

**FACTORS INFLUENCING FARMERS' ATTITUDES
TOWARDS FARMLAND PRESERVATION PROGRAM
CASE STUDY: SELUMA REGENCY, INDONESIA**

THESIS

A thesis submitted in partial fulfillment of the requirements for
Master Degree from Institute of Technology Bandung and
Master Degree from University of Groningen

By
Jimmy Ariaferda

Supervisors:
Dr. Ir. Terry van Dijk
(University of Groningen, the Netherlands)
Ir. Hastu Prabatmodjo, MS., Ph.D.
(Institute of Technology Bandung, Indonesia)

DOUBLE MASTER DEGREE PROGRAMME



**DEVELOPMENT PLANNING AND
INFRASTRUCTURE MANAGEMENT
DEPARTMENT OF REGIONAL AND CITY PLANNING
INSTITUTE OF TECHNOLOGY BANDUNG**

AND

**ENVIRONMENTAL AND INFRASTRUCTURE PLANNING
FACULTY OF SPATIAL SCIENCES
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2012

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Jimmy Ariaferda
ITB: 25410071
RuG: S2130467

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Supervisors

Date: August, 2012

Supervisor I

Supervisor II

(Dr. Ir. Terry van Dijk)

(Hastu Prabatmodjo, Ir., MS., Ph.D)

ABSTRACT

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Recognizing which factors that influence farmers' attitudes toward the farmland preservation program is important in formulating and implementing protective programs. Through the research, it is investigated how investigated factors: parcel characteristics, land owner characteristics, perceived negative consequences, the presences of incentives and levels of urban pressure influence farmers' attitudes. A series of interviews are conducted and passed to a descriptive analysis. From the analysis, it is found that perceived negative consequences after joining the program and the presence of incentives especially irrigation and production equipment influence farmer's attitudes toward the farmland preservation program. Meanwhile, it is found that parcel characteristics, land owner characteristic and the level of urban pressure do not influence farmers' attitudes toward farmland preservation program. On the other hand, it is also found that farming for food self-fulfillment, farming as the sole skill and farming as family tradition characterized farmers to continue farming.

Keywords: *farmland preservation, farmer's attitudes, parcel characteristics, land owner characteristics, perceived negative consequences, incentives, urban pressure, farming for self-fulfillment, farming as the sole skill, farming as family tradition*

GUIDELINE FOR USING THESIS

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This work is completed as a partial fulfillment of the requirements for the Master Degree from Institut Teknologi Bandung and University of Groningen. The thesis is centered at factors influenced farmers' attitudes toward farmland preservation program. On this occasion, I would like to thank God for blessing me in finishing my thesis. I also give my greatest thankful for everybody giving supports to me in this thesis process. I would like to address my special thanks to my supervisors, Dr. Ir. Terry van Dijk (RuG) and Ir. Hastu Prabatmodjo, MS., Ph.D (ITB) for guiding me on my thesis work.

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CHAPTER I: INTRODUCTION

1.1 Background

Indonesian Initial Efforts in Preserving Farmland amid Palm Oil Expansion

In January 2011, Indonesian government issued government regulation no.1 concerning procedures in implementing farmland preservation program and farmland conversion following Law No. 41/2009 relating to Farmland Preservation Program. These regulations are underpinned by agricultural land conversion that has been continued for many years in Indonesia. As an illustration, the paddy field areas in Indonesia had fallen down from 8.52 million hectares in 1996 to 7.78 million hectares in 2002 (Indonesian Statistical Bureau). Moreover, according to Sutomo (2004, in Abdurachman: 2005), paddy field areas outside java island were primary converted to non-paddy commodity field (48.60%) and housing (16.10%). Meanwhile, in Java itself as many as 58.70% paddy field was turned to housing and the other 21,80% of total paddy field were shifted non-paddy commodity field. Furthermore, there has been an increment pattern in term of paddy field conversion that taken place not only in Java Island but also outside Java.

In contrast, the increasing demand for biofuels has triggered Indonesian farmers to produce more biofuels crops such as palm oil rather than agricultural crops. As the price of this agricultural commodity has remained stable at a higher beneficial level than other commodities, more farmers have turned their land into palm oil crops. On one hand an increased demand for biofuels could better off the farmer who planting palm oil on their crops, but on the other hand this may encourage a massive conversion of potential land to be developed for food to palm oil crops.

In the following paragraphs, the comparison between the growth rate of rice and palm oil production in the world and Indonesia are presented in order to get deeper sight about how palm oil plantation outweigh the paddy field's growth rate. It is not necessarily means that there have been massive land conversions from paddy fields to palm oil plantation. It is worried if there is no immediate

action that carried up, this circumstance may lead to food crisis as Indonesian population continues to grow.

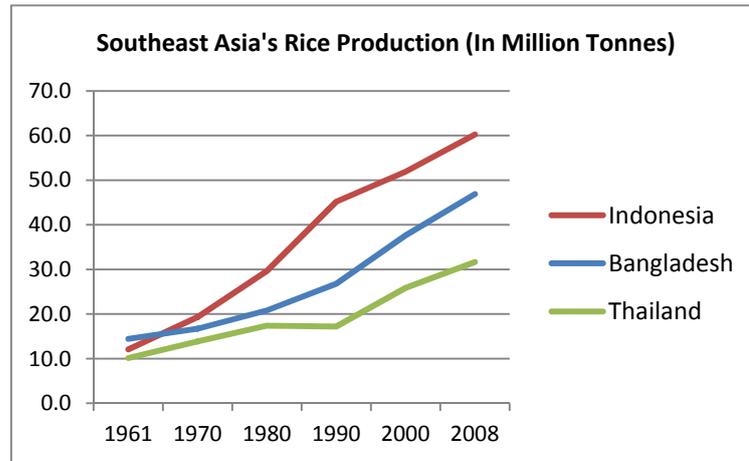


Figure 1.1: World's rice production from 1961 to 2008 (Source : Processed data from FAOSTAT / Food and Agriculture Organization Statistic)

Among Southeast Asia countries, indeed Indonesia is the most productive country compared with Bangladesh and Thailand. However, when we look carefully to figure 1.1, both Thailand and Bangladesh show steeper growth since 1990 whereas Indonesia at the same period performs slower rate. Furthermore, if the rate of Indonesian's rice production with the rate of its palm oil production, again the later shows faster growth.

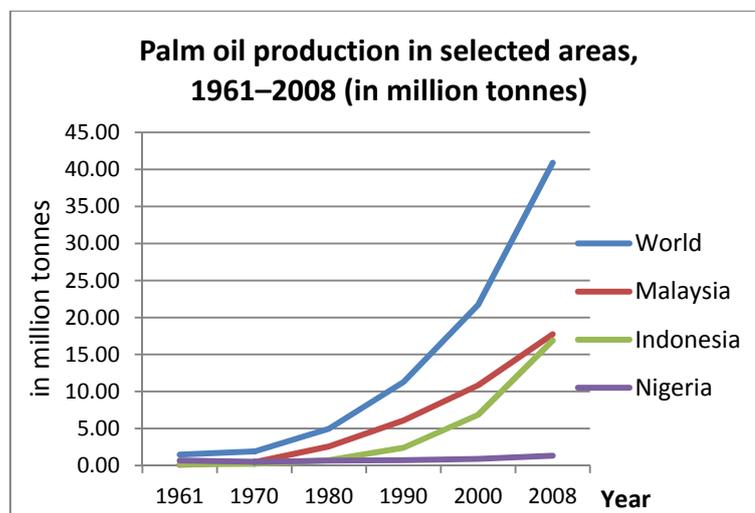


Figure 1.2: Palm oil production from 1961 to 2008 (Source : Processed data from FAOSTAT / Food and Agriculture Organization Statistic)

Globally, there has been a tremendous increasing of palm oil production, from only 1.46 million tonnes in 1961 to 40.9 million tonnes in the next five decades

(FAOSTAT). It is can be clearly seen from figure 1.2 that Indonesia and Malaysia is the two largest contributors in boosting world's palm oil production. In Indonesia, the production is skyrocketed from 0.15 million in 1961 tonnes to just below 17 million tonnes.

In Indonesia itself, based on the data gathered from Directorate General of Estate Crops (figure 1.3) within the past ten years from 1999 to 2009 the palm oil plantation has increased drastically from 3.9 million to 7.3 million hectare. In 2009, as many as 65 % of palm oil plantation areas was located in Sumatera. This figure was followed by Kalimantan as the second largest contributor that held 26 % of plantation areas. The rest of those portions were dispersed nationally in Kalimantan, Sulawesi, Java and Papua.

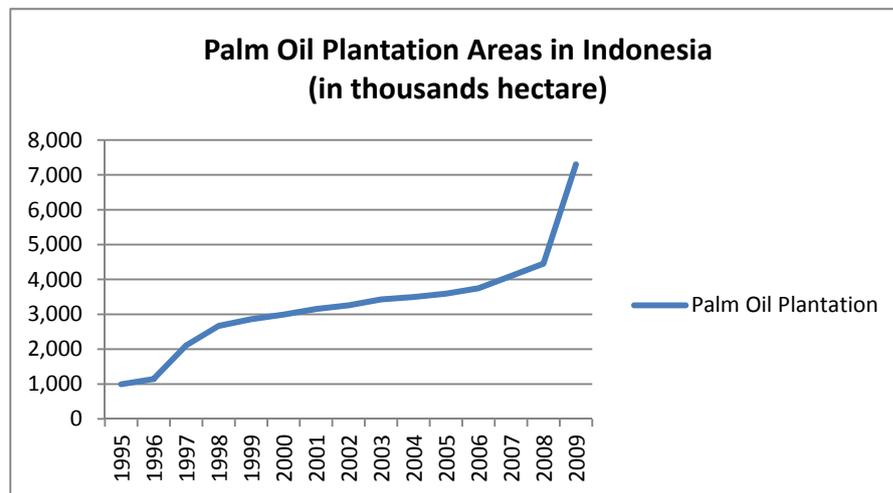


Figure 1.3: Palm Oil Plantation in Indonesia 1995-2009
(Source : Indonesian Statistical Bureau)

Furthermore, Indonesia has 39.3 million hectares arable land and 148.9 million hectares dry land (Ritung et al. 2004 in Abdurachman 2005). From those 39.3 million hectares arable land, 24.55 million hectares can be developed as new paddy fields which are situated in Papua, Sumatera, Sulawesi, and Kalimantan island (Ritung et al. 2004 in Abdurachman 2005). Because the enlargement of agricultural land is less possible to be implemented in Java island due to land scarcity and high population density, the most possible region to be developed are Papua, Sumatera, Sulawesi, and Kalimantan island (the four largest islands in Indonesia).

It is undeniable that palm oil industry has given many economical advantages especially for a developing country like Indonesia. Briefly, six million least advantage people in Indonesia can raise themselves from poverty by working in 6.2 million hectares (Goenadi, Executive Director of the Indonesia Palm Oil Producers Association, 2008). From the revenue figures by imposing export taxes, government has received billions of USD per year through this non-oil export commodity.

If we elaborate the numbers showed in figure 1.3 and arable land that can be utilized as agricultural land as mentioned above, it is worried that if there is no immediate efforts in preserving existing and potential land to be developed as farmland, the palm oil will continue to expand in those Indonesian's four largest island with enormous pace. By issuing law number 41/2009: Farmland Preservation Program, followed by government regulation number 1 /2011 concerning procedures in implementing farmland preservation program and farmland conversion and government regulation no.30/2012, Indonesian government try to protect arable land to be allocated for food production. However, the implementation in lower tier governments is still questionable.

In addition, by far only Yogyakarta and Riau province has responded to the regulation. The former which is situated is Java island issued provincial regulation number 10/2011 in October 2011 while the latter has proposed the draft of its provincial regulation to councilors at the end of 2011 and it is hoped to be approved in the next year.

The Urgency of Farmland Preservation in Local Scale

Bengkulu as one of provinces in Indonesia that possesses big potency to be developed as food production centrals has not responded to the regulation. A regency in Bengkulu, Seluma will be selected to be the case study area. This selection is underpinned by the fact that this region has been designed to be agricultural central since Soeharto presidential era. Seluma regency has three big dams and irrigation networks built within that era.

The potential possessed by Bengkulu provinces has been threaten by the expansion of palm oil plantation. Since 2009, in Bengkulu there are 25.160 hectares of paddy fields that converted to palm oil crops and the other 23.209 hectares are converted to rubber plantation (harianhaluan.com, 2012). Specifically, the recent finding in Seluma regency shows that there has been farmland conversion to palm oil crops (antaranews.com, 2010). The area where this conversion is taken place is supported by irrigation system. Not only has the presence of palm oil crops decreased the amount of farmlands, it has also disturbed the water availability for remaining paddy fields. If there is no immediate step, it is worried that farmlands in Seluma regency will continue to decrease. This is also exacerbated by the topographical condition of Seluma that dominated by hilly areas. This circumstance leads to difficulties in establishing new paddy fields because they are needed to be cultivated on flat areas.

To deal with this emerging issue, the attempts to preserve farmland programs need to be pursued in order to manage the rate of farmland conversion in Seluma. Even though Seluma has not enacted the farmland preservation program, the acknowledgement of farmer attitudes is admirable to be conducted. It is hoped that the outcomes of this study will give proper information for local government regarding of the implementation of the program but also it can enrich academically to the relevant research fields regarding of farmland preservation policy.

Through this research, the farmer attitudes towards farmland preservation program will be investigated. Furthermore, this research will be limited to focus just on farmers' attitudes but not the other way around. This is reasoned by the separation of attitudes and behavior. This means, in certain condition, that people who have positive attitudes towards issues might pursue different behavior (Ajzen & Fishbein 2005 p.180; Crano & Prislin 2008 p.41). However, farmers' attitudes which will be studied in this research is still valuable to be carried up. This is strengthened by the argument conveyed by Byrka (2009) amid the fact that the consistency of relationship between attitudes and behaviors has still widely been examined: "it is reasonable to be skeptical of scientific results that contradict

common sense”. Some researcher even found considerable relationship between them. For instance, Grob (1995) found adequate relationship between them in his examination of the relationship between attitudes and environmental behavior. In addition, Ajzen & Fishbein (2005, p.181) emphasize that attitudes correlate significantly with specific behavior.

By examining specific program such farmland preservation which demand specific reaction from particular respondents, it is hoped that there will be strong relationship between attitudes and behavior. This means that the farmer behavior will not deviate significantly from their attitudes. Thus, this can make the outcomes of the study will be useful for the implementation of farmland preservation program at local level especially within Seluma context.

In attitude measurements, several related factors are included in order to acquire the “true” attitudes of farmers. As conveyed by Ajzen & Fishbein (2005, p.209), the consistency of the relationship between attitudes and behaviors can be gained by using “proximal determinants” of specific actions. This is strengthened by Crano & Prislin (2008, p.41), the answer of respondent to the questions are vastly context dependent. This means that contextual factors that related to the farmland preservation program have to be elaborated in this study. Therefore, the relevant factors corresponded to the topic of this study has to be selected carefully to fit in the case study context.

1.2 Research Objectives

This study is intended to reveal the factors influence farmers’ attitude towards farmland preservation policy in Seluma regency. The farmers in this research are also the owners of farmlands. Thus, the term of farmers and landowners will be used interchangeably. It has to be underlined that positive attitudes alone cannot be directly affected the land use. Instead, these attitudes will influence farmers’ behavior in deciding whether to participate in program. The research will be limited to investigate the farmers’ attitudes. Thus whether these attitudes will lead the farmers’ behavior to join the program is beyond the scope of this research.

Underpinning by previous researches, several factors that influence farmer attitudes towards the program are selected. The detail findings from previous study will be covered in sub-chapter 2.3 and the reasoning of chosen factors will be discussed in sub-chapter 3.2.1. There are five factors will be investigated through this research in order to study their impacts towards farmer participation in farmland preservation program.

The first factor studied is landowner characteristic (McLeod et. al. 1999; Bourke et. al. 1996) which comprise of age, education level and income. The second factor is the parcel characteristics (Lynch & Lovell 2001; Lynch & Lovell 2003; Houser 2007; Nickerson 2000) which consist of distance to settlement and the size of farmland. The other factors studied in this research are the presence of incentives (Boisvert 1996; Nickerson 2000), the perceived negative consequences (Rickard 1986; Vitaliano & Hill 1994) and the levels of urban pressure (Bourke et. al. 1996; Boisvert 1996).

1.3 Research Question

Here are questions related to the objective in the previous explanation:

1. What is the relationship between landowner characteristics (age, education level and income) and their attitudes toward farmland preservation program?
2. What is the relationship between parcel characteristics (distance to settlement and farmland size) and farmer's attitudes toward farmland preservation program?
3. What is the relationship perceived negative consequences after joining the program and farmer's attitudes toward farmland preservation program?
4. What is the relationship between the presence of incentives and farmer's attitudes toward farmland preservation program?
5. What is the relationship between the levels of urban pressure and farmer's attitudes toward farmland preservation program?
6. How landowner characteristics, parcel characteristics, perceived negative consequences, incentives and levels of urban pressure influence farmers' attitudes toward farmland preservation program?

With the background previously described, it can be inferred that there are significant differences between the program which will be investigated with those studied in previous research in term of their attributes and surrounding circumstances. Those differences lead to need for investigating farmer's attitudes towards farmland preservation program in Seluma Regency. To get clearer insight about the framework of the research, it can be seen in the following figure:

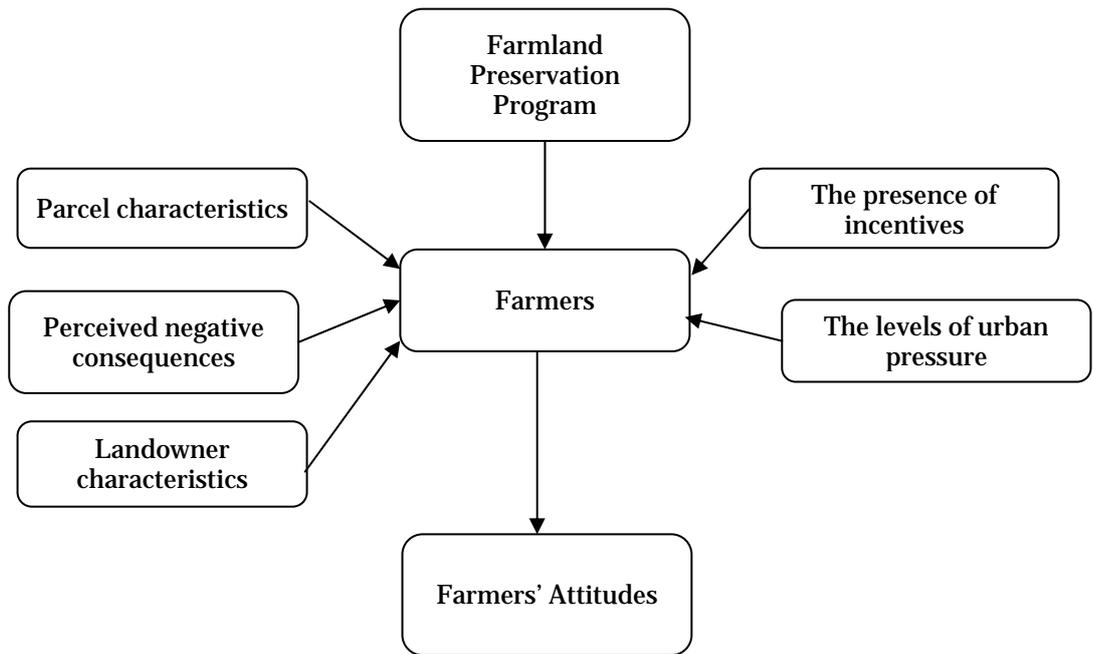


Figure 1.4: Research Framework

1.4 Research Significance

This research is aimed to contribute towards farmland preservation policy and regional planning for wider scopes. By acknowledging which factors influence farmers' attitudes toward farmland preservation program, it is hoped that it can enrich the existing literatures related to farmland protection. It can also provide useful information for policy makers in formulating and implementing farmland preservation programs.

1.5 Research Structure

The research is commenced by the author's curiosity towards farmland preservation program that recently initiated in Indonesia. As in worldwide, preservation program in Indonesia is also intended to manage the rate of farmland conversion. This manner can be found in the first chapter of the research report. Then it is started to conduct literature reviews centered on study of farmland preservation program which is covered in the second chapter. The next stage of the research is formulating research methodology in order to collect appropriate data. This stage is described in the third chapter of the report. Collected data then passed to analysis stage which is depicted in the fourth chapter. Lastly, the analysis results are summarized in chapter five which is also comprehended by recommendation built on the research findings. The full picture of the research outline is illustrated in figure 1.5.

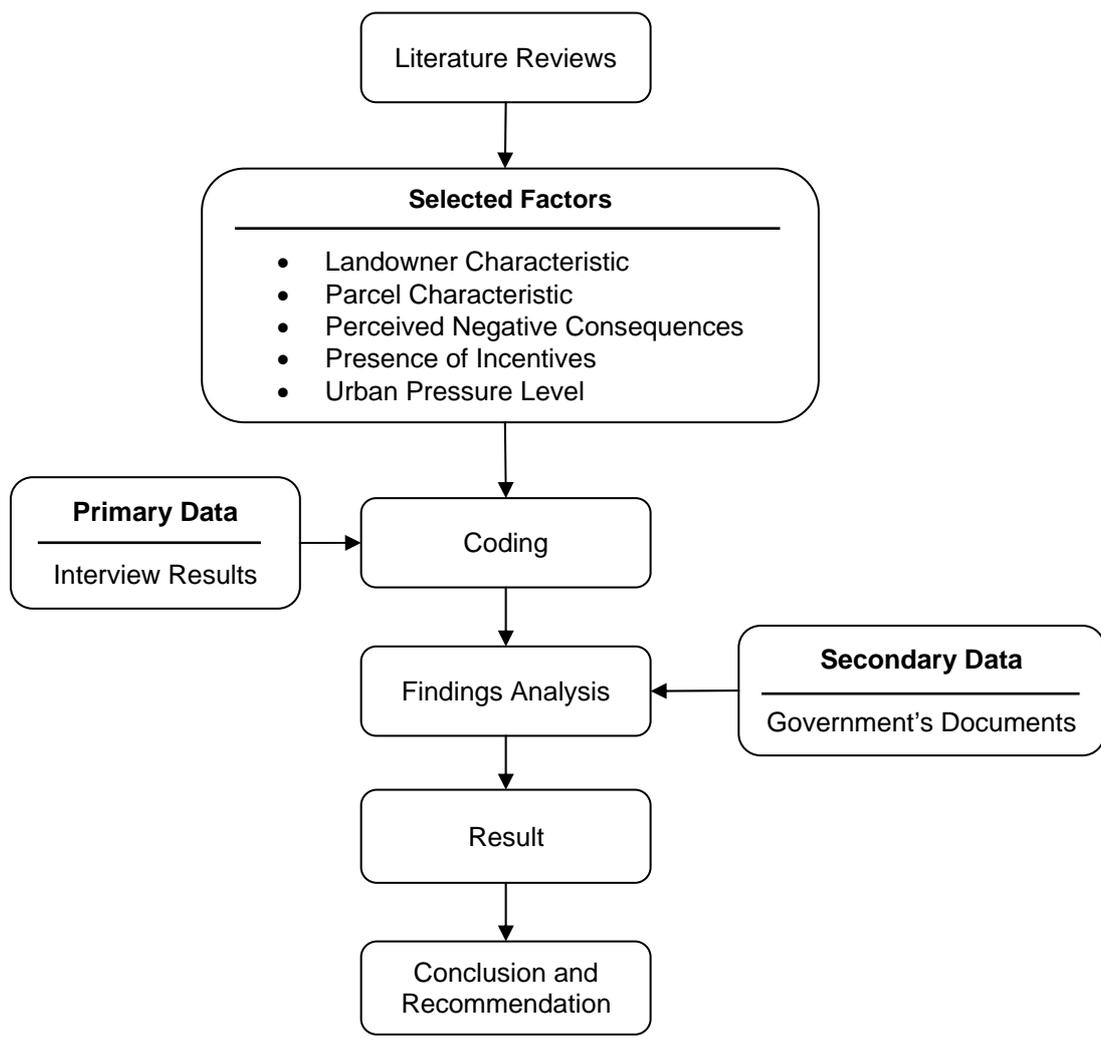


Figure 1.5: Research Structure

CHAPTER II: FARMLAND PRESERVATION PROGRAM IN VARIOUS COUNTRIES

2.1. Farmland Preservation Policy in European Countries, China and North America

Farmland preservation has been concerned by many countries. They have developed different approach in dealing with farmland conversion. For instance, European countries such as the Netherlands (Tan et.al, 2009), the United Kingdom and France (Alterman, 1997) do not have specific legislation concerned farmland preservation. Meanwhile, China has imposed basic farmland preservation program which forbid the conversion of high quality farmland (Lichtenberg and Chengri, 2006). In US, there are various farmland preservation programs that characterized by “natural selection” phenomena (Alterman, 1997). This means that most US farmland preservation programs are developed at local level. Then, these programs are exchanged, strengthened or refused until the successful method will grasp national attention.

2.1.1 Farmland Preservation Policy in European Countries

a. Farmland Preservation Policy in the Netherlands

In the Netherlands, there is no legislation that intended specifically to limit farmland conversion (Alterman 1997 and Tan et. al. 2009). The main tool aimed for agricultural land protection relies on the Dutch planning system which is driven by a strong tradition of urban containment (Alterman, 1997). The planning system is well known for the integration of local, regional and national policy. This circumstance has promoted interdependence among city/countryside.

Open Space Preservation in Midden-Delfland

Instead of enacting specific legislation to preserve farmland, in 1977 the Netherlands imposed particular act in Midden-Delfland called *reconstructiewet* or The Midden-Delfland (Van Rij et.al. 2007; 2008). Most area in Midden-Delfland is characterized by the traditional peaty meadows, cows and windmills while the

other land-use comprise of recreation, nature and greenhouse horticulture. The perimeter of Midden-Delfland is surrounded by urban fringes which are adjacent to Rotterdam, Delft, The Hague and the extensive Westland greenhouse complex. In 2007, the active dairy farmers encompass the 4,000 hectares which are located in the center of the area (Van Rij et.al. 2007).

Its position make its open space area prone to be converted to built-up areas as the expansion of the cities of Delft and Rotterdam is continue to occur. In dealing with this issue, *reconstructiewet* Midden-Delfland was enacted. There are three main aims of this act (Van Rij et.al. 2007). They are preserving open space, developing recreational areas and enhancing farming conditions. These goals link to the main goals of the buffer zones which is to protect open spaces between cities. Reinforcing the recreational, agricultural and natural values of these areas is one of method in preserving open space. A land consolidation project including land reallocation was also comprehended in order to attain the three goals in Midden-Delfland Act.

The focal point of the approach here is to build recreational zones adjacent to the cities in order to restrain city growth and to establish noble conditions for farming in the rest of the area (Van Rij et.al. 2008). The act also outlines periphery of the Midden-Delfland area and the zones within which compulsory purchase for creating the recreational area would be granted. However, the statute did not embrace specific zoning provisions except for some broad outlines (Van Rij et.al. 2008). Instead, the right to make detailed binding zoning plans will be in the hand of the municipality. Furthermore, the midden-delfland act did not present a whole new apparatus but it resembled other land consolidation acts.

The other important feature of Midden-Delfland is the role of the Reconstruction Committee that responsible for the entire project (Van Rij et.al. 2008). The Reconstruction Committee was consist of representatives of the municipalities, the province, the farmers union, the Midden-Delfland Countryside Union, the district water board and the Dutch Association for Travel and Recreation (ANWB). They also determined which individual building proposal would be granted.

The implementation of Midden-Delfland can generally be categorized as a successful effort (Van Rij et.al. 2008). Its two aims, the preservation of open space and the development of recreational areas, have been accomplished. Nevertheless, the third goal of enhancing dairy farming conditions has demonstrated inadequate improvement. As argued by Van Rij (2008), this deviation is stemmed from the factor that this specific agricultural sector goal stands beyond the scope of the reconstruction project.

There are two types of local plans, a structure plan and a zoning regulation. The second type is a very detailed land use plan which is strictly binding on development permission. Furthermore, Dutch successes in preserving their farmland are corresponded with the transformation of public awareness from farming as solely an economic enterprise, toward farming as a means for rural land and environmental preservation (Alterman, 1997).

b. Farmland Preservation Policy in the UK

Meanwhile, like Netherland, the United Kingdom does not possess specific legislation intended to protect farmland (Alterman 1997 and Tan et. al. 2009). The primary tool for farmland preservation is carried up through urban policies called urban containment. The most prevailing example of these policies are the greenbelts surrounding most major cities in UK. However, the main goal of this kind of policies is to protect countryside beauty instead of directly preserve its farmland (Alterman, 1997).

Unlike zoning in US, UK's regulatory plans are not binding on decisions related to development and does not recognize development rights. However, they must be taken into account when deciding on proposal of development permission (Alterman, 1997). Furthermore, decisions towards the urban-rural boundary are managed more by planning than that in US. This is underpinned by the condition that UK's planning system is supported by stronger urban containment tradition. This gives opportunity to integrate rural land protection into UK's planning system although it will be attached to national policy guidelines instead of formal national land use plans which are absence in UK context.

c. Farmland Preservation Policy in France

In France, farmland preservation programs rely on the local plan. This tool is much weaker than that of UK and the Netherland (Alterman, 1997). They are two reasons underpinning this circumstance. Firstly, preparation of local plans is not mandatory. That is why many smaller local authorities do not have plans yet. Secondly, France has a vast number of local authorities (approximately 36,000) in which extensive discretion over future development can be pursued by each municipality. As the consequence, this brings threat to the farmland preservation programs (Booth 1989 in Alterman 1997).

In addition, many of France's open lands are currently subjected to specific conservation program regarding of national parks, forests, coastlines, etc. instead of attached to farmland preservation programs.

Fortunately, farmland conversion rate is governed by the French tax systems. This system assesses a parcel of land based on its agricultural value as long as it is not converted to urban use (Comby 1990 in Alterman 1997). This discourages landowners to sell their farmland. In US, farmland sometimes is valued based on its property value rather than agricultural use value (Colyer, 1998). Thus, this circumstance triggers US landowners to sell their land whenever the potential development exists.

2.1.2 Farmland Preservation Policy in China

In coping with farmland conversion, China issued two principal laws of farmland preservation policy. They are the Basic Farmland Protection Regulation enacted in 1994, and the New Land Administration Law delivered in 1999 (Lichtenberg and Chengri, 2006). In the first regulation, farmland or farmland protection district is proposed to the higher government bodies up to the level of the State Council. There are two kinds of basic farmland protection districts. The first level consists of high-quality land with high productivity. The second level consists of good-quality land with moderate productivity. The law forbids the conversion of first level lands to nonagricultural uses. Meanwhile, the conversion of the second level

land is allowed under some condition for instance the conversion has to be planned for a period of 5–10 years.

The regulation also requires a conversion mechanism where the end result of this conversion is ended up with no net loss of farmland quantity (Lichtenberg and Chengri, 2006). The law arranges a conversion mechanism which comprise of two main points. Firstly, the farmland conversion is allowed for the case to build national projects, such as highways, energy production or transportation. The law arranges further regarding of which government level that has to grant the farmland conversion in correspond with how large the land that will be converted. The conversion involving land parcels of less than 33.3 hectares will be approved by the provincial governments while the land parcels of more than 33.3 hectares will be granted by the state. Secondly, the law requires that the farmland lost in conversion has to be equalized by the same amount of new farmland somewhere else. Thus, the policy is aimed to keep the total amount of basic farmland remain stable amid the pressures from urbanization and infrastructure construction.

In 1999, China launched New Land Administration Law which is aimed for protecting agricultural lands, promote market development and encourage citizen involvement in the legislative process, as well as coordinate the planning and development of urban land. This law strengthens farmland preservation efforts by obligating a permit from the State Council for any conversion of basic farmland. It prioritizes development in areas that are categorized as wasteland or land with low soil productivity. In practice the no net loss arrangement of farmland policy is in fact carried out at the city, county, and sometimes township levels although it is enacted to that be implemented at provincial levels.

2.1.3 Farmland Preservation Policy in North America

a. Farmland Preservation Policy in United States

Agricultural zoning is one of agricultural land preservation programs in United States. The historical background of agricultural land preservation in United States was dated back in the period from 1967 to 1975 when in aggregate 23.4 million acres of agricultural land had been converted to non-farm uses such as

transportation, water resource utilization, etc.(Coughlin et al. 1981). This circumstance grasped the attention of citizens and their representative across United States towards negative externalities that could be generated. In the short term this declining agricultural land was worried to slow down the local economy while in the long run it could affect the national food security and revenue obtained from foreign sales (Coughlin et al. 1981).

From that moment several programs to protect agricultural land have been implemented in United States (Coughlin et al. 1981). The programs are tax relief, right to farm laws, purchase of development rights, transfer of development rights, agricultural district and agricultural zoning.

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Tax relief

In essence, agricultural lands are very often valued by land markets for its nonfarm uses due to the presence of urban and industrial growth (Colyer, 1998). This circumstance leads to valuation of farmland that exceeds its agricultural uses. This evidence often discourages farmers to stay in farm business and in the worst scenario they may sell the farmland. By imposing property taxed based on their use-value measurement can significantly scale down the taxes. At the same time,

it can level up the profit from farming as well as it reduces probability of farmers to sell their farmland. Whenever there is a huge disparity between use and market values, especially in the urban fringe areas, there will be a considerably increase in farmers' net income per acre. This taxes relief scheme is also comprehended by penalties arrangement which is given to farmers who convert preserved land to nonfarm uses.

Right to Farm Laws

The right to farm laws provide legal defense for farmers when their non-farmers neighborhood issue objection regarding of nuisance generated by farming activities (Colyer, 1998 and Bills 1996). Nuisances are originated from farming activities. They can be in the form of dust, fault odor, flies, noise, vibrations and pesticides (Bills, 1996). This law does not prevent farmers from legal disputes around the nuisance instead it can be used to challenge nuisance lawsuits. This law also encourages farmers to invest further for their farm business because it does strengthen farmer when facing nuisance dispute in courts. Even, it can reduce probability of nuisance objection issuance.

Purchase of Development Rights

The enactment of tax relief is viewed as not strong enough to stop farmers from selling their farmland. This condition leads to need for new program alternative in farmland preservation (Colyer, 1998). The purchase of development rights is considered to be firstly carried out by Suffolk county in New York in 1974 (Bryant and Conklin, 1975). The basic idea of this approach is to acquire permanently legal interest in the use of agricultural lands. The land purchasing itself is performed by government. After this acquiring development right of farmland, a government has right to prohibit and limit the use of the land for non-farm uses. Despite of its drawback due to the amount of money that has to be spent in acquiring development rights, purchase development right is claimed as one of best alternatives in preserving farmland (Bryant and Conklin, 1975).

Transfer of Development Rights

Based on (Coughlin et al. 1981), development rights are attached to land owners in the preservation district in a systematic procedure. Transfer of Development

Rights (TDR) is an arrangement that allows property owners with restricted zoning to sell development rights to those whose property is zoned for non-restricted uses (Gardner, 1977). Essentially, the land owners in the preservation district are not allowed to develop their land for non-agricultural use. Thus the owner of agricultural land has the option of either utilizing his land at low densities or selling his development rights. As compensation, they can sell their development rights to land owners in development district. These newly purchased development rights can be utilized to build at higher densities than normally permitted by the zoning. Furthermore, TDR arrangement are aimed to maintain designated land in open use and reimburse the owners of the preserved land for the loss of their right to develop it.

Agricultural Districts

Agricultural districting is initiated by local farmers. To form an agricultural district, farmers form a group with a minimum of 500 acres. The proposal then is handed out to authorities in order to be processed. The process comprise of many steps including public hearing and consultation. The main advantage of this process lies on the involvement of public awareness. This is a way to promote the acceptability and credibility of a farmland preservation program in the face of non-farmer residents (Bills 1996). Agricultural districts are established for periods of four to ten years and can be extended after the end of periods (Coughlin et al. 1981).

Several supportive provisions are equipped to support agricultural district program. Tax reduction is one of the easements given to land owners who participate in the program (Bryant and Conklin, 1974). The other provisions are related to the efforts to exclude the district from the enactment of other regulations that restrict farm structures and practices. Other regulations related to health and safety sometimes is too high to be fulfilled by farming activities. To encourage the agricultural district, local government may exclude the farming from those regulations (Bryant & Conklin, 1975 and Colyer, 1998).

According to Fisher (1982), agricultural district differs from agricultural zoning in term of the restriction of construction of non-farm buildings in agricultural areas. Unlike agricultural zoning, agricultural district does not restrict development directly but instead permits farmers to establish districts within which they are protected from certain state or local regulations or from private nuisance suits.

Agricultural Zoning

Among those programs, agricultural zoning is the most widely used program in United States. In 1980, agricultural zoning had been constituted in 104 counties and 166 municipalities in 22 states had implemented (Coughlin et al. 1981). Agricultural zoning have been the most effective approach in coping with agricultural land conversion (NERCRD, 2001). Compared to indirect approaches such as tax incentives and agricultural district which ease farmers to continue growing agricultural products but do not hamper them to sell their lands, agricultural zoning directly prevent farmers from selling the lands because of the high-cost in transferring development rights (Coughlin, 1991).

Agricultural zoning regulation is categorized in two types: exclusive and non-exclusive (Coughlin et al. 1981). The former forbids most non-agricultural activities from an agriculture zone and in extreme excludes all non-farm residences. Conditionally, exceptions might be given to this ordinance for parcels of land that are not suitable for farming. This type of agricultural zoning is rarely used. It is more vulnerable to legal challenge than non-exclusive agricultural zoning, and, when challenged, more likely to be defeated. Meanwhile, the latter permits non-farm (residential) dwellings, but strictly limits the number of such dwellings. Moreover, non-exclusive zoning often grants the construction of conditional uses if these uses are located on land of low quality for farming.

b. Farmland Preservation Policy in Canada

In Canada, both the continuation of agriculture and the coordination of agricultural land use policies with other land use decisions have been highlighted in managing farmland protection programs (Francis et. al. 2012). One of the policies is the Agricultural Land Commission Act which is enacted in British

Columbia. This policy contains mechanisms intended at growth management and preservation of agricultural land by utilizing an integrated policy approach. This policy is centered at the exclusive agricultural zoning to preempt the urbanization of agricultural land, a strategy that recognizes agriculture and related land uses as valued activities rather than temporary uses. This policy has also endorsed in Quebec and Newfoundland.

British Columbia province has developed various protecting farmlands strategy in dealing with intense development pressures from growing human population. They are Agricultural Land Commission Act, Farm Practices Protection Act, Regional growth strategies, Official community plans, Zoning bylaws, Farming bylaws, Agriculture area plans, Farm Tax Assessment Act and Community farm co-operatives (Francis et. al. 2012). These instruments are also utilized in other provinces.

The most distinctive program in Canada is Community farm co-operatives. Community cooperatives demonstrate an innovative model in preserving agricultural land. In this scheme, the community can safeguard a farm by acquiring a part of the property. These individuals turn into shareholders of the so-called “community farm”. This farm can be run by other farmers, but the land designation is attached permanently by a society or land trust that monitored by an elected board. Moreover, the details of farm operations and management are regulated by board members. The Keating Community Farm Cooperative on Vancouver Island and Horse Lake Community Farm Co-operative are the examples of this scheme. Both farms are possessed by The Land Conservancy (www.conservancy.bc.ca).

The Land Conservancy (TLC) which was established in 1997 is a non-profit and charitable land trust in British Columbia, Canada (wikipedia.org, 2012). TLC is aimed to protect plants, animals, natural communities and landscape features. This is carried by purchasing lands, long-term leases or conservation contract. TLC accomplishes its conservation objectives by working with many partners including all levels of government, other agencies, businesses, community groups

and individuals. So far, TLC has protected more than 300 properties covering 50,600 hectares of land (wikipedia.org, 2012).

2.2. Farmland Preservation Program in Indonesia

2.2.1 Farmland definition in Indonesia Context

It is important to acknowledge that the term “farmland” in Indonesia context does not correspond precisely to what would be classified as farmland in other countries. Based on Law 41/2009 farmland is defined as the land that cultivated to produce principle food staple to be consumed by human. It is originated from both plant and animal origin. The food staple that originated from plant comprises of food grains such as rice, corn, wheat, soybean, peanuts, etc. and various tubers. Meanwhile, principle food staples originated from animal are in the form of any meats. Thus, farmland in this research will refer to paddy field, lands for growing food grains as previously mentioned, fishpond and ranch. However, it does not correspond to land to grow tree fruits and viticulture.

2.2.2 The Current Development of Farmland Preservation Program in Indonesia

In Indonesian context, agricultural zoning has not been implemented. However, national government has commenced to institute this ordinance as stipulated in article 48 paragraph (1) letter (e) of Law 26/2007 concerning the Indonesian Spatial Plan. This effort is strengthened by the issuance of law number 41/2009 concerning agricultural land protection. This law is followed by government regulation number 1/2011 focusing on focusing on procedures in implementing farmland preservation program and farmland conversion. Recently in February 2012, Indonesian government launched government regulation number 30/2012 specifying in financing agricultural land protection.

On one hand it can be clearly seen that through the issuance of three regulations within four years related to agricultural land protection, Indonesian government has prioritized farmland preservation. On the other hand, the implementation of agricultural zoning at local level remains questionable. For instance, the low accuracy of crop lands categorization in spatial plan documents has been

hampered the agricultural land protection programs (Bunyamin, 2004 in Abdurachman A. et. al. 2005).

2.2.3 The Characteristic of Farmland Preservation in Indonesia

As the complement of the characteristic of farmland preservation in Indonesia, the Indonesian administrative division will be described firstly. Indonesia is divided into provinces. Provinces are made up of regencies and cities. Each province, regency, and city, has their own local governments and parliamentary bodies. A regency will be divided further into several sub-districts. A sub-district will be split into several villages. Briefly, the administrative divisions in Indonesia are provinces, regencies or cities and villages.

Unlike European countries efforts in coping with farmland conversion such as in the Netherlands and Germany (Tan et. al. 2009) as well as UK (Alterman, 1997) that characterized with strong urban containment without specific farmland protection program, Indonesia enacted specific regulation aimed for governing this issue. The issuance of Law number 41/2009 is a first milestone for Indonesia in preserving farmlands. There are several main characteristics of Indonesian's farmland preservation program formulated in the Law and its derivation regulation. The first characteristic which is the axis of the program is that enrolled farmland will be legally bound to the law but it is voluntarily offered. This means that once a farmland is enlisted in the program, it is forbidden to convert it to non-agricultural use. Secondly, farmland enrolled in the preservation program will be integrated to spatial planning (Law 41/2009 article 19-15). Thirdly, the ownership of enrolled farmland can be transferred but the new owner is prohibited to utilize the farmland for non-agricultural use (Law 41/2009 article 44, paragraph 1 and article 50). Fourthly, governments will arrange several provisions as the companion of this program (Law 41/2009 article 37-41). These provisions are tax reduction, farming equipment, infrastructure development and incentives.

Fifthly, the Law 41/2009 also stipulates a mechanism in converting land substitution regarding of farmland conversion to non-agricultural use (article 44, paragraph 2-6). This mechanism is intended to exhibit no net loss result.

Furthermore, the land conversions that can be carried up are limited to the development of public facilities and the occurrences of the natural disaster. The exclusion of public facilities is related to accommodate room for development. These public facilities consist of the roads, dams, irrigation, drainage, sewerage, port, etc (Government Regulation number 1/2001 article 36, paragraph 1). In detail, at least 3 times of substitution from receiving areas should be provided to convert a prime agricultural land (Law 41/2009 article 46). The further mechanism in farmland conversion is specified in Government Regulation number 1/2011.

Compared to those in other countries that previously mentioned, farmland preservation program in Indonesia closely resembles the China's Basic Farmland Protection Regulation. The first and primary analogous aspect is the legal binding of farmland. The other resemblances are the mechanism of no net loss in converting farmland to non-agricultural use and the exclusion of public facilities development from the enactment of the preservation program.

On the other hand, unlike that in China, Indonesian's farmland preservation program do not specified the quantity of converted farmland respected to which level of government who will tackle the permits but it emphasizes the location of the farmland itself. The levels of governments who will responsible for the farmland conversion permit are appointed based on the farmland's location (Law 41/2009 article 49; Government Regulation 1/2011 article 46). Specifically, farmland located in one municipality jurisdiction will be handled by the respective municipality. For the farmland lied on a boundary of two municipalities will be tackled by upper level government, in this case will be taken care by a province. Meanwhile, the inclusion of the occurrences of natural disaster make the preservation program in Indonesia differs from that in China.

Contrary to the specific statute like the Midden-Delfland act in the Netherlands and British Columbia's Community farm cooperative, Indonesian farmland preservation law possesses broader scope. It is intended to be enacted in all regions in Indonesia. Meanwhile, the Midden-Delfland is particularly aimed to preserve the area of 4000 hectares which is much narrower than that of Indonesia.

In addition, the keys of the success of the Midden-Delfland are sufficient funds for land acquisition and appropriate institutions such as the Reconstruction Committee which are hardly can be attained in Indonesia context.

Opposed to those in US, Indonesia do not developed specific tools in preserving farmland such as right to farm laws, purchase of development rights (PDR), transfers of development rights (TDR), agricultural district and agricultural zoning. In term of development right, Indonesia does not recognize this concept. That is why both PDR and TDR are not the options in protecting agricultural land in Indonesia. Right to farm law is also not considered in Law no.41/2009. This is due to the absence of nuisance issue in Indonesia farming. Farming in Indonesia is not capital intensives as in US instead it is a labor intensives. Farming in Indonesia is carried by peasants instead of by heavy machinery. This means that the nuisance issue can be neglected for Indonesia case.

From the point of view of supportive provision such as taxes relief, agricultural tools and infrastructure provision which is enlisted in article 38, the approach resembles agricultural district. The supportive provision is usually comprehended within agricultural district program. However, due to the approach formulated in regulation no.1/2011 contains the aspect of permanent legal binding, this program is substantively distinguished from agricultural district. Meanwhile, agricultural districts are established for periods of four to ten years and can be extended after the end of periods (Coughlin et al. 1981).

On one hand regarding of legal binding aspect, the approach formulated in regulation no.1/2011 contains the declaration that the preserved land is not allowed to be converted to non-farm use (article 35). This issue is covered more detail in Law 41/2009 concerning agricultural land protection. In the article 50 of this law, it is stated that non-agricultural use permit that has already granted will be cancelled. It is also declared that the agricultural land can be sold but the purchased land is still attached to agricultural use and not allowed to be utilized for non-agricultural use. These points lead the policy to hold the same consequences as agricultural zoning.

On the other hand, agricultural zoning in US context is strongly connected to dwelling arrangement. It specifically deals with how many dwellings unit per acre of farmland. Meanwhile, the preservation program stipulated in the Law 41/2009 and its derivation has not something to do with this dwelling unit arrangement. However, the legal binding aspect becomes the key element to distinguish agricultural zoning from agricultural district (Coughlin et al. 1981). On one hand, regarding of dwelling units arrangement what is formulated Indonesian farmland regulation differs with agricultural zoning but they coincide in term of legal binding aspect. The aspect of legal binding plays crucial role in this research. Not only this is the pivotal point of Indonesian farmland preservation program but also because many literatures presented here concern about their impact on farmer participation and farmland prices.

In conclusion, the comparisons between Indonesian's farmland preservation program and other countries are summarized in table 2.1 below.

Aspect	Indonesia	China	United States	The Netherlands
Approach in Preserving Farmland	Farmland preservation is carried through specific regulation	Farmland preservation is carried through specific regulation	Farmland preservation is carried through specific tools e.g. Agricultural Zoning, District, Purchased Development Right	<ul style="list-style-type: none"> • No Specific regulation or tools. • Strong urban containment tradition
Land Ownership and Development Right	Land ownership and development right are connected	<ul style="list-style-type: none"> • Land ownership and development right are separated • States hold land ownership while user/developer have land use right 	<ul style="list-style-type: none"> • Land ownership and development right are separated • Both land ownership and development right are in the hand of each individual • Transferable development right 	Land ownership and development right are connected

Exceptional Farmland Conversion	<ul style="list-style-type: none"> • Natural disaster occurrences • The land for public facilities 	The land for public facilities	<ul style="list-style-type: none"> • Residential dwellings * 	Arranged in Spatial Plan
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(Source: Indonesian Law 41/2009 Coughlin et. al. 1981; Bryan & Conklin 1975; Lichtenberg & Chengri 2006; Alterman 1997; Tan et. al. 2009; Van Rij et.al. 2007)

* Non-exclusive agricultural zoning permits non-farm (residential) dwellings, but strictly limits the number of such dwellings. Non-exclusive zoning often grants the construction of conditional uses if these uses are located on land of low quality for farming (Coughlin, et al. 1981).

Table 2.1: The comparison of farmland preservation in Indonesia and other countries

2.3. The perspective on Regulatory Approach of Farmland Preservation

The results gathered from this research are not intended to measure the farmers' possibility to participate the program. These influencing factors will not necessarily lead farmers to participate the program at the time of program implementation. During the implementation of farmland preservation related regulation, there will likely be three types of interaction between law and people (Van Dijk and Beunen, 2009). The first is distortion in which landowners do not appropriately be familiar with the aims of the regulation. The second is compliance where the landowners comprehend and react as suggested. The last is avoidance in which landowners refuse to participate or at least try to make use the regulation for their own purpose without harming their advantages.

In the case study, those three types of interaction will likely take place. Firstly, farmland preservation program has not been enacted, thus its features that characterized by legal binding aspects will trigger distortion not only on landowners but also government officers as the actors of the program implementation. Secondly, at the time of program implementation, landowners will be polarized into two groups, those who accept and others who refuse to participate in the program.

Because the regulation is not the only aspect that taken into account by people to behave, thus it is difficult to measure how large the influence of regulation toward the achieved results in which the un-proposed and side effects on people or consequences can also take place (Van Dijk and Beunen, 2009). There must be other components that affect people to act. Motivation, on the other hand, perhaps can explain people behavior. Motivation encompasses different definitions. All of psychologists state that motivation is the endogenous factor that triggers person's behavior and guides it (Huit 2001, Malek 2000).

Furthermore, McClellands (1992) conveys that there are three major needs which motivate individuals to behave in certain ways. The first is the need for achievement then the second is the need for affiliation and the rest is the need for power. Meanwhile, in term of volunteerism, Clary (1998) and Clary and Snyder (1999) stated that there are the six major motivational functions encompassing understanding, sociability, career, protection and enhancement. Among aforementioned motivation elements, both the need for betterment and association will likely be the main reason of farmers in determining their attitudes. The need for association, for instance, may be related to farmers' desire to affiliate themselves to the existing groups or cultures. In this case, groups can be represented by neighborhood or farmer group. Meanwhile, existing cultures can be in the form of well-established way of life or livelihood. For example, the current farmers continue farming because this occupation has been carried up since their early ancestor.

2.4. Factors Influencing Participation in Farmland Preservation

This section will cover factors affecting participation in farmland preservation program originated from previous studies. The main feature of literatures described here is the aspect of legal binding. This means that farmland enrolled in the farmland preservation such as agricultural zoning, PDR, TDR, etc will be prohibited to be utilized for non-agricultural use at least for a very long time period if it cannot be defined as permanent.

Factors Influencing Participation found in previous studies

Through this research, the factors that can influence farmer attitudes towards farmland preservation policy will be investigated. The probable factors will be drawn from previous researches. Regarding of factors influencing attitudes towards farmland preservation program, Bourke et. al. (1996) investigated that there are five individual characteristics affecting these attitudes. They are environmentalist, farmers, rural residences, age and education. Moreover, he differentiated a typology of urban pressure levels in farmland areas: farm existed with no urban presence or pressure; farm existed with urban presence but no urban pressure; and farm existed with both urban presence and urban pressure. Each levels of urban pressure affect the responses towards the programs.

The effect of urban pressure was also considered in a research pursued by Boisvert (1996). He established a model to explain participation in New York's agricultural districts and use-value assessment programs. He found that land productivity, urban pressure, and the importance of non-farm activity in the area positively affecting the decision to join agricultural districts. Farmer dependencies towards employment on the farm also positively contribute to increase participation rate. Tax reduction as the provision comprehended in agricultural districts is also found to be the factors considered by farmers in deciding to participate in the program. By enrolling in agricultural district, land value will be assessed based on its agricultural use value which is lower than its real value.

In relation with individual characteristics, McLeod et.al. (1999) in their investigation towards factors influencing support for rural land use control found that landowner characteristics influence the probability of participating. The research was taken place in Sublette County, Wyoming concerning preferences for private land use and land use controls such as zoning, purchase of development rights and cluster development. The findings show that individual's demographic characteristics such as education, age, and income significantly influence the decisions to support for land use controls. Demographic characteristics also demonstrate a positive effect on decisions towards cluster development. On the other hand, demographic factors negatively influenced the

approval of zoning and purchase of development rights. Moreover, to a lesser degree, the decisions are altered by attitudes toward private land management and quality of life assessments.

Not only landowner characteristics are considered to influence participation, it is also found that parcel characteristics demonstrated the similar effects. Houser (2007) obtained evidence regarding of this findings. She attested factors affected farmers in joining conservation easement in Lancaster County, Pennsylvania. On one hand, this program offers reduction in property value of the land thus it lowers farmers' tax burden. On the other hand, it evades development rights. She found that parcel characteristics such as the size of parcels, location within an agricultural security area, and the scaled cost-weighted distance to cities positively influencing the probability of farmers to participate in the program. Other variables such as location within agricultural zoning, location within an urban growth boundary, the proximity to easement clusters, the proximity to preserved farms, and the proximity to development infrastructure exhibit statistically significant negative effect on the probability of farmers to opt for preservation program.

Parcel characteristic effects are also gathered by Lynch and Lovell (2001) who examined factors influencing participation in agricultural land preservation programs in four counties in Maryland. They found that parcel characteristic alter the probability of participating in preservation programs. In this research, there is a variation in the type of preservation program within each county. In addition, the state's farmland preservation program can be accessed by all landowners. There are similarities demonstrated by landowners in the four counties related to some factors such as number of acres, whether there is another preserved parcel near their farmland, whether they have a child intending to continue farming, share of income (a larger percent of income from farming) and products generated by them. However they are different in other factors shaping the probability to participate such as the distance to the nearest city, distance to nearest preserved parcel, years family owned the farm and whether parents farmed.

The finding of landowner and parcel characteristics as the factors altering the probability of participation is strengthened by the later research carried by Lynch and Lovell (2003) in their attempt to combine spatial and survey data to explain participation in agricultural land preservation. The possibility to participate in farmland preservation is affected by eligibility, growing crops, farm size, distance to the nearest city, percent of income from farming, having a child who planned to continue the farm, and how one heard about the program. In this research, data from a survey of agricultural landowners and from spatial data on individual farms collected using GIS for four Maryland counties is used to investigate the factors influencing participation in both PDR and TDR.

The other study analyzing participation in farmland preservation programs was carried up by Nickerson (2000) in investigating PDR and TDR in Calvert and Howard Counties, Maryland. Both PDR and TDR are enacted for the areas where high farmland conversion is existed. Both programs will impose fixed land use in very long time period but they are voluntarily offered. The main objective of the research is related to the timing in decision making to join the preservation program. It is found that the farmers accept the easement payment as enough compensation for the agricultural and development values of their lands. However, he will be indifferent in participating sooner rather than later. Landowners possessed larger land parcels tend to be joined sooner rather than later. Regarding of the length of ownership prior to preservation, it is gathered that the parcels owned three years or less tend to discourage farmers to participate the program. This is employed as a preference indicator in dealing with debt and/or desire to farm.

Regarding of perceived negative consequences, Rickard (1986) found that farmers are prefer to opt for less strict program such as tax break with less amount of tax penalty if they withdraw from the agreement. In relation with this issue, Stokes (2010) has also recommended to investigate whether efforts to reduce farmland income variability may hamper the implementation of farmland preservation programs. This factor was also discovered by Vitaliano and Hill (1994) who studied the impact of New York's agricultural districts towards farmland price.

They hypothesized that perceived decreasing land value influence landowners to participate the program. In contrast, those who take part in the program perceive that agriculture is the highest value use of their land. Another findings in the research demonstrate that New York State's Agricultural District program equipped with an agricultural-use property tax exemption do not affect farmland's market price.

Related to perceived decreasing land value after enrolling the preservation program, it is necessary to convey several studies concerning the impact of farmland preservation that legally binding on farmland prices. This is carried up in order to legitimate the inclusion of this factor in the research. There are three finding features related to this issue. Firstly, it is found that there is no significant decreasing land value after enrolling zoning program (Liu & Lynch (2011); Deaton and Vyn 2010; Etgens, et al. 2003; Nickerson & Lynch 2001; Vitaliano & Hill 1994). Secondly, it is also discovered that there are significant negative changes in land value after participating in zoning program within certain conditions (Liu & Lynch 2011; Deaton and Vyn 2010; Isakson 2004). Lastly, in contrast to the previous finding features, a study even resulted in evidence that down-zoning policies significantly increases land value (Fleming 1999).

These mixed results originated from the aspect of legal binding of the zoning program (Liu & Lynch, 2011). The present study shows that the effects of down-zoning towards the land price are enormously context specific (Gottlieb and Adelaja, 2009). Furthermore, factors such as location, market demand, trends in the local and national economy contribute to the mix effects of downzoning on land prices varies (Etgens, et al. 2003)

In detail, Deaton and Vyn (2010) examined the effect of Greenbelt legislation on farmland property prices in province of Ontario-Canada. This legislation is aimed to halt urban development of agricultural land within a "Greenbelt" boundary. They found that farmland property prices were affected by the Greenbelt legislation. However, the effect varies based on the proximity of the farmland to the Greater Toronto metropolitan areas. A statistically significant drop in property values is taken place in farmland situated close to the Greater Toronto Area. In

detail, the urban–rural boundary is heavily experienced this adverse impact. The zoning effect depletes and becomes statistically insignificant outside this interface area. The insignificant relation between zoning regulation and land prices was also gathered by Etgens, et al. 2003 in his study about the effect of down-zoning on rural land values in the mid and upper Eastern Shore and in Southern Maryland. He found that down-zoning resulted in either the escalation of land value or little to no considerable effect on their land value.

Other study carried by Liu & Lynch (2011) to analyze the effect of zoning regulation towards rural land value in nine counties in Maryland. They divided the investigated lands into two classifications: resource land and non-resource land. The former is the lands that will continually be used for agriculture or forestry and thus, it is taxed based on its use-value. Meanwhile the latter is assessed at their full market value. It is found that zoning regulation demonstrate diverse impacts. The values of resource parcels remain unchanged whereas the values of non-resource parcels decline significantly. Furthermore, they recommend distinguishing the land types in assessing the impact of zoning regulation.

Contrary to the findings above, Fleming (1999) found that there are increases of land values impacted by growth control contained in zoning regulation that aimed for open space and rural land use preservation. The research conducted in a fast growing suburban county of Washington DC using the spatial statistical technique.

The factors affecting farmers' expectations to sell their farmland can be taken into account too. If these factors contribute to the selling of farmland, the inverse of values of the factors may hold farmers from selling the farmlands. Furthermore, it might be useful to elaborate these factors in revealing farmers' attitude towards agricultural zoning. Zollinger and Krannich (2002) studied the factors influencing farmers' expectations to sell their farmland in areas where the increase in the conversion of agricultural land has been relatively rapid. They found in Utah that perceived negative change (particularly difficulty in obtaining and retaining rental land and in purchasing land), lack of a child who will take over the operation; and

declining profits from the operation are the major factors that lead farmers to sell their farmland. Meanwhile, the minor factors are level of intrinsic rewards that a farmer experiences from his farming operation, the farmer's satisfaction with his community, and the farmer's closeness to retirement age.

Another research concerning the role of regulation (policy) and perceived profitability (beliefs/optimism) of the future of farming (Brockman, 2011) was pursued in Seattle, US. The research findings demonstrate that there is a moderate relationship between "I intend to continue farming for the next five years" and "I believe that agriculture has a bright future". Furthermore, it is found in the research that statistically there is no significant relationship between the statement "I have plans for nonfarm development of my land" and what factors contribute to farmers decision to not farm.

CHAPTER III: METHODOLOGY

The interest to conduct a research towards farmland preservation program in Indonesia stemmed from reading about the issuance of three statutes regarding of farmland preservation in Indonesia within four years and the pattern of farmland conversion and palm oil expansion. The first is law number 41/2009 concerning farmland preservation program. The second is government regulation number 1 /2011 concerning procedures in implementing farmland preservation program and farmland conversion. The last which is issued in February 2012 is government regulation no.30/2012 relating to financing farmland preservation. This interest is strengthened by information gathered from online newspaper reporting the farmland conversion to palm oil and rubber plantation that taken place in the case study area (harianhaluan.com 2012; antaranews.com 2010).

The biggest issue lies on what the responses of farmers towards the enactment of farmland preservation program. After having established such a rough shape of the research environment with keywords like farmland preservation, farmers and attitudes, corresponding questions have to be devised and the study has to be posited into an existing field of research. Therefore, secondary data will grasp most space in knowledge and data collection. They will also be utilized as background information for obtaining primary data through interviews. Both types of data will mutually shape the basis for the analysis.

Conducting a study on attitudes, it is needed to attain the appropriate research method for the specific field of research. In literatures, social research methods are frequently differentiated into two main research approaches: quantitative and qualitative research (Neuman, 2000 p.16; Bryman, 2008 p.21). Deciding upon what type of research methods that will be used, it is required to focus on the main objectives of the research. The main objectives of this study are to acknowledge the farmer attitudes towards farmland preservation. Assessing this main objective with the characteristics of a qualitative and quantitative research method, it is clearly recognized that a qualitative research is the fittest method for this study (see table 3.1).

	Quantitative Research	Qualitative Research
Starting point	Test hypothesis that the researcher begins with	Capture and discover meaning once the researcher becomes immersed in the data
Concepts	distinct variables	themes, motifs, generalizations and taxonomies
Measurement	systematically created before data collection and are standardized	created in an ad hoc manner are often specific to the individual setting or researcher
Data types	numbers from precise measurement	words and images from documents, observations and transcript
Theory	largely causal and deductive	causal or non-causal and often inductive
Procedures	standard, and replication is assumed	particular and replication is very rare
Analysis	using statistics, tables, or charts	extracting themes or generalization from evidence.

Table 3.1: The differences between qualitative and quantitative research
(After Neuman 2000)

Actually, this research can be carried by employing quantitative method. However, with limited time (1 month), the author thought that quantitative method is only possible to be pursued if levels of urban pressure factor is abandoned. The author deliberately distinguishes two groups of farmers: those who live in a village with urban presence and pressure and those who live in a village without urban presence or pressure. Furthermore, it will take more time and fund to reach large number of respondents of villages with no urban presence or pressure because they are located in less accessible or even in isolated areas. In addition, because of the objects of this research are farmers who are also the land owners, it is worried that it is needed to survey more than one village in order to encounter sufficient number of respondents. This can be exacerbated by the possibility of respondent refusal to be interviewed. Thus, more villages need to be surveyed meaning that longer time and more funds have to be provided. So, regarding of time limit and fund constraint, quantitative method was not employed in this research.

The previous reasons are also strengthened by the fact that so far farmland preservation program has not been implemented in the case study area. It is worried that if quantitative method is employed, respondents will face difficulties

to understand questionnaires because they are not familiar with the subject of the questions. That is why by utilizing qualitative method, it can give bigger opportunities to interviewees to achieve clearer information. Thus, deeper interviewee's responses can be gained.

3.1 Qualitative research

One of the main advantages of qualitative research in social science is its ability to portray authentic interpretations that are sensitive to specific social-historical context (Neuman, 2000 p.122). Neuman further argues that the concern of qualitative research is to find case that will improve other research discovery about the process of social life in a specific context (p.196). In my view, this is the benefit to employ this research type to my research. In a qualitative research, the researcher gains the opportunity to take part in the mind of another individual (Bryman, 2008 p.385) and thus will be able to see things in a different perspective.

The researcher should start as neutral as possible, to readily accept new aspects of the social world of people even though every study stems from assumptions and images of the reality of the studied social world. The close contact with respondents who are questioned in the study gives a high degree of flexibility (Bryman, 2008). This flexibility demands the ability to familiarize new situations and findings in the investigated social world. Thus, a fully structured research method may be disruptive whereas less structured and interactive approaches may ensure a high degree of flexibility. Furthermore, the latter method offers the possibility to grab whole picture of what stated by respondents including their words and impressions.

However, every research method has its drawback unexceptionally with qualitative research. One aspect of criticism is the lack of objectivity Bryman (2008). It is often criticized that personal relationship with the respondents inhibits objectivity. This is coupled by the critic that sometimes the flexibility during the research process triggers a lack of transparency, so that the technique of arriving at a conclusion is rather vague. Nevertheless, it is still questionable

whether a researcher can be fully objective in his/her investigation. In order to come as near as possible to the objectivity, the researcher needs to possess a critical attitude towards him/herself. Another aspect relating to the disadvantages of qualitative method is the issue of generalization (Bryman, 2008). This recognition is stemmed from the massive quantity of data or knowledge obtained from only a few resources. Thus, this emerges a question: how the findings can be justifiably generalized? It is difficult to quantify meaningful words and impressions, therefore, it is hard to come to a generalization. To sum up, in my view, it is still admirable to utilize qualitative method because not only it can unveil the “true” responses from people but it is also provide the researcher a sort of intuition to obtain generalization after being exposed to the studied social environment.

3.2 Methods of collecting qualitative data

After deciding to employ qualitative method in the research, the appropriate method of collecting data is selected from three categories: in-depth interview, focus group discussion and observation. The study of farmers’ attitudes toward farmland preservation program can be pursued by using focus group discussion to gather data. In this method, the groups of participants are usually formed from 7 to 10 people who are unknown with each other and have been chosen because of their similarity in certain characteristics that appropriate to the research (Marshall and Rossman, 2006). In focus group, the researcher constructs conducive settings in order to stimulate dynamic discussion and different opinions toward studied subject by querying focused questions. These activities may be repetitively taken place with different individuals to give opportunity to the researcher to characterize patterns in the articulated perceptions and opinions.

The main advantage of focus group discussion is that the participants are exposed to a more natural environment and less formal than an in-depth interview (Marshall and Rossman, 2006). However, there are some disadvantages of this method. Marshall and Rossman (2006) spotted four disadvantages of focus group discussion: power issues, time consuming, difficulties in managing discussion and data collection and specific room requirement.

This research actually might be pursued by employing focus group method. However, the main obstruction of this application is that it is very difficult to gather farmers who are not familiar one another. They live in the same village for many years and their houses are located near each other, so it is almost impossible that they do not recognize their fellow farmers. Furthermore, it is often happen especially in the Seluma regency is that villagers have family relationship among them. In other words, a village is dwelled by several groups of relatives. Thus, because of their connection of each other, it is unlikely that farmers will challenge the opinions of other participants who are also their relatives. At the end, it is hard to create dynamic discussion from these kinds of participants.

Moreover, in line with the aforementioned drawbacks, firstly the author found that the presence of power in the focus group-discussion will likely to take place. Amid the different education level of farmers, it is worried that less educated farmers will be affected by opinions of their more educated colleagues, not to mention that they will discuss unfamiliar topic. Secondly, this method can take longer time when the discussion comes to disputed issues such as farmland conversion. A group of farmers may support the conversion while the others will challenge this opinion. Participants may also spend much time on irrelevant issues such as village chief election result.

The third obstacle of this method application is that it is difficult to manage the discussion and at the same time acquire good quality data thus this may lead difficulties in analyzing the farmer's responses based on their context. Fourthly, this method needs to be held in special room arrangements at a specific time. In villages, it is hard to isolate the participants of focus group discussion from other villagers. Their colleague will likely to come by. For the first time they just want to watch the discussion but when the discussion come to issues that they are familiar with, they will likely to participate. At the least involvement, the non-participants will shout or mock the participants whose opinions are contrast with their views.

Another possible data collection method that can be elaborated in this research is observation in which “*the systematic noting and recording of events, behaviors, and artifacts (objects) in the social setting chosen for study*” (Marshall and Rossman, 2006) are involved. Observation method presumably perceives that deliberate and expressive of deeper values and beliefs lead to behavior. However, this data collection method is time consuming activities. It takes months to accomplish the observation on studied subject (for instance Adams et. al, 2010). Time limitation is not sole consideration to not make use of this method in the research. The subject of the study is also less suitable to be carried by observation method. The main objective of this research is to acknowledge farmers’ attitudes that can barely be captured from observation. In contrast, as cited from Marshall and Rossman (2006), observation is intended to document visual data such as events, behaviors and artifacts.

Finally, in this research the author chooses in-depth interview as the method of data collection in which one-to-one interview is conducted. This data collection method is built on the essential assumption of qualitative research in which the participant’s point of view on the studied subject should be revealed as the participant perceives it (Marshall and Rossman, 2006). The field interview includes asking questions, listening, expressing interest, and recording what was said (Neuman, 2000). There are also several limitations of this method. It does require cooperation between the interviewer and interviewees because it counts heavily on personal interaction (Marshall and Rossman, 2006). Therefore, it might happen that interviewees avoid revealing the information that they do not feel comfortable with. They might also deliver “safe” answer toward sensitive questions especially related to legal aspects such as regulation and punishment.

Despite its limitations, the author views in-depth interview as the most suitable primary data collection method that fit the objective of the research. Specifically in acknowledgement of farmer attitudes towards farmland preservation program, it possesses higher opportunity to dig deeper into farmer responses in order to grasp their words, feelings and meanings. The author can also induce long

narratives from interviewees because his familiarity with the local language and cultures.

3.2.1 Secondary Data

Secondary data from literature are one of the main sources of this research. It is commenced with information on theories, which is gathered from various types of written media, like books and articles. These data establish the basis of the theoretical part of factors influencing farmer attitudes towards farmland preservation program and are not specific to the case study of Seluma regency. Relevant factors are selected based on their suitability with Indonesian context especially for case study area, Seluma regency.

The second big part of secondary data is collected from local government of Seluma regency. It is used to describe the condition in case study area which is specifically related to local demographic, spatial planning, economy and agriculture. The whole data gathered from local government and their related process can be seen in the figure 3.1. All data are attained from local planning board and statistical bureau. The former provided spatial plan, land use map and road networks documents whereas the latter offered Sub-districts statistics, Regency Statistics and Regency in Numbers.

Data from local statistical bureau are processed to produce indicators of agricultural and rurality which are derived from the work of Bourke et. al. (1996). These indicators are functioned to distinguish each site representing each type of urban pressure levels. In detail, these indicators consist of population size, percents of housing unit and percent of land in agriculture. Each indicator is ranked to generate two villages with different urban pressure level. A village with urban presence and pressure is chosen from the village that holds the highest scores. Meanwhile a village without urban presence or pressure is selected from areas which are situated in isolated or less accessible area. Thus, its selection is comprehended with data (map and related documents) from local planning board regarding of its accessibility. The separation between two types of urban pressure level is intended to examine the effect of this factor on farmer attitudes. Several farmers of each village then are interviewed.

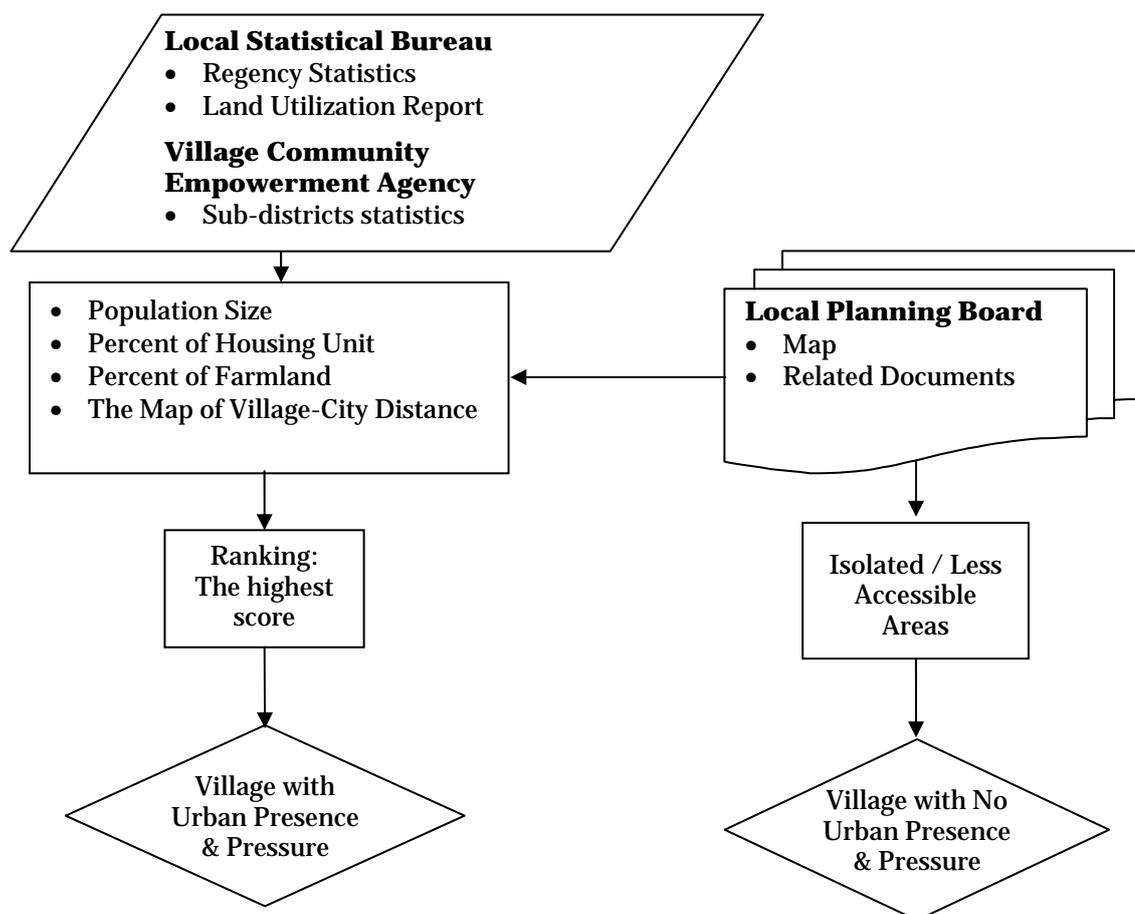


Figure 3.1: Data Requirements

3.2.2 Primary data

Primary data is mainly originated from interviews which were conducted over a period of one month from the beginning of May and June 2012. The interviews were pursued by the unstructured, nondirective, and in depth interview which are usually used in the field research to obtain as much information. Thus, farmers were questioned by several questions. As it was expected, interviewees gave open-ended answers. In addition, researcher experience might be the one of the data resources because the researcher originates from the same regency with respondents and has stayed in the regency for years. The interview focuses on two villages with different level of urban pressure as previously described. The activity of interview is organized into several steps:

- Composing detailed list of questions based on the selected factors.

- Defining farmer location for field research. As previously described, several farmers were elected from each village with different level of urban pressure. After selecting two villages represented each level, the researcher came to village office in order to gather information about farmers that will be interviewed. This is also comprehended by interviewee information relating other potential interviewees.
- Defining interviewees and arranging appointment with them. The appointment has to be held in convenient times and places for the effectiveness of interviewing process.
- Conducting the interview. The interviews were recorded to ease writing the scripts.
- Transferring the records into transcription and typing the notes into the readable form.
- Coding the interview transcription into categories based on the theoretical framework.

3.2.3 Determining Relevant Factors

The factors previously mentioned in sub-chapter 2.3 are chosen reasoned by their relevancy towards the condition existed in Seluma Regency. Landowner characteristics comprise of age, education level and income (McLeod et. al. 1999; Bourke et. al. 1996) are utilized in this research. This is underpinned by the need to investigate whether younger or older farmers who want to involve in the program. Furthermore, it is checked whether farmers' income can influence their decision toward the program. The last is whether education level can be taken into account too. Other landowner characteristics such as share of income and whether farmers have children who want to continue farming are neglected (Lynch & Lovell 2001; 2003). The proportion of income from farming is not considered because the landowners will be interviewed in this research work as farmers. Thus, the big share, if it is not all, of their income share originated from farming activities. The factor of whether farmers' children want to continue farming is not taken into account due to time limitation in doing this research and the lack of data related to farmers' family size and ages.

Regarding of parcel characteristics, distance to city and farmland size (Lynch & Lovell 2001; Lynch & Lovell 2003; Houser 2007; Nickerson 2000) are included in this research. On the other hand, other parcel characteristics such as land eligibility (Lynch & Lovell 2003) and location within another preserved parcel (Lynch & Lovell 2001; Houser 2007) are disregarded. Land eligibility is not elaborated because this aspect is required technical measurement which is beyond the scope of this research. As cited from Indonesian Government Regulation 1/2011, a land that can be submitted to farmland preservation program has to meet several criteria. One of these criteria is technical eligibility which consists of land slope, climate and soil characteristics. Moreover, it is likely that the farmers will not recognize whether their farmlands are eligible to be enrolled to the program. For the factor location within another preserved parcel, its abandonment is underpinned by the fact that there is no farmland preservation program that has been implemented in Indonesia.

Furthermore, the factor of “distance to city” in this research will be defined as “distance to settlement”. It is expected that the lands that situated near settlements discourage farmers to enroll the program. The land parcel located very near to settlement will likely be sold to the highest bidder and then will be developed by new owner to best use e.g. housing development. In the other scenario regarding of strategic position possessed by the land that might be pursued by farmers are either their left the land vacant in order to raise its price or their simply build housing for their own purpose. This circumstance becomes the threats of the program because there are big opportunities for farmers in doing so. The size of the land itself might affect the farmers’ decision. In Seluma context, the bigger the lot, the bigger temptation faced by farmers to convert their land to palm oil plantation. To reach its economic scale, palm oil need to be planted in large areas, that is why smaller lot of the land possess the bigger possibilities to be included in the program.

Unlike Lynch and Lovell (2003) who found that the larger land size, the higher possibility of farmers to participate in preservation program, the author argues that in the Seluma case, the larger the farmland the higher risk of the land to be

converted to plantation such as palm oil and rubber. The most outstanding difference between the case study areas and other countries is laid on the threats of farmlands. Farmlands in case study areas (Seluma regency) are threaten by the expansion of palm oil or rubber plantation while in other countries they are threaten by the expansion of settlement.

The incentive factor (Boisvert 1996; Nickerson 2000) is also needed to be elaborated in this research. The main reason for this inclusion is to recognize whether incentives still affect the farmers' decision even though their land will be legally bound for a very long time period. Moreover, the incentives in this research refer to those enlisted in Law 41/2009 article 38 which consist of land tax reduction, agricultural infrastructure development (e.g. irrigation networks, local road), agricultural equipment and farmland certificates.

Perceived negative consequences in literatures consist of the avoidance towards stricter program (Rickard, 1986) and the anxieties towards decreasing land price (Vitaliano & Hill 1994). In this research, the perceived negative consequence will refer to the latter type. There are two reasons in selecting this issue. Firstly, the impact farmland preservation program on land price has enormously been studied by many researchers. This effect is largely linked to farmland preservation that legally binding such as agricultural zoning, PDR and TDR. Meanwhile, this aspect is also attached to Indonesian farmland preservation program. Secondly, farmers' avoidance of stricter program is more related to penalty after quitting from tax exemption program. It is not relevant with Indonesia context where such arrangement is not existed. Therefore, the perceived negative consequence in this research will refer to the farmers' anxieties about the decrease of land price after enrolling the preservation program. It also represents their worry that they cannot utilize their land for best use for example to be developed as palm oil or rubber plantation

The effects of urban pressure (Bourke et. al. 1996; Boisvert 1996) are also taken into account. This is reasoned by the intention to divide the study area into two sites with different levels of urban pressure. The first is the area where farmland existed with both urban presence and pressure. The second is the area where

farmland lied with no urban presence or pressure. Actually there are three levels of urban pressure typified by Bourke et. al. 1996 but farmland with urban presence without pressure is rarely seen thus it is neglected (Bourke et. al. 1996).

In conclusion, there are five factors which are investigated through this research in order to study their impacts towards farmer participation in farmland preservation program. They factors are landowner characteristics (McLeod et. al. 1999; Bourke et. al. 1996) and, parcel characteristics (Lynch & Lovell 2001; Lynch & Lovell 2003; Houser 2007; Nickerson 2000), incentives (Boisvert 1996; Nickerson 2000), perceived negative consequences (Rickard 1986; Vitaliano & Hill 1994) and the levels of urban pressure (Bourke et. al. 1996; Boisvert 1996).

3.2.4 Sampling

Sample representativeness or comprehensive technique for extracting a probability sample is less focused in doing qualitative research. In contrast, it will concentrate on how the sample can elucidate social life (Neuman, 2000 p.196). Thus, non-probability sampling will be employed in this research. Among other of this sampling type, it is considered that purposive and snowball samplings are appropriate for the study. The rationale behind this is laid on two reasons. Firstly, the distinction between the village with urban presence and pressure and the village without urban presence or pressure lead to the need for selecting farmers purposively. Secondly, the lack of information regarding of farmer identities for both type of villages make the references given by one farmer about others become the basis for the next farmers who can be interviewed. Thus this latter reason coincides with snowball sampling type.

3.3 Data analysis

Data analysis is carried up after data collection stage. Data are analyzed by descriptive analysis approach. Despite its simplicity, descriptive analysis is a crucial tool to describe social life. In this research, descriptive analysis is used to acknowledge farmer attitudes towards farmland preservation program. Data analysis comprises of several steps:

- Strengthening theoretical background regarding of farmer attitudes towards farmland preservation program.
- Classifying the indication into each corresponded factor: landowner and parcel characteristics, incentives, perceived negative consequences and the levels of urban pressure.
- Assessing the relationship between each factor and farmer attitudes towards farmland preservation program.

3.4 Interview Guide

In interviews for a qualitative research, it is not necessary to have standardized questions and answers. The flexibility during the interview is needed to react spontaneously during the interview and to understand and not to generalize the respondents. This dynamic can not be achieved from a standardized questionnaire. The following list depicts the interview guide with several main questions. During the interviews, these questions were not literally asked, but will act as a reminder to obtain all necessary information related to research questions.

- What is the main problem in cultivating your farmland?
- What do you think about the future of you farmland?
- What do you think about farmland preservation program?
- What do you think about strict consequences of joining the program?
- Do you want to participate in the program?
- Why you accept/reject the program?
- What do you expect from participating in the program?
- What kind of government assistance that needed?

Prior to asking the main question as listed above, the interviews were preceded by warm-up talk. The aim of the interview, the interviewer identity and the subject of the interview were mentioned in this preliminary talk. Because the farmland preservation program has not been implemented in case study areas, the information relating to the features of the program were also given to the interviewees. It was explained that the program has strict consequence in which the farmland that enrolled in the program cannot be utilized for non-agricultural use. It was also conveyed that farmers can still sell their farmland to others but its

function is still to grow paddy or other food staple. It is further explained that despite its strictness, the program is voluntarily offered to farmers/landowners thus farmers may choose to participate or refuse the program. The interviewees were also described that in compensating its strict requirement, the program is comprehended with many provisions such as agricultural infrastructure (irrigation and local road), farming equipment and farmland certificate as well as incentives. These steps are carried in order to give clearer insight to interviewees because they are not familiar with the features of the program.

CHAPTER IV: RESEARCH RESULTS

4.1 Overview of Case Study Areas

4.1.1 Seluma Regency Geographical Situation

Seluma Regency is new regency resulted from the fragmentation of South Bengkulu Regency according to Regulations Number 3 / 2003. Geographically, its position is located in the west coast of southern part of Sumatra Island with coordinate $3^{\circ}58'22'' - 4^{\circ}21'37''$ south latitude and $102^{\circ}37'25'' - 102^{\circ}59'25''$ east longitude (figure 4.1). Its regional boundary includes Bengkulu City and North Bengkulu Regency in the north, Rejang Lebong Regency and South Sumatra Province in the east, South Bengkulu Regency in the south, and also Indonesian Ocean in the west. Administratively, its region, which extends as vast as 2400.44 Km² is divided into 14 districts. Based on the latest population census conducted by Central Statistical Buerau (BPS) in 2010, the population of Seluma regency is 172.801 people, which are consist of 88.910 male and 83.891 female.

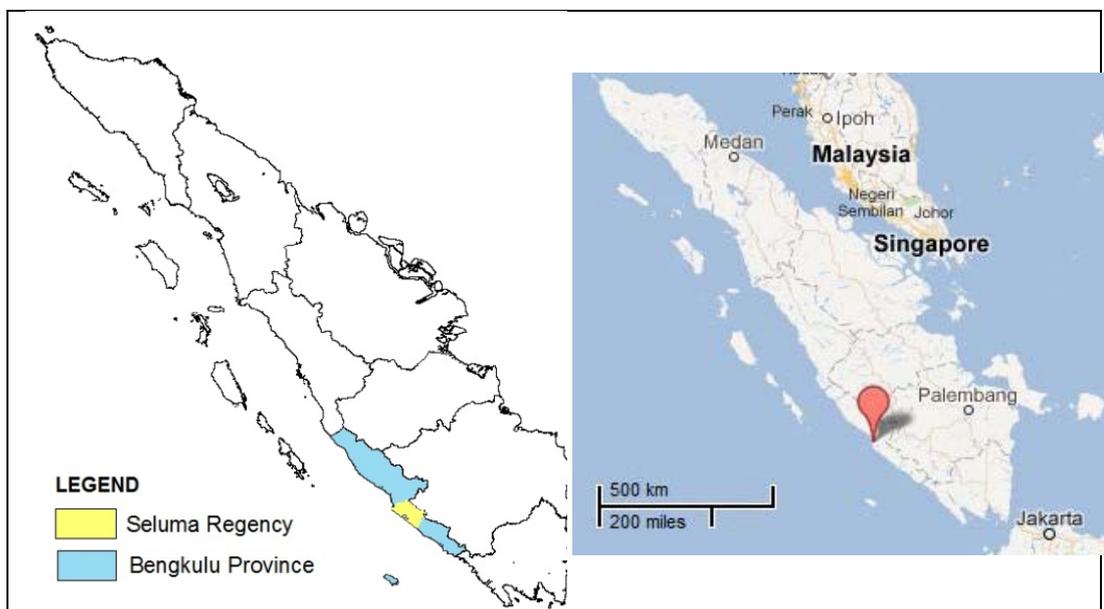


Figure 4.1: Seluma Regency Map (Source: Google Map)

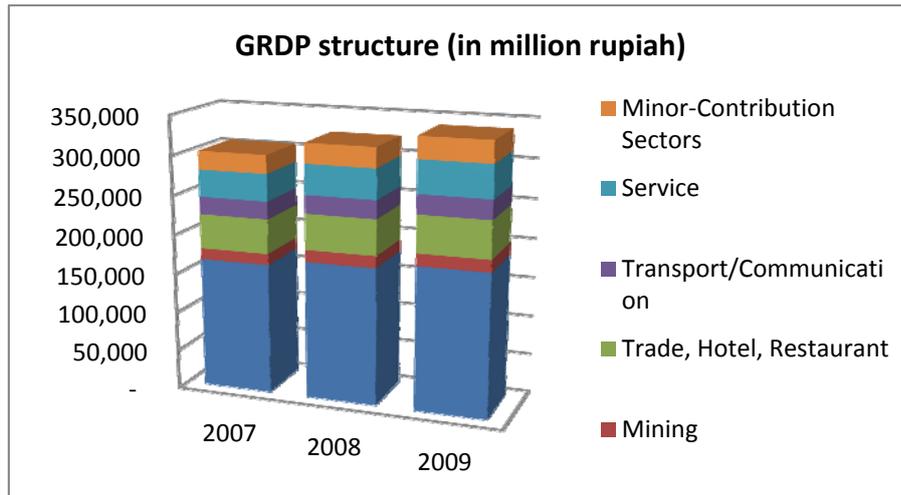


Figure 4.2: The Graph of Seluma's GRDP (Source: Seluma Regency in Figures, 2010)

As can be seen in figure 4.2 and table 4.1, the highest contributor of Gross Regional Domestic Product in Seluma regency is agriculture/farming sector. This is followed by trade, hotel, restaurant sector and service sector.

No	Sectors	Year					
		2007		2008		2009	
		Rupiah (million)	%	Rupiah (million)	%	Rupiah (million)	%
1	Farming	165,887	54.65%	174,589	54.31%	182,192	53.96%
2	Mining	14,007	4.61%	15,084	4.69%	15,387	4.56%
3	Processing Industry	4,409	1.45%	5,290	1.65%	5,752	1.70%
4	Electricity and Clean Water	591	0.19%	576	0.18%	601	0.18%
5	Building	11,754	3.87%	12,650	3.94%	13,703	4.06%
6	Trade, Hotel, Restaurant	43,737	14.41%	45,173	14.05%	47,188	13.97%
7	Transport/Communication	22,222	7.32%	23,065	7.18%	24,228	7.18%
8	Bank/Monetary Institution/Housing	6,691	2.20%	6,933	2.16%	7,376	2.18%
9	Service	34,253	11.28%	38,097	11.85%	41,233	12.21%
	Total	303,551	100.00%	321,458	100.00%	337,659	100.00%

Table 4.1: The GRDP structure of Seluma regency (Source: Seluma Regency in Figures, 2010)

The research was conducted in two case study area. Firstly, a village was selected to represent an area with urban presence and pressure. Secondly, another village was chosen to represent an area without urban presence and pressure.

4.1.2 South Seluma Sub-district Overview

South Seluma Sub-district whose area is 74.46 km² was chosen reasoned by several reasons. Firstly, among other sub-districts, South Seluma possesses the highest percentage of paddy fields (figure 4.3). As can be seen in the table 4.2 below, 42% of total area of South Seluma is cultivated as paddy field which is 11% more than those in Semidang Alas Maras sub-district (Statistical Bureau of Seluma Regency, 2011). Secondly, South Seluma is the highest paddy fields percentage and the closest sub-district situated to the local government office center. This office center consists of almost all agencies in Seluma Regency which is intended to ease public in reaching the place. Thirdly, it is planned as one of region that will be included into city enlargement (Seluma's Planning Board 2007b). These three reason lead South Seluma sub-district as the representation of an area with urban presence and urban pressure. Fourthly, it was selected as the subdistrict where agropolitan program will be implemented (Seluma's Planning Board, 2007c). Agropolitan is a program that aimed to boost villages' improvement through agribusiness sector.

No	Sub-districts	Paddy Fields	Total Area	Paddy Field Percentage (%)
1	Semidang Alas Maras	3,289	10,375	31.70
2	Semidang Alas	1,600	55,475	2.88
3	Talo	1,010	11,120	9.08
4	Ilir Talo	1,500	13,138	11.42
5	Talo Kecil	536	5,977	8.97
6	Ulu Talo	1,671	22,716	7.36
7	Seluma	551	2,183	25.24
8	South Seluma	3,185	7,466	42.66
9	West Seluma	1,850	10,245	18.06
10	East Seluma	1,068	6,450	16.56
11	North Seluma	1,400	41,089	3.41
12	Sukaraja	757	24,078	3.14
13	Air Periukan	933	12,233	7.63
14	Lubuk Sandi	800	17,519	4.57

Table 4.2: Percentage of paddy fields of each sub-district (Source: Land Utilization Report 2011, Statistical Bureau of Seluma Regency)

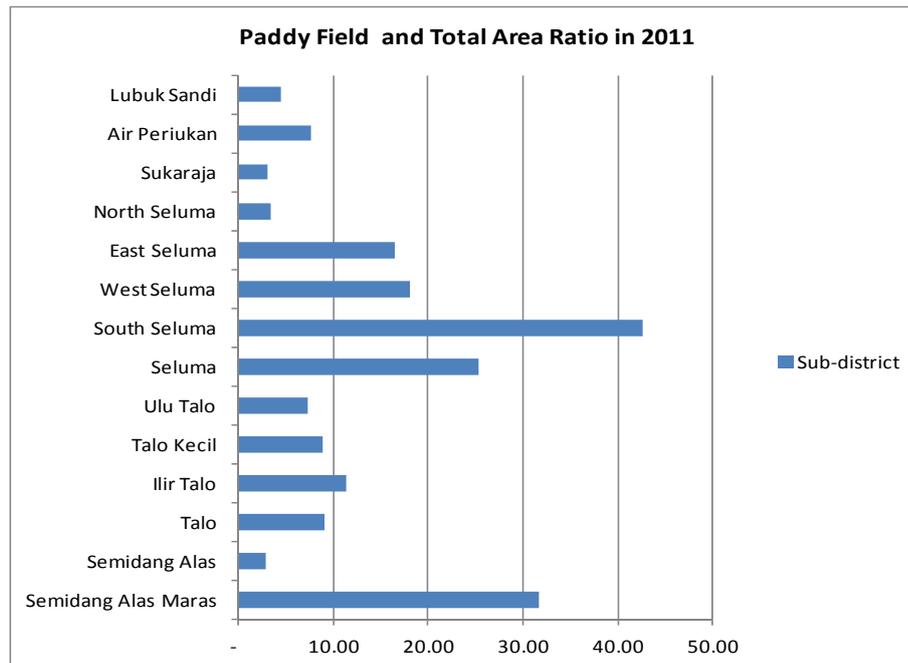


Figure 4.3: The Graph of paddy fields and total area ratio in each sub-district (Source: Land Utilization Report 2011, Statistical Bureau of Seluma Regency)

Furthermore, one of villages in South Seluma will be selected as a village with urban presence and urban pressure. As previously mentioned, to distinguish each site representing each type of urban pressure levels, indicators that consist of population size, population growth, migration rate, percents of housing unit change, percent of land in agriculture, percent of urban and proportion employed in agricultural occupations (Bourke et. al. 1996) were supposed to be used. Each of indicators will be ranked to generate two villages with different urban pressure level. A village with urban presence and pressure is chosen from the village that holds the highest scores. However, due to the lack of data that can be gathered from related agencies in Seluma Regency, the indicators that can be used are population size, percent of housing unit and percent of land in agriculture. This will be accompanied by the village distances to city center.

No.	Villages	Total Area (Ha)	Area (Ha)		Percentage (%)		Population (2010)
			Settlement	Paddy Fields	Settlement	Paddy Fields	
1	Sido Mulyo	284	105	30	36.97	10.56	1124
2	Padang Rambun	598	225	329	37.63	55.02	1440
3	Tanjung Seluai	286	62	125	21.68	43.71	702
4	Sengkuang	410	25	130	6.10	31.71	932
5	Tanjung Seru	856	28	216	3.27	25.23	693
6	Tanjungan	662	27.5	350	4.15	52.87	571
7	Tangga Batu	413	70	150	16.95	36.32	757
8	Rimbo Kedui	753	215	412	28.55	54.71	1495
9	Padang Genting	2119	85	1200	4.01	56.63	1178
10	Sukarami	230	64	80	27.83	34.78	826
11	Pasar Seluma	835	120	25	14.37	2.99	870

Table 4.3: Percentage of paddy fields in South Seluma's villages (Seluma's Village Community Empowerment Agency 2011)

As can be seen in the table 4.3 above and figure 4.4 below, Padang Rambun village shows the highest percentage of settlement (37.63%) compared to other villages in South Seluma sub-district. Regarding of paddy field percentage, 55.02% of total Padang Rambun area is paddy fields which make it stand in the second place after Padang Genting Village (56.63) and before Rimbo Kedui village (54.71%). Moreover, from table 4.3 and figure 4.5, Padang Rambun village is the second most populous village which is dwelled by 1440 residents. This is 45 people less than those in Rimbo Kedui.

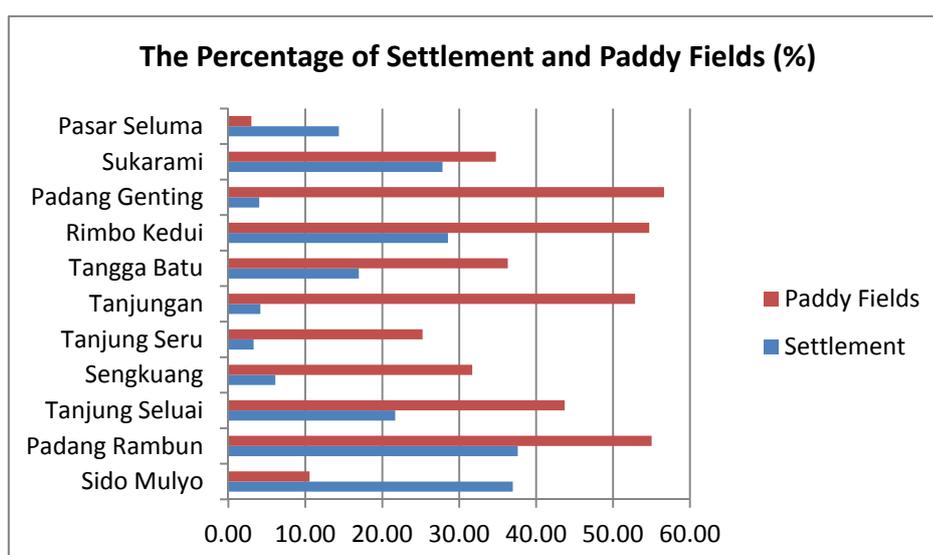


Figure 4.4: The Graph of paddy fields percentage of each village in South Seluma (Source: Seluma's Village Community Empowerment Agency 2011)

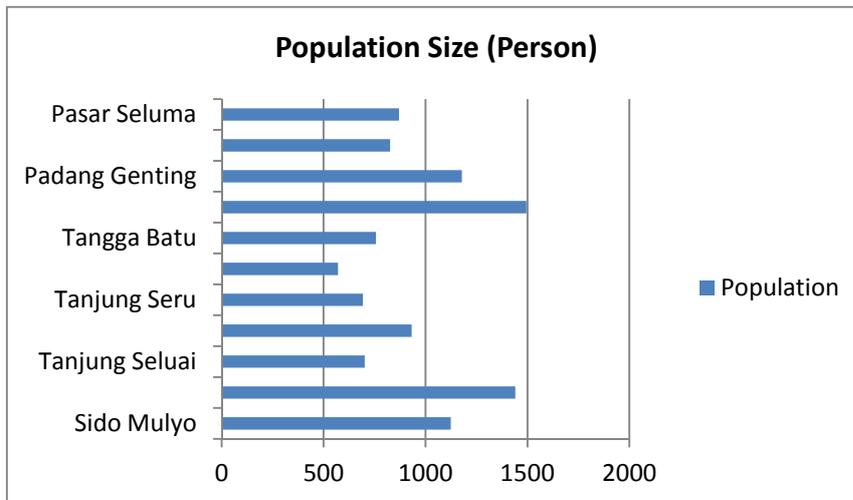


Figure 4.5: The Graph of population size of each village in South Seluma (Seluma's Village Community Empowerment Agency 2011)

In term of the village distance to city center, Sidomulyo is the closest village to the capital city of Seluma Regency, Tais (figure 4.6). Meanwhile, Both Sengkuang and Padang Rambun village are the second closest villages to the city center. Nevertheless, Padang Rambun is the closest village to government office center. Based on the previous consideration, Padang Rambun village is selected as the case study area that represents the area with urban presence and urban pressure. It is concluded that Padang Rambun village demonstrate the village that more than an half of its area is paddy field and the other a third of its area is used for its resident settlements.

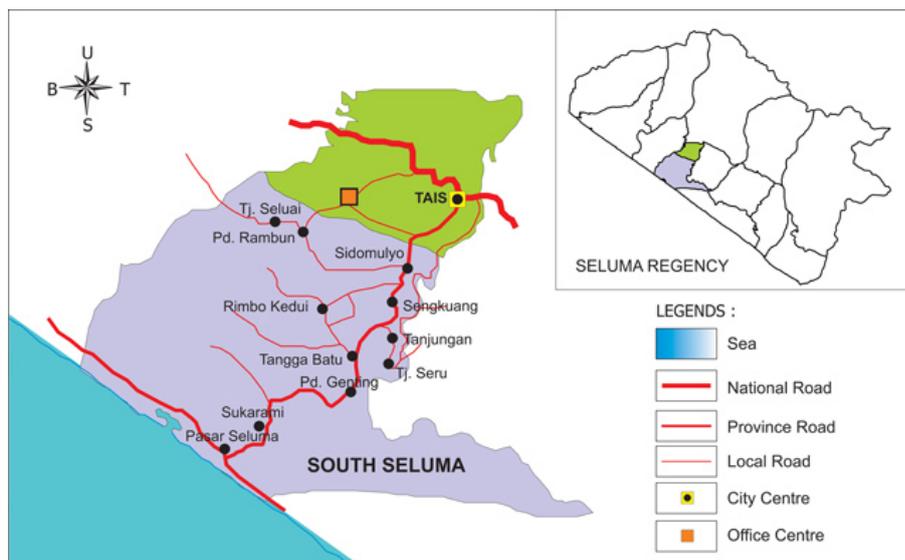


Figure 4.6: South Seluma sub-district Map (Source: Planning Board, 2007a)

4.1.3 Ulu Talo Sub-district Overview

Ulu Talo sub-district is situated 45 km western of the capital city of Seluma Regency (figure 4.7). Its area as vast as 227.16 km² is characterized as hilly areas (figure 4.8). Its area is sparsely populated which is only 21 people/km². To reach remote villages, it is needed to pass through ramped road whose slopes more than 30 degree. This often hampers people to carry goods in a lot of quantities because it is difficult for big size vehicle such as trucks to pass the ramped road.

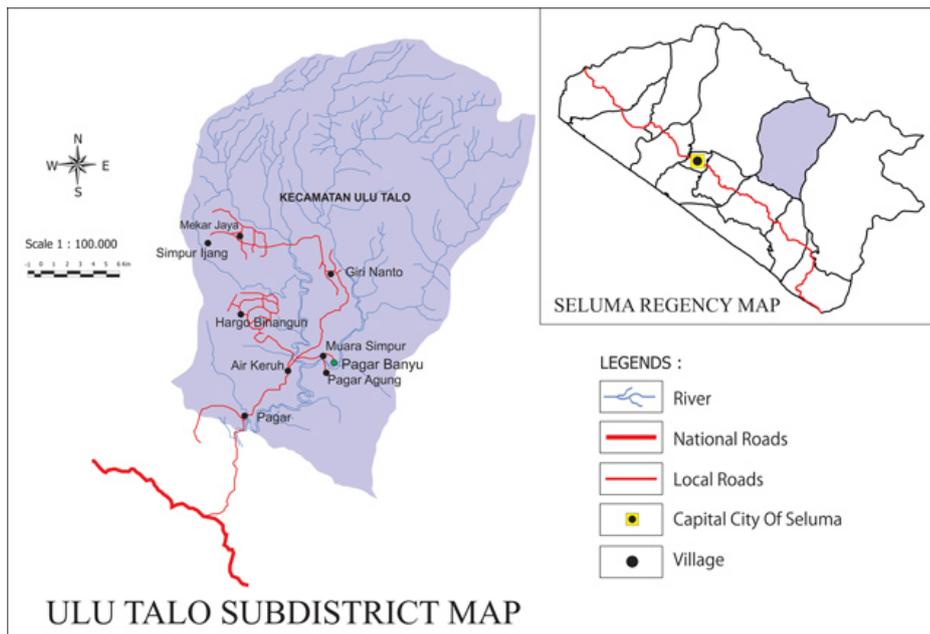


Figure 4.7: Ulu Talo sub-district Map (Source: Planning Board, 2007a)



Figure 4.8: Hilly Area characterize Ulu Talo sub-district (Source: Field Survey, 2012)

A village without urban presence or pressure is selected from nine villages in Ulu Talo sub-district. This is reasoned by several reasons. Firstly, as can be seen in table 4.4, all villages in this sub-district are categorized as left-behind villages (Seluma's Planning Board, 2006). Secondly, most of its villages are located in remote area. Thirdly, most villages in Ulu Talo Sub-district have not been serviced by electricity from State Electricity Firm (PLN). Furthermore, among other villages, Pagar Banyu whose population is 767 people (Sub-district in figure, 2011) is chosen to be investigated. Pagar Banyu population is a half of Padang Rambun (1440) which is selected as village that represents an area with urban presence and pressure. It is also accompanied by information that gathered from local officer who conveyed that even though there is no permanent dam in Pagar Banyu village, the farmers is still willing to continue growing paddy. They built the dam by temporary material such as bamboo to elevate the water from river surface so that it can irrigate their paddy fields.

No	Village	Population (2010)	Status
1	Air Keruh	651	Left-Behind Village
2	Pagar	224	Left-Behind Village
3	Mekar Jaya	266	Left-Behind Village
4	Hargo Binangun	767	Left-Behind Village
5	Muara Simpurn	592	Left-Behind Village
6	Simpurn Ijang	359	Left-Behind Village
7	Giri Nanto	734	Left-Behind Village
8	Pagar Agung	625	Left-Behind Village
9	Pagar Banyu	598	Left-Behind Village

Table 4.4: Villages in Ulu Talo Sub-district (Source: Seluma Planning Board, 2008)

Pagar Banyu village where this research was taken place has not been provided from State firm's electricity. During the author's survey, the state electricity firm's transmission utility such as pillars and cables has just been mounted in the village (figure 4.9) but the electricity has not been distributed. So far, Pagar Banyu residents have obtained electricity from a diesel-fuel generator in the village. Each resident can only use this electricity for lighting purpose. They cannot use other electronic devices that consume a lot of electricity energy such as television, rice cooker, refrigerator, etc. Every villager has to pay 15 thousand

rupiah per month to the generator management. This fund is collected to purchase diesel fuel and maintenance costs.



Figure 4.9: State Electricity Firm's Transmission Utility (Source: Field Survey, 2012)

4.2 Interviewee responses towards investigated factors

There are five factors that investigated in this research. It is studied whether land owner characteristic, parcel characteristics, perceived negative consequences, the presence of incentives and the level of urban pressures affect farmer's attitudes toward farmland preservation program. Totally, there are twelve interviewees are questioned during the primary data collection. Ten of them are farmers who grow paddy on their own land. Five paddy growers are selected from each village. Two non-farmer interviewees are elaborated in clarifying the farmers' statements. The first non-farmer resident that interviewed is a chief village of one of case study area. He was asked to the similar questions that given to those ten farmers. This is carried up to obtain another perspective relating to the farmland preservation program. The second non-farmer-interviewee is a landowner that converted his paddy field to palm oil crop. This is conducted due to the information from paddy growers that claim the lack of water from irrigation led their colleague to convert the paddy field to plantations.

The excerpts of interviewee responses are enlisted in the four following tables. The interviewees' responses corresponded to their related factors are tabulated in table 4.5 and 4.7. The responses from Padang Rambun's interviewees are covered in table 4.5 while those of Pagar Banyu are charted in table 4.7. Other important statements from both villages which are discussed in the finding analysis are arranged in table 4.6 and 4.8.

In addition, the summary of interviewees' responses toward the question corresponded to the related factors can be seen in table 4.9. Each sign in this table is summarized from interviewees' responses which are corresponded to investigated factors. Moreover, table 4.9 is derived from table 4.5 and 4.7. The next analysis describing the relationship between studied factors and farmers' attitudes toward farmland preservation program utilize table 4.9 and elaborate other important statements of interviewees tabulated in table 4.6 and 4.8 as the complement.

		Padang Rambun Village					
		Kahar	Asmawi	Sarudin	Zairan	Supriadi	Badrun
Attitudes		Our hope is that the amount of paddy fields can be expanded. This is due to the population growth in Bengkulu. ...I am sure that in the future we will face the food shortage if palm oil plantation is continuing to expand.	I really agree and will support if government will implement the program. As I mentioned earlier, if all farmers convert their farmland to other uses, we as people who only have small size crops will face difficulty to purchase rice.	I emphasize that our local government should issue regulation to preserve farmland. If this regulation is not enacted, 2 – 3 years from now, irrigated farmland will decline.farmers feel that growing paddy has not given them expected results if it is not worthy nothing. They have been influenced by the success story of palm oil growers. However, to guarantee daily consumption for family, growing paddy is more than enough. ...	If all potential lands in this village are cultivated for growing paddy, the water will be not adequate.Government has assisted farmers to procure fertilizer and insecticide by providing money to farmer groups. However, a lot of farmers cannot return the loan. This thing is difficult to control. I am rather pessimistic towards government efforts.
FACTORS		RESPONSES					
Landowner Characteristic	Age	53	34	52	47	50	31
	Education	1st Level of Elementary School	Junior High School	Junior High School	Elementary School	Elementary School	Senior High School
	Income	Middle-Up	Medium	Middle-Up	Medium	Medium	Medium
Parcel Characteristic	Area (Ha)	1.25	0.35	1	0.5	0.25	-
	Distance to Road (Km)	1	0.4	0.1	0.1	0.5	-
	Distance to Settlement (Km)	1	0.1	0.1	0.25	0.5	-
Perceived Negative Consequences		- I think, the present amount of paddy fields should not be decreased. If it is possible their number should be expanded. - Honestly, as illiteracy person, what is in the future will be aimed towards good things, can lead me to join the program.	If the lands are originally intended to be utilized as paddy fields, it should be legitimized permanently to be used to grow paddy.	- If local government has commitment, that prerequisite should be implemented. - I am ready to participate in the program. If I am not interesting to join the program, I would have my paddy field converted to palm oils from long time ago ... In the long term, I think the price of paddy will stable.	- I think there will be two sides. There will farmers who want to participate in the program and others refuse it. - I think farmers will accept the consequences. As long as this program is enacted towards paddy fields or vacant lands. - In my opinion, paddy should be planted on 0.15-0.3 ha land.	- ... it cannot be guaranteed that farmers will stick to the program forever. They might change their mind someday. - I am not ready if I am alone who join the program but it should be included other my neighborhood farmers. Before implementation of the program, farmer groups should be invited to discuss this manner.	-
Incentives		- We really appreciate if government truly supports farmers because generally farmers experience the lack of financial capital. - Most of low financial capital-farmers borrow the fertilizer to merchants where the payment will be given during the harvesting time	This desire (to convert paddy field to palm oil crops) emerged due to my farmland location that located far away from tertiary tunnel. This made my farmland only got residual water from upstream farmland.	Generally, the main problem here is that farmers have low resources. That is why government aids are still needed. ... government should provide farmers with good seeds..., fertilizer, ... (prevent) price un-stability.	- I hope that government gives free aids that do not have to be returned. ... For instance, ...an half price of insecticide. - ... Farmers are saturated to rehabilitate the (tertiary) tunnel ... - If government assist farmers by subsidizing paddy production equipment, I think farmers who have small size of farmland will not convert them to other uses.	- The main problem is the strike of pests... - Government should nurture farmers ... We often obtain knowledge in applying insecticide from the merchant.	- The harvest sometimes cannot compensate the borrowed fertilizer. This means that farmers should spent additional money besides the harvest.
Urban Pressure		Yes	Yes	Yes	Yes	Yes	Yes

Table 4.5: The excerpt of interviewees' responses (Source: Field Survey, 2012); * A Landowner who convert his farmland to palm oil plantation

	Padang Rambun Village					
	Kahar	Asmawi	Sarudin	Zairan	Supriadi	Badrun
OTHER STATEMENTS						
Opinion towards Farmland Conversion	I think if the land that can be planted with paddy but utilized to grow palm oil will cause losses.	If a lot of paddy fields are converted to palm oils, the price of rice will increase drastically. This increase will not be proportional with the income of labor. ...my colleague should not convert paddy fields to palm oils.	... as long as the water can irrigate farmlands, the lands have to be kept to grow paddy. ... central government spent a huge amount of money to build Seluma dam ...Actually, people who plant their farmland with palm oil are only pursuing welfare for themselves but not for their descendants.	- ...planting palm oils is more beneficial than growing paddy. ...There is also friend of mine that converted paddy field (to palm oil), he also complained that he got nothing from growing paddy - I hope that government would nurture farmers by providing us with aids. The problem here is about trust. We often disappointed by government.	... irrigation is not functioned well. Irrigated farmlands located in swampy areas have already been forbidden to be converted to palm oil or rubber but due to the water scarcity, farmers kept converting their farmland.	... there are 30% of total land that cultivated as paddy fields. Others are crops. The biggest component of costs ... is fertilizer. This cost reduces farmers' benefit significantly. ...This cause farmers only receive very small profit. All their efforts cannot be paid off by the harvest that they got.
Motivation	By joining the program, I hope I can achieve clearer information. In addition, I can enlarge my relations and also to widen my horizon.	... my farmland which is 0.35 hectare wide will not be enough to fulfill my family daily needs if it is converted to palm oils.	In the long term, I think the price of paddy will stable. Unlike palm oil or rubber price, it cannot be guaranteed that their price will be steady.	-	-	-
Other Income Sources	Renting other paddy fields	Besides growing paddy, I work as labor in property sector such housing and road.	I also have palm oil crop but this crop is not irrigated land ... I also has rubber plantation which is also non-irrigated land.	- At present, I also plant palm oils on my vacant land. - If I didn't work as shoe repairs, I cannot finance my two children until senior high school.	I have 2 ha rubber plantation which is taken care by my brother.	I use 1.25 ha land for planting palm oil while the remaining 0.25 ha is grown with rubber.
Type of Incentives that Needed	We want to be provided with village's cooperative society, so we can borrow money from it and our harvest can be sold to this village's cooperative society.	... it should be provided in the form of goods ...insecticide, herbicide or seeds. To rehabilitate tertiary tunnel, the aids should be in the form of fund that given to farmers to conduct the repair.	...it should provide aids such as agricultural production tools ...Local government should allocate fund for them (agricultural instructors) in order to help them visiting farmers whenever they are needed. ...	- ...For instance, they were given with an half price of insecticide. ... If government assist farmers by subsidizing paddy production equipment... - A lot of farmlands have been converted because of the lack of water. The problem is ... the damage in tertiary tunnel...	...we don't know the right dose and method in applying fertilizer. The wrong dose of fertilizer or insecticide can cause failure.	...government should provide farmers with subsidized fertilizer and insecticide. Besides these, irrigation should be rehabilitated by excavating the mud. In addition, the irrigation channel should be firstly drained in order to totally sweep the mud.
Hopes for Children	I hope that my children and grand children can continue to study at higher education but they have to keep farming.	I hope that my children will be better than me. It depends on them whether they want to be a civil servant or company worker.	He does not want to continue to higher education. He wants to be an entrepreneur. Nowadays, farmer' children do not want to be farmers ...	My son have said to me that he don't want to be a farmer like me because growing paddy needs hard working.	It depend on them what they want to be. I will finance my children education. Then I hope they can implement the lessons that have been learned at school.	I have 5-years old child. She has not studied at school but I hope I can finance her until higher education.

Table 4.6: Other important statements from Padang Rambun's interviewees (Source: Field Survey, 2012);

* A Landowner who convert his farmland to palm oil plantation

		Pagar Banyu					
		Junaidi	Kaslani	Idan	Uday	Pandi	Risun*
Attitudes	As long as government programs are intended to help farmers, we will participate in the programs.	I think the program can be implemented here because it can encourage farmers to keep farming.	If the program suit the farmer needs, it will surely help us.	... I will keep my land as paddy field. If this program is intended to help farmers, I will participate in the program. Hopefully, the local roads that connect my paddy field and my home will be improved through this program.	If there are aids from government, please include me in the program. My name has been enlisted in previous programs but I barely got the aids. I still want continue growing paddy although planting palm oil is more beneficial.	I think the program can be succeeded. However, it should be coordinated to related agency such as agricultural agency because they should disseminate the information that linked to this program for instance information about the procedure in participating in the program.	
FACTORS		RESPONSES					
Landowner Characteristic	Age	58	51	50	57	60	41
	Education	Junior High School	Elementary School	Elementary School	Elementary School	Early Level Of Elementary School	Senior High School
	Income	Medium	Medium	Medium	Low	Low	Medium
Parcel Characteristic	Area (Ha)	0.5	1	0.5	0.75	0.5	
	Distance to Road (Km)	0.1	0.3	0.5	1.5	0.3	
	Distance to Settlement (Km)	0.1	0.5	0.25	1	0.05	
Perceived Negative Consequences	In my opinion, this prerequisite is not difficult to be met. This is because our lands have been planted with paddy from our early ancestor.	- The consequences of the program will be accepted. As I said before, as long as I have colleague to take care the dam, I will not convert my farmland. - I think the program can be implemented here because it can encourage farmers to keep farming.	If government continues supporting farmers, we will accept the consequences. We will not convert our paddy fields to other uses. ... If government still wants to nurture farmers, we are ready to keep our farmland to be paddy fields.	... I will keep my land as paddy field. If this program is intended to help farmers, I will participate in the program. Hopefully, the local roads that connect my paddy field and my home will be improved through this program.	I think it is good if government want to keep farmers to grow paddy. I hope government will help farmers by providing subsidized fertilizer.	I think it depend on the farmers who own the farmland.	
Incentives	- For this village, we need aids to rehabilitate the dam. It can be in the form of cement or other materials. This is to make the dam more resilient towards flood. - If the dam is rehabilitated, in the future growing paddy is still promising.	- ...as long as I have colleague to take care the dam, I will not convert my farmland. - Before using gabion wires, we used bamboo to dam the water. In couple years, we have not received gabion wires. We have conveyed this problem to local and province councilor...	The water from irrigation is far away from sufficient. Within two days when temperature is really hot, my farmland is run out of water. This condition sometimes discourages me to continue farming.	The main problem is the lack of water. Despite this problem, we still eager to grow paddy. If our paddy field can only be watered for one week then let it be. I insist to keep my land as paddy field.	We need subsidized fertilizer because this is the biggest costs that we have to spent	- The main problem faced by farmers here are the lack of water and the price of fertilizer. - Farmers hope that government should assist them by providing subsidized fertilizer and other facility in growing paddy.	
Urban Pressure	No	No	No	No	No	No	No

Table 4.7: The excerpt of Pagar Banyu-interviewees' responses (Source: Field Survey, 2012); * A chief village

	Pagar Banyu					
	Junaidi	Kaslani	Idan	Uday	Pandi	Risun*
OTHER STATEMENTS						
Opinion towards Farmland Conversion	I bequeathed my paddy fields to my children. One of my children converted this farmland to palm oil crops ...He argued that if he utilized the land to grow paddy, he have to wait for 4 month to harvests... palm oil crops can be harvested every two weeks.	... it is impossible that paddy field of villagers will be converted to other uses. Palm oil can be planted in highland or hilly area but paddy field cannot be established in those lands, paddy can be grown in flat land where water from river can be flown.	If farmlands are converted to palm oil or rubber, it becomes more difficult. If I plant palm oil, the older the palm oil age the higher its tree and it is difficult for me to harvest.	In my opinion, growing paddy is still the most beneficial livelihood in this village.	My colleague converted paddy fields to palm oil because the water is not enough to grow paddy. So, to prevent the land become unproductive, they planted palm oils.	We cannot forbid farmers to convert their farmland. We have suggested farmer to not to do so but they insist that the land belong to them so they can do what they want.
Motivation	- I have experienced that by joining farmer group, I feel that government give considerable attention to us for instance we was given a hand tractor for cultivating the farmland. - Our hope is to lift up ourselves from poverty. We already have occupation as farmers. Through farming we can lift up ourselves from poverty...	I think in the future growing paddy will still be promising. Besides growing paddy, my farmland can be intensified to be fishpond.	If the program can support our farming, we will join the program.	I am worry that the price of palm oil or rubber will decrease ...On the other hand, although the harvest from paddy field is not so much but I and my family can still consume paddy.	I have grown paddy for many years. This is the only occupation that I know.	
Other Income Sources	now I only live with my wife, so this harvest will be more than enough.	I also have coffee crops but the harvest is not much. I have palm oil crops too which is located near my paddy field. However this crop is cultivated in hilly land.	I also have land to be cultivated as palm oil.	-	-	
Type of Incentives that Needed	...we need aids to rehabilitate the dam. It can be in the form of cement or other materials.	I hope that government can improve local roads...should build dam. ...fertilizer should be continued to be subsidized...	...government should provide us subsidized fertilizer ...(and) also a hand tractor.	We will accept all supporting facility provided by government ...especially irrigation and local road improvement.	I hope that government keeps subsidizing fertilizer. I also hope that I can get cheap insecticides. ...	Farmers hope that government should assist them by providing subsidized fertilizer and other facility in growing paddy.
Hopes for Children	I bequeathed my paddy fields to my children. One of my children converted this farmland to palm oil crops ... So, I cannot force my children to not convert the farmland because he owns the land.	I have 1 ha paddy field. I cultivate an half of this farmland and the rest is grown by my son.	Actually I want my child to continue studying at college but I don't have enough money to finance it. I cannot force my children to keep farming.	I hope that my children should continue farming like I have done.	My youngest son still studies at junior high school. I hope that someday my youngest want to take care my paddy field.	

Table 4.8: Other important statements from Pagar Banyu interviewees (Source: Field Survey, 2012);

* A chief village

		Padang Rambun Village						Pagar Banyu					
		Kahar	Asmawi	Sarudin	Zairan	Supriadi	Badrun*	Junaidi	Kaslani	Idan	Uday	Pandi	Risun**
Attitudes		++	++	++	0	0	-	+	++	+	+	+	+
Landowner Characteristic	Age	53	34	52	47	50	31	58	51	50	57	60	41
	Education	1st Level of Elementary School	Junior High School	Junior High School	Elementary School	Elementary School	Senior High School	Junior High School	Elementary School	Elementary School	Elementary School	Early Level Of Elementary	Senior High School
	Income	++	+	+	+	+	+	+	+	+	-	-	+
Parcel Characteristic	Area (Ha)	1.25	0.35	1	0.5	0.75	-	0.5	1	0.5	0.75	0.5	
	Distance to Road (Km)	1	0.4	0.1	0.1	0.5	-	0.1	0.3	0.5	1.5	0.3	
	Distance to Settlement (Km)	1	0.1	0.1	0.25	0.5	-	0.1	0.5	0.25	1	0.05	
Perceived Negative Consequences		++	++	++	0	0	-	++	++	+	+	+	+
Incentives		++	++	++	++	+	+	++	++	++	++	++	++
Urban Pressure		Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No

* A Landowner who convert his farmland to palm oil plantation

** A Village Chief

- ++ : Very positive response
- + : Positive response
- 0 : Neutral
- : Negative response
- : Very Negative response

Table 4.9: The summary of farmers' responses toward related factor-questions (Source: Field Survey, 2012)

4.3 Discussion

4.3.1 How Investigated Factors Influence Interviewees' Attitudes toward Farmland Preservation Program

As shown in the first row of table 4.9, it is found that most interviewees exhibit positive attitudes toward the program. In detail, four farmers show very positive attitudes, two farmers demonstrate neutral attitudes while the rest have positive attitudes. A landowner who converted his paddy field to palm oil crop shows pessimistic attitudes toward the program. He argued that there have been government efforts which are intended to help paddy growers but the result did not meet the program expectations. Which factors that may influence these farmers' attitudes are discussed in the next sub-chapters.

The Relationship between Landowner Characteristics and Their Attitudes toward Farmland Preservation Program

As can be seen in table 4.9, overall interviewees are 30 – 60 years old. This means that they are in their productive ages. All interviewees have their own land so they can fully determine what their land will be used for the future. Regarding of education, two interviewees were graduated from senior high school, another three of them were finished junior high school while the rest were ranging from the early level to elementary school graduates. Most farmers' incomes are ranging from low to medium. There is only one interviewee who can be categorized as a wealthy farmer. He can afford a car from growing paddy.

I bought used car because I cannot afford the new one. After struggling many years, this is the time to enjoy my achievement. (Kahar - the interviewee, 2012).

From the responses given by interviewees, they are largely indifferent in their attitudes toward farmland preservation program even though they have different ages that ranging from 30 to 60 years old. In exception for two farmers whose ages are 50s years old (table 4.9), most of them have positive attitudes toward the program. The youngest interviewee (31 years old) exhibits pessimistic attitudes but he is a palm oil grower that elaborated in the research to confirm his farmer-colleagues' statements. Furthermore, despite income differences among them that

ranging from low to medium, they still remark that the program can be implemented in their region. This finding can be observed through interviewee responses (table 4.5 and 4.7). The following excerpts represent each statement from middle-up, medium and low income farmers respectively.

“Our hope is that the amount of paddy fields can be expanded...” (Kahar - the interviewee, 2012).

“I think the program can be implemented here because it can encourage farmers to keep farming.” (Kaslani - the interviewee, 2012).

“...If this program is intended to help farmers, I will participate in the program...” (Uday - the interviewee, 2012).

The differences of interviewees’ education level are also found to not affect their attitudes toward the program. However, they have different opinion about the paddy fields that converted to palm oil crops. The paddy field growers who have higher education (junior high school) tend to criticize this conversion.

“... as long as the water can irrigate farmlands, the lands have to be kept to grow paddy. ... central government spent a huge amount of money to build Seluma dam ...Actually, people who plant their farmland with palm oil are only pursuing welfare for themselves but not for their descendants...” (Sarudin - the interviewee, 2012).

“If a lot of paddy fields are converted to palm oils, the price of rice will increase drastically. This increase will not be proportional with the income of labor. ...my colleague should not convert paddy fields to palm oils. (Asmawi - the interviewee, 2012).

		Padang Rambun Village						Pagar Banyu					
		Kahar	Asmawi	Sarudin	Zairan	Supriadi	Badrun*	Junaidi	Kaslani	Idan	Uday	Pandi	Risun**
Attitudes		++	++	++	0	0	-	+	++	+	+	+	+
Landowner Characteristic	Age	53	34	52	47	50	31	58	51	50	57	60	41
	Education	1st Level of Elementary	Junior High School	Junior High School	Elementary School	Elementary School	Senior High School	Junior High School	Elementary School	Elementary School	Elementary School	Early Level Of Elementary	Senior High School
	Income	++	+	+	+	+	+	+	+	+	+	-	-

* A Landowner who convert his farmland to palm oil plantation

** A Village Chief

++ : Very positive response + : Positive response 0 : Neutral
 - : Negative response -- : Very Negative response

Table 4.10: Landowner characteristics and their attitudes (Source: Field Survey, 2012)

Therefore, as can be seen in table 4.10, it can be concluded that the differences in landowner characteristics which consist of age, income and education levels do not affect their attitudes toward farmland preservation program. Most of them positively think that the program can be implemented in their region despite their difference characteristics.

The Relationship between Parcel Characteristics and Farmer's Attitudes toward Farmland Preservation Program

From table 4.9, it can be seen that lands that owned by interviewees are ranging from 0.35 to 1.25 hectares (3500 – 12500 m²). Three farmers have at least 1 hectare land while a large number of them own 0.5 hectare land or less. The distances between interviewee lands and main local roads are ranging from 100 m to 1.5 km. Meanwhile, their lands are located 50 m – 1 km away from the nearest settlements. Surprisingly, most farmers that interviewed have other land that planted either with palm oils or rubbers.

Generally, interviewees whose farmlands are ranging from 0.35 to 1.25 hectares (3500 – 12500 m²) demonstrate no differences in their positive attitudes toward the program. As long as their paddy fields can be watered by irrigation they still want to use their farmland regardless the farmland size. As their fellows who have smaller farmlands, large-farmland farmers also exhibit very positive attitudes toward the program even though their large farmlands possess possibility to be converted to palm oil or rubber plantations. In this case, the larger paddy fields they have, the more harvest can be achieved and the more benefit can be earned.

The distances between interviewee lands and main local roads (100 m - 1.5 km) and the distance between their lands and the nearest settlements (50 m – 1 km) do not affect farmer's attitudes toward the program. Furthermore, farmers whose lands are situated far away from settlement hope that government will build local roads to ease them in reaching their farmland.

“I will keep my land as paddy field. If this program is intended to help farmers, I will participate in the program. Hopefully, the local roads that connect my paddy field and my home will be improved through this program.” (Uday - the interviewee, 2012).

		Padang Rambun Village						Pagar Banyu					
		Kahar	Asmawi	Sarudin	Zairan	Supriadi	Badrun*	Junaidi	Kaslani	Idan	Uday	Pandi	Risun**
Attitudes		++	++	++	0	0	-	+	++	+	+	+	+
Parcel Characteristic	Area (Ha)	1.25	0.35	1	0.5	0.75		0.5	1	0.5	0.75	0.5	
	Distance to Road	1	0.4	0.1	0.1	0.5		0.1	0.3	0.5	1.5	0.3	
	Distance to Settlements	1	0.1	0.1	0.25	0.5		0.1	0.5	0.25	1	0.05	

* A Landowner who convert his farmland to palm oil plantation

** A Village Chief

++ : Very positive response + : Positive response 0 : Neutral
 - : Negative response -- : Very Negative response

Table 4.11: Parcel characteristics and interviewee's attitudes
 (Source: Field Survey, 2012)

Briefly, most farmers with various parcel characteristics (farmland size, the distances between farmlands and the nearest settlements) demonstrate indifferent attitudes toward the program (table 4.11). It can be implied that the farmers' attitudes toward the program does not correspond to the parcel characteristic. There is also an interesting finding. It is found that on average all farmers that interviewed have other land that planted either with palm oils or rubbers.

The Relationship between Perceived Negative Consequences and Farmer's Attitudes toward Farmland Preservation Program

Generally, all interviewees are not afraid with the consequences after joining the program. When they are asked with the strict consequences of joining the program in which they cannot utilize their farmland for other uses besides for food production purposes, generally they accept the consequences. In detail, interviewee responses can be classified into three groups. They are a group of interviewees who fully accept the consequences; a group who conditionally receive the consequences; and a group who show neutral responses.

The first group exhibits strong support to the farmland preservation program. As can be seen in table 4.9 below, they are five farmers who do not hesitate or worry about the consequences and even emphasize the need for government to legitimize

the existing paddy fields to be preserved as farmland. One of them shows this response by answering:

“If the lands are originally intended to be utilized as paddy fields, it should be legitimized permanently to be used to grow paddy....”
(Asmawi - the interviewee, 2012)

“If local government has commitment, that prerequisite should be implemented.” (Sarudin - the interviewee, 2012)

The second group consists of four interviewees: three farmers and a village chief. They are willing to accept the program as long as government gives considerable assistances to farmers.

“...If government still wants to nurture farmers, we are ready to keep our farmland to be paddy fields.” (Idan - the interviewee, 2012)

“...If this program is intended to help farmers, I will participate in the program...” (Uday - the interviewee, 2012)

The last group comprise of three interviewees who show doubts about the consequence of the program. One of them is palm oil growers, so his response is not surprisingly negative. Meanwhile, the other two interviewees who show neutral answer are paddy growers. One of these doubt farmers is reasoned that he needs to be accompanied by the members of his farmer group or their colleague. He is not ready to join the program if doing this alone. He further shows uncertainty that the consequences will last in a very long time. This farmer response is:

“I am not ready if I am alone who join the program but it should be included other my neighborhood farmers. Before implementation of the program, farmer groups should be invited to discuss this manner. ...this consequence can be accepted. However, other farmers have different point of views. Moreover, it cannot be guaranteed that farmers will stick to the program forever. They might change their mind someday.”
(Supriadi - the interviewee, 2012)

This statement is strengthened by another farmer who also hesitates in accepting the consequences of the program claim that that they colleagues will have the different opinions about the strict consequence of the program.

“I think there will be two sides. There will farmers who want to participate in the program and others refuse it... I think farmers will

accept the consequences as long as this program is enacted towards paddy fields or vacant lands. (Zairan - the interviewee, 2012)

This farmer also argued that paddy should only be planted on 0.15 – 0.3 hectare land while the rest can be cultivated as palm oil or rubber plantation. He further argued that this is aimed to enhance farmer wealth.

In my opinion, paddy should be planted on 0.15-0.3 ha land... (Zairan - the interviewee, 2012)

There are two possible explanation of this finding in which most farmers accept the strict consequences of the program. Firstly, the possession of other lands that cultivated as palm oil and rubber crops lead farmers to not worry if they paddy fields will preserved through their participation.

The second possible explanation describing the farmers’ acceptances of the consequence is that farmers view the farmland is the highest use value of the land (Vitaliano and Hill, 1994). Farmers consider that the most possible way to improve their welfare is through growing paddy. If government assists them by easing their paddy production costs, they can boost their benefits. As the result, farmers will not eager to convert their farmland to non-food cultivation.

“Our hope is to lift up ourselves from poverty. We already have occupation as farmers. Through farming we can lift up ourselves from poverty. We expect government can support us to improve our farming...” (Junaidi - the interviewee, 2012)

	Padang Rambun Village						Pagar Banyu					
	Kahar	Asmawi	Sarudin	Zairan	Supriadi	Badrun*	Junaidi	Kaslani	Idan	Uday	Pandi	Risun**
Attitudes	++	++	++	0	0	-	+	++	+	+	+	+
Perceived Negative Consequences	++	++	++	0	0	-	++	++	+	+	+	+

* A Landowner who convert his farmland to palm oil plantation

** A Village Chief

++ : Very positive response + : Positive response 0 : Neutral
 - : Negative response -- : Very Negative response

Table 4.12: Perceived negative consequences and interviewee’s attitudes
 (Source: Field Survey, 2012)

Regarding of the relationship between this factor and farmers' attitudes, it is found in table 4.12 that the farmers who fully accept the consequences of the program tend to have very positive attitudes towards the program. This trend is also followed by the connectedness between the second group responses concerning the program's consequences and their attitudes to the program. The farmers who categorized in this group give neutral responses toward the consequences and at the same time they also exhibit neutral attitudes to the program. Unexceptionally for a palm oil grower who stands in this group, he also displays consistency of this pattern. He shows pessimistic responses for both attitudes to the program and its consequence. The consistency of the relationship between farmers' attitudes and their responses to its consequence is also found in the last group which consists of interviewees who have moderate remarks. Therefore, it can be inferred that the way of farmers in viewing the perceived negative consequence influence their attitudes toward the farmland preservation program.

The Relationship between the Presence of Incentives and Farmer's Attitudes toward Farmland Preservation Program

As can be seen in table 4.13, all interviewees give positive feedbacks to the presence of incentives. They hope that through the farmland preservation program, government still supports them as farmers. Two farmers who exhibit neutral attitudes towards the program also respond positively to the presence of incentives. Furthermore, in term of the type of incentives needed by farmers, the well functioned irrigation is the type of incentives that mostly mentioned by farmers.

"...To rehabilitate tertiary tunnel, the aids should be in the form of fund that given to farmers themselves to conduct the repair." (Asmawi - the interviewee, 2012)

"...irrigation should be rehabilitated by excavating the mud. In addition, the irrigation channel should be firstly drained in order to totally sweep the mud." (Badrin - the interviewee, 2012).

For this village, we need aids to rehabilitate the dam. It can be in the form of cement or other materials. This is to make the dam more resilient towards flood. (Junaidi - the interviewee, 2012).

Another type of incentives that frequently conveyed is paddy production equipment such as fertilizer, insecticide and hand tractors. For them, these provisions will reduce their paddy production costs and at the end it will increase their benefits.

“I hope that government gives free aids that do not have to be returned. I have heard that in other countries, farmers are prioritized by government. For instance, they were given with a half price of insecticide. Farmers often overwhelmed by the strike of pests. (Zairan - the interviewee, 2012)

“Farmers hope that government should assist them by providing subsidized fertilizer and other facility in growing paddy.” (Risun - the interviewee, 2012)

“... it should provide aids such as agricultural production tools in order to reduce costs that have to be spent by farmers.” (Sarudin - the interviewee, 2012)

Regular meeting with agricultural instructor is also stated by two farmers. The information from agricultural instructors is truly needed by farmers especially during the strike of pests. The farmers need to know what kind of insecticide have to be used. They also need to be informed how much the amount insecticides have to be sprayed and when it has to be conducted.

“Government should nurture farmers because we don’t know the right dose and method in applying fertilizer. The wrong dose of fertilizer or insecticide can cause failure. All we can do is sharing experience to other farmers. We often obtain knowledge in applying insecticide from the merchant.” (Supriadi - the interviewee, 2012).

“Local government should allocate fund for them in order to help them (agricultural instructors) visiting farmers whenever they are needed.” (Sarudin - the interviewee, 2012).

The need for Village’s Cooperative Society (KUD) is also stated by a farmer. He hopes that farmers could lend some money from this KUD especially to help them in purchasing fertilizer. It is also hoped that KUD can absorb their harvests so the stability of price can be maintained.

“We want to be provided with village’s cooperative society, so we can borrow money from it and our harvest can be sold to this village’s cooperative society.” (Kahar - the interviewee, 2012).

The presence of incentives undoubtedly influences farmer’s attitude toward the program. Most farmers consider well functioned irrigation as the most important incentive that has to be provided by government. The availability of water could guarantee irrigated farmland to be kept for growing paddy.

“The water from irrigation is far away from sufficient. Within two days when temperature is really hot, my farmland is run out of water. This condition sometimes discourages me to continue farming. (Idan - the interviewee, 2012).

Once, I thought to convert my paddy field to palm oil or rubber plantation... This desire emerged due to my farmland location that located far away from tertiary tunnel. This made my farmland only got residual water from upstream farmland. ... the water is not enough to irrigate my paddy field. (Asmawi - the interviewee, 2012).

	Padang Rambun Village						Pagar Banyu					
	Kahar	Asmawi	Sarudin	Zairan	Supriadi	Badrun*	Junaidi	Kaslani	Idan	Uday	Pandi	Risun**
Attitudes	++	++	++	0	0	-	+	++	+	+	+	+
Incentives	++	++	++	++	+	+	++	++	++	++	++	++

* A Landowner who convert his farmland to palm oil plantation

** A Village Chief

++ : Very positive response + : Positive response 0 : Neutral
 - : Negative response -- : Very Negative response

Table 4.13: The presence of incentives and interviewee’s attitudes
 (Source: Field Survey, 2012)

Based on the above description, it can be concluded that the presence incentives influence farmers’ attitudes toward the program. This connectedness might be disturbed by the neutral attitudes shown by two farmers (table 4.13) regardless their positive feedback on the presence of incentives. The first possible explanation for this circumstance is that the lack of water to irrigate the existing paddy field. This condition leads to the anxiety that if there are additional paddy fields, the water scarcity would be worse.

“If all potential lands in this village are cultivated for growing paddy, the water will be not adequate...” (Supriadi - the interviewee, 2012).

The second probable explanation is that the net agricultural return from growing paddy is small due to high production cost in procuring fertilizer and insecticides. This condition causes the farmer to have neutral attitudes to the program.

...farmers feel that growing paddy has not given them expected results if it is not worthy nothing.” (Zairan- the interviewee, 2012).

The factual conditions in growing paddy which have been experienced by these two farmers lead them to react positively to the provision of incentives. They further identify the types of incentives needed which are irrigation, fertilizer and insecticides. The third possible explanation of this deviation is the trust toward government. This manner is mentioned by one of these neutral farmers. He further argued that they sometimes did not receive the aids promised by government.

I hope that government would nurture farmers by providing us with aids. The problem here is about trust. We often disappointed by government. (Zairan - the interviewee, 2012).

The Relationship between the Levels of Urban Pressure and Farmer’s Attitudes toward Farmland Preservation Program

The differentiation of the urban pressure levels is aimed to reckon whether there are difference responses given by farmers in these areas (Bourke, et. al. 1996). From the research results, farmers who live in the area with urban presence and pressure (Padang Rambun) and in the area without urban presence and pressure (Pagar Banyu) show similar responses towards the farmland preservation program. Most farmers from both areas exhibit positive attitudes toward the program.

However, the farmers from village with urban pressure have more diverse opportunity in obtaining additional income for their families. The farmers from village with urban pressure can earn extra revenue from other sectors such as property and service sectors as well as small shop that located in front of their houses.

“...Besides growing paddy, I work as labor in property sector such housing and road.” (Asmawi - the interviewee, 2012).

“If I didn’t work as shoe repairs, I cannot finance my two children until senior high school.” (Zairan - the interviewee, 2012).

Meanwhile, farmers from village without urban pressure only get additional incomes from their plantation such as palm oil and coffee. This is due to their village that situated in remote areas.

“I also have coffee crops but the harvest is not much. I have palm oil crops too The palm oil harvest can help me to finance paddy production costs.” (Kaslani - the interviewee, 2012).

Another difference response given farmers from both villages is stemmed from the need for agricultural instructors as one of assistance that should be provided by government. Only farmers from village with urban pressure show the urgency of the agricultural instructor's existences.

“Government should nurture farmers because we don't know the right dose and method in applying fertilizer. ... We often obtain knowledge in applying insecticide from the merchant.” (Supriadi - the interviewee, 2012).

“Local government should allocate fund for them in order to help them (agricultural instructors) visiting farmers whenever they are needed.” (Sarudin - the interviewee, 2012).

The other difference is that most interviewees from the village with no urban presence and pressure tend to hope their children could continue growing paddy on the land that someday will be bequeathed. Some interviewees show this wish although they cannot force their children to do so. Moreover, in Pagar Banyu village, there is an interviewee's son who keeps farming after receiving the land from his parents. In contrast there is also a son that converts the given paddy fields to palm oil crops.

“I bequeathed my paddy fields to my children. One of my children converted this farmland to palm oil crops although the land had been planted by paddy since my early ancestor. So, I cannot force my children to not convert the farmland because he owns the land.” (Junaidi - the interviewee, 2012).

“I have 1 ha paddy field. I cultivate an half of this farmland and the rest is grown by my son.” (Kaslani- the interviewee, 2012).

All interviewees from village with urban pressure tend to not want that their children make paddy growers as their main occupation. Even though an interviewee wants their children to keep growing paddy, he want this profession

as side job besides their main job as previously mentioned. They want their children to have other occupation such as employees in private companies, entrepreneurs and even civil servants.

“I hope that my children and grand children can continue to study at higher education but they have to keep farming. As our ancestor urged us to not leave farming and although we have a lot of money but we don’t have rice, we will be suffered.” (Kahar- the interviewee, 2012).

The last important issue that only found in village with urban pressure is that the possibility of capital flow originated from investors. As exemplified by a farmer whose statement can be seen in the following excerpt, this investor tries to enlarge their palm oil plantation by inducing farmers whose paddy fields situated next to the plantation. Although this is only an illustration given by the farmer, it indicates that farmlands located near city are prone to be acquired by rich people that later on can convert the farmland.

“... local government should be firm. It should not be swayed by investors who have high financial resources. For instance, at the beginning these investors get permit from local government to plant palm oils on 10 Ha land. Then they will persuade the adjacent farmers to sell their farmland in order to enlarge investors’ palm oil crops ...” (Sarudin - the interviewee, 2012).

	Padang Rambun Village						Pagar Banyu					
	Kahar	Asmawi	Sarudin	Zairan	Supriadi	Badrun*	Junaidi	Kaslani	Idan	Uday	Pandi	Risun**
Attitudes	++	++	++	0	0	-	+	++	+	+	+	+
Urban Pressure	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No

* A Landowner who convert his farmland to palm oil plantation

** A Village Chief

++ : Very positive response + : Positive response 0 : Neutral
 - : Negative response -- : Very Negative response

Table 4.14: The levels of urban pressure and interviewee’s attitudes
 (Source: Field Survey, 2012)

Underpinning by the above analysis which is summarized in table 4.14, it can be implied that the places where interviewees live do not affect their attitudes toward the program. The large numbers of interviewees who dwell village with different

level of urban pressure show positive attitudes toward the program despite their different village location.

4.3.2 Emerging Themes Found from Farmer's Responses

After investigating how investigated factors influenced farmer's attitudes which is carried up based on coding with a pre-determined concept (Neuman, 2000:422), other prominent response themes emerged while reading interview script. The summary of interviewee's responses toward interview questions is listed in table 4.15.

Participant	Village	Response Summary
Kahar	Padang Rambun	Pest strikes, lack of water caused by channel constriction; high production cost due to fertilizer procurement; adequate amount of farmland to achieve beneficial net income; farmers should also have other side jobs; food shortage will happen if palm oil is continue to expand; following ancestor suggestion to not leave farming
Asmawi		Achieve residual water because of channel sedimentation; the anxiety about skyrocketed paddy price if many people convert paddy field to palm oil; working as labor besides growing paddy; small farmland will not be beneficial for planting palm oil, difficulties in overcoming pests
Sarudin		inadequate water and success story of palm oil growers trigger farmland conversion; fluctuating palm oil price; fertilizer subsidy; keep planting paddy to anticipate the increase of rice price; government firmness in protecting farmland; also have palm oil crop
Zairan		Overwhelmed by pest strikes, farmland conversion because of the lack of water; have palm oil crop; high production cost; shoe repairs as side job; paddy should be planted on small lot of land and the rest land should be cultivated as crops; small lot is not suitable for crops; the influence of successful palm oil growers; planting paddy to avoid the lack of food; government is not firm enough
Supriadi		Water scarcity lead to farmland conversion; have rubber crop; the threat of pest strikes; group influence
Badrun		High paddy production cost originated from fertilizer procurement; constricted irrigation channel; palm oil needs lower working hours
Junaidi	Pagar Banyu	Traditional dam need to be fixed; the present way in growing paddy is much easier than before; growing paddy to fulfill daily consumption; ancestor influence in growing paddy; seeing growing paddy as the only way to obtain rice and the way to lift up from poverty
Kaslani		Present farming is not as difficult as in the past; cannot afford the fertilizer in the right dose; keep farming paddy field as the ancestor legacy; have small palm oil and coffee crop; permanent dam need to be built

Idan	Inadequate water from irrigation; high paddy production cost due to seed and fertilizer procurement; seeing growing paddy as the only way to feed family
Uday	Water shortage; seeing growing paddy as the most beneficial livelihood in the village; have other but small crops; growing paddy to meet family daily consumption
Pandi	Inadequate water from irrigation; perceive the lack of water as the cause of farmland conversion; fertilizer subsidy
Risun	The lack of water and high fertilize price are the main farmer's problems; farmers feel safe if they have both paddy field and other crops; if farmers already have crops they will not convert their paddy field.

Table 4.15: participant response summary

Following the previous list of summary, the comparison of features that gathered from farmer's response is conducted in order to find patterns of similarities and differences (Neuman, 2000:419). The above list of response summary also acts as building block of themes which are described in the following section.

Water Availability

The inadequacy of water has been blamed as the factor that leads farmers to convert their paddy fields to palm oil or rubber crops. As can be seen in table 4.15, all interviewees reported the water shortage issue and some of them point the finger to the lack of water as the reason why their colleagues' paddy fields was converted to non-food crops. The conversions were taken place from the farmland that situated furthest away from the irrigation (figure 4.10). As depicted in figure 4.11.b, although the irrigation channel is still in good condition, but it is empty due to water shortage. Over the years, this conversion was followed by the adjacent farmland.

“A lot of farmlands have been converted because of the lack of water. The problem is stemmed from the damage in tertiary tunnel that block the water. Farmers are saturated to rehabilitate the tunnel because it is still damaged although it had been fixed every week after struck by heavy rain.” (Zairan - the interviewee, 2012).



Figure 4.10: The palm oil crop that situated adjacent to paddy fields
(Source: Field Survey, 2012)

According to author's direct observation and interviewees statements, the water shortage is caused by the following factors. Firstly there is channel constriction that hampers the fluency of water (figure 4.11.c). Secondly, there is the decreasing volume of water due to leakages in the irrigation channel (figure 4.11.a). This impedes the water to reach farther. Thirdly, the wall of tertiary channel is damaged.



(a)



(b)



(c)



(d)

Figure 4.11: The cause of water shortage: a). The leakage in irrigation channel;
 (Source: Field Survey, 2012) b). The channel is empty from water;
 c). The narrowed channel;
 d). The clean channel

Furthermore, this explicit issue leads the author to classify all related water problem as water availability theme. Thus, water availability is defined as the right amount of water quantity originated from irrigation channel that can support paddy plantation. The indicators of this theme are “channel constriction”, “channel sedimentation”, “farmland conversion due to the lack of water”, “dam needs to be fixed”.

Production Cost

The narratives of production cost are recognized since the first interview was conducted. As conveyed by Kahar, the first interviewee, farmers have often borrowed fertilizer from local merchant. These fertilizers will be paid during the harvesting time. This shows how fertilizer is urgently required by farmers in order to increase the harvest. They are willing to procure it even though they have to pay back the borrowed fertilizer with higher price.

“...Most of low financial capital-farmers borrow the fertilizer to merchants where the payment will be given during the harvesting time. The price of fertilizer is in the hand of those merchants. This make farmers can do nothing except receiving this price.”

This narrative is expanded by other interviewees. For instance, Zairan said that the amount of harvest is not enough to compensate the production cost originated from fertilizer procurement and cultivation cost.

“...I spent as many as 1.6 million rupiah for fertilizer and land cultivation costs. In the harvest, I got not more than 30 bags and sometimes I got only 20 bags. My wife has asked me to convert my current paddy field to palm oil because of the amount of harvest that we got.”

The other components of paddy production cost that mentioned by interviewee are land cultivation, seeds and insecticides. Land cultivation which is related to the cost of labor or hand tractor rent is spent to prepare farmland before planting paddy. The inclusion of insecticide procurement cost is indicated by the statements that either directly mentioning “insecticide” or reported the strike of pests. Both seeds and land cultivation cost are relatively small compared to the insecticide and fertilizer price.

Moreover, fertilizer is the biggest component of production costs. On the one hand, this information is explicitly mentioned by Badrun, “The biggest component of costs that have to be spent by farmers is fertilizer”. On the other hand, this often implied by farmers when they made the comparison between the amount of harvest and fertilizer used which can be seen in the previous Zairan’s comment. The indication of fertilizer as the biggest component of production costs is also can be inferred when farmers made comparison between rice and fertilizer price which is found in Uday’s statement “The price of rice is not high enough compared to fertilizer price. If I sell 15 kg rice, I still cannot purchase 1 bag fertilizer”.

This circumstance leads to interviewee’s suggestion that government should maintain fertilizer subsidy in order to help them is reducing their production cost. For instance, this can be seen in Sarudin comment “...If government decrease fertilizer subsidy and even eliminate this subsidy, it will negatively affect farmers” or Badrun’s statement “I hope that government can assist farmers to increase their harvests. For instance, the irrigation should be rehabilitated and fertilizer should be subsidized so farmers could afford it”.

Inspired by the above illustration, the author further define “production cost” as the amount of money spent by farmers to procure fertilizers, insecticides and

seeds and to pay labor cost and/or hand tractor rents during land cultivation stage. Meanwhile, the indicators of this theme are all components of production cost such as fertilizer, insecticides, etc.

Government Firmness

The narratives about government firmness are firstly mentioned by Sarudin when he was asked about the future of growing paddy in his region.

“In term of prospect in the future, because this is a need, farmers should keep planting paddy on their farmland. I want you to convey to authorities that government should be firm in protecting farmland. ... If this regulation is not enacted, 2 – 3 years from now, irrigated farmland will [continue to] decline.”

These narratives are further perpetuated by Zairan and Risun. The former conveyed that government should be more firm in prohibiting farmers from converting their irrigated farmland to palm oil. Meanwhile, the latter who is a village chief argued that government cannot forcefully forbid farmers from converting their farmland.

“I ever heard that local government has banned irrigated farmland to be planted with palm oils. However, the doers have not punished. That is why government should be firm”. (Zairan - the interviewee, 2012).

“We as the government cannot force farmers to not convert their land. I think it depend on the farmers because they own the farmland”. (Risun - the interviewee, 2012).

Furthermore, the notion of government firmness is adapted by the author as a theme to classify the related interviewee’s statements. Based on the compilation of interviewee’s comment related to the notion, the author further define government firmness in the context of farmland preservation as the government ability to strictly protecting farmland from conversion to non-food plantation through the legal regulation and the introduction of punishment to the conversion actors.

Farming for Food Self-Fulfillment

The notion of food self-fulfillment is inspired by what was said by Junaidi. He is 55 years old and at the time the interview was conducted he only lives with his

wife because all of his children are married and dwell separate houses. He conveyed that the only way for him to provide rice for himself and his wife is through growing paddy. He also exemplified that if he convert his farmland, he have to wait for several years before the palm oil can be harvested. During this waiting period, he has to purchase rice while the only income that he has gotten is originated from growing paddy. Therefore, he feel secure by self-fulfilling the daily consumption. This narrative then strengthened by Zairan who describes his motive to continue farming despite his argument that he achieve very low profit from growing paddy.

“...If I convert my paddy field to palm oils, it takes at least 4 years for palm oils to be harvested. So, during this period what should I eat?. By growing paddy, I can reserve it to be used for me and my wife daily consumption. It is impossible for me to convert my paddy field because it is the only way for us to obtain rice.” (Kahar- the interviewee, 2012).

If we carefully calculate the profit gained from growing paddy, it will equal to nothing. We cannot finance our children education fee from it. However, the harvest can feed us every day in a year. (Zairan - the interviewee, 2012).

Furthermore, food self-fulfillment in this research is defined as the ability of a farmer to fulfill his and his family’s daily food dietary thorough one planting season. Then, the statements which are indicated by “feel safe because having paddy field”; “planting paddy to avoid the lack of food”; “planting paddy to anticipate the increase of rice price” are categorized as “farming for food self-fulfillment” theme.

The “food self-fulfillment” notion in this research coincide with the element of food security definition originated from United Nation’s Food and Agricultural Organization (FAO, 2002): “Food security is a situation that exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life”. The intersection element lies on food sufficiency which is contained in the last part of FAO’s food security definition. The most noticeable difference is that FAO’s food sufficiency is intended for community as a whole whereas food sufficiency in this research is subjected to a farmer as an individual.

Farming as the Sole Skill

“Farming as the Sole Skill” notion is instigated from Kaslani’s statement when answering the question about his opinion about the farmland that converted to palm oil or other uses in his village. He gave three arguments to support his claim that farmland conversion is unlikely taken place in his village. The first is that palm oil can be grown on hilly area while paddy can only be cultivated in flat land. The second argument is that their paddy fields are legacy from their ancestor. The third argument about unlikelihood of farmland conversion in his village is “*this (growing paddy) is the only occupation that we can conduct*”. This implied that one of reasons which make them to continue farming is because it is their sole skills.

Moreover, “Farming as the Sole Skill” notion is defined as the perception that farming as the only skills that farmers have or they see it as the best livelihood because it fits their skills. Some indicators that refer to this notion is “farming as the best livelihood”; “farming is the way to lift up from poverty”.

Farming as Family Tradition

“Farming as family tradition” notion firstly emerges from what was conveyed by Kahar. After mentioning his hope for his children in which he expect them to work in other sectors and also continue farming, he further delivered a suggestion from his ancestor to keep farming.

“I hope that my children and grand children can continue to study at higher education but they have to keep farming. As our ancestor urged us to not leave farming and although we have a lot of money but we don’t have rice, we will be suffered.”

Farming as family tradition here is defined as farmer’s reason to continue farming because this occupation has been maintained or the current paddy field has been cultivated since farmer’s ancestor. This notion is indicated by statements such as “paddy field is bequeathed from parents”; “ancestor suggestion to keep farming”; “paddy fields as legacy from the ancestor”

The Relation among Endogenous Factors

Following the coding of themes which is previously arranged, the themes are “reorganizes, sorts, combines, discards, or extends in further analysis” (Neuman, 2000:422). The first “reorganizing” stage is depicted in figure 4.12 which is underpinned by the conception of Huit (2001) and Malek (2000) about motivation which is defined the endogenous factor that triggers person's behavior and guides it. In this stage, the themes are classified further into two categories: endogenous and exogenous factors (figure 4.12).

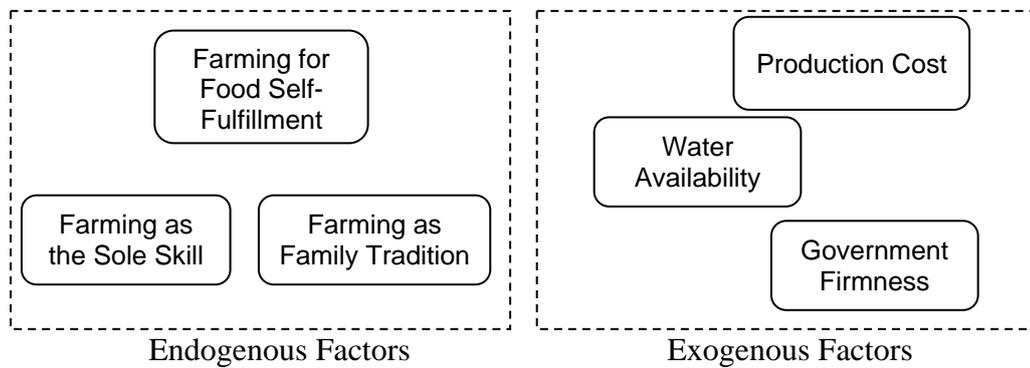


Figure 4.12: The first “reorganizing” stage: Grouping themes

As described in the sub-chapter 4.3.2, endogenous factors (farming for food self-fulfillment; farming as the sole skill; and farming as family tradition) lead farmer to continue growing paddy despite the drawbacks caused by exogenous factors. They keep farming amid the high production cost, low water availability and less firm government. Therefore, endogenous factors play crucial role in sustaining farmers to continue growing paddy.

In the next “reorganizing” stage, explanation or generalization that proximate farmer’s responses and sensitive to contexts are established. This is carried to find “the explanation [which] may be causal, but this is not always the case” (Neuman, 2000:419). Kaslani’s response on question about his opinion toward farmland conversion in his village infers that there is a relationship between farming as sole skills and farming as family tradition.

“...for paddy fields that we have, we will not convert it because they are legacy from our ancestor. We think that it is difficult to find other land that can be cultivated to grow paddy. Thirdly, this is the only occupation that we can conduct.”

On the other hand, Idan’s comment indicates that there is a relationship between farming as sole skills and farming for food self-fulfillment.

“I will not convert my paddy field to palm oil or rubber plantation because only through growing paddy I can feed my family.”

Moreover, Kahar’s statement signals that farming as family tradition is inter-related with farming for food self-fulfillment:

“I hope that my children and grand children can continue to study at higher education but they have to keep farming. As our ancestor urged us to not leave farming and although we have a lot of money but we don’t have rice, we will be suffered.”

Thus, underpinning by the above narratives it is concluded that farming for food self-fulfillment, farming as the sole skill, and farming as family tradition are inter-related one another (figure 4.13). Among other endogenous factors, farming for food self-fulfillment becomes the most prominent factors that lead farmers to continue growing paddy. Almost all farmers conveyed this reason. However, it cannot be concluded from this research that this factor alone affects farmers to keep farming because farmers usually convey the combination of two endogenous factors in explaining their motives to keep farming. They relate farming as sole skills - farming as family tradition or farming as sole skills - farming for food self-fulfillment or family tradition - farming for food self-fulfillment as the reason to continue growing paddy.

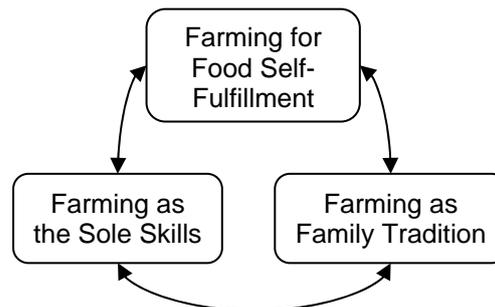


Figure 4.13: The scheme of the relation among endogenous factors

Therefore, whether each of endogenous factors (farming for food self-fulfillment; farming as the sole skill; and farming as family tradition) is individually or they are inter-related one another in influencing farmers to keep farming should be examined through further study.

CHAPTER V: CONCLUSION AND RECOMMENDATION

5.1 Conclusion

Acknowledging which factors that influence farmers' attitudes toward the farmland preservation program is important in formulating and implementing protective programs. From the research results, it is found that perceived negative consequences after joining the program and the presence of incentives influence farmer's attitudes toward the farmland preservation program. The ways of farmers in viewing the consequence in which they are legally bound to not convert their farmland to non-agricultural use influence their attitudes toward the program. Farmers who are anxious about the consequences of the program exhibit negative attitude on the program. Conversely, those who perceive the consequences as an acceptable manner, they demonstrate positive attitudes on the program.

On the other hand, parcel characteristics, landowner characteristics and levels of urban pressure do not affect farmers' attitudes toward the farmland preservation program. Farmers who vary in their own characteristics (age, education and income), parcel characteristics (farmland size and distance to the settlement) and dwell villages with different levels of urban pressure show indifferent attitudes toward the farmland preservation program. In other words, the farmers' attitudes toward the program do not correspond to the landowner and parcel characteristic and levels of urban pressure.

Meanwhile, from the interviewee information, it is found that both water availability and production costs become the major factors that trigger the conversion of paddy fields to other crops such as palm oil and rubber plantation. The lack of water that irrigate the converted farmland and the high production costs during growing paddy which are largely originated from the cost in procuring fertilizer stimulate farmers to convert their lands. At the lower impacts, either the water shortage or high production costs decrease farmers' profit and as a result this discourages farmers to continue growing paddy.

Furthermore, there are some sources of bias that could affect the research results. They are associated in two phase of the research: interview and data processing phase. On the one hand, during the interview phase there are some villagers who refuse to be interviewed. These villagers who are unwilling to be interviewed might have different responses toward the questions. It is also difficult to find young farmer because the paddy fields in the case study areas are still cultivated by their parents whose ages are ranging from 45-60 years old. These young farmers might have different responses that could enrich the research findings. The other circumstance during the interview phase that may affect the research results are the distortion stemmed from interviewer influences toward interviewees or the interviewees' anxieties to give their true answers. They may prefer to give the answers that they think it can satisfy the interviewer expectation.

On the other hand, during the data processing in which both primary and secondary data are chosen to be displayed, the concern of neutrality is emerged. As mentioned earlier in the chapter 3 in which it is stated that it is difficult for researchers to be neutral, the author also feels that it is hard to act neutrally. The author worries that what are displayed in the data tabulation regarding of interviewees' responses are not neutrally drawn from interview transcripts. The author is anxious that data harvesting might be disturbed by his own purposes in pursuing the research. However, the author is sure that displayed data are selected as neutral as possible. Moreover, it is also supported by the similar answer patterns demonstrate by interviewees. The author also takes into account the saturation of information given by interviewees in order to confirm or confront one interviewee responses to another.

Despite their various characteristics, most farmers demonstrate convincing attitudes to the program. The possible explanation for this is that farmers who have medium income and exhibit neutral attitudes toward farmland preservation program have other occupation besides farming for instance as shoe repair and labor in property sectors. This means that a considerable percentage of their incomes are not originated from farming. Meanwhile, those who have low income do not have such additional income besides growing paddy, thus they are only

rely on this farmland. This may trigger these low-income farmers to demonstrate positive attitudes because they do not have opportunity to earn additional income from other sectors and they thought that farming is the best occupation can be carried. Briefly, it can be implied that the reason underpinning farmers' acceptances of the consequence is that farmers view farmlands as the highest use value of the land (Vitaliano and Hill, 1994).

The research findings in which different characteristic do not affect farmer's attitudes is probably caused by the circumstance that the farmland in the village with urban presence and urban pressure relatively near each other. By means of good quality roads, the distance among farmlands can be neglected. Thus it can be said that those farmlands have equal distance from the city. Another possible explanation is that those farmlands have the same accessible level where they possess the same proximity to the local roads (Houser, 2007). The same reason can be used to explain the finding in the village without urban presence and urban pressure. In this area, all farmlands are similarly situated far away from the city. The other possible explanation is that all farmlands have the same soil quality (Nickerson 2000; Houser 2007). Therefore, it make growing paddy become excellent everywhere.

From research results, it is found that both group of farmers from both villages with different level of urban pressure show similar attitudes toward farmland preservation program. The difficulties in procuring accurate occupation data in both sub-district and village level may disturb the influence of levels of urban pressure on farmer's attitudes. This is related to the ambiguity in "farmer" definition. It is often found that farmers are defined as both paddy and palm oil growers. The occupation data is needed as the complement of land use data. These data are used to rank the sub-districts and villages from which areas with different urban presence and pressure will be selected. The higher percentage of employment from farming is used to select a village with urban presence and pressure. As a result, it is worried that the chosen village is not the areas that experience the most intense urban presence and pressure in Seluma Regency.

Another important finding is that endogenous factors which consist of farming for food self-fulfillment, farming as the sole skill, and farming as family tradition are the reasons that lead farmers to continue growing paddy despite the drawbacks caused by exogenous factors. They keep farming amid the high production cost, low water availability and less firm government. They keep planting paddy although the profit is very small compared to palm oil or rubber plantation. They also barely can finance their children education fees. However, because paddy field is the legacy that bequeathed from one generation to the next since their early ancestor in which they can guarantee to fulfill their family daily dietary and sometimes this is the only skills that they have, they remain to keep growing paddy.

Therefore, endogenous factors can play crucial role in sustaining farmers to continue growing paddy. In this case, this phenomenon can be another alternative for preserving farmland besides the regulatory approach. The regulation is not the only aspect that taken into account by people to behave (Van Dijk and Beunen, 2009). There must be other components that affect people to act, for instance, farming tradition. By helping farmers to sustain this tradition through provision of crucial components in growing paddy such as irrigation and production equipment, government can preserve farmlands without implementing strict regulation that might discourage participants to join,

In conclusion, it is found that the perceived negative consequences and incentives influence farmers' attitudes toward the preservation program. In addition, farmland preservation can also be pursued by other methods besides regulatory approach. The strength of the tradition of growing paddy displayed by farmers can be another approach in preserving farmland. This approach may lead to lesser resistance of farmers than strict regulation.

5.2 Recommendation

The further study should examine whether each of endogenous factors (farming for food self-fulfillment; farming as the sole skill; and farming as family tradition) is individually or they are inter-related one another in influencing farmers to keep farming. Especially for farming as family tradition, if this factor can individually motivates farmers to keep farming, it will be the alternative method in preserving farmland besides regulatory approaches.

Moreover, the dissemination of farmland preservation program should be taken care intensively in order to make farmers more familiar with the program's features. Thus, it can diminish the perceived negative consequences of the program viewed by farmers. This may increase their attitudes toward the program and at the end it could encourage them to participate.

The threat of farmland conversion is not come from the current generation but it comes from the children of farmers. From the research results, it is found that most farmers do not hope their children to continue farming. Therefore, it is worried that when the farmlands are bequeathed to the farmers' children, the farmlands might be converted or sold to new owners who also may utilize farmlands for non-agricultural use.

“My son said to me that he don't want to be a farmer like me because growing paddy needs hard working.” (Zairan - the interviewee, 2012).

This phenomenon should be addressed to find the reason behind the reluctance of farmers to bequeath their occupation as paddy growers. As found by Lynch and Lovell (2003; 2001), having a child who want to continue farming increase the possibility of farmers to join the preservation program.

The other threat of the paddy field existences is originated from the flow of capital. The expansion of palm oil plantation can be carried either by local farmers or rich people from outside of the village. Therefore, this possibility has to be addressed by local government immediately in order to manage the rate of farmland conversion.

REFERENCES

- Abdurachman A. et. al. (2005): Biophysical criteria in establishment of prime ricefields in Java. Bogor. Research and Development center of Agricultural Resources.
- Adams, Adi. Anderson, Eric and McCormack, Mark. (2010): Establishing and Challenging Masculinity: The Influence of Gendered Discourses in Organized Sport. *Journal of Language and Social Psychology* 29: 278. SAGE Publications.
- Ajzen, I., & Fishbein, M. (2005): The influence of attitudes on behavior. In D. Albaracn, B. T. Johnson, & M. P. Zanna (Eds.). *The handbook of attitudes* (p. 173-221). Mahwah, NJ: Lawrence Erlbaum.
- Alterman, Rachelle. (1997): The Challenge of Farmland Preservation: Lessons from a Six-Nation Comparison. *Journal of the American Planning Association*, 63:2, 220-243.
- Byrka, Katarzyna. (2009): Attitude-behavior consistency - Campbell's paradigm in environmental and health domains. Eindhoven : Technische Universiteit Eindhoven.
- Bourke, Lisa et. al. (1996): Response to Pennsylvania's Agricultural Preservation Programs. *Rural Sociology* 61 (4).
- Bills, N.L. (1996): Farmland Preservation: Agricultural Districts, Right-to-Farm Laws and Related Legislation. Paper presented at the annual meeting of the American Association for the Advancement of Science, Baltimore, MD.
- Bryant, William R. and Conklin Howard E. (1975): New Farmland Preservation Programs in New York. *Journal of the American Institute of Planners*, 41:6, 390-396.
- Boisvert, Richard N. et.al. (1988): A Model to Explain Participation in New York's Agricultural Districts and Use-Value Assessment Programs.
- Brockman, Mike. (2011): Breaking New Ground; Puget Sound Agriculture. Capstone Final. Master of Arts in Policy Studies.
- Bryman, A. (2008): *Social research methods* (Third edition). New York: Oxford University Press.
- Clary, E.G. et.al. (1998): Understanding and assessing motivations of volunteers: A functional approach. *Journal Personality Social Psychology*.
- Clary, E.G. and M. Snyder. (1999): The motivations to volunteer: Theoretical and practical considerations. *Curr. Directions Psychological Science*.
- Coughlin, Robert E., John C. Keene, et al. (1980): *The Protection of Farmland: A Reference Guidebook for State and Local Governments*. National Agricultural Lands Study. Washington, DC: U.S. Government Printing Office.

- Coughlin, Robert E. (1991): Formulating and Evaluating Agricultural Zoning Programs. *Journal of The American Planning Association*, American Planning Association, Chicago, Spring 1991.
- Colyer, Dale. (1998): Farmland Preservation Programs. Paper presented at the Seventh International Symposium on Society and Resource Management, University of Missouri, Columbia.
- Crano, William D. and Prislin, Radmila. (2008): Attitudes and Attitude Change. Psychology Press Taylor & Francis Group.
- Daniels, Thomas L. (1997): Where Does Cluster Zoning Fit in Farmland Protection? *Journal of the American Planning Association*, 63:1, 129-137.
- Deaton, B. James and Vyn, Richard J. (2010): The Effect of Strict Agricultural Zoning on Agricultural Land Values: The Case of Ontario's greenbelt. Oxford University Press.
- Etgens, R., S. Taylor-Rogers, J. Bernstein, R. Gray, E. Perry, P. Caldwell, J. Chapman, and G. Dehart. (2003): Down-zoning: Does It Protect Working Landscapes and Maintain Equity for the Landowner? Maryland Center for Agro-Ecology, Inc., Queenstown, MD.
- FAOSTAT <http://faostat.fao.org> - Accessed 11 March 2012.
- FAO. 2002. The State of Food Insecurity in the World 2001. Rome. <http://www.fao.org/docrep/005/y4671e/y4671e06.htm>
- Fisher, Peter S. (1982): Introduction: Public Policy and the Urbanization of Farmland. *International Regional Science Review* Vol.7:3. Sage Publication.
- Fleming, M. M. (1999): Growth Controls and Fragmented Suburban Development: The Effect on Land Values. *Geographic Information Sciences* 5(2): 154–162.
- Francis, Charles A.; Hansen, Twyla E.; Fox, Allison A.; Hesje, Paula J.; Nelson, Hana E.; Lawseth, Andrea E. & English, Alexandra (2012): Farmland conversion to non-agricultural uses in the US and Canada: current impacts and concerns for the future, *International Journal of Agricultural Sustainability*, 10:1, 8-24.
- Government of Indonesia. (2007): Law no.26/2007 concerning Spatial Planning. Jakarta. Government of Indonesia.
- Government of Indonesia. (2009): Law no.41/2009 concerning Agricultural Land Protection. Jakarta. Government of Indonesia.
- Government of Indonesia. (2011): Government Regulation no.1/2011 concerning Agricultural Zoning. Jakarta. Government of Indonesia.
- Government of Indonesia. (2012): Government Regulation no.30/201w concerning Financing Agricultural Land Protection. Jakarta. Government of Indonesia.

- Gardner, B. Delworth. (1977): The Economics of Agricultural Land Preservation. *American Journal of Agricultural Economics* Vol. 59:5. pp. 1027-1036. Oxford University Press.
- Goenadi, Didiiek Hadjar. (2008): Perspective On Indonesian Palm Oil Production. Paper presented on the International Food & Agricultural Trade Policy Council's Spring 2008 Meeting, Bogor, Indonesia.
- Gottlieb, Paul D. and Adelaja, Soji. (2009): The Impact of Down-zoning on Land Values: A Theoretical Approach. Department of Agricultural, Food, and Resource Economics. Rutgers University. Submitted to *Agricultural Finance Review* on May 6, 2009.
- Grob, Alexander. (1995): Structural Model of Environmental Attitudes and Behavior. *Journal of Environmental Psychology*, 15, 209-220.
- Hite, J.C. and Dilman, B.L. (1981): Protection of Agricultural Land: An Institutionalist Perspective. *Southern Journal of Agricultural Economics* 13: 43-53.
- Houser, Elizabeth. (2007): A Decision for Farmland Preservation: Utilizing GIS and Logistic Regression to Analyze Landowner Motivation in Lancaster County, PA. Master of Urban Spatial Analytics Program.
- Huitt, W. (2001): Motivation to learn: An overview. Educational Psychology Interactive. Valdosta, GA: Valdosta State University. <http://chiron.valdosta.edu/whuitt/col/motivation/motivate.html>
- Isakson, H. (2004): Analysis of the Effects of Large Lot Zoning. *Journal of Real Estate Research* 26(4): 397-415.
- Jacobs, Harvey M. (1989): Social Equity in Agricultural Land Protection. *Landscape and Urban Planning* Vol. 17. Elsevier Science Publishers.
- Liu, Xiangping and Lynch, Lori. (2011): Do zoning regulations rob rural landowners' Equity? Oxford University Press.
- Libby, L.W. (1997): In Pursuit of the Commons: Toward a Farmland Protection Strategy for the Midwest. SSRI Distinguished Lecture, Northern Illinois University, DeKalb.
- Lichtenberg, Erik and Ding Chengri (2006): Assessing farmland protection policy in China. *Land Use Policy* 25 59-68. Elsevier Ltd.
- Lynch, Lori and Lovell, Sabrina J. (2003): Combining Spatial and Survey Data to Explain Participation in Agricultural Land Preservation. *Land Economics*, Vol. 79, No. 2, pp. 259-276. University of Wisconsin Press.
- Lynch, Lori and Lovell Sabrina J. (2001): Factors Influencing Participation in Agricultural Land Preservation Programs. Selected Paper at The American Agricultural Economics Association Conference, Chicago, IL. Agricultural and Resource Economics, University of Maryland, College Park.
- Marshall, Catherine and Rossman, Gretchen B. (2006): Designing Qualitative Research. Thousands Oaks: Sage Publication, 4th edition.

- Malek Mohammadi, I. and Gh. Hosaini nia, (2000): Motives for rural women to participate in agricultural extension programs case study in Fars province Iran. *Iranian Journal of Agriculture Science*.
- Meltz, Robert et.al. (1999): The takings issue : constitutional limits on land-use control and environmental regulation. Island Press. Washington, D.C.
- McClelland, D.C., (1992): Motivational configurations. In C.P. Smith (Ed.), *Motivation and personality: Handbook of thematic content analysis*. Cambridge University Press. Cambridge, UK.
- McLeod, Donald M. et.al. (1999): Factors Influencing Support For Rural Land Use Control: A Case Study. *Agricultural and Resource Economics Review*, Northeastern Agricultural and Resource Economics Association, vol. 28(1).
- Nellis, Lee and Maca, Martin N. (1986): *The Effectiveness of Zoning for Agricultural Lands Protection: A Case Study from Cache County, Utah*. Elsevier Science Publishers.
- Nelson, Robert H. (1981): *Agricultural Zoning: A study in the Purposes, Consequences, and Alternatives to Zoning*. Paper presented at a conference on Agricultural Land Preservation: Economics or Politics. Political Economy Research Center, Bozeman, Montana.
- Nickerson, Cindy. (2000): *Characterizing Participation in Farmland Preservation Programs*. Department of Agricultural and Resource Economics, The University of Maryland, College Park.
- Nickerson, Cynthia J. and Lynch, Lori. (2001): *The Effect of Farmland Preservation Programs on Farmland Prices*. *American Journal of Agricultural Economics*, Vol. 83, No. 2 (May, 2001), pp. 341-351. Oxford University Press.
- Neuman, W. Lawrence. (2000): *Social research methods: qualitative and quantitative approaches*. Fourth edition. Allyn and Bacon.
- Olson, R. K. and A. H. Olson (1999): *Farmland loss in America*. In R. H. Olson and T. A. Lyson (eds.), *Under the Blade: The Conversion of Agricultural Landscapes* (pp. 15–51). Boulder, Colorado: Westview Press.
- Pasour Jr., E.C. (1982): *Agricultural Land Protection: Is government Intervention Warranted?* *Cato Journal* Vol.2-3. Cato Institute.
- Richardson Jr, Jesse J. (2003): *Downzoning, Fairness and Farmland Protection*. *Journal of Land Use* Vol.19:1.
- Rickard, Timothy J. (1986): *Problems in Implementing Farmland Preservation Policies in Connecticut*. *Journal of Rural Studies* Vol.2:3, pp.197-207. Pergamont Journals Ltd.
- Statistical Bureau of Seluma Regency. (2011): *Statistics of Agriculture: Land Utilization Report*.
- Statistical Bureau of Seluma Regency. (2010): *Seluma Regency in Figures, 2010*.

- Seluma's Planning Board. (2008): Under-developed Region Development Acceleration Action Plan.
- Seluma's Village Community Empowerment Agency. (2011): Sub-district in Figures: South Seluma Sub-district.
- Seluma's Planning Board. (2007a): Seluma Regency Map.
- Seluma's Planning Board. (2007b): Seluma's City Enlargement Plan, 2007.
- Seluma's Planning Board. (2007c): The Master Plan of Agropolitan Region Development in Seluma Regency.
- Shilling, J. D., C.F. Sirmans, and K.A. Guidry. (1991): The Impact of Stand Land-Use Controls on Residential Land Values. *Journal of Regional Science* 31(1): 83–92.
- Stokes, Jeffrey R. (2010): The value of the option to preserve farm real estate. *Journal of Economy and Finance* 36:162–175. Springer Science.
- Tan, Rong. et. al. (2009): Governing farmland conversion: Comparing China with the Netherlands and Germany. *Land Use Policy* 26, 961–974. Elsevier Ltd.
- The Northeast Regional Center for Rural Development (NERCRD). (2001): Protecting Farmland at the Fringe: Do Regulations Work? Conference Summary Proceedings. Baltimore, Maryland.
- Van Dijk, Terry & Beunen, Raoul (2009): Laws, People and Land Use: A Sociological Perspective on the Relation Between Laws and Land Use, *European Planning Studies*, 17:12, 1797-1815
- Van Rij, Evelien; Dekkers, Jasper & Koomen, Eric. (2007): Analysing the Success Of Open Space Preservation in the Netherlands: The Midden-Delfland Case. The Royal Dutch Geographical Society KNAG.
- Van Rij, Evelien (H. E.) & Altes, Willem K. Korthals (2008): The Merits of Outmoded Planning Instruments for Improving Metropolitan Green Areas: The Midden-Delfland Approach, *Planning Theory & Practice*, 9:3, 345-362.
- Vitaliano, Donald E and Hill, Constance. (1994): Agricultural Districts and Farmland Price. *Journal of Real Estate Finance and Economics*, 8:213-223. Kluwer Academic Publishers.
- Zollinger, Brett and Krannich, Richard S. (2002): Factors Influencing Farmers' Expectations to Sell Agricultural Land for Non-Agricultural Uses. *Rural Sociology* 67(3), pp. 442–463. Rural Sociological Society
- <http://www.antaraneews.com/berita/1267998124/dprd-bengkulu-temukan-alihfungsi-lahan-sawah-jadi-sawit>.
- http://www.harianhaluan.com/index.php?option=com_content&view=article&id=11820:puluhan-ribu-hektare-sawah-beralih-fungsi&catid=7:rantau&Itemid=72.
- <http://selumakab.bps.go.id/index.php>
- http://en.wikipedia.org/wiki/The_Land_Conservancy_of_British_Columbia.
- Accessed 17 April 2012.

APPENDIX 1: List of Questions

This research is being carried to acknowledge the farmer responses towards farmland preservation program. I am pursuing this research for my master degree at Institute Teknologi Bandung and the University of Groningen in the Netherlands. I am particularly interesting to know what farmers in this village opinion about farmland preservation program. Recently, Indonesia government tries to preserve farmland by enacting related regulation. The program has strict consequence in which the farmland that enrolled in the problem cannot be utilized for non-agricultural use. You can still sell your farmland to others but its function is still to grow paddy or other food staple. Although its strictness, this program is voluntarily offered to farmers/landowners. They may choose to participate or refuse the program. To compensate this strict agreement, the program is comprehended with many provisions such as agricultural infrastructure (irrigation and local road), farming equipment and farmland certificate as well as incentives. The question that I would like to ask you corresponds to the topics of farmland preservation. All information you tell me will only be used for this research and will not be shared to anyone. Your name will also be concealed in order to make sure that no one can recognize you with your answer. You have already been informed to the outgoing interview. Do you have any question before we begin?

Background information

No. of interview :
Village :
Age :
Education :

Opening questions

- What is the current condition of growing crops in your farmland?
- What do you think about the agricultural infrastructure (irrigation and local roads)?
- What is your opinion about the farmland that converted to palm oil or other uses in your village?

Landowner characteristics (income)

- What do you think about the price of rice/paddy in this region?
- Is your harvest sufficient to fulfill your family needs and your children education?
- How you fulfill your daily needs and education tuition of your children?

Parcel Characteristics

- Would you describe your farm? (e.g. number of employees, seasonal production, etc.)
- How large your farmland?
- How far your farmland from the nearest settlement?
- How far your farmland from main road?

Perceived Negative Consequences

- What do you think about the future of growing paddy on your farmland?
- Why you don't grow other crops such palm oil and rubber plantation?
- What is the main problem in cultivating your farmland?
- What do you think about farmland preservation program?
- What do you think about strict consequences of joining the program?
- Do you want to participate in the program?
- Why you accept/reject the program?

Incentives

- What do you expect from participating in the program?
- What kind of incentives do you expect from joining the program?

Closing Question

- In what way government can support farmers to improve their welfare?
- What are your hopes for your children in the future?