manage their land effectively such as the Netherlands and Singapore. Therefore, it motivates to study further public landownership as instrument to control land development. Secondly, as Bryant et al., (1982) pointed out, the acceptance of planning or land use in one country will have big influence on the land conversion. The more market value is accepted, the higher is the probability to convert land. Conversely, the greeter the degree of acceptance of land use planning, the less the conversion of land will be. Planning in The Netherlands is highly accepted by the community; probably it will conform to this requisite. At least, these facts can be as reasons to understanding insight Kivell works and to understanding their implementation in The Netherlands and Indonesia.

According to Kivell (1993: 33), as discussed in the previous paragraph, the instruments that can be employed by the government in intervention on land can be simplified into three broad headings: public ownership, regulatory measures and fiscal measures as elaborated further in the next discussion.

Public Ownership

Public ownership is one of techniques to control land development. The public ownership on land can be temporary or permanent. Kivell urges that public land ownership

has traditionally been justified for reasons of “the common good” or “the public interest”. Moreover, public ownership on land has several advantages: “*planning efficiency, fiscal and social equity and the provision of services*” (Kivell, 1993: 109). Planning efficiency means that by owning the land for development, government can encourage efficient land use and guide growth in the managed way. Fiscal and social equity relates to wealth redistribution and dropping inequality in the society. Land resources are not distributed equally in community so that public ownership can be a useful mechanism to allocate them. Provision of services refers to the obligation of the governments to provide services to citizens such as providing houses, schools, parks, infrastructures and other facilities that need land. Public ownership on land can promote the government has better performance in serving its community.

Kivell (1993: 33) urges that the involvement of government institution such as municipalities in land development process is as a form of higher level of public intervention in land ownership. Kivell provides some countries as example. Public ownership of development land in Britain is part of the 1947 Town and Country Planning Act. In Germany, municipal and provincial governments establish land banking for future interests. Similarly, municipalities in The Netherlands are actively involved in land ownership, often performing as connectors between landowners and developers.

Regulatory Measures

Regulatory measures refer to land development control. Land development control shows the state power to approve or reject development on land as main issues. The land development control can be in the form of land use planning systems. Land use planning systems vary from one country to another country. There are two characteristics of land use planning systems: indicative and discretionary (European Commission, 1997). In an indicative system, the land use planning is more detailed and the control on land use is strict. The indicative system has advantage on the greater certainty of the land use. Otherwise in discretionary systems, the land use planning is more general and flexible so that there is room for negotiation in land development. The positive aspect of discretionary system is that it enables decision to respond rapidly changing circumstances. In European countries, the land use planning in the Netherlands is one example of indicative system. Otherwise, the United Kingdom model is the primary example of discretionary system.

Besides the characteristics above, the structure of the government systems influences on whether land use plans are centralized or decentralized. In unitary states, in which power resides with national government and certain authorities may be delegated to departments and local governments, the national government makes the regulation in land use plans. This national legislation shall be applied in the local land use plans. The Netherlands is the example. In The Netherlands, there is strong hierarchical integration between the national, provincial and municipalities in making the land use plans. The

national government sets up the strategic policy in spatial plans; the provincial governments specify it in spatial development for the province and the municipalities formulate their land use based on national and provincial spatial policies. Similarly, Indonesia has same hierarchical structure of government and the hierarchical model of spatial plans.

The other regulatory measure instruments to control the land are building permits and land development permits. Building permits in the Netherlands are issued by local authorities and can be as planning permission and building control. Local land use plan is legally binding document. Based on the land use plan, the government can approve or reject development proposed by individual or private sectors. Clear criteria are stated for judgment to evaluate whether the proposed building permits shall be accepted or denied. Correspondingly, land development permits (*ijin lokasi* in Indonesian) have same function in controlling land development. Archer (1993 in Firman, 2000), stated that land development permit systems are able to perform many roles: (1) to guide the location of private land and building development projects; (2) to coordinate government and private-sector development activities; (3) to facilitate land assembly for large-scale development projects, such as new town and industrial-estate development

Fiscal Measures

Fiscal measures as tools to control land use change is still debatable. The antagonists urge that the developers should be tolerable to gain profit from developing land to a higher use. The protagonists advocate that the government creates land value by granting permission or improving facilities. Therefore, the government has privileges to gain part of the profit. According to Kivell (1993: 39) there are three kinds of fiscal measures: (1) routine raising of revenue (2) taxes or levies on land and property in order to recoup some of the enhanced value of the developed land which is considered to have been created by the community, and (3) subsidies to promote development or encourage important activities.

Fiscal measures can be used to interfere with land use change. Firman (2004) stated that land taxation could serve as a mechanism to administer land utilization, including the process of land conversion. Urban land taxation would also promote and encourage the effective utilization of 'private land' and assist the authorities to develop public infrastructures, which in turn could enhance urban development by the public and the private sector. Nevertheless, land taxation tends to be used to increase revenues rather than as a tool to control land development in most Asian countries. Therefore, evaluating such instruments is interesting subject.

2.4. Criteria to Evaluate Land Policies

The author intends to evaluate institutional, fiscal and social aspects of land policies in The Netherlands and Indonesia. The reason is that these aspects have important role in the success of the implementation of such policies. Darin-Drabkin (1977) stated that institutional structure as a framework for implementing policy has significant role on policy results. Many land policies are fail due to institutional settings such as lack of capacity of the local municipalities, insufficiency of information, lack of coordination among institution, and lack of skills of the professionals in public administration. Arguably, the success of land policies more or less depends on the institutional capacity building in such a country. Finance also has important role in land policies. Providing with the enough funds to achieve the objectives of land policies is essential to the success of a program including coping with land conversion at the countryside. Social aspects of land policies shall be considered to succeed in the implementation of land policies, for instance, public participation. Theoretically, a public involvement would provide more acceptable decisions through broad representation of all affected interests so that the land policies will be more effective.

Many aspects can be evaluated in institutional aspects of land policies such as decentralized versus centralized, comprehensiveness versus fragmented and institutional capacity building. Some experts questioning that a centralized institutional arrangement results in more effective land policies. It has gradually been recognized that the powers of national governments on land policies need to be decentralized. The assumption is that local government has more knowledge of local problems and allows for greater representation of various ethnic, religious and political groups including in the land development process. Comprehensive and integrated land policies to protect farmland at the countryside are needed. It has already been recognized that the conflict interests on farmland at the countryside occur. For institutional capacity building, it can also be seen from many aspects such as the coordination among involved institutions and the capacity of human resources. Darin-Drabkin (1977: 185) noticed that the coordination among policy measures could be one of criteria of the effectiveness of policy measures in order to minimize the side effects due to the interrelationship between different policy measures. Therefore, the effectiveness of such policies is influenced by the result of different measures. Due to the hierarchical government, in which such policies are implemented at national, regional and local level, it is possible that conflict interests among these tiers occur. For this reason, policy efficiency is needed. Policy efficiency will be achieved as long as the local levels participate in establishing the regional plan and the efficient control by the national and regional level of implementation of policies. The capacity of human resources of apparatus has important role in the success of the implementation of land policies. As Firman (2004) urges that a serious shortage of qualified personnel in Indonesia is the source of ineffective coordination

among institutions of urban land-use development at the local, provincial and national levels.

As discussed in the previous paragraph, finance also has important role in land policies because coping with land conversion at the countryside needs amount of money. The implementation of such land policies can be costly. Generally, land policies will be evaluated whether the governments provide financial mechanism on land policies or not. Moreover, the existing financial mechanisms such as land taxation whether as a tool to control development or as an instrument to increase revenue will be evaluated because both have different consequences. As Needham (2000) urges, if land taxation is to be used as an instrument of land-use planning, then it is the intention that the taxation affects land use. However, if the land taxation is intended to increase revenue the effect on land use is small.

Socially, land policies will be examined whether they are supported or rejected by the public and private as stakeholders in land policies. It is generally accepted that the governments have dominant role on land policies because they are responsible for the wealth of the society on the whole. However, the involvement of multistakeholders on land policies is also important. As Healey (1997) suggested that collaborative practice among stakeholders should be done on planning because none of the actors alone are able to do what they want to do without collaboration with other actors.

Besides institutional, fiscal and social aspects above, this study tries to evaluate the effectiveness of the instruments of land policies. How to evaluate the effectiveness of the instruments of land policies? There are some criteria that can be used to evaluate land policies (Zulkaidi, 2005). The criteria are:

1. *Problem Solving*. Land policies can be categorized effective if they can solve problem, not create problem. Hence, land policies can be mentioned effective if they can minimize rapid farmland conversion.
2. *Prevention*. Land policies will be more effective if they tend as prevention of uncontrolled development. Faludi (1994) pointed out that the success of growth management in the Netherlands was due to the prevention of growth. Land use can be an effective tool to determine where development should be permitted or should not occur.
3. *Minimum (negative) effect*. Land policies will be effective if there is minimum negative effect to the community. Eviction, for instance, has big negative social impacts to the community. Furthermore, land acquisition by the government without proper compensation also has negative effects to the property owners.
4. *Coordination*. Land policies needs coordination among involved institutions. By coordinating the main relative activities, responsible authorities can develop an integrated policy. In the case of farmland conversion at urban fringe area, it involves several institutions such as planning, agriculture, environments, trade and industry, investment, etc. Therefore, coordination among these institutions is required so that conflicts between goals and objectives among institutions can be minimized.

5. *Participation*. Theoretically, a participatory approach would provide more acceptable decisions through broad representation of all affected interests on land policies. The involvement of stakeholders such as government institutions, private sectors, and the community will increase the effectiveness of such land policies.

These criteria will be used to evaluate such land policies in the Netherlands and Indonesia to get lesson learned.

2.5. *Lesson Learned*

Land conversion is worldwide phenomena. Learning from other countries, which succeed in coping with land conversion, can be useful knowledge for the countries that have similar problem. Recently, international comparative study to get lesson learned or policy transfer has become more popular. More and more international comparative studies have been conducted in several subjects. The next discussion will elaborate: what is lesson learned? What is learned? Are there different degrees of transfer?

What is lesson learned or policy transfer? According to Dolowitz and Marsh (1996) lesson learned or policy transfer refer to

“...a process in which knowledge about policies, administrative arrangements, institutions, etc. in one time and/or place is used in the development of policies, administrative arrangements and institutions in another time and/or place”.

Broadly speaking, lesson learned in this study can be summarized as a process to learn kinds of policies on coping with farmland conversion at urban fringe area in The Netherlands to develop or improve related existing policies in Indonesia. By learning from other countries, we know what are the positive and negative of certain policies in other country then we can try to identify the possibility to implement the policy in our own system.

What is learned? According to Dolowitz and Marsh (1996:349), there are seven objects that can be learned or transferred: “policy goals, structure and content; policy instruments and administrative techniques; institutions; ideology; ideas, attitudes and concepts; and negative lessons”. Decision makers from one country may pick a certain idea or policy instruments from other country to deal with specific problems in their country. For example, at least 34 States in the United States try to adopt California Land Conservation Act of 1965 (Gloudemans, 1974 in Schwartz and Hansen, 1975).

Learning from other countries in certain policy can be advantage and disadvantage. The advantage is that by adopting policy from other countries can save time and other resources. However, it will face difficulty if the culture and institutional backgrounds between one country and other country are completely different. The other constraints are differences of political, bureaucratic and economic resources. The similarity in political

ideology makes it easier to transfer of such policies. Correspondingly, the matching of bureaucratic and economic resources will promote in success of such policy transfer.

Are the different levels of lesson learned or policy transfer? Rose (quoted in Dolowitz and Marsh, 1996:351) defined four degrees of policy transfer: copying, emulation, hybridization or synthesis and inspiration. Copying arises when the lesson learned or policies from other country are absolutely applied without any alterations. Emulation occurs when only a particular aspect from foreign practices is adopted for designing policies at national level. Hybridization or synthesis happens when the lesson learned of certain elements of policies is shared from such practices in two or more countries. Lastly, inspiration takes place when such policies in other countries could enhance ideas and inspire what is probable at one country. Due to the academic purpose of this research, the last degree of lesson learned is the most proper.

Those theoretical frameworks above will be used to review the land policies in The Netherlands and Indonesia in coping with farmland conversion at urban fringe area in the next discussion. Hopefully, the similarities and differences of land policies can be identified and the lesson learned for Indonesia can be recognized.

Chapter 3

Farmland Conversion in The Netherlands

This chapter discusses how The Netherlands deals with land conversion at urban fringe area. Firstly, the discussion starts with reviewing the national context of The Netherlands including geographical information, current population, and the governmental system. Then, the discussion elaborates farmland conversion in The Netherlands in general and especially Randstad area, followed by examining public ownership, regulatory measures (land use planning and building permits) and fiscal measures as instruments in dealing with land conversion.

3.1. National Context

The Netherlands covers an area around 41,500 square kilometers. Based on the Central Bureau of Statistics data in 2005, 16,335,509 inhabitants lived in this country. The density of population is around 482 per square kilometers. About 18% of the population lives in extremely urban surroundings, and more than 25% lives in a highly urban environment. Most of the population is concentrated in Randstad area. This area is also highly urbanized and industrialized with intense competition in the use of land.

The Netherlands is a unitary state in which the national government has the strongest authorities albeit certain responsibilities can also be delegated to government departments for specific territorial units or to municipal government (European Commission, 1997). For The Netherlands, a decentralized unitary state also means 'co-government' that involves the provinces and/or the municipalities in the formulation of the implementation of policies published by the central government. Co-government represents not only delegation of responsibilities but also intergovernmental relations (Faludi, 1994).

The governmental system in The Netherlands is divided into three layers: national, provincial and municipal level. The relationship among the tiers of the governments and the power given to local authorities is based on the Constitution and Municipalities Act of 1851. This Act regulates the relationship between municipality and the higher authorities. It specifies the splitting up of responsibilities between the different tiers of government and admitting the autonomy of the local governments (Faludi, 1987)

Historically, the high population densities, speedy up urban growth and difficult topographical conditions have led the active role of the government on land policies. Additionally, decentralized unitary state model has influenced on land policies in The Netherlands in which the characteristic of Dutch land policy is that the national government creates the instruments of land policies that shall be applied by the local (municipal) governments. The national and provincial government can control the implementation of land policy in the local level but in practice "*land policy is local policy*" (Needham in Hallet, 1988: 49).

3.2. *Farmland Conversion*

Farmland is critical for The Netherlands due to its scarcity of the land. The growth of its population and their activities resulted in high pressure on farmland due to the largest portion in the land use of this country. The cultivated land has dwindled because of urbanization and industrialization, as well as infrastructure developments and increased demands for outdoor recreation and nature protection. As discussed in the theoretical framework, this study will try to examine urban expansion, population growth, economic growth and government policies as causes of farmland conversion.

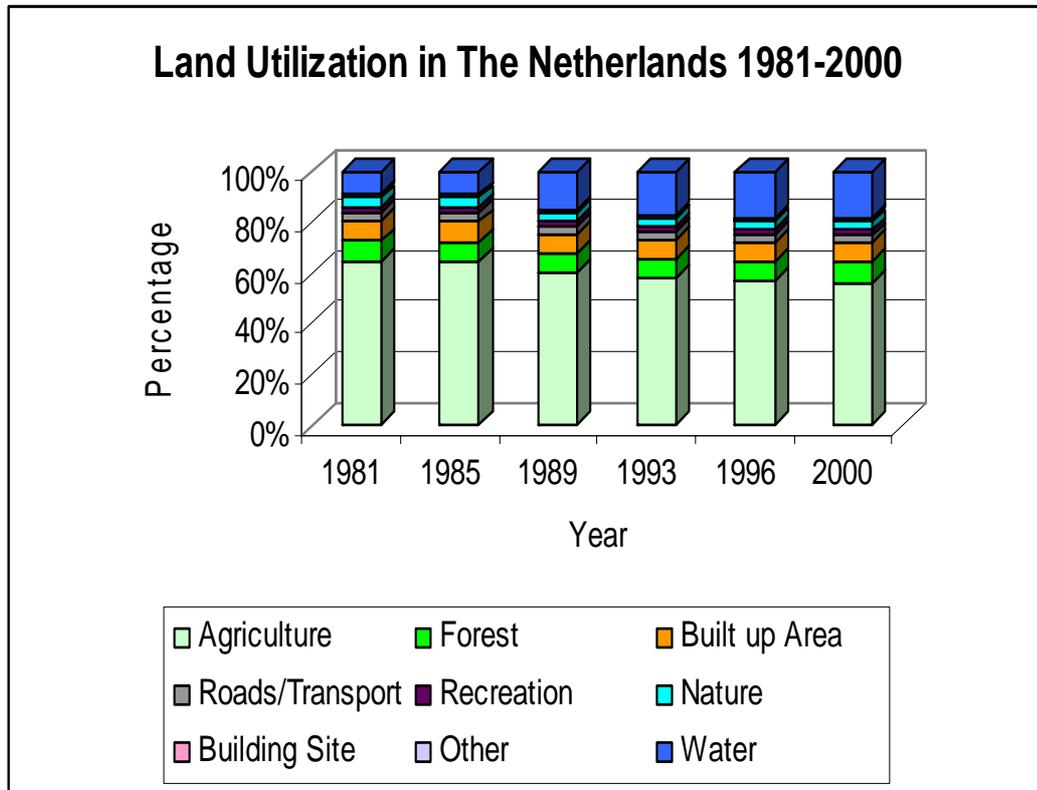
According to Grossman and Brussaard (1989: 4), the demands of urban areas since the 1960s have led to the accelerated conversion of farmland to built-up land, getting a risky rate in the 1970s. During 1960s and 1970s, the lost of farmland in the Netherlands was around 10,000 hectares every year. This is still a significant amount for The Netherlands, which is small country.

The land use in The Netherlands always changes. According to Koomen and Groen (2004), urban land use has increased 70,000 hectares in the last 20 years. Based on Central Bureau Statistics of The Netherlands (2004; see Figure 3), in 1981 agricultural land was 24,133 km² and decreased to 23,260 km². Built up area increased from 2,836 km² in 1981 to 3,183 km² in 2000. Built up area is around 14-17 % of The Netherlands land. The most attractive number is land use for water. It increased from 3,376 km² in 1981 to 7,745 km² in 2000 due to “room for water” policy. More detail data can be seen in *Appendix 1*.

The population growth has influenced to the conversion of farmland. The people demand space for live, space for activities, and space for leisure. According to Koomen and Groen (2004: 5) residential land use has enlarged 14 % in the period of 1980-2000. In addition, Koomen et al., (2004) urged that most of the land required for residential land use was acquired by converting farmland due to the largest part of the country and the cheap price of the land. Nowadays, the increase of prosperity stimulates the increase demand of bigger and second homes. Ageing population and increasing the prosperity stimulate the demand of space for recreational purposes or space for leisure. Scenic rural landscape in the countryside can attract the visitors who seek fun, refreshing from daily activities, and leisure. The increase of tourists to countryside will demand on such facilities including hotels, better infrastructures, shops, and other facilities. These require space that mostly is farmland. Therefore, converting agricultural land to support these activities is inevitable.

Furthermore, land conversion is also affected by economic growth. According to Koomen and Groen (2004: 5), commercial land use (industry, public and private offices, retail) has increased 40 % between 1980-2000. Residential land use has also enlarged 14 % in the period of 1980-2000. Again, due to the largest portion of this state and the cheaper price of the land, most of the land required for commercial and residential land use was acquired by converting farmland.

Figure 3. The Land Utilization in The Netherlands 1981-2000



Source: CBS, 2004

Government policies in The Netherlands have ‘two poles’ for agricultural land conversion. On one pole, the government policies have important role in minimizing the rapid of farmland conversion. For example, the compact city policy is able to slow down the urbanization process. On the other pole, many government policies have impacts to the increase of agricultural land consumption such as the government policies on housings, economic growth, and etcetera. In the Fourth Report on Physical Planning Extra, the government tried to guide new urban (re)development in ‘brownfield’ and ‘greenfield’ locations for residential areas (Vinx locations). According to Geurs and van Wee, (2005), between 1995 and 2005, a total of almost 460,000 dwellings were to have been built on the Vinx locations, about half on the greenfield locations was in the Randstad. The constructions of housings in the greenfield areas that mostly are farmland fasten the conversion of agricultural land in The Netherlands. Moreover, Koomen and Groen (2004) have warned that the publication of the last Spatial Planning Report by VROM in 2004 that offers more freedom to the municipalities to govern their land use may lead to the acceleration of farmland conversion due to the development of residential and commercial areas in the regions which previously are discouraged. This acceleration of farmland conversion will probably give more negative impacts to the community.

The farmland in Randstad that represents a group of towns and cities located in the western part of the Netherlands including Amsterdam, The Hague, Rotterdam and Utrecht (see Figure 4), is the most critical area. The Randstad area is highly urbanized in which competing land occurs. Different functions are clearly appearing in the Randstad area. The northern part is dominated by service sectors such as offices and government centers. The southern part is known for manufacturing industry and distribution sectors. ‘The Green Heart’, one of landmark of The Netherlands, is located in the middle of Randstad area in which the agricultural activities and open space are predominant. Intensive agricultural activities in glasshouses and open space that produce vegetables and fruits can be found in this area. Livestock is also one of remarkable productions in Randstad (See Figure 5).

Figure 4. Map of the Randstad Area



Source: Dieleman and Musterd, 1992

Figure 5. Farmland in The Netherlands



The densely population is the other characteristic of the Randstad area. In 2002, Randstad has around 6.6 million people; and nowadays more than 7,1 million inhabitants are living there. It is almost a half of the Dutch population (16,3 million). In fact, the Randstad area comprises only 16 % of the Dutch territory. It is not surprising that Randstad is one of the most population densities in Europe.

As urbanized area, conflicting among land use occurs in the Randstad. The demand of land for residential areas increases in line with the population growth. Furthermore, more land is consumed to provide public facilities such as roads, schools, and parks. Additionally, the growing of industrial activities, offices, commercial businesses which are essential part of the Randstad also needs land. On the other hand, in the center of Randstad is well known for its Green Heart. Therefore, managing the land from conversion to residential, industrial, commercial uses and conservation functions in this area is big battle.

Hennink (*no year*) provided data on land use change in The Green Heart and The Netherlands as a whole between 1981-2000 (*See Table 1*). Based on that table, housing area increased 501 hectares or 0.28 % during 1981-2000 in The Green Heart. Industry area also enlarged 605 hectares similar with 0.15 % in the same period. Otherwise agricultural area declined 277 hectares or 0.15 %. For the whole of The Netherlands, housing area increased 25,433 hectares during 1981-2000 or 0.67 %. Similarly, industry area increased 13,812 hectares. Otherwise agricultural area decreased 58,765 hectares or 1.55 %.

Table 1. Land Use Change in The Green Heart and The Netherlands 1981-2000.

The Green Heart		
<i>Land Use</i>	<i>Land Use Change (ha)</i>	<i>Percentage</i>
Housing Area	501	0.28
Industry Area	605	0.33
Agriculture Area	-277	0.15
The Netherlands		
<i>Land Use</i>	<i>Land Use Change (ha)</i>	<i>Percentage</i>
Housing Area	25,443	0.67
Industry Area	13,812	0.36
Agriculture Area	-58,765	1.55

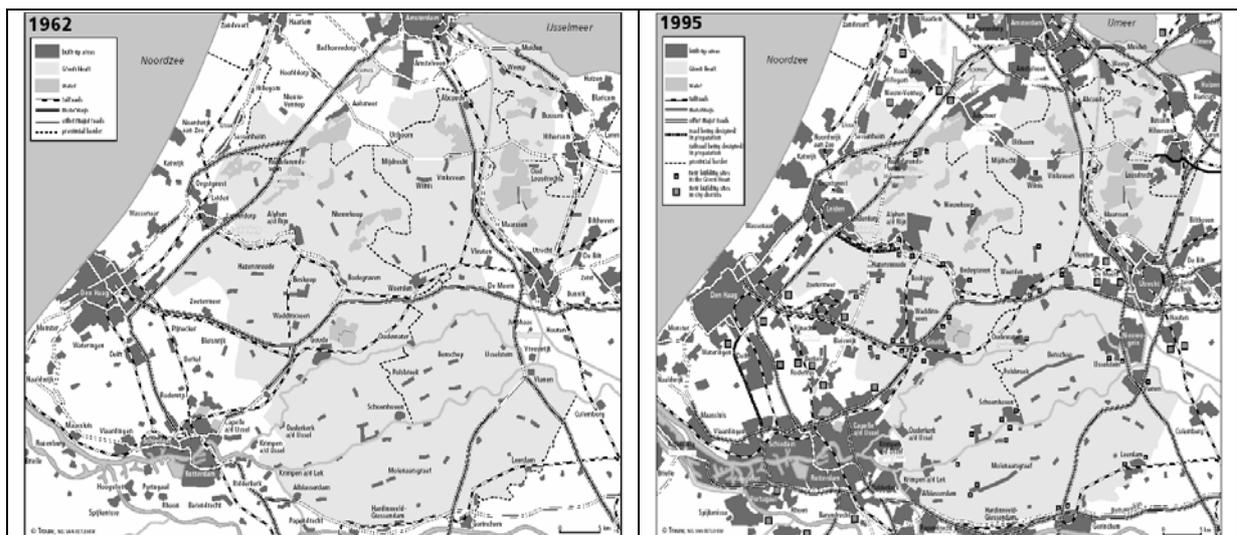
Source: Hennink, no year

Land use change in Randstad area is influenced by urbanisation process. Infrastructure development promotes the urbanisation in this area. According to Schrijnen (2000 in Stead, no year), the Green Heart was still difficult to reach in 1850 and infrastructure development was built around it. Then, the first roads and railways connection crossing the Green Heart were constructed in the early of 20th century. In the middle of 20th century, many infrastructure networks were constructed in the surrounding area of the Green Heart. These networks are able to change the land use and landscape. Due

to the better accessibility, many developments such as housing, industry, and infrastructure have taken place in the Randstad area. Figure 6 below shows the urbanisation in the Randstad and the Green Heart in 1962 and 1995. We can see some remarkable changes in these regions.

The impacts of farmland conversion on social economic can be seen in the changing of agricultural land to commercial land use. Probably, there is a positive impact on this conversion because the construction of commercial land use can promote economic growth due to the less importance of agricultural sectors in the economic sectors. However, the conversion of agricultural land also has negative impacts on the environment. Particularly the growing urbanization and changes in the farmland areas wholly influence problems of water shortage. An increase in built-up area causes higher peaks in the drainage systems and less infiltration. Also people face the decrease of open space in the countryside. Moreover, it has impacts to the changing of ecosystems.

Figure 6. Urbanisation in the Randstad and the Green Heart, 1962 and 1995



Source: IDG, 1997 (in Stead, no year).

Due to the negative consequences, the growth of population and their activities, which stimulate high demand on land, obliges The Netherlands to manage the use of its scarce land. Farmland conversion to urban uses has to be controlled by land policies.

3.3. Land Policies

The next discussion will begin with the goals of land policies in The Netherlands. Then, it discusses the institutional, fiscal and social aspects of land policies including instruments that are used to cope with farmland conversion at urban fringe area.

3.3.1. The goals on coping with farmland conversion at urban fringe area

There are some goals why The Netherlands strongly commits to preserve its farmland at urban fringe area at the countryside. Firstly, maintaining food production is necessary for the Netherlands based on the bad experience after World War II but this isn't a central issue anymore. Thus, maintaining food production is more export orientation than food security. As previously discussed, Dutch agriculture is the most industrialized and intensified in Europe. Although in many areas agriculture no longer provides the main economic base, The Netherlands is the top farm-exporting nations and the contribution of agriculture sectors in export value is still significant for national economy. Therefore, maintaining farmland is still important.

Secondly, preserving the farmland in the countryside usually relates to conservation and preservation of the environment. The countryside sometimes has beautiful natural landscape and heritage values that shall be conserved. "The countryside can also be seen as a storehouse of characteristic landscapes, culture and heritage, including historic farmhouses and archaeological treasures" (MINLNV, 2004). Farmland in the countryside contains rich biodiversity of ecosystems that are valuable. Therefore, maintaining the countryside will have significant impacts to the conservation and preservation of environment, ecosystems, and heritage values.

Thirdly, maintaining the quality of life is the other goal to keep the farmland in the countryside from conversion. For Dutch people, the countryside is not merely space for food production, but it also reflects the Dutch character, the quality of life. Nowadays, people highly appreciate to the countryside due to its authenticity and naturalness. The countryside does not just mirror the farmer activities, but it also reflects the Dutch needs. People demand on peace and space and the pleasant natural and social living environment in the countryside. For Dutch people, "the countryside offers peace, space and greenery for all Dutch people and thus some relief from the madding crowds of the cities. Green space and landscape contribute to spiritual and social well-being"(MINLNV, 2004).

3.3.2. Institutional, fiscal and social context of land policies

In The Netherlands, there is no such legislation aimed directly to minimize the conversion of land as Alterman (1997) pointed out; the Dutch use 'the normal planning system's laws, institutions, and policies'. According to Alterman, 'the Dutch planning system is characterized by the close integration of local, regional, and national policy, which has encouraged city/countryside interdependence'.

Grossman and Brussaard (1989: 4) stated that The Netherlands has adopted relatively stringent measures to control and allocate the consumption of its land. They emphasize three effective measures in maximizing the productivity of agricultural land: a comprehensive system of physical planning, reclamation of new agricultural land and land

development. A comprehensive system of physical planning, as previously discussed, depicts the strong integration among national, provincial and local government plans. Reclamation of land for agriculture uses has become long tradition in the Netherlands. Due to the high cost of land reclamation, this strategy is not prioritized anymore. Recently, Land Development Act of 1985 regulates land development. The aims of land development are to reorganize, improve, reparcel, and reallocate farmland, for the purpose of improving agriculture structure, especially economic and working conditions.

Institutionally, land policies in The Netherlands have been known for its comprehensive integrated approach with other policies. Because of this, the land policies in The Netherlands are recognized as mature system. For example, Alterman (1997) urges that The Netherlands shifts its farming goals from single economic purpose toward farming as a medium for countryside and environmental preservation. The Netherlands has shown that dependence on agriculture, as a means for keeping the farmland is difficult to achieve. Nowadays, agriculture becomes less and less important in the contribution to economic sectors. Countryside and environmental preservation are two goals that can be integrated with agricultural purposes in coping with farmland conversion. Additionally, the protection of the countryside such as the Green Heart is supported by housing policy that prohibits building residential areas in the inner border of this conservation area.

The other feature of land policies in The Netherlands is its hierarchical and intergovernmental coordination. Land policies such as spatial planning is conducted through a very systematic and formal hierarchy of plans from national to local level, which coordinate public sectors and are focused on spatial coordination (EU Compendium, 1997). The hierarchy and responsibility among the tiers of government in The Netherlands is regulated in the legislation such as the Municipalities Act 1851. In addition, the coordination among government institutions in the Netherlands both in national, provincial and local levels has become government culture. Additionally, in The Netherlands, land policies have been implemented closely from the plans and regulations. The governments have strong commitment and institutional capacity building to achieve it. In the case of Randstad, the Dutch government can control the industrial development in this area. The main assumption is that industrial development can promote of urban growth. If the industrial growth can be controlled, the other development will be able to be managed. Besides controlling industrial development, the development of towns in Randstad area is restricted. As Faludi (1994) pointed out the provincial planning directors had a strong motivation that satellite towns were not to be located in the "agricultural heart of the Randstad Holland". Additionally, the active role of the government as developers gives little chance of sporadic urban sprawl by private developers.

Fiscally, farmland at the countryside in The Netherlands is maintained by highly financial support from the government. Such financial mechanisms including tax relief, subsidy and budget allocation are implemented in The Netherlands. For the tax relief, farmland is exempt from the property taxes in The Netherlands. Subsidy mechanism can be

found in which developers who build housing far away from The Randstad area provided “location subsidy” by the governments. Moreover, the government has strong commitment to maintain its farmland in the countryside by allocating amount of for buying up agricultural land for environmental protection (Faludi, 1994).

Socially, land policies in The Netherlands are highly supported by the public. In The Netherlands, the trust of the people to government is still high. Planning is highly accepted by the public even The Netherlands is well known for “paradise of planning”. Moreover, consensus-building and public participation are well established. Faludi (1994) pointed out that success in maintaining the Green Heart, Randstad areas is ‘*depended on cooperation between public authorities and industry, and also on acceptance by the public at large*’. Alterman has similar opinion that farmland preservation policies in The Netherlands enjoy wide and diffused public support among electoral constituencies. Probably without public support to conserve the farmland, The Netherlands will have similar problem of urban sprawl with other countries and the Green Heart will be less and less green

3.3.3. The instruments to cope with farmland at urban fringe area

The Netherlands has employed several methods to control the conversion of farmland. However, this study will be more focused on examining public ownership, regulatory measures and financial measures to control land development.

Public ownership

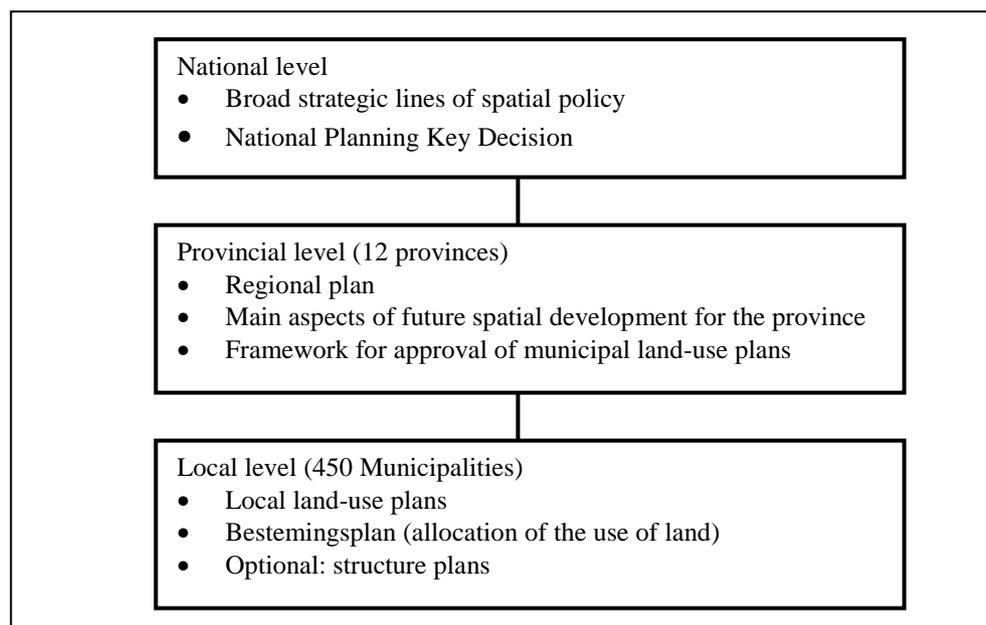
In the case of the Netherlands, municipalities are strong actor in land ownership. Blair study (1994) shows that ‘...in Amsterdam about 80 per cent of the land is owned by the city government, while in Den Haag the figure (65 per cent) is boosted by the addition of land supporting the State's institutions (12 per cent)’. The public landownership in The Netherlands relates to Compulsory Purchase Act (*Onteigening*). Land can be acquired compulsorily for implementing or maintaining a land-use plan, implementing a building plan, acquiring land for housing, and acquiring and demolishing housing declared unfit for habitation (Needham, 1988: 62).

Public landowner is long tradition in Dutch land policy. Local government is an active playmaker in land market. They have power to buy farmland whose development is forthcoming such define in the land use. The government is directing the development on public land. As Needham (1992 in Alterman, 1997) noticed, “some 77 percent of all urban development is undertaken on public land after municipalities have supplied the infrastructure”. In addition, the compulsory purchase can minimize land speculation in The Netherlands because land speculators have to pay land price with government price. Therefore, contrary with other countries, land speculation is absent in The Netherlands.

Regulatory Measures

The next discussion tries to elaborate the role of land use plans, building permits and land development as regulatory measures to cope with farmland conversion. Land use plans have become main instruments of land policies in The Netherlands. Based on Physical Planning Act 1965, municipalities are compulsory to prepare land use plans (*See Figure 7*). The municipalities are also required making a structure plan and a bestemmingsplan. A structure plan is a comprehensive plan for the future development of the Municipality. It may be comparable with master plans in the United States (Faludi, 1983: 32). A bestemmingsplan (designation plan) is a detailed or indicative plan for the allocation of the land use. It is similar with zoning plus a site plan. The bestemmingsplan is stringently binding on development permits. This bestemmingsplan is complemented by the regulation in which give power for the local government to approve or refuse such as permission proposed by citizens or privates. In 1985, The Physical Planning Regulation was amended. This regulation gives more room for municipalities to enhance the degree of discretionary plans, ‘but that has not adversely affected farmland conservation’ (Alterman, 1997).

Figure7. Overview of the Dutch Spatial Planning System



Source: Woltjer and Al, 2005

Building permits is one of the main instruments to control the use of land. In The Netherlands, according to Faludi (1983: 13) “the granting or refusal of applications for building permits... ‘can only and must’ be refused, if the application conflicts with the Municipal Building Ordinance and or the allocation plan, and or if a permit under the preservation of Monuments Act, or a provincial or municipal monuments ordinance is

required but has not been obtained”. Rejection is obligatory if the application is contrary with these requirements; and therefore, there is limited chance for manipulation.

Local government issues building permits in the Netherlands based on the *bestemmingsplan*. The allocation plans indicate the purpose of the use of land, supplemented by a map, the plan regulation and the explanation. The map and the plan regulation are binding documents that specify the zoning. The building permits give authority to reject or approve the permits proposed by applicants. Building permits will not be issued due to the contradiction with the *bestemmingsplan*. Consequently, land intended to agricultural uses can be kept from conversion to other uses.

Land development in The Netherlands embraces land consolidation (*ruilverkaveling*) and land development (*landrichting*). Land consolidation is restructuring of small and separation parcels of land ownership mostly for agricultural goals. Land development is comprehensive scheme ‘for improving working conditions and raising incomes in agriculture and horticulture, for conserving and developing nature and landscape values, for improving opportunities for outdoor recreation, and other factors that improve living and working circumstances in the countryside’ (Grossman and Brussaard, 1989: 9).

Land consolidation and land development have significant impact on preventing parcels of farmland to be converted. Generally, small plots of land tend to be converted by the owner because of inefficiency of production. Land consolidation scheme is able to solve this problem by restructuring parcel of land and distributing again to the original owner. By improving the working conditions, providing infrastructure such as roads and water system in land development, can also minimize the conversion of farmland.

Fiscal Measures

There are many financial mechanisms to keep farmland from conversion such as tax relief and subsidy mechanism in The Netherlands. Farmland is exempt from the property taxes. By exempting the tax for agricultural uses, this can stimulate the farmers always operating their land for agricultural purposes. Moreover, the government has strong commitment to maintain its farmland in the countryside. For example, when agriculture has been no longer economically feasible, in 1993, the Dutch Council of Ministers approved one billion guilders for buying up agricultural land for environmental protection (Faludi, 1994). Furthermore, the government has given subsidies to build houses or new towns outside the Randstad area. In 2006, the government has budget allocation EUR 433,727,000 to buy more than 3800 hectares of new land and 6300 ha developed for the National Ecological Network. The other programme is the reconstruction of sandy soils. For this reconstruction, the Government has set aside EUR 38 million to realize a more beautiful, more livable and balanced countryside¹.

¹ http://www9.minlnv.nl/servlet/page?_pageid=104&_dad=portal30&_schema=PORTAL30&p_item_id

Chapter 4

Farmland Conversion in Indonesia

This chapter elaborates how Indonesia deals with land conversion at urban fringe area. Similar with the Netherlands case, reviewing the national context of Indonesia such as geographical information, current population, and the governmental system will be done first. Then, the next step is elaborating farmland conversion phenomena in Indonesia in general including Yogyakarta area, continued by examining public ownership, regulatory measures (land use planning and building permits) and fiscal measures as instruments in coping with land conversion.

4.1. National Context

Indonesia is located in South East Asia. The land area of Indonesia is 1,919,443 square kilometers. Based on Central Bureau of Statistics of Indonesia, the population in early 2006 is 244,665,424 inhabitants. In 2005, urban population was more than 106 million people (47,9% of total population). Additionally, this population was not evenly distributed in all regions but more than 60% was concentrated in Java, an island comprising only six percent of the Indonesia land. National Census 2000 data showed that Jakarta was the most densely population in Indonesia (12,635 people per square kilometer) otherwise Papua is the least densely population (6 people per square kilometer).

The governmental system in Indonesia is similar with Netherlands, a unitary decentralized country. Indonesia has been a multi-tiered unitary state, with provinces as the second tier below the central (national) government, and local (district) governments as the third tier. Nowadays, the central government is doing big efforts to promote decentralization in Indonesia. Two acts on various aspects of decentralization were published in 1999: the Act of 22/1999 on Regional Government (*Undang-Undang tentang Pemerintahan Daerah*) and Act of 25/1999 on the Fiscal Balance between the Central Government and the Regions (*Undang-Undang tentang Pembagian Keuangan antara Pusat dan Daerah*). Based on Act of 22/1999, the central government is responsible for defense and security, foreign policy, monetary and fiscal policy, and judicial and religious affairs. The provincial governments represent the national government and responsible for cooperation among local governments in their territories. There is no hierarchical relationship between the provincial and the local governments. This was one of the weaknesses of Act 22/1999 that promoted this act to be revised in 2004. Local governments are fully autonomous. They perform all affairs except central government authorities such as public work, health, education and culture, agriculture, industry and trade, land policy, spatial planning, cooperation, labor work and others. In 2004, the Act of 32/2004 on Regional Government changed the Act of 22/1999. This new act revises some weaknesses of the Act of 22/1999 such as restructuring hierarchical relationship between the provincial and local governments.

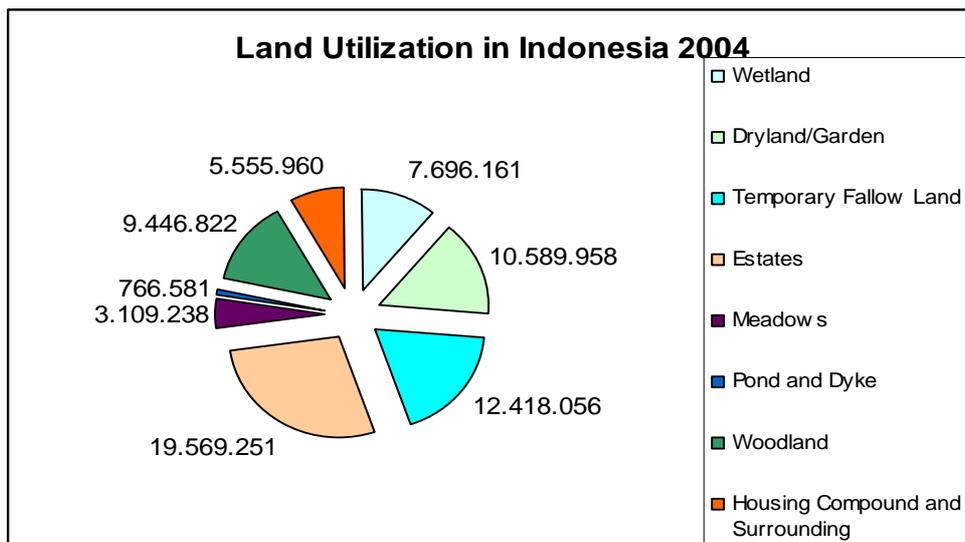
Based on the Act of 32/2004, the local government has responsibility in planning and controlling the development in its region. Similar with the Dutch system, local government has obligation to make land use plans to promote and control development. Land policies have become local policy although the central and provincial government guide the local governments. However, many land policies nowadays are still using old system, centralized approach due to the transition era.

Besides that, agricultural sector is still important for Indonesia. Based on National Economic Census 2003, this sector absorbed 46, 26 % of labor work. Most of the people highly depend on this sector to support their life. On the other hand, the contribution of agricultural sectors to national economy tends to decrease (15.9 % of Gross Domestic Product in 2003). In addition, tremendous farmland conversion is the other problem faced by agricultural sector in Indonesia.

4.2. Farmland Conversion

Agriculture is still important for Indonesia but ironically only small portion of land in Indonesia is farmland. Based on the Central Bureau Statistics of Indonesia 2004 data, the wetland area that can be cultivated for rice as staple food for Indonesian is around 7.6 million hectares (See Figure 8). In fact, the population of Indonesia is more than 200 hundred million people that need huge amount of rice. Estates and forest areas are the biggest portion of land use in Indonesia. Similarly with other developing countries, the land use in Indonesia is changing rapidly. Many forest areas are converted to agricultural land and estate; otherwise agricultural lands at urban fringe area are changed to urban uses such as residential areas and industrial estates.

Figure 8. Land Area by Utilization in Indonesia in 2004



Source: BPS, 2005

Farmland conversion is one of the main features of land development in Indonesia. Most of agricultural land conversion occurred in Java Island (*See Table 2*) that has highly productive farmlands. Between 1981-1991 in Java, more than 1 million hectares of farmland was converted to other uses. This conversion was tried to be covered by addition of 518,224 hectares of new farmland but the amount is still unbalance (-483,831 hectares). The conversion of farmland also occurred in outer Java but it was covered by new farmland addition. Moreover, the farmland in outer Java is less fertile and productive than that of Java. In the period 1999-2002, the conversion of farmland in Indonesia was alarming both in Java and outer Java. In average farmland was converted 187,720 hectares per year and far exceeding the addition, leaving the net negative balance of 420,000 ha nationally in the three year period or 141,000 ha annually in average (Agus and Irawan, 2006).

Table 2. Farmland Conversions in Indonesia Between 1981-1991 and 1999-2002

Period 1981-1991 (adapted from Irawan et al., 2001)			
Region	Conversion	Addition	Balance
Java (ha)	1,002,055	518,224	-483,831
Outer Island (ha)	625,459	2,702,939	2,077,480
Indonesia (ha)	1,627,514	3,221,163	1,593,649
Indonesia (ha/year)	90,417	178,954	88,536
Period 1999-2002 (adapted from Sutomo, 2004)			
Java (ha)	167,150	18,024	-107,482
Outer Island (ha)	396,009	121,278	-274,732
Indonesia (ha)	563,159	139,302	-423,857
Indonesia (ha/year)	187,720	46,434	-141,286
Remarks: the total of rice field in 2002 was about 7.8 million ha			

Source: Agus and Irawan, 2006

Many factors cause the rapid conversion of farmland in Indonesia. As macro factors, we can define urban expansion, population growth, economic growth and government policies. In urban expansion, Kustiwan (1996) stated that the conversion of land at urban fringe area couldn't be separated from the growing of the city called urban expansion. Based on Yunus (2001), Java in 1985 had level of urbanized land 30.36 %, Sumatra 21.83 %, Kalimantan 23.92 %, and Papua 22.74 %. Unfortunately, the author doesn't have recent data of level of urbanized land and how much areas are urbanized. However, we still can get general description of urbanized land in Indonesia based on the explanation of population and economic growth below.

Population growth has increased the demand of land for settlements, infrastructures, services, and other facilities. More and more rural people are moving to cities. In 1990, the

urban population reached 55.4 million (33 percent of the total population), with a growth rate of 5.4 percent per year (Rais, 1997). Following this trend, the urban population will reach 102.5 million in the year 2010 (44 percent of the total population) and 127 million in 2020 (50 percent of the total population). The result is that cities become crowded, more pollution and crime. The rich people tend to move to countryside to avoid the bad living in the cities. The example can be found in the surrounding of Jakarta in which once fertile agriculture land has been transformed into settlement and industrial areas. These rich people also demand on golf field, malls, roads and recreation area that promote more and more conversion of agricultural land.

In economic growth, Firman (1997) pointed out that economic growth in 1980s-1990s brought immense physical development of large cities including land conversion at urban fringe. The investment in housing and industrial estates has transformed agricultural areas at urban fringe into large subdivisions and industrial estates. As a whole, the conversion of agricultural land to settlements dominates the changing of farmland in Indonesia. Firman (1997) also emphasizes that land conversion in Indonesia has largely been uncontrolled, business speculation that triggers economic crises in Indonesia. Additionally, much farmland has become unutilized land ('*tanah tidur*' or sleeping land).

The conversion of agricultural land occurs at large scale in the countryside of most of big cities in Indonesia. Firman (2000) described that the conversion of agricultural land to urban uses during 1991-1993 was more than 106,000 ha, including 58,000 ha (54.7%) of residential areas; 16,452 ha (15.5%) of industrial land; 5,210 ha (4.9%) of offices; and 26,774 ha (25.3%) of other urban land uses. Based on Budiman study (*cited in Firman, 1997*), the agricultural land in Surabaya, the second largest city in Indonesia, during 1990-1995 had been converted into seven large sub-divisions, ranging from 200 ha to 1000 ha in size, and 28 industrial estates which range in size from 15 ha to 900 ha. Furthermore, the physical development in Bandung, the third largest city in Indonesia during 1991-1996 consumed 3,300 ha of agricultural land.

The rapid economic growth in Indonesia in 1980s had led the increasing demand of land to industrial estates. There are 65 industrial estates at the end of 1998; most of them are located in Jakarta Metropolitan Area (25) and 9 in Surabaya (Firman, 2000). Individual industrial estate such as electronics, footwear and plastics also has tremendous impacts on farmland conversion.

Government policies contribute both conversion and maintenance of farmland. As example, bias towards prioritizing industrial development, have created difficulty to keep farmland from conversion. Moreover, in this autonomy era, many local governments in Indonesia try to attract investments in their region in order to increase revenue. Many efforts have been done including changing the land use in their spatial plans. Based on Agus and Irawan study (2006), 42.37 % of irrigated paddy field will be converted by local governments in their spatial plans (*See Appendix 2*). Only 57.63 % of irrigated paddy field will be maintained. Of course, this condition will be dangerous for national self sufficient in

rice and other negative impacts especially social, economical and environmental aspects if there is no action to change the spatial plans.

Farmland conversion also occurs rapidly in Yogyakarta because of settlement growth and infrastructure developments. Historically, Sri Sultan Hamengkubuwono I (first king of Yogyakarta) founded Yogyakarta in 1755 during Dutch colonial period. Yogyakarta is fertile area because it is located in the valley of Mount Merapi, an active volcano in Java (see Figure 9.). In the colonial period, some remarkable settlements have been built after a new Palace of Pakualaman was founded in 1813 and the installation of railway networks by Dutch in 1872. This railway networks link Yogyakarta with Surabaya and Jakarta, two biggest cities in Indonesia now (Baiquni, 2005)

Figure 9. Map of Java Island and Yogyakarta Area



Source: Brontowiyono, 2005

The new settlement pattern in Yogyakarta is concentrated close to central business district of Malioboro, government offices of ‘Kepatihan’ and two palaces of ‘Kasultanan’ and ‘Pakualaman’. The settlement pattern has been shifting to other directions following the main road networks, business centers, education centers and tourism centers called Yogyakarta Agglomeration Development. Yogyakarta Agglomeration Development consists of Yogyakarta Municipality as a core, and Sleman and Bantul Regency as buffer areas (periphery). The development of Yogyakarta Outer Ring Road in 1986 has huge impacts on the development of new residential areas, the movement of universities and other business activities in the fringe. Consequently, this stimulates land use change at the countryside.

Since 1970s, Yogyakarta has been known as the ‘student city’ in Indonesia. More than 80 higher educations such as universities, academies and institutes both public and private are distributed in Yogyakarta, Sleman and Bantul. This attracts developers to invest their money in property sectors and promotes the rapid urbanization on this region. Rini Rahmawati study (cited in Giyarsih, 2001) showed that the movement several universities

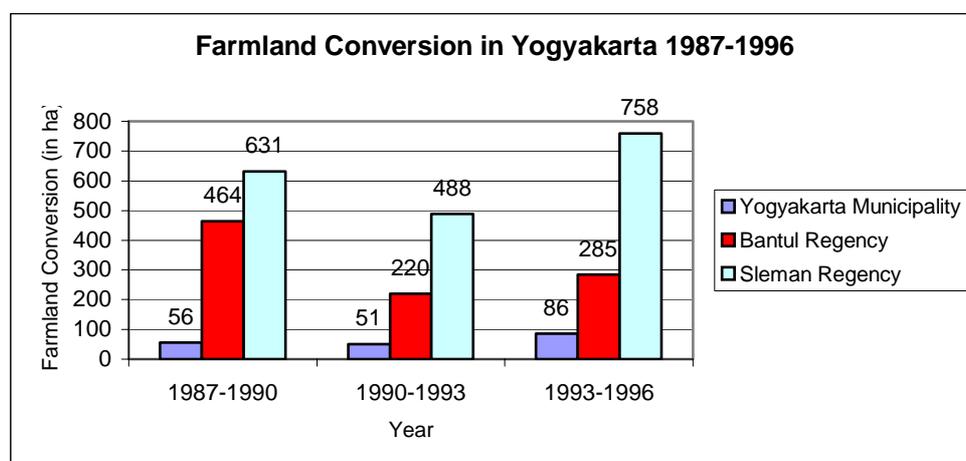
from Yogyakarta Municipality to urban fringe area had significant impact to urban sprawl and promoted densification of building such as boarding house, shops, and other services. The agglomeration of development has big impacts on the transformation of rural areas to become urban signed by the large conversion of farmland (See Figure 10).

Figure 10. Farmland Conversion to Residential Use in Yogyakarta



In Yogyakarta area, there are two main trends of land use change. On one hand, the settlement grows from time to time. On the other hand, the agricultural area declines in line the fast conversion of wetland. The settlements are growing mostly from irrigated farmland. The annual average land use change for settlement in Yogyakarta area is 1.47 % and mostly is transformation of irrigated farmland, otherwise irrigated farmland decreases -1.41% changing to settlements and unirrigated farmland (Brontowiyono, 2005). Unirrigated farmland is also increasing due to unmanaged irrigation system and the impacts of farmland conversion. Plantation land also decreases due to settlement construction.

Figure 11. Farmland Conversion in Yogyakarta in 1987-1996

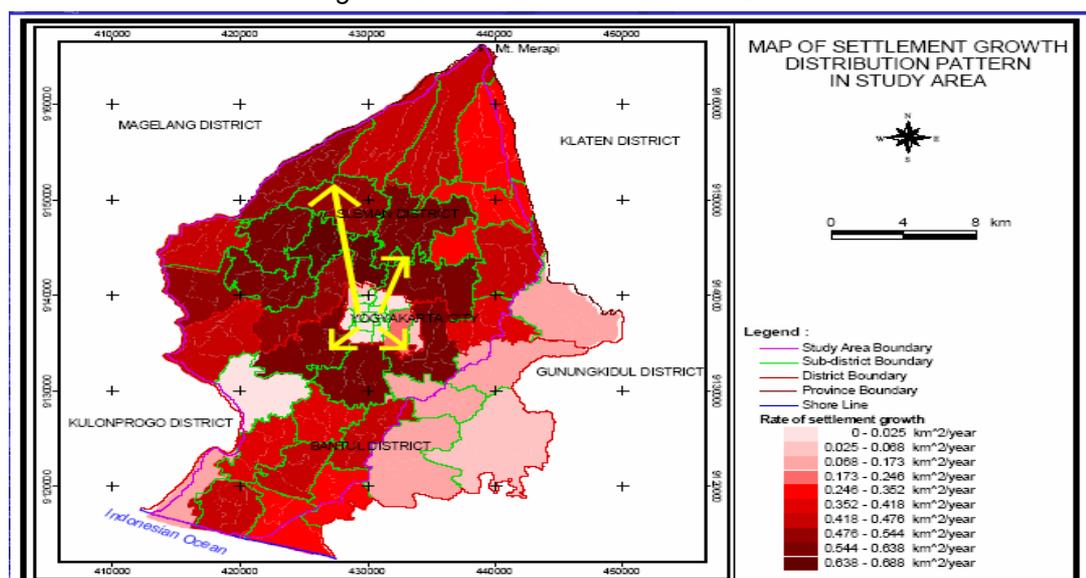


Source: BPS Yogyakarta

The settlements growth is more or less influenced by population growth. Based on Brontowiyono (2005) data, between 1990-2000, the population growth of Sleman Regency was around 1.5 % and Bantul Regency was around 1.19 %. Otherwise the population in Yogyakarta City decreased -0.39% (See Appendix 3). These peoples of Yogyakarta moved to Sleman Regency and Bantul. The movement of population to urban fringe is in line with the fast growing of new settlements in Sleman and Bantul fringe. There are some reasons why new settlements growing rapidly in this area: (1) land prize in urban center (Yogyakarta City) is very expensive; (2) population density in urban center is high; (3) improving the infrastructure networks such as roads (Baiquni, para 20)

The development of settlements in Yogyakarta area can be categorized as mixed between concentric development and ribbon development. In the concentric development, the development of non-agricultural land uses occupied agricultural land evenly in periphery. The ribbon development means that the development takes place along the transportation routes. In Yogyakarta area, the accessibility of local, regional and national roads (*Jalan*) have big influence on the development of settlements, as shown by yellow arrows in Figure 12. Many settlements in the western part of Yogyakarta such as Godean, Gamping, and Mlati are built after the construction of Yogyakarta Outer Ring Road in 1986. This ring road was built through the farmland area. Therefore it promotes further the huge conversion of farmland to settlements. Furthermore, many residential areas are also built along the regional networks such as Jalan Wates that connect Yogyakarta with Jakarta, Jalan Magelang that links Yogyakarta and Semarang, and Jalan Solo that connects Yogyakarta with Surabaya. There are productive and better-irrigated paddy field areas along these roads. However, due to the improvement of accessibility, the conversion of paddy fields to housing areas is serious peril in these regions (See Figure 11).

Figure 12. Settlement Growth 1994-2000



Source: Brontowiyono, 2005

The negative consequences of farmland conversion in Indonesia have been recognized long time. Obviously, food security in rice is an example. The government of Indonesia has to import rice from neighboring country such as Vietnam and Thailand to fulfill the citizens' demand. Based on FAO data, in 1998/1999 Indonesia imported rice more than 6 million tons when economic crisis started in this country. Probably, this situation could be avoided if the conversion of agricultural land could be managed properly.

Due to the many roles of agriculture lands, the conversion of farmland also will have impacts in several aspects. As previously mentioned, farmland conversion socially can create loss of jobs for labor farmers. These farmers become unemployment, then without income, this can raise social problems. Traditional farmers usually don't have enough skill to get other jobs. Economically, the decreasing of irrigated farmland can decrease the area of production. Moreover, it could loss of investment in irrigation infrastructures that mostly were developed gradually with high investment and maintenance costs of about US \$ 2,778 /ha (Sumaryanto, et al., 2001 in Agus and Irawan, 2006).

In environmental aspects, we recognize that agriculture land produces various environmental services called multifunctionality of agriculture such as erosion control, recycling of water resources, flood control, maintenance of biodiversity, carbon sequestration, rural amenity, organic-waste accumulation reduction, maintenance of socio-cultural values, and others. The decreasing of farmland can reduce the multifunctionality of agriculture. Annual flooding in Jakarta, Bandung, and other cities in Indonesia has been predicted as a result of agricultural land conversion to non-agricultural uses. The water from rain can't be absorbed by land because of many concrete constructions.

In Yogyakarta area, nowadays, the impacts of farmland conversion are already clear. Firstly, the decrease of rice production. Previously, Yogyakarta area was self-sufficient in rice production. Sleman and Bantul as main rice production areas in Yogyakarta can supply the demand of rice for Yogyakarta inhabitants. However, due to the rapid of farmland conversion and increasing of the population, nowadays the demand of rice has to be supported from neighboring regencies in Central Java Province such as Purworejo and Klaten.

Secondly, urban sprawl. The development of settlements in Yogyakarta areas is characterized by small-scale development by developers and individual houses by the community. Small-scale development is a result of Yogyakarta as a medium city. Therefore, local consumers dominate the demand of houses. Moreover, individual houses built on farmland areas are huge problem in Yogyakarta because they usually build without proposing permits. The low capacity building of local institutions to enforce building permits causes more and more houses built in paddy field areas. This urban sprawl phenomena cause difficulty for local government to implement the land use plans, to support the facilities for inhabitants and also create some environmental problem do to the unconnected sewages and unmanaged the garbage.

Thirdly, fragmentation of farmland. Due to the rapid farmland conversion in Yogyakarta, fragmentation of farmland is clear recently. Many irrigation systems are not connected any longer due to new settlement constructions. This is why unirrigated farmland in Yogyakarta areas increases. The fragmentation of land creates difficulties for farmers to flush their plants. Moreover, it motivates them to sell their farmlands and convert to other uses.

Fourthly, the rapid farmland conversion changes the occupational structure of the people. As previously mentioned, before 1980s, the number of people worked in agricultural sectors was more than 60 %. Nowadays, more and more people are working in non-agricultural sectors. Hence, to prevent and reduce some negative impacts of farmland conversion needs such land policies as discussed in the next part.

4.3. *Land Policies*

The next discussion starts with institutional context of land policies in Indonesia that more or less describes new decentralization systems, fiscal and social aspects of land policies. Then, it continues to discuss about goals and instruments in coping with farmland conversion at urban fringe area.

4.3.1. Institutional, fiscal and social context of land policies

Nowadays, Indonesia is decentralized country. Based on The Act 32 Year 2004 about Regional Government, land has become local affair. However, most of the legislations still use old legislations that are centralized in character. Therefore, land policies in Indonesia sometimes are confusing even conflicts each other. In Indonesia, as Firman (2004) noticed several policies and regulations have been published but ‘ these are fragmented in terms of their objectives, orientation and institutions. Not surprisingly, these regulations and policies have been inefficient, inconsistent and sometimes even in conflict with each another’.

Although land policies have become local affairs, some responsibilities are still handled in the central and provincial governments. Sumiyoto (*no year*) explained that the central government is responsible for regulating land ownership, strategic national spatial plans, land rights, land registration and land development control and empowering the community. Provincial governments have authorities to plan land development in provincial level, regional development, and traditional rights on land called “*Hak Ulayat*”. The local governments have tasks on issuing the land development permits, allocating the use of land, resolving the conflicts of cultivation on public land, circumscribing land price and others. Based on this notion, the land policy has not fully decentralized yet but there is share responsibility between central, provincial and local governments.

Until now, Indonesia's Basic Agrarian Law (*Undang-Undang Pokok Agraria-UUPA*) published in 1960 is basic agriculture land legislation. Actually, this act is intended to cope with rural land problem. This act is still highly influenced by Dutch system embedded in its principles in which state control is important. It also signs that the state is a far better allocator of rights than the market. Moreover, foreign ownership and absentee ownership must be controlled; private ownership leads to problems of land waste and inequitable distribution; parcel sizes must be restricted; company ownership must be prevented because this leads to exploitation and excessive ownership. Nowadays, this act is out of order due to decentralization era and the government has prepared it for amendment.

The government of Indonesia has published some regulations that try to prevent the irrigated agricultural land conversion. In 1992, the government published The Act Number 12 about Cultivation System that regulate the changing of spatial plans that will give impacts to farmland conversion should consider national food production and self sufficient in rice. In 1998, the government published President Decree Number 98 that prohibits the conversion of fertile agricultural land to industrial areas. There are more ministry decrees both Ministry of National Planning Agency and Ministry of National Land Agency that try to minimize the conversion of irrigated wetland to other uses such as The Letter of Ministry of National Land Agency Number 410-2261, July 22, 1994, about prevention of technically irrigated farmland to other uses. And there are still many regulations that legalize the same thing but the result is not as good as expected due to the continuity of farmland conversion.

Contrary to The Netherlands, land policies in Indonesia are fragmented in term of their objectives, orientation, and institution. For example, the Ministry of Home Affair in 1984 regulated that farmland conversion at urban fringe area should be kept for food security of rice production. However, during 1980s and 1990s, the BKPM (Investment Coordinating Agency) had pushed to grant investment permits both foreign and domestic investors (Firman, 2000). Then, the result is that the demand of land for industrial area increased. Additionally, the Indonesia government has given permission for private companies to manage their own industrial estates. To attract the investment, the government of Indonesia gave assistance to obtain land for business intentions such as the relaxation of regulations and location and land development permits. Consequently, farmland conversion at urban fringe area to industrial uses occurred in large scale.

Poorly coordinated land management institution is the other feature of land policies in Indonesia. Each institution has its own goals, objectives on land policy. In the case of planning for instance, Susanto (1998) pointed out that 'different agencies are in charge of planning, implementation, financing and issuing various permits for development. Planning is fragmented and overlapped between many institutions at the central, provincial, and municipal levels'. At the central level, National Land Agency, National Planning Agency, Ministry of Home Affairs, and Ministry of Agriculture are among key decision makers which responsible for the conversion of farmland. However, as Susanto urges these ministries in many cases made decisions and took approaches on their own policies. At the

provincial and local levels, poorly coordinated land management institution is also common symptom.

Weak government commitment and capacity building are the other characteristics of institutional aspects of land policies in Indonesia. In Indonesia, some policies on land management often face difficulty in the implementation regarding the weak government commitment and capacity building. For instance, spatial plans are rarely been implemented due to the low capacity of the institutions. Many developments at urban fringe area do not conform to the spatial plans. Susanto (1998) urged that informal process dominated the land development process. Consequently, corruption and bribery are involved in the development permits. Therefore, the commitment and capacity building of land management institutions in Indonesia should be improved first in order the governments are able to follow their own plans and regulation as Akbar et al., 1997(in Firman, 1997) stated that farmland conversion is caused by many factors, but lack of authority to manage and control it is a major one.

Unlike in The Netherlands policies, fiscally, the financial support for keeping farmland at the countryside in Indonesia is low. Farmland is object of property taxes. Whilst fiscal mechanism can be used to interfere with land use change, in Indonesia, fiscal measures are still focused to increase revenue. Moreover, there is no subsidy mechanism to stimulate farmers in order to always use their land for agriculture purposes.

Socially, the characteristic of most of land policies in Indonesia is top down policy and ignorance the public as a stakeholder. As a result, the public support on land policies is weak. Evidence shows that only few people proposing building permits before constructing a building. They ignore the land use plans established by the government. They built houses wherever their own land including farmland. Probably, this corresponds with highly individual property rights in Indonesia. Furthermore, people feel proposing building permits is difficult, costly, and lengthy. Unclear sanction worsens this situation. Additionally, the private sectors in Indonesia are powerful. While in The Netherlands the private sectors are willing to cooperate with public authorities in implementation of land use, in Indonesia the situation is different. As Ferguson and Hoffman pointed out above, large developers frequently influence government officials to change zoning. Private interests are able to obtain approval, even when not in accordance with the master plan or zoning, through a back-door process by bribing the officials. Briefly, the support from the community, private sectors, and the government officials on the implementation of land policies is still weak.

4.3.2. The goals on coping with farmland at urban fringe area

What are the goals on coping with farmland conversion at urban fringe area in Indonesia? Based on the Ministry of Home Affairs Decree No. 590/11108/S.J. October 24, 1984, the conversion of farmland should be prevented to keep self sufficient of rice. Food security has become long intention of the government. In the middle of 1980s Indonesia was

self sufficient of rice in the short period but after 1990s the growth of rice production slowed down, introducing Indonesia as rice importing country. Agriculture land conversion has been blame for the decline of rice production. The demand of rice is increasing in line with population growth otherwise the rice production is declining. In the last decade, Indonesia fears “food security time bomb”.

Compare to The Netherlands which is more concern with environment and conservation of the countryside, the governments of Indonesia haven't taken much attention to the environment and ecosystems. This can be seen in which the governments still give land development permits in agricultural areas even in designated conservation areas such as *Jalur Puncak* (Puncak Strip) in south of Jakarta, which obviously result in serious impacts to environment (Firman, 1997). In here, we can also see how the private sectors are more powerful than the governments in land development.

4.3.3. The instruments to cope with farmland at urban fringe area

The next discussion will focus on public ownership, regulatory measures and fiscal measures as instruments to manage land from conversion.

Public Ownership

The government of Indonesia owns some parcels of land including forest. Unlike in The Netherlands in which government especially municipalities are active playmaker on land, local governments in Indonesia are passive on land market. The private sectors are more active in land market. Therefore, profit seeking that creates land speculation is big problem in Indonesia. The government still has power of eminent domain to acquire land from the public to construct public facilities. The new Presidential Decree of 36 Year 2005 of Land Acquisition for Public Interest reasserts this power. This regulation gives authority to the state to buy land from citizens with proper compensation. However, public ownership is not as a strategy to prevent farmland from conversion in Indonesia.

Regulatory measures

There are at least two instruments as regulatory measures that are usually be employed to control land from conversion in Indonesia, that is, Spatial Plans (*Rencana Umum Tata Ruang-RUTR*) and land development permit (*ijin lokasi*). The Act of 24 Year 1992 about Spatial Plans is a main land use regulation. Spatial plan is an instrument to promote and control development in municipal level. Each municipality has to make spatial planning under guidance of the provincial and central government. The spatial planning in Indonesia is still top-down process neglecting the public as stakeholders. Therefore, spatial planning is not effective in the implementation.

Such as *bestemmingsplan* in the Netherlands, spatial planning in Indonesia also allocates the use of land. The Local Development Planning Board (*Bappeda*) is responsible for coordinating the spatial planning. There are five zones at least should be incorporated in the spatial planning: conservation areas, cultivation areas, rural areas, urban areas, and specific zones such as military. Therefore, spatial planning shapes the physical growth of certain region. Additionally, spatial planning is intended to control the development. Due to the limitation of local planning capacity and the strong power of private sectors, the spatial planning is not effective instruments to control the development in Indonesia.

Land development permits (*ijin lokasi*) are the other instruments to control development. Normatively, land development permits should be consistent with spatial planning. However, as Firman (2004) noticed that in the past the land development permit system in Indonesia was a top down process which essentially reserved land almost exclusively for the approve developers. Combining with bribery and corruption, therefore, building permits are not effective tool to control development of land. Consequently, conversion of agricultural land at urban fringe area still continues.

In Yogyakarta areas, the local governments have tried to minimize the rapid of farmland conversion. Every municipality has its own land use plans and building permit systems. However, the land use plans and building permit systems have not well been implemented. Land use plans are just as documents. Rarely do people propose building permits before constructing their houses.

Recently, the central government has delegated land as a part of local affairs. To response this authorization, the local governments can form the local land agency. This local land agency has task to control development on land. Among three regencies in study area, Sleman Regency is the only regency that has formed Local Land Control Agency (*Badan Pengendalian Pertanian Daerah*). The Local Government of Sleman established this agency in November 2003. This institution has responsibility to control land development based on spatial plans. In 2005, this agency rejected 109 proposed land conversion permits from agricultural land uses to other uses². This rejection is able to keep 11.69 hectares of farmland. However, as previously discussed, many people don't propose permits before constructing buildings. Probably, much more farmland is converted without registration than that can be saved.

As new institution, Local Land Control Agency hasn't performed optimally. For instance, this agency acts passively in land development control. It issues permits based on proposed land development permits. Furthermore, this agency hasn't been able to enforce the law in controlling development such as giving sanction to people who construct building without permission and develop land in contrary with proposed land use plans. Therefore, in the coming years, institutional capacity building becomes main issue on land development control in this regency and also other regions in Indonesia.

² http://tmp.sleman.go.id/?hal=detail_berita.php&id=414

Fiscal measures

Land and Building Tax (*Pajak Bumi dan Bangunan-PBB*) is one of property taxes in Indonesia. However, this tax tends to be employed as revenue mechanism rather than control development mechanism although the revenues extracted from this tax are not significant compare to profit extracted by private sectors. Firman (2004) notices that the current land tax does not take the spatial plan into consideration. The PBB essentially has nothing to do with land-use planning because it is mainly intended to increase revenue. It means that there is no relationship between land taxes and strategy to cope with agricultural land conversion at urban fringe area.

Chapter 5

Evaluation and Lesson Learned

This chapter discusses the effectiveness of land policies in coping with farmland conversion in The Netherlands and Indonesia and the lesson learned. Firstly, it examines the effectiveness of land policies in The Netherlands and Indonesia including what factors of the success and failures of such policies and then draws the lesson learned from the case study.

5.1. The Effectiveness of Land Policies in The Netherlands and Indonesia

How to measure the effectiveness of land policies in coping with farmland conversion at urban fringe area? The author esteems that a significant declining trend of agricultural land conversion can be as one of measures how effective of land policies on coping with farmland conversion. Land policies in this subject can be categorized effective if they can minimize the rapid farmland conversion after the implementation of such policies. Otherwise, land policies are not effective if the trend of farmland conversion still increases after land policies are applied. The Netherlands can be categorized success in maintaining farmland from conversion due to the decreasing of farmland conversion from time to time.

In the 1960s-1970s, the conversion of farmland was around 10,000 hectares per year (Grossman and Brussaard, 1989). After the implementation of the third national policy of spatial planning in 1973, the policy document on urbanization 1976, and the policy document on rural areas 1977, the farmland conversion decreased. In 1980s, about 5,000 hectares of farmland lost per year (Crijs, 1986 in Grossman, 1989). According to Koomen et al., 2005, the total area under cultivation has decreased by only *16 per cent* over the period 1950-2002. Hennink (no year) provided further data that *agricultural land in The Netherlands decreased 58,765 hectares (1.55%) during 1981-2000 and for The Green Heart agricultural land declined 277 hectares (0.15%) in the same period (See Table 1 above).*

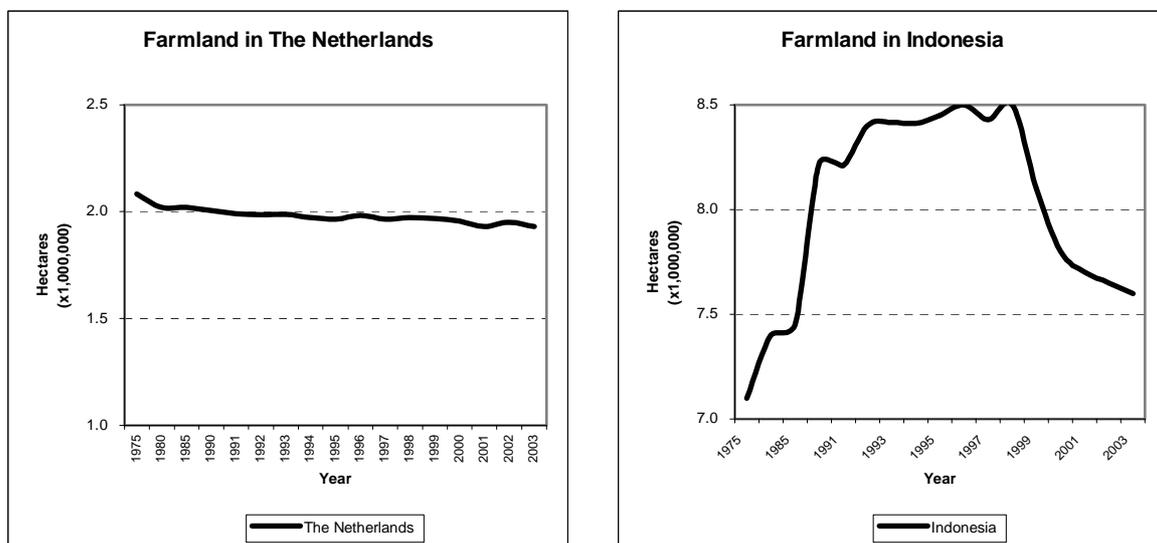
The author deems that the success of The Netherlands on maintaining its farmland can also be described by the total of agriculture land in The Netherlands because this country hasn't created new farmland anymore as previously done by reclaiming the sea before 1980s. Based on CBS data, the cultivated land in 1975 was 2,081,964 hectares and declined to 1,949,445 hectares in 2000, in average 4,908 hectares per year as described in the Figure 13 below. From that figure, the cultivated land in the Netherlands steadily declines.

Contrary with the Netherlands condition, Indonesia is still fail in coping with farmland conversion at urban fringe area. Unluckily, the author faces difficulty to obtain the exact data how much farmland is converted to other uses every year since many competent

institutions have different data. Moreover, the total of farmland in Indonesia from year to year can't describe the rapid farmland conversion because the government tries to balance farmland conversion at urban fringe area in Java by new additional agricultural land in outer Java (See Table 2). Therefore, the total amount of wetland (*sawah*) increases, as shown in the Figure 13. Based on the Indonesia national statistics agency (BPS), the land use data show a steady increase in the amount of sawah in Indonesia, from 7.1 million hectares in 1980 to 8.5 million hectares in 1998. From 1998 to 2000 the data shows a sharp drop in total sawah, from 8.5 million hectares to 7.8 million hectares means that land conversion occurs in large scale.

Based on Yunus study (2001), 2,400,000 hectares of productive farmland in Indonesia have been converted to other uses until early 21st century, 7.8 million hectares of farmland still exists. Firman (2000) described that the conversion of agricultural land to urban uses during 1991-1993 was more than 106,000 ha, in average more than 30,000 hectares per year. The trend still continues instead increasing as Sutomo stated that farmland has been decreased 563,159 hectares in 1999-2002, in average 187,720 hectares per year. According to Irawan (in Agus and Irawan, 2006), *agricultural land conversion in Java reached 23 % during 1978-1998*.

Figure 13. Farmland in The Netherlands and Indonesia 1975-2002



Source: CBS, 2005 and Bappenas, 2002

Based on the data and the figure 11 above, the author concludes that the Netherlands is more success in keeping its farmland than that of Indonesia. Furthermore, the success of The Netherlands in keeping its farmland is worldwide known. Koomen, et al., 2005 strengthen the opinion that The Netherlands prevails in maintaining its agricultural land. They urge that the area under agricultural use has changed relatively little and farmland still dominates the country. In spite of the pressures on farmland, two thirds of the land area is

still in agricultural use. Alterman (1997) pointed out that The Netherlands had accomplished an exciting record of farmland conservation. Faludi and Van der Valk (1994) emphasized how the Dutch could keep the Green Heart from urban sprawl. Dieleman and Mustered (1992) described the success of Dutch in maintaining agricultural land from urban expansion. Otherwise in Indonesia, as Firman (2004) stated, there are many regulations on the use of land but they are inefficient. Therefore, farmland conversion continues to occur in large scale.

What factors of the success of The Netherlands in coping with farmland conversion? What factors of the failure of Indonesia in coping with farmland conversion? Generally, the success of The Netherlands and the failure of Indonesia in coping with farmland conversion can be seen from many angles:

1. *Institutional Aspects.*

The comprehensiveness and integration among land policies in The Netherlands make easier for this country to achieve the protection of the countryside than the fragmentation of land policies in Indonesia. The close integration among government institutions between different sectors and levels has encouraged city/countryside interdependence and can prevent the contrary among land policies so that land policies are effective. The Netherlands has shown that dependence on agriculture, as a means for keeping the farmland is difficult to achieve. That's why The Netherlands focuses on urban containment or compact city policy in preservation of farmland at urban fringe area. This strategy are combined with housing, rural development, urbanization and environmental policies that stimulate synergies in achieving protection of the countryside. Contrary to The Netherlands, land policies in Indonesia are fragmented in term of their objectives, orientations and institutions. Consequently, they are ineffective and inefficient. The objective of the protection of farmland that is more concern with food security is difficult to be achieved. This objective has become less powerful than the objective to increase the government revenue by attracting private sector investments in residential, industrial and commercial development. As shown in the *Appendix 3*, the local government will change many hectares of irrigated farmland in Indonesia to attract investments.

The other success of land policies in The Netherlands is due to its high government institutional capacity building. This can be shown in the co-governance model in which hierarchical and intergovernmental coordination has become government culture. Additionally, in The Netherlands, the governments are able to implement land policies closely from the plans and regulations because they are supported by enough resources both human and finance to achieve the objective of protection of farmland in the countryside. Furthermore, the active role of the government on land policies and land market stimulates can prevent negative effect of land market. Otherwise in Indonesia, the government institutional capacity building is still low. This can be shown in which poorly coordinated land management institutions are the characteristics of land policies

in Indonesia. For instance, in land administration, many institutions such as the Land National Agency (BPN), National Coordinating Agency for Surveying and Mapping (*Bakosurtanal*), Ministry of Agriculture, and Ministry of Forestry, and the local government are notoriously fragmented and perform land registrations largely for their own interests (Firman, 2004). Planning, implementation, financing and issuing various permits for development is fragmented and overlapped between many institutions at the central, provincial, and municipal levels. Whilst coordination of urban land-use development at the local, provincial and national levels is very important, unfortunately most of these institutions face a serious shortage of qualified personnel (Firman, 2004). Due to this condition, the governments always face difficulty to implement land policies as expected. Insufficient financial and human resources worsen the implementation such land policies. Moreover, the governments aren't able to control land market so that inefficient and negative impacts of land market allocation can't be prevented.

2. *Fiscal Aspects*

We can imagine how difficult to implement land policies without financial support. In The Netherlands, the protection of farmland at the countryside enjoys many financial mechanisms. For example, farmland is exempt from the property taxes. Moreover, the government has strong commitment to maintain its farmland by allocating huge amount of money for protecting the countryside as discussed previously. Furthermore, the government has given subsidies including location subsidies to build houses or new towns outside the Randstad area. Unlike in The Netherlands policies, the protection of the countryside in Indonesia doesn't get much financial support from the governments. There is no kind of subsidies for keeping farmland at the countryside in Indonesia instead farmland has been an object of property taxes. Whilst fiscal mechanism can be used to interfere with land use change, in Indonesia, fiscal measures are still focused to increase revenue. Of course, without proper financial support, the protection of farmland in the urban fringe in Indonesia is just a dream.

2. *Social Aspects.*

Without support from the public (multistakeholders), land policies will be impotent, inefficient. Public support is very important in the implementation of land policies. In The Netherlands, land policies are highly supported by the public because the trust of the people to government is still high. Planning is highly accepted by the public even The Netherlands is well known for "paradise of planning", a country which is conducive for planning. Historically, this can be explained that The Netherlands is always battle with water as low laying country so that many people are working together to solve their problem. Public interests are accepted higher than that of individual interest.

On the other hand, the characteristic of most of land policies in Indonesia is top down policy and ignorance the public as a stakeholder. There has been almost no negotiation process to build up consensus among various parties and stakeholders involved in land

policies. As a result, the public support on land policies is weak and land policies can't be implemented well.

Based on the description above, the institutional, fiscal and social aspects of land policies in coping with farmland in the Netherlands and Indonesia can be summarized in the table below:

Table 3. Institutional, Fiscal and Social Aspects of Land Policies

<i>Aspects of Land Policies</i>	<i>The Netherlands</i>	<i>Indonesia</i>
Institutional Aspect: <ul style="list-style-type: none"> ▪ Decentralized vs centralized ▪ Comprehensive Integrated vs Fragmented ▪ Institutional capacity building ▪ Close relationship between regulations and implementation 	Decentralized Comprehensive Integrated Approach High Close	Decentralized but many regulations still in centralized systems (transition) Fragmented Low Wide Gap
Fiscal Aspect: <ul style="list-style-type: none"> ▪ Tax system ▪ Subsidy Mechanism 	Development control and revenue mechanism Exist	Revenue Mechanism None
Social Aspect: <ul style="list-style-type: none"> ▪ Public Support 	High	Low

After examining general land policies in The Netherlands and Indonesia, the next discussion tries to evaluate the effectiveness of the instruments of land policies in coping with farmland conversion at the countryside. How effective are public ownership, regulatory measures and fiscal measures? As Zulkaidi (2005) mentioned, there are some criteria including problem solving, prevention, minimum negative impacts, coordination and participation that can be used to evaluate the effectiveness of land policies.

Obviously, public ownership on land in The Netherlands can solve farmland conversion at urban fringe area due to the ability of the government directing the private development on their land. This can also prevent urban sprawl from private development. Additionally, public ownership on land is able to negate land speculation. Land speculation becomes a serious factor that causes farmland conversion in many countries. In The Netherlands, public ownership on land has minimum negative impacts on society because the government acquires the land with proper compensation. Rarely do conflicts on land acquisition end in the courts. Moreover, public landownership has positive effects. It makes the government easier in providing public facilities such as infrastructure, social housing, and parks because the government owns the land. Coordination is done among government institutions before acquiring the land such as between municipalities, planners, finance

department, and others. Communicative in consensus building is well established in The Netherlands so that public ownership also involves multi stakeholders such as landowners and the government before acquiring the land.

Otherwise in Indonesia, public ownership has not intended as techniques to cope with farmland conversion. Although the government has eminent domain, this right usually is to acquire land for infrastructure development such as roads, dams, and canals rather than as to control development of land. Furthermore, land acquisition in Indonesia is often problematic due to inappropriate of compensation and the strong role of land speculators or “land mafia”. Eviction that causes many people homeless has become intense common news. Terribly, sometimes the eviction involves violence so that it has huge negative impacts to the community.

Regulatory measures including land use and building permits are the effective tools to cope with farmland conversion in The Netherlands. Land use plans can minimize the chance to convert farmland to other uses due to its strict regulation. Land use plans are as binding in which the development is allowed or prohibited. Building permits will be published if they comply with the land use. Moreover, land use and building permits can be as prevention of the uncontrolled development. In addition, coordination among institutions in making the land use and issuing the permits makes land policies in The Netherlands effective. However, the involvement of multi stakeholders such as public involvement shall be improved in making the land use plans.

Additionally, Geurs and van Wee (2005) discussed the powerful of Second Report on Physical Planning in The Netherlands against urban sprawl. This Physical Planning Act concerned with efficient land use, funding of services and infrastructure and preserving the Green Heart. It tried to link sub urbanization with “concentrated deconcentration” – i.e. accommodate new urban growth outside existing urban areas in a number of designated overspill centers. Consequently, it can lessen the quick conversion of agricultural land in the Green Heart. Koomen and Groen 2004: 7) emphasized that ...

“...the Dutch national and regional spatial policies have a strong influence on the future of the countryside. The relatively strict-compact city policy together with the related restrictions on many open, green areas decreased the possibility for the conversion of agricultural land in the last decades, although these conversions were far from absent (VROM, 2000)”.

Several efforts have been done to maintain the Green Heart as open space since 1960s, through restrictive urban growth and the strengthening of the Green Heart as conservation areas. The first national spatial planning policy in 1960 recommended lessening the development pressure on the Green Heart by directing the development in the ring of Green Heart areas. This document planned the Green Heart as an agricultural area. However, this policy was limited success due to the increasing of population growth. The increasing of prosperity increased the demand of housing in the Green Heart area. Additionally, the increase of car ownership stirred the people to settle in the Green Heart.

The second national policy document published in 1966 regulated the same idea for the Green Heart. The Green Heart was established as green functions. The development was directed to far from the Green Heart but more focused on the border regions such as North Holland, Flevoland, and the Delta area. This strategy was unsuccessful because local authorities didn't take much attention to the national spatial policy. Many towns and villages were still attempting to attract business and residential investments. Consequently, the Green Heart became less and less green.

The limited success of first and second spatial policy in the Green Heart inspired the government to influence directly on planning not only setting the outlines as seen in the third national policy on spatial planning published in 1973. Complementarily, the government published the policy document on urbanisation in 1976. Based on this policy, the government tried to develop growth centre outside the Randstad. Moreover, the government limited issuing the building permits for residential and commercial in the Green Heart. The other effort was urban renewal policy. The government directed the development in the brownfield (existing urban area) than in the greenfield. The government published policy document on rural areas in 1977. Based on this document, the Green Heart was established as a location for recreation and nature conservation. These government efforts proved visible results. *"The populations of major cities had stabilised and large numbers of new homes had been built in the growth centres. Without these growth centres, there would be undoubtedly have been more urban sprawl ..."*(Stead, no year). These concerns contributed to the emergence of compact city policy.

The idea to keep the Green Heart as green area continued in the fourth national policy document published in 1988. The government made policy to plan business locations and residential areas as close as to existing cities. Hopefully, this policy could also increase the use of public transport than car. The VINEX (*Vierde Nota Extra*) published in 1990 planned some housing locations to be built in the period until 2005. These locations are designed outside the official borders of the Green Heart. Nowadays, the concepts of the Randstad and the Green Heart are well known for its success in the world. They have remained pretty much intact within spatial planning since their introduction in the 1950s (Zonneveld, 1991 in Stead, no year). These concepts have captured a robust and strategic place in national spatial policy, and still enjoy a high level of political and public support (van der Valk and Faludi, 1997 in Stead, no year).

Otherwise in Indonesia, regulatory measures including land use plans, building permits and location permits are malfunction. Susanto (1998) pointed out the gap between the theory and the practices of master plans due to the strong private sectors and the limited capacity of local or municipal governments. The other problem is every institution has its own plans. Unfortunately, coordination among institutions is weak. Therefore, such Firman (2004) urged land policies were sometimes contrary each other. Additionally, land policies in Indonesia are weak of public participation because most of them are top down system.

The government is supposed to use building permits and location permits as instruments to control land development based on spatial plans. The goals of permits are to ensure that developments conform to spatial plans. However, the reality is always contradictory. Bertaud (1989 in Susanto, para 39) stated that zoning regulation in Indonesia as written rather than practiced by developers. Additionally, Susanto (1998, para 40) urged that informal settlement process in which all development takes place outside of laws and regulations occurred in Indonesia. Ferguson and Hoffman (1992 in Susanto, para 40) found that 'large developers frequently influence government officials to change zoning. Private interests are able to obtain approval, even when not in accordance with the master plan or zoning, through a back-door process by bribing the officials'.

Several fiscal measures to cope with farmland conversion at urban fringe area can be found in The Netherlands. For instance, agricultural land is free from taxes. It promotes the farmers to always use their land for agricultural purposes. The other fiscal measure is the subsidy for developers who build housings away from the Green Heart called 'location subsidy' (Faludi, 1994). The government also gives subsidy for farmers to keep their farmland from other uses for environmental purposes. Furthermore, the government also provides budget allocation for buying farmland for open space and environmental consideration as previously discussed. Therefore, fiscal measures are useful tools to maintain farmland from conversion.

Conversely, in Indonesia fiscal measures are not intended to control land development. Farmland is not free from property taxes and no such budget allocation to buy farmland for environmental purposes such as in The Netherlands. Furthermore, property tax is mechanism to increase revenue rather than as development control. Therefore, it can't be as strategy to solve farmland conversion problem. It can't prevent the farmland from conversion. Moreover, this can burden the community due to the tendency to raise money. It involves several government institutions such as Department of Finance, local governments, but little is the involvement of the community in decision-making.

Based on the discussion above, the effectiveness of land policies in The Netherlands and Indonesia can be summarized in the table 4 below. The table provides general description of the effectiveness of instruments of land policies on coping with farmland conversion at urban fringe area with three level criteria: strongly applied (++), weakly applied (+) and not applied (O).

Table 4. The Effectiveness of Land Policies in the Netherlands and Indonesia

Criteria	<i>Techniques in coping with farmland conversion</i>					
	<i>Public Ownership</i>		<i>Regulatory Measures (Land Use and Building permits)</i>		<i>Fiscal Measures</i>	
	<i>Netherlands</i>	<i>Indonesia</i>	<i>Netherlands</i>	<i>Indonesia</i>	<i>Netherlands</i>	<i>Indonesia</i>
Problem Solving	++	O	++	+	++	+
Prevention	++	O	++	+	++	O
Minimum (negative) effect	++	+	++	+	++	+
Coordination	++	+	++	+	++	+
Participation	+	O	+	O	O	O
<i>Note:</i> ++ : <i>strongly applied</i> + : <i>weakly applied</i> O : <i>not applied</i>						

5.2. Comparison of land policies in The Netherlands and Indonesia

The next discussion tries to elaborate the comparison of land policies based on objects of policy transfer by Marsh and Dolowitz. The objects of policy transfer are goals, concepts, structure, instruments, institutions and negative lessons.

The case study shows the different goals of land policies in The Netherlands and Indonesia. The Netherlands concerns with shaping future development otherwise Indonesia more focused in controlling development. Moreover, they have different objectives in coping with farmland conversion. The Netherlands doesn't suffer from food security instead exporting agricultural production to other countries. Additionally, food productions are used for agricultural industries. The Netherlands also concerns with conservation and preservation of the environment. Moreover, the countryside has become the Dutch character that shows quality of life. On the other hand, Indonesia is still struggle for food security especially self sufficient in rice to fulfill its massive population demands.

The other differences can be found in the concepts of land policies. As earlier discussed, the characteristics of land policies in the Netherlands are its comprehensiveness and integration with other policies. For instance, the Netherlands can maintain its Green Heart due to the integration between spatial planning, urbanization and rural policies. Otherwise in Indonesia, land policies are fragmented among institutions and sometimes conflicts each other. The other feature is that in The Netherlands there is strong hierarchy and intergovernmental coordination among national, regional and local institutions. On the other hand, previously Indonesia was centralized country. Recently, Indonesia is strongly decentralized in which local institutions have more power in land policies.

The structure of government systems of The Netherlands and Indonesia is almost similar. The governments are divided into three tiers: national, regional or provincial, and local levels. Similarly, each tier has its own responsibility on land policies. The national government makes strategic policy that can be as guidelines for the lower levels. The regional or provincial governments use this strategic policy to establish regional or provincial planning. Then, the local governments adopt the strategic and regional planning in their land use plans. Based on the land use plans, the local governments issue building permits and location development permits. In the local levels, The Netherlands differs from Indonesia in which the former also employ public ownership on land as instrument to control development. The local governments of The Netherlands are active as playmaker on land market. Otherwise, the local governments in Indonesia are passive on land market.

The instruments of land policies such as land use plans in Indonesia have both negative and positive sides. As negative side, land use plans in The Netherlands are known as binding or strict regulation. However, it has positive aspect in which it offers high certainty and supremacy of law. Theoretically, in Indonesia, land use plans are also binding regulation, however in practice, they are discretionary so that there is room for negotiation to change the land use. This has become source of corruption for bureaucracy and private developers. On the other hand, it becomes more flexible so that it will be able to response quickly to changing situation.

From the institutional aspects, the locus of power of land policies is distributed to national, provincial, and local governments. There are several legislations in The Netherlands that regulate land policies such as Land Development Act 1985, National Spatial Planning Policy, Municipalities Act, Compulsory Purchase Act, and etcetera. In Indonesia, many regulations have been published such as Indonesia Basic Agrarian Law 1960, Spatial Planning Act 24/1992, Regional Government Act 32/2004, and so on. In The Netherlands, such legal bases on land policies have functions as planning, development and control. Similarly, land policies in Indonesia can be engaged as planning and controlling development.

There is also negative lesson that can be learned from The Netherlands and Indonesia land policies. The Netherlands is inflexible or rigid. Due to this rigidity, it is difficult to response quickly any changing situation. However, in Indonesia, land policies are flexible. But this flexibility also creates uncertainty.

From the previous evaluation, in the future, the involvement of multi stakeholders in land policies in The Netherlands shall be improved. The involvement of stakeholders will create more public support. In the case of Indonesia, the increase of local institution capacity building is the most important aspects. Without proper capacity building of local institutions, the land policies can't be implemented well. This can create more and more land problems including the continuity of farmland conversion in the countryside.

The comparison above mostly shows many differences of land policies in The Netherlands and Indonesia. Now, the question is whether similarities between land policies

in The Netherlands and Indonesia exist or not. The author presumes that the matches of land policies in Dutch and Indonesia can be figured out. The matches are:

1. *Land policies tend to be authorized in local levels (decentralized)*. In The Netherlands, Needham (1988: 49) noticed that land policy was local policy. As unitary states, there is strong relationship between national, provincial and local governments. The national government has published land policies that shall be implemented in the provincial and local governments. Additionally, the national and provincial governments have power to control local governments. Similarly, land policies in Indonesia have been delegated to local governments. Based on the Act 32/2004 about Regional Government, land policies become local affair. However, many regulations on land policies are still regulated by old legislations in which the characteristics are centralized systems due to transition era. However, it should be noticed that decentralization has potency to worsen farmland conversion at urban fringe area. Koomen, et al., 2005 signed that the decentralization and privatization might lead to more opportunities for developing residential and commercial areas in regions where this was formerly discouraged. Similarly, in Indonesia, many local governments try to attract investors by changing their land use plans including converting farmland to other uses. As previously mentioned on Agus and Irawan study (2006), 42.37 % of irrigated paddy field will be converted by local governments in their spatial plans (*See Appendix 2*). Only 57.63 % of irrigated paddy field will be maintained.
2. *Moving to land market*. The Netherlands has moved to the land market but the governments still have strong role in land market. That is why land speculation is almost absent in The Netherlands. Otherwise in Indonesia, market has strong role on land market and land speculator becomes big problem. In fact, Brennan (1993 in Firman, 2004) has warned that market mechanisms alone are unlikely to create inefficient urban land allocation, and therefore intervention is necessary with respect to regulations, administration and planning to assist market mechanisms to function effectively.
3. *Land use plans have become main instruments on land policies*. The bestemmingsplan in The Netherlands has become effective tool in the allocation of land use and as a base to issuing building permits. In the same way, spatial plans in Indonesia have become main instruments on managing land development. The spatial plans are used to judge whether land development permits proposed by the developers should be approved or rejected.

Table 5. The Comparison of Land Policies in the Netherlands and Indonesia

Object		The Netherlands	Indonesia
<i>Goals</i>	<i>Purpose</i>	<ul style="list-style-type: none"> To shape future development 	<ul style="list-style-type: none"> To control development
	<i>Objective</i>	<ul style="list-style-type: none"> Industry, export orientation Conservation and preservation of environment Quality of life 	<ul style="list-style-type: none"> Self sufficient in rice (agricultural production)
<i>Concepts</i>	<i>Main characteristic</i>	<ul style="list-style-type: none"> Comprehensive, integration 	<ul style="list-style-type: none"> Sectoral, fragmentation
	<i>Intention</i>	<ul style="list-style-type: none"> Co-government 	<ul style="list-style-type: none"> Local institutions
<i>Structure</i>	<i>National</i>	<ul style="list-style-type: none"> Strategic policy 	<ul style="list-style-type: none"> Policy guidelines
	<i>Regional</i>	<ul style="list-style-type: none"> Regional planning 	<ul style="list-style-type: none"> Provincial planning
	<i>Local</i>	<ul style="list-style-type: none"> Public ownership, land use planning, building permits, tax 	<ul style="list-style-type: none"> Spatial plans, building and location permits
<i>Instrument</i>	<i>Positive</i>	<ul style="list-style-type: none"> High certainty Supremacies of law 	<ul style="list-style-type: none"> Flexibility Response to changing
	<i>Negative</i>	<ul style="list-style-type: none"> Strict/rigid, binding 	<ul style="list-style-type: none"> Strict in theory, discretionary in practice, room for corruption
<i>Institutions</i>	<i>Locus of power</i>	<ul style="list-style-type: none"> National, provincial, and municipal government 	<ul style="list-style-type: none"> Central, provincial, and local government
	<i>Legal base</i>	<ul style="list-style-type: none"> Land Development Act 1985 National Spatial Planning Act 1965 Municipalities Act 1851 Compulsory Purchase Act 	<ul style="list-style-type: none"> Indonesia Basic Agrarian Law 1960 The Act of 24 Year 1992 about Spatial Planning The Act of 32 Year 2004 about Regional Government
	<i>Main functions</i>	<ul style="list-style-type: none"> Planning, development, and control 	<ul style="list-style-type: none"> Planning and controlling development
<i>Negative lessons</i>		<ul style="list-style-type: none"> Inflexible, rigid 	<ul style="list-style-type: none"> Uncertainty
<i>Recommendation for future</i>		<ul style="list-style-type: none"> More public participation 	<ul style="list-style-type: none"> Local government capacity building

5.3. *Lesson Learned*

Some aspects in coping with farmland conversion at urban fringe area in the Netherlands and Indonesia have been discussed on the previous parts. Based on the discussion above, some lesson learned can be drawn as follow:

- Integration among land policies is needed. The Netherlands case shows that integration among land policies will stimulate the success of maintaining farmland at the countryside. As Alterman (1997) noticed that the success of The Netherlands to protect its countryside is not by protecting farmland, but by containing urban growth. The Netherlands focuses on urban containment rather than farmland retention, though the result is the same. Although Indonesia has specific regulations that aim to maintain farmland in the countryside, obviously they don't decrease the quick farmland conversion at urban fringe area because they don't integrate with other policies.
- Dutch land policy demands many instruments in the implementation. Many techniques such as public ownership, regulatory measures and fiscal measures can be used together in dealing with farmland conversion. These techniques are complementary but shall be incorporated. Without integration, these instruments will be unproductive.
- The success factors of land policies in The Netherlands are due to the better circumstances of institutional, fiscal and social aspects of land policies. Land policies in The Netherlands are supported by good institutional aspects that are more comprehensive and integrated, better hierarchy and intergovernmental coordination, and strong government commitment and capacity building. Land policies in The Netherlands enjoy fiscal support in the form of subsidy and budget allocation. Public support has significant impact on the implementation of land policies. Without the emergence of success factors above, the probability of failure such land policies is high such as in Indonesia case.
- Both of the countries have negative lesson of land policies. Land policies in The Netherlands are rigid, inflexible. Otherwise in Indonesia, the implementation of land policies is full of uncertainty due to its flexibility. In the future, it will be better if both countries combine the certainty and flexibility on their land policies such as structure plans in provincial level.
- Both of the countries show that decentralization of land policies also has negative impacts on the land conversion. To anticipate this, it is needed to strengthen the role of provincial governments in balancing the central and local government powers on managing land at the countryside.

Hopefully, this lesson learned is useful for the countries that have farmland conversion problems. Specifically, Indonesia can learn from The Netherlands how to manage its farmland from conversion so that rapid agriculture land conversion can be minimized. Then, the next final chapter illustrates some concluding remarks and recommendations.

Chapter 6

Conclusion and Recommendation

This last chapter discusses some concluding remarks from the previous chapters and suggests some recommendations in coping with farmland conversion in the countryside.

6.1. Conclusion

Farmland conversion phenomena delineate *paradoxes* in human perceptions. For the short-term period, the growing population and their activities especially in urban area demand on space for live, space for economic activities, and space for social and leisure activities. That is why the conversion of land for settlement is in the highest rank in The Netherlands and Indonesia, followed by industrial and recreational area. Due to the scarcity of the land at urban area, these needs are supplied by converting the lands at urban fringe area that mostly are prime and fertile agricultural lands. This farmland conversion is urged as the logical consequences of human growth. Therefore, farmland conversion has been accepted as common phenomena and become a part of daily life. From the case study in previous chapters, this can be found in Indonesia case. However, for the long-term period, farmland conversion will result in many negative consequences such as loss of valuable farmland both for humans and habitat and decreasing flood plain areas, thus increasing the risk of flooding. For that reason, the conversion of farmland shall be done carefully considering many aspects both social economy and environment. The Netherlands has shown these considerations on keeping its farmland at its countryside.

Maintaining farmland at the countryside is a big challenge due to the complexity of the problem. It is important to clearly understand what are the causes and the impacts of farmland conversion to get effective land policy. Effective policy decisions also need understanding the complex relationship between the role of government, market and society on land that can be defined as the institutional context of land policies. Furthermore, the kinds of land policy goals and instruments are also important to understand the effectiveness of such land policies.

There may be more consensus on the causes of growing at urban fringe area that result in agricultural land conversion. These causes, for instance, are push and pull factors. Push factors motivate people to move out from the city to urban fringe such as social discomfort living near people unlike themselves (anti heterogeneities), congestion, expensive living cost, poor environmental qualities such as noise and air pollution (See also Miller, 2004). Otherwise pull factors that attract people to settle in suburban areas are low-density, lower price of land and housing such as in Yogyakarta area, greater privacy gained in part through larger lot sizes, and better environmental qualities and amenities such as large open space and beautiful landscape in the Green Heart area.

This study has focused on urban expansion, population growth, economic growth, and government policies as macro factors that can also be categorized push factors of land conversion. These are usually combined with micro factors such as developer initiatives, people preferences, personal motivations of landowners and etcetera. However, these micro factors weren't discussed in this study. These macro and micro factors are intertwined that create intricate relationship on promoting farmland conversion that results in some negative impacts.

Farmland conversion has been blamed for several negative impacts on social, economy, environment, and spatial aspects. Socially, it has consequences on the changing of land ownership, the movement of people to the fringe and the loss of indigenous culture of people in the countryside. Farmland conversion also has impacts to the decreasing of quality of life. Economically, farmland conversion has been accused for loss of fertile and productive agriculture land, loss of agriculture occupations, and loss of irrigation investment. Environmentally, the conversion of agriculture land causes loss of beautiful natural landscape, loss of natural areas, source of water, air and land pollution and loss of valuable ecosystems in the countryside. Spatially, farmland conversion results in the changing of land use and fragmentation of land. On the other hand, farmland conversion gives some advantages including improving living standards, better amenities and services, improving housing conditions and in some areas promoting regional economic growth. However, uncontrolled farmland conversion will create more complicated problem. Hence, managing farmland in the countryside from uncontrolled development shall be done.

Many countries use more than one technique in their attempts to prevent land conversion from agricultural to non-agricultural use. In the United States, using value assessment, transferable of development rights (TDR), urban growth boundaries, and growth management are common techniques to manage farmland conversion that emerge urban sprawl. The Netherlands uses normal planning systems, institutions and integration of many policies such as spatial planning, urbanization, rural areas to keep its countryside as open space and green areas. Additionally, public landownership and financial mechanism have also been implemented to manage farmland from conversion. Indonesia employs land use plans and some regulations to control development at urban fringe area. Those techniques can be used together and complementarily that enhance the possibility to succeed in coping with farmland conversion in the countryside.

Each country has its own set of land ownership model derived from the cultural, social, political and ethnical context of the country. Individual and private ownership are prominent in some countries such as the United States, whilst the others concern with public and social ownership such as The Netherlands. Public ownership is one of techniques that can be used to control land development. Kivell (1993) urges that public land ownership has traditionally been justified for reasons of "the common good" or "the public interest". Moreover, public ownership on land has several advantages: "planning efficiency, fiscal and social equity and the provision of services" (Kivell, 1993: 109). The evidence shows that

The Netherlands has better performance on land development because of public land ownership. The Netherlands is able to supply the needs of human settlement and the needed land for future development such as public facilities. The municipalities act an active role in the urban land market, supplying land needed for general urban growth and for private as well as public housing. The experience of The Netherlands in advance land acquisition enables this country to carry out planned development without sprawling or fragmented development. Otherwise in Indonesia, individual and private land ownership is more prominent. The consequence is that the governments face difficulties to make land utilization efficient and to make the control of land effective due to the high individual and private property rights. Moreover, eminent domain in which the governments always force their power to obtain land for development creates serious social problem in Indonesia. This might probably be prevented if the governments employed the public landownership as a tool to control development.

Regulatory measures correspond with land use plans and permit systems. Land use planning systems vary from one country to another country. There are two common characteristics of land use planning systems: indicative and discretionary systems. The land use plans in The Netherlands is well known for its indicative system. In an indicative system, the land use planning is more detailed and the control on land use is strict. The indicative system has advantage on the greater certainty of the land use. The land use plans in The Netherlands show their effectiveness in minimizing the chance to convert farmland to other uses due to its strict regulation. Land use plans are as binding in which the development is allowed or prohibited. Building permits will be published if they comply with the land use. Theoretically, land use plans in Indonesia are indicative and binding systems. However, in practice, they are discretionary due to the flexibility in the implementation. Regulatory measures including land use plans, building permits and location permits are malfunction.

Archer (1993 in Firman, 2000), stated that land development permit systems are able to perform many roles: (1) to guide the location of private land and building development projects; (2) to coordinate government and private-sector development activities; (3) to facilitate land assembly for large-scale development projects, such as new town and industrial-estate development. The Netherlands has recorded that these roles can be implemented well. The governments can guide the private and public development mostly in government land that complies with the land use. Cooperation and coordination among government and private sectors occurs. New town and industrial-estate development are also under control of the government. Different situation can be seen in Indonesia. The governments are not able to guide private projects because the private sectors mostly develop on their own land. Moreover, there is a gap between the theory and the practices of spatial plans due to the strong power of private sectors and the limited capacity of local or municipal governments.

Financial measures can be used to control land development at the countryside. The financial measures can be in the form of tax or subsidy. A tax on land can be proposed as a way of achieving land use planning objectives. As Needham (2000) urges, if land taxation is to be used as an instrument of land-use planning, then it is the intention that the taxation affects land use. However, if the land taxation is intended to increase revenue the effect on land use is small. Obviously, The Netherlands uses many financial mechanism including tax and subsidy to achieve land use planning. Therefore, these financial measures are effective in keeping its farmland at the countryside. Otherwise in Indonesia, financial measures are still intended to increase revenue for public purpose so that they are no effect on the effectiveness of land use planning.

The Netherlands and Indonesia have similarities and differences on land policies in coping with farmland conversion at urban fringe area. The similarities can be found in which land policies have been decentralized and land use plans become main land management instruments. Since 1980s, it has gradually been recognized that the powers of national governments need to be decentralized. The assumption is that local government has more knowledge of local problems and allows for greater representation of various ethnic, religious and political groups including in the land development process. Land use plans have become one of land management tools in Indonesia and The Netherlands as well as in other countries. However, there are also some differences in the goals and objectives, the main characteristics of land policies and legal frameworks. In the goals and objectives, Indonesia still focuses in food security especially rice, whilst The Netherlands is more advance in which it concerns not only food production but also environmental and conservation considerations. The main characteristics of land policies in The Netherlands are comprehensive integrated approach otherwise Indonesia land policies are sectoral and fragmented.

Obviously, The Netherlands is more success in keeping its countryside than Indonesia signed by the declining trend of agricultural land conversion due to its better institutional, fiscal and social aspects of land policies. Institutionally, land policies in The Netherlands are more comprehensive in term of their objectives, orientation and institutions. Integration among land policies will stimulate more success in maintaining farmland at the countryside rather than fragmented and sectoral land policies. The comprehensiveness and integration of land policies can be seen in the goals of maintaining farmland not only for agricultural functions but also for environmental and preservation of countryside purposes. Moreover, the gap between land policies and the implementation is close. Otherwise in Indonesia, land policies are fragmented and the implementation is far from the expectation. Furthermore, to succeed in keeping farmland at countryside requires hierarchical and intergovernmental coordination and strong government commitment and capacity building.

Additionally, to succeed in the implementation of land policies shall be supported by financial mechanism and public support. Fiscally, land policies in The Netherlands are highly supported by the government budget. Whilst in Indonesia, land policies are mostly

intended to increase revenue. Socially, public support is essential in achieving the objectives of land policies. Land policies in The Netherlands enjoy public support because the trust of the people to government is high. Planning is highly accepted by the public. Moreover, consensus-building and public participation are well established. On the other hand, land policies in Indonesia less receive public support due to the low trust to the government. Hence, Indonesia can reflect its failure by learning from success of The Netherlands in coping with farmland conversion.

6.2. Recommendation

Learning from other success countries in coping with farmland conversion at the countryside is just one of many efforts to solve similar problem in a country. It is possible that different countries have different factors that cause land conversion. It has already been recognized that many developing countries such as Indonesia too much reliance on planning and development concept from developed countries in which the cultural, demographic, social and even climatic setting is inherently different. Therefore, it will be necessary that countries develop different approaches to solve farmland conversion problems based on the setting in their countries. There is no guarantee that copying success technique in other countries will result in success for a country. However, learning from other countries can inspire a country in dealing with resemblance trouble to formulate its own policies by adjusting lesson learned from other countries.

Several techniques should be considered on coping with farmland conversion. There is no a certain technique as a panacea of land conversion problems. The governments can use public ownership, land use plans, building permits, and fiscal measures integrally and complementarily. However, the governments should be consistent with their policies. Furthermore, they shall also consider the matching of those techniques with governmental systems, social culture, and so on. Again, of course, it requires strong institutional capacity building of the government in all layers. It is clear that how strong is the institutional capacity building of the government in implementing the land policies will determine the success in slowing farmland conversion in Indonesia.

Furthermore, the involvement of multi stakeholders such as the community, landowners, government and non-government institutions should be taken into account as important factors of success in the implementation of land policies. Without support of those stakeholders, land policies will be ineffective. As Healey (1997) suggested that collaborative practice among stakeholders should be done on planning because none of the actors alone are able to do what they want to do without collaboration with other actors. Therefore, to prevail in keeping farmland from conversion at the countryside necessitates intensive coordination and cooperation among stakeholders.

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Appendix 1.
The Land Utilization in The Netherlands 1981-2000

Km²

Land Type	Year					
	1981	1985	1989	1993	1996	2000
Agriculture	24133	23974	23991	23755	23508	23260
Forest	2955	3003	3098	3108	3233	3501
Built up Area	2836	2950	2970	3093	3201	3183
Roads/Transport	1289	1328	1306	1331	1340	1130
Recreation	710	782	761	809	827	889
Nature	1560	1497	1407	1409	1379	1333
Building Site	326	254	215	237	235	327
Other	119	133	134	137	150	159
Water	3376	3414	5977	7148	7653	7745
Total	37305	37334	39858	41028	41526	41528

Source: CBS, 2004

Appendix 2.
Spatial Plans and Land Conversion in Indonesia

Province	Total paddy field		Non Irrigated		Irrigated		Spatial plan for irrigated paddy field			
							Converted		Maintained	
	Ha	%	Ha	%	Ha	%	Ha	%	Ha	%
Sumatera	2,036,690	22,88	414,780	26,11	1,621,910	22,17	710,230	43,79	911,680	56,21
Jakarta	3,600	0,04	420	0,03	3,180	0,04	2,130	66,98	1,050	33,02
Banten	190,950	2,14	12,710	0,80	178,240	2,44	67,560	37,90	110,680	62,10
Jawa Barat	1,109,560	12,46	15,240	0,96	1,094,320	14,96	658,220	60,15	436,100	39,85
Jawa Tengah	1,124,940	12,64	331,910	20,89	793,030	10,84	310,410	39,14	482,620	60,86
DI Yogyakarta	65,630	0,74	620	0,04	65,010	0,89	36,690	56,44	28,320	43,56
Jawa Timur	1,332,420	14,97	75,410	11,04	1,157,010	15,82	546,830	47,26	610,180	52,74
Bali	106,270	1,19	5,810	0,37	100,460	1,37	47,760	47,54	52,700	52,46
Jawa & Bali	3,933,370	44,18	442,120	34,13	3,391,250	46,36	1,669,600	49,23	1,721,650	50,77
Kalimantan	1,253,130	14,08	375,200	23,62	877,930	12,00	58,360	6,65	819,570	93,35
Sulawesi	982,410	11,03	124,270	7,82	858,140	11,73	414,290	48,28	443,850	51,72
Nusa Tenggara & Maluku	566,100	6,36	67,050	4,22	499,050	6,82	180,080	36,08	318,990	63,92
Papua	131,520	1,48	65,060	4,10	66,460	0,91	66,460	100,00	-	-
Total National	8,903,220	100,00	1,488,480	17,84	7,314,740	82,16	3,099,020	42,37	4,215,740	57,63

Source: National Land Agency (2004) in Winoto (2005) in Agus and Irawan, 2006

*Appendix 3.
Population of Yogyakarta Province*

No	Regency/ Municipality	Area (km ²)	Population (000)			Population Density		Growth Rate	
			1980	1990	2000	1990	2000	1980-1990	1990-2000
1	Yogyakarta	32.50	398.2	412.1	396.7	12,678.70	12,206.50	0.34	-0.39
2	Sleman	574.80	677.3	780.3	901.4	1,357.50	1,568.10	1.43	1.5
3	Bantul	506.90	634.4	696.9	781	1,357.00	1,540.90	0.94	1.19
4	Gunung Kidul	1485.40	659.5	651	670.4	438.30	451.40	-0.13	0.3
5	Kulon Progo	583.30	380.7	372.3	371	635.00	632.70	-0.22	-0.04
	<i>Total</i>	<i>3,185.80</i>	<i>2,750.10</i>	<i>2,912.60</i>	<i>3,120.50</i>	<i>914.20</i>	<i>979.50</i>	<i>0.58</i>	<i>0.72</i>

Source: BPS, Population Census 1980.1990, and 2000.