



Sveriges lantbruksuniversitet  
Swedish University of Agricultural Sciences

Department of Economics

## **Driving forces of land use**

- Underlying factors in peri-urban land use

*Matilda Thelin*

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**Supervisor:** Richard Ferguson  
Swedish University of Agricultural Sciences,  
Department of Economics

**Assistant supervisor:** Lotta Woxblom  
Swedish University of Agricultural Sciences,  
Department of Forest Products

**Examiner:** Karin Hakelius  
Swedish University of Agricultural Sciences,  
Department of Economics

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# Abstract

Swedish agriculture faces future challenges regarding food production and land use. Increased competition for agricultural land creates complex situations, where conflicts may arise when productive crop land is in demand not only for food production but also energy- and fodder production. On top of that there is an obvious conflict of goals between agricultural production and non-agricultural exploitation of agricultural land. In several emerging economic regions it is noticeable how agricultural land is being expropriated for development of urban settlement and infrastructure, carrying potentially significant long-term effects.

During the last decade the exploitation of agricultural land in activities other than food production has increased in Sweden and is expected to continue in the same manor. Approximately 700 hectare of land in Sweden is diverted from food production, annually, and in 2013, the Uppsala Municipality showed the greatest change in land use of all municipalities (SCB, 2013). This change in land use has consequences for peri-urban farmers, who are dependent on the availability of agricultural land in the operation of their businesses. When agricultural land is expropriated for urban development the farmers loose the land resources and there is an increased competition for the remaining land resource leading to high land prices.

In order to better understand the landowners' management of their agricultural land resource, it is essential to find out how landowners make strategic decisions about future land use. Since the final decision regarding land use lies with the landowner, it is important to find out how they make their decisions and what underlying factors influences such decisions. Therefore, the aim of this study is to identify driving forces and underlying factors which influence decisions regarding land use. And as it is land use in peri-urban areas that appears to be undergoing the greatest change, this study is empirically focused on this specific type of area.

This study identifies two groups of landowners that are central in peri-urban agricultural land use in the Uppsala area; commercial farmers and institutional landowners. The empirical study is based on qualitative methods, using interviews and future scenarios to promote discussion. Results indicate that farmers and institutional landowners formulate their decisions in different ways. Farmers tend to make decisions incrementally, strongly influenced by previous experiences. Institutional landowners, on the other hand, arrive at decisions in a more strategic and analytic way, where organization goals and visions play a central role. Both groups are characterized by a conflict between short term economic goals and long-term management of the agricultural land. The driving forces that affect the decision-making include political, socio-economic and cultural dimensions. Landowners are largely influenced by their organizational structure and prerequisites for strategic decision-making.

# Sammanfattning

Det svenska jordbruket står inför framtida utmaningar gällande livsmedelsproduktion och markanvändning. Ökad konkurrens om jordbruksmark skapar komplexa situationer och riskerar att leda till konflikter, då jordbruksmark inte bara används till livsmedelsproduktion utan också används till energi- och foderproduktion. Därtill finns det en uppenbar målkonflikt mellan jordbruksproduktion och exploatering av jordbruksmark. Runtom i flera tillväxtregioner ser vi idag hur jordbruksmark tas i anspråk för bebyggelse och infrastruktur, vilket skapar effekter för lång tid framåt.

Under de senaste decennierna har exploatering av jordbruksmark ökat i Sverige och förutspås att fortsätta på samma sätt. Varje år exploateras cirka 700 hektar i Sverige och där Uppsala Kommun under 2013 hade den största exploaterade arealen av jordbruksmark i Sverige. Detta medför konsekvenser för stadsnära lantbrukare som är beroende av jordbruksmarken för att kunna driva sina företag. Exploatering av jordbruksmark leder till att lantbrukare förlorar sin markresurs. Det medför ökad konkurrens om den återstående jordbruksmarken till följd av ökad efterfrågan och högre markpriser.

För att bättre förstå hur markägare förvaltar sin jordbruksmark är det väsentligt att ta reda på hur dem fattar strategiska beslut kring framtida markanvändning. Det slutgiltiga beslutet om markanvändning ligger hos markägaren och det är därför viktigt att ta reda på hur de fattar sina beslut och vilka bakomliggande faktorer som kan påverka ett sådant beslut. Syftet med denna studie är att identifiera drivkrafter och underliggande faktorer som påverkar markanvändningsbeslut. Eftersom det är de stadsnära områdena som förväntas exploateras först är det naturligt att i denna studie fokusera på dessa områden.

Studien har identifierat två grupper av markägare som är väsentliga att undersöka när det gäller stadsnära jordbruksmark i Uppsala; lantbrukare och institutionella markägare. Den empiriska delen av studien har ett kvalitativt angreppssätt och utgörs främst utav intervjuer. Framtidsscenarioer har använts vid intervjuerna för att främja diskussion kring framtida markanvändning. Resultatet tyder på att lantbrukare och institutionella markägare fattar beslut på olika sätt. Lantbrukare tenderar att ta beslut stegvis, ofta baserat på tidigare erfarenhet och strävar efter att minimera risk. Institutionella markägare tar beslut på ett mer strategiskt och analytiskt karaktär utefter organisationens visioner och mål. Båda grupperna markägare karakteriseras av en motsättning mellan kortsiktiga ekonomiska mål och långsiktig förvaltning av jordbruksmarken. De drivkrafter som påverkar beslutsfattningen är politiska, socio-ekonomiska samt kulturella. Markägarna påverkas i hög grad av organisationsstrukturen och de förutsättningar som finns för att ta framtida strategiska beslut.

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# 1 Introduction

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*The following chapter presents and introduces the reader to the background of the problem, regarding decision making of land use and land management in peri-urban agriculture. The problem definition as well as the aim of this study is presented. The limitations that are essential to this study are defined and lastly an outline is presented in order to give the reader overview about the following chapters in thesis.*

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The Swedish agriculture is facing future challenges regarding agricultural production and land use (Öborn *et al.*, 2011; Milestad *et al.*, 2014). The pressure on agricultural resources is increasing due to globalization, climate change solutions, and increased consumption (Fogelfors *et al.*, 2009). There are major challenges on a global level arising from population growth, and many people's increasingly more resource intensive lifestyles (Hallström *et al.*, 2011). Land is a substantial natural resource and land use is a key link between human activity and the environment (Winter & Lobley, 2009). Our impact on the land is one of the main driving forces behind global environmental changes.

As a response to the problems above and to support a low-carbon economy in 2050 the European Union launched collaboration project between several countries called COMPLEX. The project is multidisciplinary research program designed to "...help policy makers facilitate change without compromising cultural and natural life-support systems" (www, COMPLEX, 1, 2013). A subproject to COMPLEX is analysing consequences of political strategic decisions and states that "*The dynamics of land use change and its environmental and economic impacts require analysis...*". (www, COMPLEX, 2, 2013). Another response is made by the Swedish University of Agriculture which created a multidisciplinary research platform to "...develop research on sustainable use of natural resources, with an emphasis on agricultural production and land use" (Bengtsson *et al.*, 2010, p.1). These are on-going activities arising from concerns about what the world is facing in today's society and environment. Society and nature interact in a complex manner which gives a high degree of uncertainty (SOU, 2013:43). The future is uncertain, but various actors still need to plan for the future.

During the last decades there have been a rapid increase of urbanization in Western Europe (Zasada, 2011). Due to the rapid growth of population, the cities need to expand which affect the surrounding areas. Peri-urban areas are often exposed to competition between different land use purposes. The exploitation on farm land for non-agricultural purposes in Sweden has increased during the last decades and is expected to continue in the same manner. Each year approximately 700 hectare agricultural land is exploited (Swedish Board of Agriculture, 2013:35). Uppsala County have the highest exploitation of agricultural land in Sweden with 98 hectare during 2006-2010 (Swedish Board of Agriculture, 2013:3).

The agricultural land is becoming more important in Sweden as the competition for land increases due to urbanization and population growth (Slätmo, 2011; KSLA, 2012). Increased demand for land may involve conflicts over land and land use (SOU, 2013:43). Government Official Report (SOU, 2014:38) states that there are vulnerabilities in Swedish agricultural production that need to be solved in order to ensure future competitive agricultural businesses. That can be done by strategic actions within farm enterprises. A competitive industry requires profitable companies and requires the holders continued adaption and efficiency, but also developed strategic management (SOU, 2014:38).

In order to better understand the landowners' management of their agricultural land resource. It is essential to find out how landowners make strategic decisions about future land use. Eisenhardt & Zbaracki (1992) & Lee *et al* (1999) states the importance of studying strategic decisions in order to understand decisions that are made by the firm, and how these decisions set the course of the firm. Individual's decision making is influenced by organizational context, but also by several (environmental) forces both internal and external. These forces may differ between individuals and contributes to compromises is done regarding decision making.

Land use is about human use of land for different purposes and therefore includes aspects of both owning and cultivating land (SCB, 2013). When it comes to understanding how and why land use changes over time, it is necessary to investigate and understand the underlying influencing factors and driving forces (SCB, 2013). In order to analyse driving forces of land use, relevant literature needs to be addressed.

## 1.1 Driving Forces of Land Use

Driving forces is a commonly used concept that became well-known within the field of landscape research during the 1990s (Bürgi *et al.*, 2004; Eiter & Potthoff, 2007). The concept is also known as the drivers of land use change. Bürgi *et al* (2004, p.858) defines the driving forces: *"the forces that cause observed landscape changes, i.e., they are influential processes in the evolutionary trajectory of the landscape"*. These concepts became a new setting in a theoretical approach in order to understand and analyse changes of land use (Bürgi *et al.*, 2004).

Landscape research examines our physical surroundings in order to find out what they are affected by and which values that occurs within them (Slätmo, 2011). Through the years a range of different approaches and perspectives have been investigated (Bürgi *et al.*, 2004). The use of several terminologies contributes to a challenge in describing driving forces (Eiter & Potthoff, 2007). Another definition that is used in addition is keystone processes. According to Eiter & Potthoff (2007) enables these definitions, (1) driving forces, (2) drivers of land use change, and (3) keystone processes, a broad understanding of which factors that should be included in order to explain the cause of land use change. Slätmo (2011) stresses the relevance of concretize a definition in order to creating a useful concept that can be used within empirical research and contribute with relevant knowledge.

Landscape changes are affected by both global and national processes (Slätmo, 2011). However, local socio-economic environment and the biophysical conditions also have significant importance. SCB (2013) summarize the key driving forces determining land use is mainly economic and demography. Since it is when these structures changes as the conditions for land use changes as well (SCB, 2013). Driving forces and land use change have both causal relations and more complex context, which contributes to unclear result.

Slätmo (2011) stresses the importance of getting a deeper understanding about the forces that influence land use changes and explains that it can provide valuable information about our surrounding environment. Further it also creates an opportunity to influence landscape change through relations between different actors. Bürgi *et al* (2004) points out that new understanding contributes to future land management of natural and cultural values.

## 1.2 Problem

Agricultural land is a fundamental resource in all agricultural businesses. The growing competition for agricultural land puts strain on agricultural business due to land scarcity, especially for land located in areas with high urban development. Cramer *et al* (2001) defines agricultural economics:

*“Agricultural economics may be defined as an applied social science dealing with how humans choose to use technical knowledge and scarce productive resources such as land, labour, capital, and management to produce food and fibre and to distribute it for consumption to various members of society over time” (Cramer et al., 2001, p.7).*

Agricultural economics has traditionally suggested that decisions for resource use are arrived at through a rational process, where utility or economic value is maximized. This assumes, however, that prices are known, and that effects of decisions can be a priori valued. However, individual actors have to take into account the changing business environment in order to adapt to the changes. It is therefore important to examine individual actors' decision-making process and analyse which factors influence their strategic decisions for long-term direction of the business. Since the agricultural land is a limited resource for the landowners, it is essential to consider the land management. The decision process is complex and there are several factors that influence the outcome of the decision. The ultimate decision regarding land use lies with the landowner, it is therefore important to gain knowledge in how they make their decision and what factors that influence.

## 1.3 Aim and research question

The general aim of this study is to increase understanding, and illuminate the complexities that underlie landowners' strategic decisions of land use. The problem is approached from a business economics point of view. This study focuses more specifically on identifying and analysing factors that influence decision outcomes, such as economical, socioeconomical and environmental factors. In order to evaluate how landowners take strategic decision. It is of importance to understand how the prerequisites for strategic decision among different subgroups of landowners affects their decision-making process and what underlying values that occur. The following research question is posed in order to reach the aim of the study:

*What are the major underlying factors influencing peri-urban landowners' strategic decisions regarding future land use?*

It is central to understand the underlying factors in order to identify factors that are not being well accounted for in classic economic theory, such as non-economic values and long-term development concerns. The identified factors can also be of interest and is essential to consider in the formulation of future policies.

## 1.4 Delimitations

This thesis will focus on peri-urban land use and the conflicts between exploitation of non-agricultural land uses and agricultural production. The reason why the focus is made towards peri-urban agriculture is that it is considered the most interesting area in the near future to study because it is where the problem comes to a head. Several studies state that it is the peri urban areas that are used for urbanization purposes (Zasada, 2011; KSLA, 2012; SCB, 2013). However, focusing on peri-urban areas may risk missing exploitation of agricultural land that does not occur in the direct vicinity of cities.

There will be a restriction in geographic area to Uppsala Municipality, since Uppsala have the highest amount of agricultural land that have been exploited during the last years (Swedish Board of Agriculture, 2013:3). The focus on a specific geographic area will enable consideration of specific local conditions. However this focus may risk missing major influencing factors that may not be dominant in the Uppsala area and may over estimate Uppsala specific factors.

Since this study has a business economics perspective the study is focused on the underlying factors that influence a decision, not the decision process in itself. In order to analyse the underlying factors that occur, it is essential to consider the decision context. By not investigating the decision process, this study may underestimate factors that have been of importance for historically made decisions. The factors that are examined in the thesis are mainly focused on economic and socio-economic factors. Since this study is limited to explore agricultural land, the landowners is selected based on this restriction. The landowners are divided into two subgroups; institutional landowners and farm enterprises as they are the two largest subgroups of landowners according to Statistics Sweden (SCB, 2013).

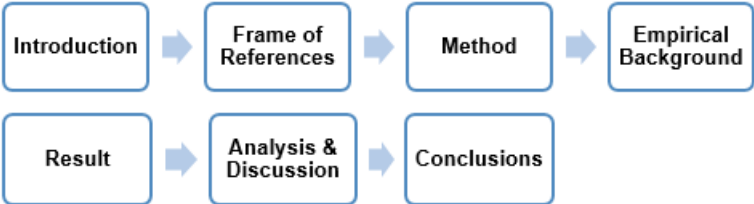
## 1.5 Outline

The outline of this thesis is illustrated in Figure 1. Chapter one briefly introduces the reader to the background of the problem and describes the current situation for competition of peri-urban farm land. Further, it describes the importance to understand how landowners make decisions regarding land use and especially how strategic decisions regarding future direction are taken. The reader is given a short background of previously research about driving forces of land use. The aim of this study is presented and the research question is posed.

Chapter two highlights literature and theories that are essential to dig deeper into what affects decision making and especially strategic decision for peri-urban agriculture. Moreover the reader is provided with information about how farmers can be categorized by their behaviour and strategic characteristics. The driving forces of land use are important to understand in order to analyse which driving forces that are of interest for the landowner when making decisions. Chapter three explains how the methodology is used in the thesis, in order to understand how the thesis have been written, how the data have been collected, and how empirical work have been developed and implemented. Chapter four introduces the reader with information about the respondents and background information about land use in Uppsala Municipality.

Chapter five presents the result and the empirical findings that have been reached through qualitative interviews. The chapter is divided into two sub-headings, farmers and institutional

landowners, in order to easier see how the different groups of landowners have answered to the questions. Chapter sex presents an analysis and discussion about the results in relation to the literature and theory used in previous chapter, in order to answer to the aim of this thesis. Lastly, chapter seven presents the final conclusions and suggestion to further studies and research questions that have been raised during this research process.



**Figure 1, Schematic illustration over the outline in thesis (own modification).**

# 2 Frame of references

*This chapter provides a presentation of relevant theories that are required to fulfil the research aim. The used literature in this thesis is collected from different databases such as; Epsilon, Web of Knowledge, JStor, ScienceDirect and Libris. These databases are available from the library at the Swedish University of Agriculture (SLU). The theories that are central to this study will be presented thoroughly and provide a good base for the empirical investigation. Theories that are chosen are in the research field of Driving Forces of Land Use Change, Decision Making, Strategy and Strategic Decision, and Farm Typology.*

## 2.1 Land use changes in urban-rural fringe

In order to obtain a deeper understanding of land use changes, it is central to find out about the influencing factors and driving forces (Slätmo, 2011). Earlier studies within landscape research have mainly focused on a quantitative approach. Slätmo (2011) consider that it has been difficulties to reach a common methodological and theoretical approach. According to Eiter and Potthoff (2007) there is a need for better knowledge about land use changes and the complexity about which factors that affects and lead to changes in the landscape (Eiter & Potthoff, 2007). Earlier studies have been conducted in different approaches and where the focus is differing mainly between three categories: processes, structures or combined approach with both process and structure (Slätmo, 2011).

Eiter & Potthoff (2007) have conducted a study that focus on understanding the driving forces that affects land use changes. According to Eiter & Potthoff (2007) better knowledge is achieved when the source of the force and the force itself are separated from each other. The definition of driving forces from their perspective is defined as forces that are applied by someone or something. From this understanding the forces are categorized in five concepts: attraction, pressure, friction, repulsion and working force, Figure 2. Two of these concepts consist of elements arising from changes, by attraction or pressure. In contrast the concept of repulsion a factor that prevents change and friction is the factor that is changing the direction of landscape change. The last one is a working force that refers to the factors that could be identified as the triggers of change.

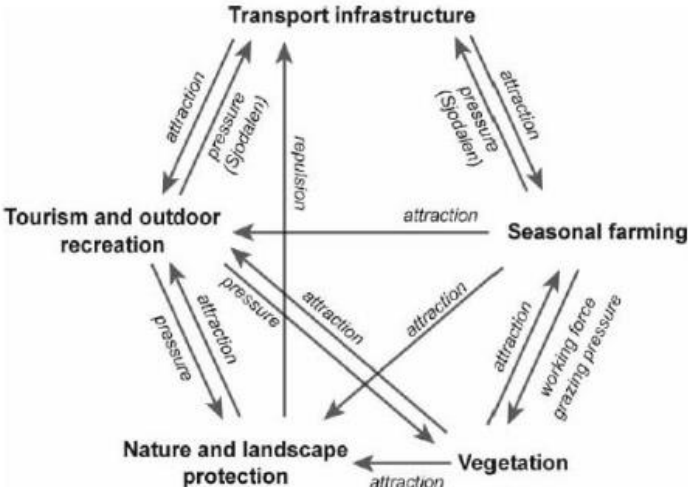
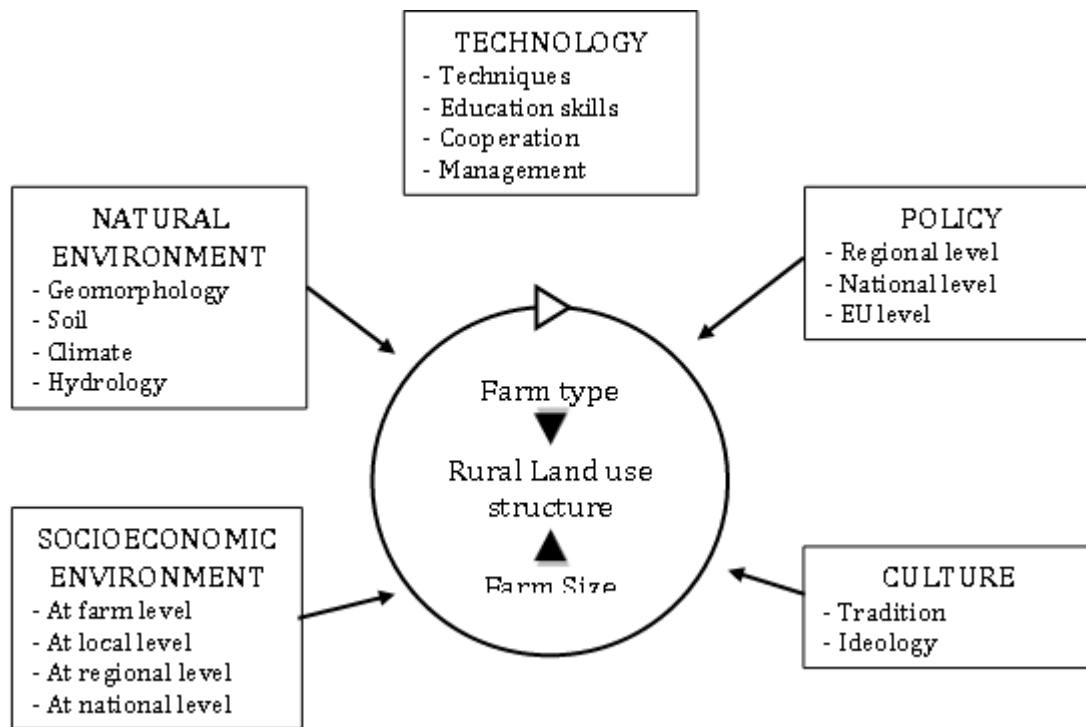


Figure 2, Schematic figure that presents forces related to five different type of land use (Eiter & Potthoff, 2007).

Brandt *et al* (1999) conducted a study about land use development in urban rural areas in Denmark, focusing on changes in the urban fringe and marginalization of agricultural areas. In order to analyse the key driving forces they are categorized into five groups: technology, natural environment, socio economic environment, policy and culture, see Figure 3 (Brandt *et al.*, 1999). The categorization shows how different land use changes are influenced by different driving forces. The categories are connected to their effect on rural land use. In order to analyse the agricultural system, it is essential to consider farm type and farm size as two important structural characteristics (Ibid).



**Figure 3, Illustration over driving forces influencing land use and landscape pattern (Brandt *et al.*, 1999).**

According to Brandt *et al* (1999), approaches that includes both processes and structures can take the complex dynamic of driving forces into consideration and contribute for the understanding of land use changes. These categories have a general character, which can lead to less detailed information about the driving forces in a specific area. The general approach contributes to that driving forces can be suitable in several categories and have therefore been questioned by other researchers (Eiter & Potthoff, 2007).

Brandt *et al* (1999) points out the difficulties in forecasting land use due to fact that land use changes is affected by several factors. Moreover, they discuss that it may be possible to predict the changes in larger point of view and are critical of doing it on local scale. However, Eiter & Potthoff (2007) highlights the importance to consider a local level. Despite the importance to look at a larger scale, Brandt *et al* (1999) emphasizes that interviews conducted with farmers have been successful in order to analyse future changes regarding marginalization of agricultural land.

## 2.2 Decision Making

Traditional economic theory assumes that people make decisions based on the expected change in their level of well-being and utility maximization (Edwards-Jones, 2006). It is difficult to measure the benefits of certain decisions and therefore is often connected to concept of economic terms such as profit maximization or other monetary values that easily can be measured.

Decision theory contains different theories of how decisions are made within organizations and companies (Nutt & Wilson, 2010). Decision making and strategic decision are key elements within the research area and is a central activity for organizations of all types and often when considering key decision regarding future direction. Making a decision often involves parts of choosing between alternatives, often done in a systematic approach (Lee *et al.*, 1999; Nutt & Wilson, 2010). Managers are expected to make decisions based on alternatives that often holds some degree of uncertainty and where the outcome is unknown (Lee *et al.*, 1999; Bromiley & Rau, 2010). The decisions that are made should take into account the requirements of the organization but also the interest of the company's key stakeholders (Lee *et al.*, 1999; Johnson *et al.*, 2008; Nutt & Wilson, 2010).

Decision theory is mainly divided into two research areas: *normative* and *descriptive* (Resnik, 1987, p.3). The normative research area may also be referred to *prescriptive*. The normative decision theory describes how decision should be made and how people should behave in order to make rational decision. The prescriptive theory, in similarity to the normative, describes how people should make their decisions but it also includes what they can do. The descriptive theory describes how decision actually is made, often allowing or noting that people's behavior may be inconsistent and non-rational. Moreover, the theories consider how people view risk and expected benefit of a decision.

Mintzberg & Westley (2001) writes about three different ways of explaining how people take their decision based on their behaviour: (1) *Thinking First*, (2) *Seeing First*, and lastly (3) *Doing First*. The first categorization symbolizes the rational approach in decision making. The second one more of the process that get insight about a solution that may fit a particular problem. The process can be summarized in four steps: preparation, incubation, illumination and lastly verification (Mintzberg & Westley, 2001). The third categorization is a more experimental approach, where you first of all do things and then evaluate the result in order to repeat the successful behaviour. Each approach has its advantages and disadvantages and which approach that are the most useful depends on the situation. The first one is more appropriate when there is a clear issue and information is reliable. The approach by seeing first is more suitable when there are several components that need to be combined and where it is necessary to find a creative solution. Lastly, the approach by doing first is more appropriate when situations are more complex and confusing and it is easier to just work things out.

### 2.2.1 Rational decision-making

The classical approach in decision making assumes that individuals think and act with complete objectivity (Lee *et al.*, 1999). It is common to assume that all alternatives and consequences are known for the decision maker (March & Heath, 2009). However, this is a



truth with modification, since situations with perfect information are ideal in actual situations it becomes very difficult to make decision entirely rational and in an objective manner.

When individuals make decision they are often influenced by the organizational context and several environmental forces, which can be both internal and external (Lee *et al.*, 1999). The forces may differ depending on the individuals own preferences, but is especially affected by the organizational culture, management, and further by political and legal considerations. Simon (1951) identified that the surrounding environment had impact on the decision making process and contributed to individuals bounded rationality (Lee *et al.*, 1999, p.4). It is commonly assumed that there exist optimal outcomes to a decision given certain circumstances. However, the decision makers need to consider influencing factors which often leads to compromises.

In an ideal world, all decision are made entirely on rational basis and enable individuals to maximize resources with clarified constraints by a step-by-step logic (Lee *et al.*, 1999). Rational decision making have for a long time been considered as central aspect in strategic decision making (Child *et al.*, 2010). Theories about rational choices is often used in understanding and communicating about choices that the decision maker takes (March & Heath, 2009).

The meaning of rationality has come to have many explanations. March & Heath (2009) have chosen the meaning that is linked to processes of choice and its procedure for making choices. A rational procedure may or may not lead to good outcomes. Which choice the decision maker takes depends on which different alternatives that are considered. Therefore decision makers are assumed to choose among several alternatives on basis of their expected consequences where none of the consequences are known with certainty. Since a decision maker does not know with certainty the outcome of a specific decision it is unlikely that the result of an action will confirm expectation. The most common situations that involves uncertainty are those were decision is taken under risk (March & Heath, 2009, p.6). In these cases the consequences are often uncertain and the probabilities are known.

A rational decision making process are often conducted in four steps: define, diagnose, design and decide (Mintzberg & Westley, 2001). In reality most decision do not have a rational approach according to the criteria that are listed above, thus the individuals is rather acting by bounded rationality (Lee *et al.*, 1999; Bromiley & Rau, 2010). There a number of factors that will determine the way in which organizations and individuals reach decisions. The definition of bounded rationality is defined as individuals' rational behaviour within set parameters that contain the main features of a problem (Lee *et al.*, 1999, p.4). This is not only about parameters, but will also be influenced by the decision makers' environment. The environment can contribute both external and internal to the organization. Decision makers can also lack information and face a range of constraints, for example there may be imprecise definition of the problem, lack of alternatives, no clear criteria (Lee *et al.*, 1999). It can also depend on that there is no time, cost constraints or an inability to calculate the optimal choice.

## 2.3 Strategy & Strategic Decision

*“Strategy is the direction and scope of an organisation over the long term, which achieves advantage in a changing environment through its configuration of resources and competences with the aim of fulfilling stakeholder expectations”* (Johnson *et al.*, 2008, p.3).

Research about strategic management have been developing original from business policy and strategic planning and have been separated in two main research streams: (1) strategic content and (2) strategy processes (Johnson *et al.*, 2008; Papadakis *et al.*, 2010). Strategic content is about the nature of different strategic options and strategic process is about decision-making and strategic change in an organization. Papadakis *et al* (2010) explains the differences in this way: “*Content research deals with the ‘what’ of strategy while process research deals with the ‘how’ of strategy*” (Papadakis *et al.*, 2010, p.32).

It is central to study strategic decision making to understand decisions that are made by the firm and how these decisions set the course of a firm (Eisenhardt & Zbaracki, 1992). Strategic decision involves the central decisions that set the direction of the organization for the future (Lee *et al.*, 1999). In literature it is common that a strategic decision is characterizes with long-term decisions. But it is important to remember that the term strategic is not synonymous with long-term. The time horizon of strategic planning will vary depending on the business environment and performance of the firm.

Organizations constantly faces challenges of a strategic nature, it can be about new opportunities or solve significant problems that arise for organization (Johnson *et al.*, 2008). There are several factors and issues that affect a company's strategic decisions. It is essential for the company to have a strategy regarding their long-term directions but also the scope of organizations activities. Due to its long-term horizon can strategic decisions that fails lead to bad outcomes that affects the organization for a long time (Nutt, 2010). The company need to find the strategic fit within the business environment and also see to its resources and competences. A company's stakeholders can have some influence on the organization and it is often essential for the organization to act after their requirements and expectations. Stakeholders can both facilitate and provide resources, but also limit the activities through their demands.

Strategy is about people making decision in order to implement an organization's long-term direction and performance (Johnson *et al.*, 2008; Child *et al.*, 2010). Due to its long-term horizon is often strategy and strategic decision characterized by complexity and uncertainty. According to Johnson *et al* (2008) “*Uncertainty are inherent in strategy, because nobody can be sure about the future*” (Johnson *et al.*, 2008, p. 4). Strategic decisions are likely to affect operational decision and require an integrated approach within the organization.

The main differences between a strategic decision and any other decision is the time horizon and importance's (Lee *et al.*, 1999). But it is central to remember that strategic decision does not need to be long-term automatically, rather depending on situation. The time-scale in decision will vary mostly because of the business environment and the organization itself. Strategic decision that are taken in an organization are strongly affected by its surrounding environment, but also the level of acceptance to risk in the organization (Lee *et al.*, 1999). Another factor that influences the strategic decisions is the size of the organization, especially of the time horizon. According to Lee *et al* (1999) a large company will be unable or find it more difficult to react quickly to changes. A small medium enterprise will find it easier to respond quickly and adapt to changes. On other hand, will probably the small medium enterprise have more challenge to discover what will come in future and may not have the resources to predict future. Therefore it is more likely than smaller firms do less formal strategic planning compared to larger organisations.

### 2.3.1 Strategic decision in farm business

Decision models of how farmers make decisions early on assumed that farmers are taking rational decisions and aims at maximizing profits (Öhlmér *et al.*, 1998). However, there are several studies that claim that farmers not only make decisions based on profit maximization and mean that there are other factors that affect (Willock *et al.*, 1999; Wallace & Moss, 2002; Edwards-Jones, 2006) The farmer is often affected by the combination of different factors such as values, family situation, lifestyle and financial goals. According to Gasson (1973) value the farmer's lifestyle and believes that economic values tend to have a lower priority. Research in recent years highlights the importance of farmers' various characteristics such as age, education, attitude to risk and personality (Willock *et al.*, 1999; Edwards-Jones, 2006). The structure of the farm has great impact on the decision-making process and includes production orientation and size of the farm. Decision in farm businesses are often made and implemented by a single person (Willock *et al.*, 1999). It appears that farmers have more external pressure on their decision making, compared to other businesses.

A study conducted by Öhlmér *et al* (1998) identified eight elements that was of importance in the decision process and that was concretized in four phases: (1) problem detection, (2) problem definition, (3) observation and (4) development of intention. The farmers could be categorized in two groups: (1) intuitive farmers and (2) analytical farmers (Öhlmér *et al.*, 1998). These grouping depended on how farmers approach was according to their formulated goals. The first group formulated not quantitative goals, while the other group at least quantified some of their goals. It emerged in the study that farmers of the first categorization often used prescriptive knowledge in their decision making and had some “*rules of thumb*” that influenced their short-term decisions (Ibid). It was noticed that earlier performance was a big input to their decision making or experiences from other farmers. On the other hand the second categorization was distinguished by a more analytical process where the farmer himself planned different options and estimated the consequences for a certain decision. The decision process is seldom a linear process; rather a matrix best describes how farmers make their decision.

In both case these different types of farmers are influenced by their values in the decision making (Öhlmér *et al.*, 1998). It emerged from the study that farmers' highest value was to stay on the farm and improve it for the next generation. It was clearly that all farmers wanted to make a living on their farm businesses. Farmers are often slow to detect problems and are not aware of the problem until it is pointed out for them and is rather taking decisions step-by-step. Instead they continually update their plans for the future and are often choosing a low level of risk that they can handle the outcome if it turns out to be bad. Farmers often take responsibility in a broader view and as Öhlmér *et al* (1998) expressed it in the study: “*The farmer is decision maker, executer of the decision, and owner of the resources*” (Öhlmér *et al.*, 1998, p.285).

### 2.3.2 Strategic decision model

In order to understand and predict strategic decisions in an organization different models been used over time (Schoemaker, 1993). This field of research have been seeing several approaches in purpose to understand and improve strategic decisions. Schoemaker (1993) contributed with a conceptual framework in this research area and which resulted in four models that builds on Allison's (1971) well-known theory about Cuban missile crisis

(Allison, 1971; Schoemaker, 1993). These four models can be divided in four classes: the unitary rational, the organizational, the political and the contextual. A conceptual schema over the four models can be seen in Figure 4.

		<i>Co-ordinative efficiency</i>	
		Low	High
<i>Goal congruency</i>	High	<b>Organizational model</b>	<b>Unitary actor model</b>
	Low	<b>Contextual view</b>	<b>Political model</b>

**Figure 4, Conceptual schema over four different models (Schoemaker, 1993, p.109).**

The conceptual schema gives a picture about the four models and the two key axes: (1) degree of individual goal congruency and (2) extent of co-coordinative efficiency (Schoemaker, 1993). The first axis can be impacted by the culture in the organization, if there organizational changes going on and selection pressure. The second axis shows in which extent of coordinative efficiency appears in the organization. The four models are explained briefly under each heading:

*Unitary Actor Model (A)*

This model assumes that the decision making can be modelled as a single person taking strategic decision in a rational manner. Schoemaker (1993) describes it like: “*only one person is behind the curtain, who acts from a clear set of objectives and pursues a rational strategy in meeting these objectives*” (Schoemaker, 1993, p.109). The person making the decision is assumed having shared values and act in a rational manner but not hyper rationally.

*Organizational Model (B)*

This model assumes that there are multiple individuals in the organization that is heading for the same objectives. The organization can be divided in several departments that have its own perceptions, constraints and limitations according to a specific activity. However, the departments are assumed to share a common goal.

*Political Model (C)*

This model assumes that individuals or departments have their own sub-goals to achieve the organizational goal, but these goals may be in contrast to each other. In despite of individuals and departments working together aiming for the same goal cans the intern politics contributes to partisan behaviour.

*Contextual View (D)*

This model assumes that organizational environment and individual goals is complex that each decision is special and unique. This means that similar problems often have different solutions depending on the situation. Schoemaker (1993) describes it: “*each decision context becomes its own reality, with limited consistency across situations and goals*” (Schoemaker, 1993, p.110).

According to Schoemaker (1993) it is more likely that we consider other people’s action fitting the unitary actor frame rather than organizational, political or contextual view (Schoemaker, 1993). From an economic approach it is common to view the organization as

optimizing entities which act from a shared set of values. But it is well-known the internal complexity and bounded rationality that can occur in organization.

In which way an organization is structured have great impact on the decisions that are made in the organization, concerning both strategic, tactical and routine decisions (Schoemaker, 1993). When making strategic and tactical decision often requires input from several managers in an organization. These managers often have their own agendas and constraints in their decision making and which affect the outcome from the decision seen from the organizational point of view. In the political model there is obvious differences between the organizational and individual goals and according to Schoemaker (1993) is it impossible to design an incentive system where individuals in the organization strives for the same goal.

## 2.4 Peri-Urban Agriculture

During the last decades there have been a rapid change and process of urbanisation in several parts of the world and especially in Western Europe (Zasada, 2011). Peri-urban areas are often exposed to competition between different land use purposes and Zasada (2011) writes in his article that: “*farming has to compete on the land market with other non-agricultural land uses, such as housing with its higher bid rents*” (Zasada, 2011, p.640). It creates financial incentives for landowners to sell their farm land for urban development. This pattern is not unique for Western Europe, same trend can also be seen in United Kingdom regarding agricultural land market (Munton, 2009). The urban impact on agricultural land is leading to increased land prices. There may also be different market condition and complex pattern, and changes of ownership and property rights with short-term contract.

Land scarcity are a common problem in peri-urban areas and farmers´ sometimes perceived that there is no available land, due to the high land prices (Vandermeulen *et al.*, 2005). However, Vandermeulen (2005) states that not all farmers perceive this as a major problem and explains it with the differences of land ownership. The land resource is an important factor to consider in farm enterprises and farmers need to decide whether to own or lease agricultural land. A farmer that owns most of the arable land themselves is not worried about land shortage in the same extent as farmers that lease a significant share. Further, the age of a farmer is of importance since older farmers tend to own a larger share. Vandermeulen *et al* (2005) lifts the advantages with leasing arable land by saying that less capital is needed for investing compared with buying land. Whether agricultural land is owned or leased may have impact on how effective the land is used. Farmers that have short-term contract are more likely to have strategies and preferences based on short-term planning. Moreover, are farmers that are willing to expand more sensitive about the land availability.

Vandermeulen *et al* (2005) explain that due to the increased urbanization it has created competitors for the peri-urban areas, for example urban development, infrastructure, nature and tourism. The competition for land also contribute to increased impact of the remaining farmland which results in increasing cost of land resources (Zasada, 2012). According to Vandermeulen *et al* (2005) there is both advantages and disadvantages being a farmer in peri-urban areas. Zasada (2012) states some advantages and opportunities of peri-urban agriculture such as availability of labour, rental of farmlands and new local market opportunities. Some studies argue that peri-urban agriculture creates opportunities for farm household to seek employment outside the agriculture (Evans & Ilbery, 1993).

### 2.4.1 Farm Typology

In a study conducted by Zasada (2012) peri-urban farmers have been studied to see how they are affected by being active in urban agricultural areas and their decision-making processes regarding their adaption strategies. The result has been contributing to create a framework of a model, which divides farmers in to four different typologies and is shown in Figure 5. The framework consist by following four farm types; *Traditional Farm* (Type A), *Adaptive Farm* (B), *Phasing-Out Farm* (C) and *Innovative Farm* (D). The case study has been investigating farmers that have horticultural business near the urban area of Berlin. The four typologies are built on distinctive features that occur among the different farm types. The methodology is qualitative and is conducted in depth interviews, the cases were selected by the farm style approach.

Zasada (2012) writes in his dissertation a summary about each of the four different farm types. The *Traditional Farm* (Type A) is representing the traditional farm prototype and represents a larger-scale salad grower with conventional production. The *Adaptive Farm* (Type B) is representing a smaller enterprises but that is strongly market orientated for the urban areas. The *Phasing-Out Farm* (Type C) that is a long-established farmer with organic production which have during the last reduced his farm size. The last one is the *Innovative Farm* (Type D) that is included in a cooperative farming and gardening and is dealing with the new demands and requirements that have occurred in the urban areas. The result aims to give a better understanding to understand farmers' perception of their peri-urban location of farm business and their adaption strategies.

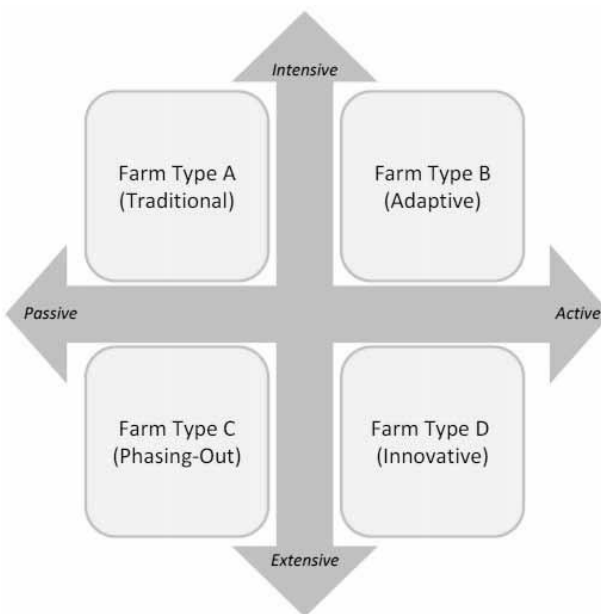


Figure 5, Framework of farm typology (Zasada, 2012).

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*Farm* (Type D) that is included in a cooperative farming and gardening and is dealing with the new demands and requirements that have occurred in the urban areas. The result aims to give a better understanding to understand farmers' perception of their peri-urban location of farm business and their adaption strategies.

## 2.5 Theoretical synopsis

In order to identify underlying factors that influence landowners' strategic decisions regarding future land use, it is of importance to investigate driving forces behind the change (Brandt *et al.*, 1999; Bürgi *et al.*, 2004; Slätmo, 2011). This is done by using Brandt *et al.* (1999) division of driving forces. To understand landowners' individual decision making regarding future land use it is essential look closer to their decision making process. The classical approach in decision making assumes that individuals think and act with complete objectivity (Lee *et al.*, 1999). However, to gain further knowledge we need to take into account individuals bounded rationality and non-economic factors such as values.

To investigate how landowners is affected by land scarcity there is a need to look into land ownership structures (Vandermeulen *et al.*, 2005). In order to analyze how landowners is planning for the future, there is a need to understand how they take their strategic decision and in which time horizon. Decision making is a key activity when regarding long term planning within organizations (Nutt & Wilson, 2010). Johnson (2008) and Child (2010) states that strategic decision often characterized by uncertainty and complexity. To understand the time horizon that landowners use, it is essential to consider business environment and organization itself (Lee *et al.* 1999).

Schoemaker (1993) have developed a theoretical framework consisting of four models, aiming to understand and predict strategic decisions in organizations. Based on this framework the landowners can be divided into groups depending on their organizational structure. Mintzberg & Westley (2001) have developed a model of how people make decisions based on their behaviour. When analyzing farmers' decision making there is a need to consider several aspects that are unique for farm enterprises. Farmers do not only make decisions based on profit maximization, meaning that other non-economic factors should be considered (Willock *et al.*, 1999; Wallace & Moss, 2002; Edwards-Jones, 2006). According to Öhlmér *et al.* (1998) farmers are influenced by their values in their decision making.

Farmers can be divided into different typologies that characterize their actions and decision making. Zasadras (2012) model examines how farmers is affected in peri-urban areas and investigates their adaption strategies. This model is considered applicable in order to see the similarities and differences between different farmer typologies and where it can lead to a good understanding of farmers' strategic decision-making in urban areas.

## 3 Method

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*In this chapter the method approach is explained and argued for why those choices were made. The study will consist of a comprehensive literature review to identify research items that are relevant to this topic and a case study with qualitative interviews with landowners in Uppsala Municipality.*

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### 3.1 General research approach

The research method is presented and explained in this chapter, which aims to describe the research design in order to create understanding for how this study was conducted. Which make the study becomes repeatable and highly reliable. A high reliability means that another researcher should be able to repeat the procedures that are described, conduct the same case study, and come up with the same results (Yin, 2003). This study uses a theoretical framework based on a literature review of the general understanding about driving forces of land use and decision theory. In order to obtain a deeper understanding of strategic decision making and farmers' typology, literature that describes this have been studied. The research strategy adapted in this thesis is case study. According to Yin (2003) case study is a preferred strategy when the study aims to investigate complex phenomena that occurs in real life and can be used in several situations.

Every organization and individual has their own unique features and similarities. (Bell, 2006). When a case study is conducted it is essential to find these differences and similarities in order to analyse and draw conclusions. There several ways in collecting data which can be gathered through interviews, survey or observations (Yin, 2009). However, there is a discussion among researchers about disadvantages when using case studies and where the value in studying single cases or units is questioned (Bell, 2006). The main argument for this reasoning is that is hard to control the findings and its accuracy. This is based the fact that several research studies has been unstructured in the meaning that they have not followed a systematic approach (Yin, 2009). This may lead to biases affecting the result and conclusions.

The case study can be performed in three different directions: *explanatory, exploratory and descriptive* (Yin, 2009). The approach of this study is explorative and uses a qualitative method through its interviews. An exploratory approach means that by identifying scenarios and relevant factors, the data obtained contribute to a deeper understanding or detection of problems (Kvale *et al.*, 2009). According to Robson (2002, p.59) an exploratory study aims to:

*“Find out what is happening, particularly in little-understood situations; to seek new insights; to ask questions; to assess phenomena in a new light; to generate ideas and hypotheses for future research”.*

Exploratory studies can contribute to new research or cover black holes of knowledge (Kvale *et al.*, 2009; Esaiasson, 2012). According to Kvale (2009) the purpose of an exploratory study is to seek new information and new dimensions of analysis. The reason for choosing an explorative approach in this thesis is that there has not been much research on landowners' driving forces in land use, and how future climate changes may affect their strategic decisions. Therefore the objective in this study is to find out how farmers and landowners take



strategic decisions regarding their future land use. Furthermore the research will seek new insights in this research area and analyses the result in order to create an understanding for the decision making in this type of decision.

Conclusions can be drawn through an inductive or deductive approach (Thurén, 2007). The two concepts are explained by (Thurén, 2007, p.22): “*Induction is based on empiricism and deduction on logic*”. Applying an inductive approach often gives conclusions of more general character and requires quantification. An inductive approach can never give answers that are completely reliable, but rather give answers that are more or less likely. Conclusions drawn with a deductive approach is often done in a logical manner, and is considered true if they have logically coherent (Thurén, 2007). But an important notice is that conclusions of deductive approach do not need to be true in the sense of reality. This thesis can be considered to use a deductive approach, due to the fact that the study is conducted qualitatively. However, no hypothesis has been made in advance which is a requirement for this type of approach.

## 3.2 Literature review method

Using already existing literature on a topic will give the reader the knowledge of what is already known about this area of research and create a picture of the concepts and theories that are relevant to this thesis (Bryman, 2008; Esaiasson, 2012). In order to create an overall picture of the topic, the literature review is based on academic articles and books. The academic articles is from peer-reviewed journals’ available through various databases. The databases that have been used for searching academic articles are those that SLU provides for its students such as; JSTOR, Primo, Web of Science, ScienceDirect and Google Scholar. Robson (2011) recommend using different databases in order to find relevant articles, due to the fact that there are some differences in findings when searching among several databases.

During the research process some key research areas have concretized and therefore represent the base in literature review. These research areas have in turn been divided into four main areas: “*Decision Making*”, “*Peri-Urban Agriculture*”, “*Foresight/Future Studies*”, and lastly “*Driving Forces of Land Use Change*”. Based on this, a number of key references have been found and thereafter used for finding other relevant articles by their citation to other references. According to Robson (2011) this is a good way of exploring what have been written in the field of science but also see how other researcher make use of the references.

Robson (2011) stresses the importance that in early stages in the research process, develop some key words that describe the central part of the thesis. The key words that have been used for searching for academic articles were for example: *decision making\**, *strategic decision\**, *peri-urban agriculture\**, *farmers’ attitude\**, *farmers’ behaviour\**, *driving forces of land use\**, *land use changes\**, *future studies\**, *future scenarios\**, and *scenario analyses\**. The key words have mainly arose from the background information in this thesis but also developed during the research process. In order to find more specific articles and relevant theory the keywords have been combined in different combinations. Since the research area is wide and contains several fields of research to cover the research question some key articles may have been overlooked. There might be other terminology than the one used in the search for articles, that could have been useful in this study. This is in line with what Robson (2011) writes and is explaining that even though several databases have been used there is no guarantee that all relevant information will be found.

### 3.3 Data collection

The research strategy applied for this thesis is flexible design in order to successively consider all aspects affecting the thesis. During the research process a more detailed framework was developed. Flexible design research is often used in qualitative studies, and a suitable methodology often emerges and evolves during the data collection for the study (Robson, 2011). When applying for a flexible design it is important to decide how *looseness* and *selectivity* the design should be. If the design is too loose it leads to an undefined structure with less selective data collection. The opposite occurs when dealing with a selective approach that may lead to a narrow view of the case and which affects the result. To avoid these two extreme scenarios it is important to have a balance between *looseness* and *selectivity* (Ibid). In order to find the balance in this thesis the research area has been defined in some directions and after the empirical data collection has been rewritten.

Robson (2011) recommends three different types of approaches when applying for a flexible design and that is: *case study*, *ethnographic studies* and *grounded theory studies*. The first approach is suited when research is about a case and its surrounding context. The second approach is more appropriate when studying culture and social structure of a social group. The third approach is a relatively new strategy where the main focus is on developing a theory from a specific social situation and uses it in the study. This thesis will use a strategy by multiple case studies, meaning that there is more than one case that is observed. A multiple case study is more likely to create generalizations both analytical and theoretical (Robson, 2011). While in a single case study it is more common with statistical generalizations.

#### 3.3.1 Unit of analyses

In order to decide about the research design it is of importance to understand the different elements that affect the outline (Halvorsen & Andersson, 1992). According to Yin (2009) it is essential to clarify *unit of analysis* in research in order to define the case. Holme & Solvang (1997) define the unit of analysis as those people that are participants in the case study.

The unit of analysis often occurs from the research question and since the aim of this study is to find out how farmers and landowners take strategic decisions regarding their future land use. The unit of analysis in this thesis consists of underlying factors that affect landowners in their decision making, and where the landowners are the analysed unit. However, is it possible to divide the landowner into two subgroups and in this case it is the institutional landowners and farmers.

#### 3.3.2 Sampling

When doing a case study it is important to choose which case or cases that are of importance to study in order to answer to the aim of the thesis (Blaxter *et al.*, 2006). Furthermore, it is essential to know the reason for choosing a specific unit and above all the amount of units that are chosen (Yin, 2013). In qualitative research it is common to do a purposive sampling in order to find that respondent that gives the most information. It is desirable to choose those that give contradictory results instead of those that more or less confirm your preconceptions. In this thesis the selected cases are based on a purposive sampling logic.

The selection and number of necessary interviewees depends on the aim with the research (Kvale, 2009). A question that usually recurs in this context is about how many respondents that is necessary to have in order to answer to the aim (Kvale, 2009; Esaiasson, 2012). A qualitative sample should be large enough to cover all eventual important perceptions and contributing to saturation is fulfilled (Mason, 2010). Saturation is fulfilled when no new information or data is collected. According to Kvale *et al* (2009, p.129) the simple answer to that question is: “*Interview as many people as needed to find out what you need to know*”. However, this can be difficult in reality and it often result in too many interviewed or too few interviewed (Kvale *et al.*, 2009). It is hard to generalize the result with few respondents and opposite with several respondents. In this thesis have the saturation approach limited the number of interviews in order to answer to aim of the study.

The selection of the respondents in this thesis has been selected through a register that the County Board of Uppsala have provided. The register is the sampling frame of the thesis and contains a list of 303 farmers in Uppsala that have been applying for CAP subsidies during the last year. All farmers had farm enterprises with crop production. Based on this register the respondents been selected through two factors: geographical location and total land area. The selection was conducted through using a database that listed the farmers and the selection was based on where the farm center was located. It was desired to choose those having farm land near the city. The selection resulted in a list of 40 farmers within radii of 20 kilometres from the city center. The limitation to 20 kilometres was done in order to select relevant landowners within peri-urban area and that is relevant for the comprehensive plan of Uppsala Municipality. The final list of interviewees’ farmers was selected based on this smaller group and none of those farmers was located further away than 10 kilometres from city. Main reason for this was to select those that are likely to first be affected by future city development. Another constraint in the selecting phase is the total land area of the participating farm enterprises aiming to find farmers that are working full time with their agricultural operation. The participating farm enterprises have a total land area approximately about 200-300 hectare, and an average area of 240 hectare.

The participating respondents in this thesis consist of four institutional landowners and five farm enterprises in the municipality of Uppsala, which has resulted in a total of ten interviews. The respondents have been contacted via telephone and asked to participate. The same selection factors have also been applied on the institutional landowners. None of the farmers or institutional landowners that were asked to participate in the study declined. However there were a few farmers that did not respond to the phone call.

### 3.4 Qualitative Interviews

Interview is conducted in order to understand people’s ordinary life from their own perspective (Kvale *et al.*, 2009). Qualitative interviews are characterized by simple and straightforward questions that often result in complex and comprehensive response (Trost, 2010). The interview is designed to obtain descriptions of the interviewee's life-world in order to interpret the described phenomena sentence (Kvale, 2009). Interview is a conversation consisting of structure and purpose. It is through dialogue we get to learn about other people.

There are three different types of interview approaches: structured, semi-structured and unstructured (Bell, 2006). Structured and semi-structured interviews often follow a type of questionnaire. Unstructured interviews are conducted through developing themes that are of

interest. This type of interviewing often come up with interesting information and is a freer way of doing interviews. In opposition to the structure that follows a strict questionnaire and where the respondents have little opportunity to express their own thoughts. In this thesis the semi-structured approach been conducted for the interviews. Kvale *et al* (2009) explain the semi-structured interview form that is commonly used in research and is defined: “*An interview aiming to obtain descriptions in the interviewee's daily life, in order to interpret the meaning of the described phenomena*”. (Kvale, 2009, p.19).

Qualitative interviews should be conducted with an interview template with different themes for the questions (Trost, 2010). This is because, to far as possible, let the interviewee guide the conversation. The interview template should be relatively short and give an overview of the research area through the different themes for the questions. The interview template can differ between the interview opportunities but should be comparable from one time to another. According to Kvale *et al* (2009) an interview template used in semi-structured interviews should focus on certain themes and suggestions for suitable questions. Afterwards it is common that the interview is transcribed and written down in text in order to start analysing the information.

### 3.4.1 Interview process

All the respondents were informed before the interview about the aim with the thesis and were presented a short description about the field of research and background to the research question. The interviews were recorded since it gives a more reliable rendering of the interviews, and especially since there is only one person doing the interviews in this thesis. All respondents were asked for their approval and informed that recording information only meant to be used during analyse. Trost (2010) state that is better to be more than one person doing the interviews, and refers that it often gives better results in data collection. However, there should never be more than one person interviewed at a time, in order to avoid the complexity with different personalities among the respondents. Esaiasson (2012) stresses the importance when interviewing that considers both *content* and *form*. The reason is to reconnect to the problem formulation but also to create a dynamic form for the interview so that the dialogue can be alive. Kvale *et al* (2009) and Esaiasson (2012) states the importance of having relatively short questions and easily understood. The purpose of the interview is to let the respondent talk as much as possible under structured forms.

The interviews with the institutional landowners were carried out firstly. When the interview template was created for the instutional landowners it was divided in six themes, see Appendix 1: (1) General Background, (2) Land management, (3) Decision Making, (4) Strategy, and (5) Future and Future Scenarios. Within the themes it was a couple of question and in those cases it was needed it also occurred follow-up questions. The interview template was not strictly followed; instead it was a complement to ensure that the themes were discussed during the interview. The interview template for the farmers reversed after the interviews among the institutional landowners had been completed. The reason for that was mainly because it is two different types of respondents and was the decision situations and social environment can differ. The interview template for the farmers was divided in following themes, see Appendix 2: (1) General Background and Land Management, (2) Decision Making (3) Driving forces/Influencing factors, (4) Future and Future Scenarios.

The interviews lasted in different lengths of time, depending on how active the respondent was during the interview. The interviews with the institutional landowners lasted between 45 minutes to one and half hours and were carried out in personal meetings. Moreover the interviews with the farm enterprises lasted between thirty minutes to one hour and were carried out through telephone. Afterwards all the respondents were given the opportunity to ask questions and discuss the subject. In some cases the respondents talked more freely when recording had ended. This phenomena could be discussed, and there may be some cases there it has affected the result. It is not considered likely due to the fact that all the respondents answered very honestly to the questions.

In order to let the respondents think more outside the box, three future scenarios were used in this thesis. Due to the fact that decision makers tend not to plan more than 10-20 years ahead, therefore it can be useful to let them use scenarios as a tool to think more openly (Milestad *et al.*, 2014). This is something that Milestad *et al.* (2014) motivates their case study with and uses scenarios just for that purpose among focus groups. The scenarios that were used in this thesis, are developed by (Öborn *et al.*, 2011) and consist in its origin of five scenarios for 2050 and is done to illustrate how conditions for agriculture and land use can develop and change in future. Three out of five future scenarios were used in this thesis: (1) An overexploited world, (2) A world in balance, and (3) The world awakes (Öborn *et al.*, 2011). The scenarios were summarized and presented for the respondents and discussed freely. This method has been used in order to make farmers and institutional landowners discuss their thoughts about the future and how that affects their daily decision making regarding land use.

### 3.4.2 Analysing the interviews

The respondents in this thesis are anonymous and have been coded from their names, companies and organizations. Several researchers stresses the importance of anonymous and confidentiality in order to not harm the participants (Kvale *et al.*, 2009; Trost, 2010; Esaiasson, 2012). Due to the fact that some part of thesis can be considered as sensitive in the meaning that it concerns the participants strategic decisions regarding future direction of the firm and that all are located in relatively small geographical area.

According to Blaxter *et al.* (2006) it is important to start analyse the empirical findings as soon as possible and stresses that analysing is an ongoing process that occur during the whole research process. The empirical studies often leads to a great amount of data and that needs to be processed and analysed (Trost, 2010). Further, Blaxter *et al.* (2006) states that there is two processes that needs to be done: (1) manage and reduce the data, and (2) analyse the data and finding the significance and importance. In order to analyse the empirical data in this thesis have pattern analysis been used to find out the similarities among the participants but also to discover the differences. Due to small selection of respondents are the conclusions that are drawn not generalizable in more extent than for the selection group.

### 3.5 Reliability and validity

Reliability and validity is two key concept in order to ensure quality in social research (Bryman, 2008). Reliability is a measure of the extent to which an approach gives the same results on different occasions and under similar circumstances (Yin, 2003; Bell & Nilsson, 2006; Bryman, 2008). Thurén (2007) says that reliability controls that the measurement has been correctly performed. The other key concept is validity and is a measurement whether a study has examined what was meant to be explored (Bell & Nilsson, 2006; Kvale, 2009; Thurén, 2007). It aims to give the reader an understanding whether the conclusions drawn in the study are reliable or not.

Robson (2011) stresses the importance reliability when using a flexible design. However, there is a challenge to ensure both validity and reliability in flexible design. The main problem is to ensure identical conditions in order to repeat a study, depending on the social context and changes occurring over time.

Bryman (2008) identifies three factors that evaluate the reliability in research: stability, internal reliability and inter-observer consistency. The first factor ensures that the result can be repeatable, meaning that the result should have high correlation between two observations. According to Robson (2011) it can be a challenge to ensure reliability in social science that involves humans and where it is hard to repeat the study with identical conditions. Therefore it is essential to well described study and explanations for which approach that is applied. If the study is conducted with the same respondents and research approach it is likely that a similar result is received.

The second factor that Bryman (2008) identifies is internal reliability that is testing if the indicators is consistent and is related to each other. This been avoided in this thesis through not analysing single questions, but rather taking into account the whole interview. The third factor is inter-observer consistency and is explaining how subjective judgement can affect the result due to a lack of consistency in decisions especially if there is more than one researcher. This is not seen as a problem in this thesis, due to the fact that there is only one author of the thesis. This problem has been avoided due to only one person doing data collection and interpreting the data.

### 3.6 Ethical aspect

It is important to consider the anonymity in a study, due to respect of the respondents (Trost, 2010). All data should be anonymous and it is only relevant data that is considered necessary for analyse and discussion that is of importance to the study. Unless it do not facilitates the identification of a respondent. It is of importance that researcher have agreed with the respondents in which information that will be used and that the respondents knows what is the aim with the study (Kvale, 2009).

Bryman (2008) investigates four main areas regarding ethical principles in research; harm to participants, lack of informed consent, invasion of privacy and deception. A researcher should try not to harm the participants and consider carefully what is published. The findings should be presented in a way so that individuals not can be identified. This can sometimes create dilemmas for the researcher. All the respondents in this thesis have been anonymous in order to not harm the participants. The farmers have been categorized as A, B, C, D and E, and in

similar way have also the institutional landowners been categorized in order to maintain their anonymity.

The second factors of importance is lack of informed consent (Bryman, 2008). Individuals should be given as much information as possible in order to make a well-considered decision whether to participate or not. In this thesis all of the participants have given their permission to be interviewed and allowance to use the information that occur. The third factor is invasion of privacy meaning that personal information about the participants should always remain confidential (Bryman, 2008). The fourth factor is about deception and is often happen when a researcher presents the study as something it is not. This can sometimes occur when researcher want to get more honest answers from participants. According to Bryman (2008) sometimes it is hard to draw the line for what is approved and generally accepted. It is important that the participants are well informed about the aim of the study to avoid misunderstandings but mostly with respect to the participants (Kvale *et al.*, 2009). In this thesis the participants have been well informed regarding the aim with this study and what the result may be used for later one. It has been of great importance that the participants feel secure answering the questions.

### 3.7 Methodological discussion

The result from this study can not be generalized and should be considered based on the selected case studies. However, the result indicates that the driving forces can be of interest since is supported by the literature and therefore the validity can be considered as sufficient.

The interviews with the institutional landowners and farm enterprise are considered to have a high reliability due to the fact that the answers were very open minded and honest. However, there may be systematic differences between the two groups since one group was interviewed in person and the other group was interviewed by telephone. The interview technique was however, consistent within each group. The fact that the interviews were recorded gives high fidelity to the empirical result. The interview questions differ between the two groups, due to the organizational size and prerequisite for land management. This may lead to some difficulties in comparing the result between farm enterprises and institutional landowners.

The use of future scenarios in the interviews was appreciated by several interviewees and contributed to open discussion. In several cases this contributed to clarify the respondents' answers in different interview questions and to give more precise answers. However, it was a disadvantage that the scenarios were aimed for a European perspective. Some of the respondents had some difficulties to relate for this general level and wished for more locally applicable scenarios. One major drawback is the scenario were resource and time consuming to explain. The result could have been differently if the respondents were focused on smaller farm enterprises and part-time farmers. The driving forces for these groups are likely to be different in some approaches.

## 4 Empirical background

This chapter aims to provide the reader with background information to the empirical study and the conducted interviews. The empirical study consists of four institutional landowners and five farm enterprises in the municipality of Uppsala, which has resulted in a total of ten interviews. The participating institutional landowners are shortly described in Table 1, and the participating farm enterprises are summarized in Table 2. All information and data that are reported in this chapter comes from respectively participants.

### 4.1 Institutional landowner

Participating landowners in this study represent four of the large institutional landowners in Uppsala Municipality. The empirical study has conducted in five interviews with people who hold the appropriate position at the organization for fulfilling purpose of the study. The current position at the organization for each interviewee can be seen in Table 1. The participating organizations are anonymous to the name and organization, mainly because the information presented in this chapter was collected during the interviews. However some of the information is public known and can considers as open information. Moreover have the participants given their approval to the information that is concerned.

**Table 1, Background information about the respondent for the institutional landowners in Uppsala Municipality.**

<i>Date</i>	<i>Organization</i>	<i>Position</i>
2014-05-21	Organization A	Manager of agriculture (Sv. Jordbrukschef)
2014-05-26	Organization B	Land manager (Sv. Markförvaltare)
2014-06-02	Organization B	Manager of agriculture (Sv. Enhetschef och förvaltare lantbruksdriften)
2014-06-03	Organization C	Land manager (Sv. Markförvaltare)
2014-06-05	Organization D	Manager of land and urban development (Sv. Mark- och exploateringschef)

#### Organization A

Organization A manages several foundations which are invested in real estates and securities in order to generate return to its owner. The organization has a long history in managing foundations and the number of foundations has increased during the years. The foundations are mainly divided into three categories: farm and forest estates, urban real estates and securities. These different categories of business contribute to risk diversification and generate return.

The interviewed person has the responsibility of leading and development the agricultural unit at the organization. In practice this means doing the ongoing management of the farm estates, but also to develop strategies for the agricultural unit. In total there are four people working as land manager for the farm estates. The total amounts of agricultural land is about 15 000 hectare. The majority of agricultural land is situated in Uppsala and consists mainly of arable land. The land area is divided into approximately 40 farm estates and 120 side leases. However, the farm estates are the main focus for the organizations management.



### **Organization B**

Organization B has two sections that manage their landholdings: property management and land management. The organization owns in total 6200 hectare and approximately 400 properties. The property management is responsible for maintaining and administrates the organizations properties but also increase the value to satisfy business requirements and needs. On this section it is four people that are working with managing the property; two of them are responsible for the commercial, one is responsible for the support service and one is responsible for the land management. The interviewed person at this section is working with the land management.

The other section, land management, is managing a total area of 5200 hectare, divided in both farm estates and forest estate. This section is responsible for assignments of the experimental areas for field trials, commercial crop production and sales both internal and external. The internal land management of arable land amounts to 2700 hectare. The interviewed person at this section is responsible towards the board for the strategic development of their farm estates and is supposed to provide the board with development strategies. The land is expected to be managed in the best way possible when it is no longer useful to field trials. The mission for this section is according to the interviewed person that the arable land shall be well managed and well suited for the needs within the organization: *“The challenge is to find solutions to get use of the land as cost effectively as possible”*. The land assets are also supposed to contribute and generate satisfying return to the organization.

### **Organization C**

Organization C manages assets mainly consisting of agricultural estates, forest estates and fund capital. The assets are supposed to generate good return to the organization and there agricultural share is about 16% of the total amount of agricultural land. The total are that this organization manage amounts to approximately 53 000 hectare and divides as follows: forest (41,770 hectare), stocked forest (3881 hectare), agricultural land (5300 hectare) and other land (1979 hectare). All of the agricultural land is leased to farmers and consists of 30 farm estates with an average area about 130 hectare and 130 side leases.

The interviewed person is land manager and is responsible for the arable land. The role of a land manager is to take care of the land in a proper way and ensure that all leases of land are set for market condition. Moreover, the work consists of structure rationalization and investment at farm estates. Sale affairs occurs when there is land or residential lots for sale, it is about twenty to thirty sales per year. If some farm estates are up for sale there is usually an estate agent engaged in the affair. It is only one person that is working with land management for the farm estates and one person that are working with the forest estates.

### **Organization D**

Organization D owns approximately 2000 hectare of land and which consists of 1700 hectare of arable land. The main reason for why the organization owns land is to secure their own needs within the organization and accommodate future development, provide recreation grounds for the community and develop biodiversity.

The interviewed person at the organization works as manager of the land and urban development. In the role of land and development manager means that you prepare items to

the local council, which represents the political land ownership in the city. The organization distinguishes between management and ownership of land. Thus, the municipal government<sup>1</sup> has responsibility for ownership and street and community committee<sup>2</sup> has responsibility for management of such land. Previously, land management has been driven from several departments which have created a complex work environment. *"If we are to take full responsibility for the management of land, you also have to have full control over the management. Therefore, it is now decided that it will create a new entity: the real estate and development department"*.

The interviewed person's role in the organization is more of a strategic nature and to interpret the political will. In addition, there are also process manager that has more practical responsibilities. The department in charge of the development consists of about twelve people and there are four people who work with management, there is only one person who is expected to work with the management of agricultural land.

## 4.2 Farm enterprises

Participating farmers in this study represent a typical farm enterprise here in Uppsala Municipality. All farmers are producing crops and have an average area of 240 hectare. The farmers will be anonymous to the name and farm enterprise with respect to the participants. All interviews were done over telephone and the selection was made randomly to the point that those farmers who have responded and who wanted to set up, they are participating in the study. Briefly information about the participating farmers can be seen in Table 2.

**Table 2, Background information about the participating farm enterprises in Uppsala Municipality**

<i>Date</i>	<i>Business name</i>	<i>Age</i>	<i>Type of business</i>	<i>Total land area (ha)</i>	<i>Lease land (%)</i>
2014-06-16	Farmer A	53	Sole proprietorship	296	25
2014-06-17	Farmer B	38	Sole proprietorship	250	60
2014-06-17	Farmer C	66	Sole proprietorship	214	95
2014-06-18	Farmer D	54	Joint-stock company	245	53
2014-06-18	Farmer E	44	Sole proprietorship	195	90

The farmers have been working within agricultural business for a long time and their farm enterprise is focused on crop production. However, one farmer has intention to start up a new agriculture business in dairy farming during the next year. The reason for the company's focus is mainly soil fertility and due to the fact that the arable land is suitable for crop production.

All farmers both own and leases agricultural land. However, Farmer C & E is mainly leasing land and owns only a small amount. Farmer A leases 25%, Farmer B leases 60% and Farmer D leases 53% of the total land area, see Table 2. Farmer A intends to expand to 450 hectare during next year. Four out of five farmers are having one-man enterprises and it is only farmer D that operates a joint-stock company.

<sup>1</sup> Sv. kommunstyrelsen

<sup>2</sup> Sv. gatu- och samhällsnämnden

## 4.3 Land Use in Uppsala

Uppsala is according to the Swedish Board of Agriculture a city municipality with a large share of surrounding agricultural land and rural areas (SCB, 2013). Uppsala municipality contain about 60% of the population in the county (Länsstyrelsen, 2013). The Uppsala Municipality's area is covered by approximately a quarter of very fertile agricultural land, see Table 3. Specific information on municipality level is not available so county level data is used. The county have a large share of crop production and the businesses are growing larger. Grain is produced on approximately half of the arable land. Cereal farms dominate in the southern part of the county. The share of business with wholly owned land is 52% and farms with wholly leased land make up 12%. The remaining 36% of the farms both owns and leases agricultural land.

**Table 3, Amount of agricultural land in Uppsala County and Municipality (SCB, 2013)**

<i>Agricultural land</i>				
<i>Year 2010</i>	<i>Arable land (ha)</i>	<i>Pasture land (ha)</i>	<i>Total landareal (ha)</i>	<i>Share of agricultural land (%)</i>
Uppsala County	167 690	17 646	819 207	22,6%
Uppsala Municipality	49 096	5 483	218 280	25,0%

The land use in Uppsala Municipality (2010) can be divided into four categorizations: agricultural land (25%), forest (61%), developed land (6%), and other land (8%). The land ownership of agricultural land in Uppsala County is represented mostly by private owners, about 89% (SCB, 2013). Additionally, the land ownership is divided between stock company (2%), public institutions (2%), associations and religious communities, and other constitutions (7%). The division between ownership categories has been relatively stable over time. It can be distinguished a weak trend in the reduction of state and municipal ownership of agricultural land, while private ownership has increased slightly.

### 4.3.1 Exploitation of agricultural land

Each year, reduces the area of utilized agricultural land in Sweden. This trend has been ongoing for several years (Swedish Board of Agriculture, 2013:3). The largest reduction occurs as a result of the abandonment of agricultural land, mainly in northern Sweden and the woodlands in Småland. This negative trend can be linked to the desertification of rural areas and reduced profitability in the cultivation of the soil. Another reason for the reduction in acreage is due to exploitation and infrastructure. Most major cities in Sweden are located in the plains. Land that once been exploited is difficult to restore to productive farmland, for example due to pressure damage on the ground. From a production perspective, the loss of this type of soil is extremely serious in the case of the most fertile farmland in Sweden.

Exploitation rate has decreased from the extreme levels in the 60's and 70's. The decreasing trend however changed around the turn of the millennium and the exploitation rate has increased in recent years. Between the years 2006-2010 the total area exploited agricultural land at approximately 2600 hectare and exploited pasture approximately 400 hectare (Swedish Board of Agriculture, 2013:3). The proportion of exploited land in the period 2006-2010 is greatest in counties which have the highest yielding farmland, such as Skåne, Halland, Stockholm, Uppsala and Jönköping.

According to the Swedish Environmental Code agricultural land is of national importance (MB 1998:808). Agricultural land may only be used for development or facilities where the purpose is to meet an important public interest and that this need can not be met by other land. There is no central authority which monitors that agricultural land are protected against exploitation (Swedish Board of Agriculture, 2013:3). This means that the planning responsibility for the economizing of agricultural land lies with the municipalities.

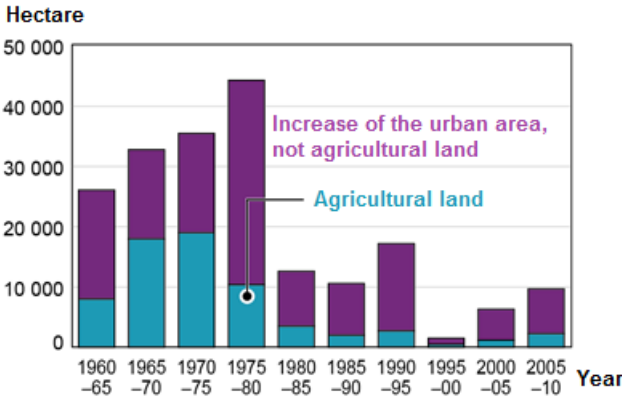


Figure 6, The increased urban area due to exploitation of agricultural land during the years 1960-2010 (SCB, 2013).

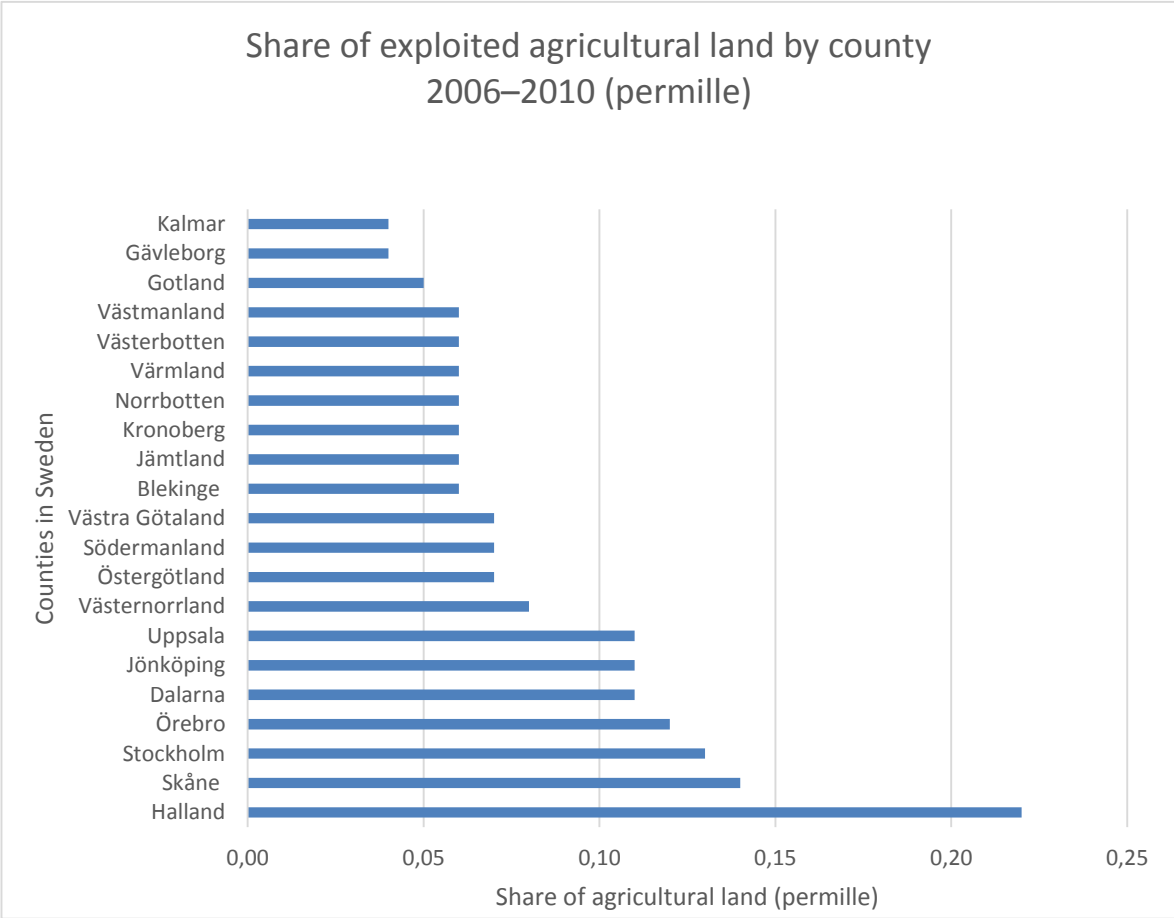


Figure 7, Share of exploited agricultural land by county 2006-2010 (Swedish Board of Agriculture, 2013:3).

## 5 Results from the empirical study

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*This chapter presents the result from the empirical study and are presented in two subheadings: farm enterprises and institutional landowners. The result is categorized in four categories; land management, decision making, driving forces/influencing factors, and future. Each interview template for institutional landowners and farm enterprises can be seen in Appendix 1 & 2. The result has been concretized through pattern analysis.*

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### 5.1 Farm enterprises

This chapter presents the result that have emerged after the interviews carried out with the participating farmers and conducted in five interviews. The interviewed farm enterprises are similar in business focus and in total amount operated farm land. Four enterprises are sole proprietorships and one enterprise is joint-stock business. The interview template that was used can be seen in Appendix 2. The result has been sorted in four headings: land management, decision making, driving forces/influencing factors, and future.

#### 5.1.1 Land management

All of the farmers are leasing arable land in their farm enterprises. The management agreements for each farmer differ and vary between one or five years contract. Farmer A and Farmer C are the only one who has five years contracts. Farmer B, D and E have all different agreements depending on which area it concerns. Three of the farmers (A, B and D) are leasing their land from private owners unlike the other two farmers (C and E) who is leasing from institutional landowners. Farmer C mentioned that there have been some difficulties with the contracts, and from the beginning the contract usually was one year at a time. However, nowadays it is five years due to the problems with the landowner.

The farmers do not feel that the land uses have changed over the last ten years. Farmer A considers that it is the methods of using the land that have changed rather than land use itself. He also points out that the reason for that mainly depends on today's focus on saving in costs in production. Farmer B, C and E are saying that it is the choice of different crops that have changed. Farmer C also points out the importance of technological development. Farmer D is the only one mentioned that some land might have been exploited for the urbanization and infrastructure but are saying that their landholdings have being stable through the years.

Farmer B, C and D stated that they have their landholdings near peri-urban settlements. Farmer C said: *“The agricultural unit that I operates on, will not be an agricultural unit in about fifteen years’ time”*. Farmer A and E states that they do not have their landholdings in direct contact with the peri-urban settlements, but they have some land that is near small communities just outside Uppsala. Farmer A is approximately about 300 to 400 meters as nearest. Farmer C and D are the only two farmers that have more or less their whole landholdings near the city. Farmer D expressed; *“Our farm is right next door to the city”*.

When asked how farmers feel that they are affected by Uppsala Municipality's comprehensive plan regarding the city's development, it was revealed two distinct groupings. Farmer A and D

will not be affected at all. Farmer A pointed out that he will not be affected because he is on the tableland. *"This land should not be touched, but who knows it might change in future"*. Farmer D said: *"I will not be affected, it is only a construction project for building a road"*. Farmer B, C and E answer that they will be affected in some way. Farmer B says that he will be affected a lot and that they just have started up a company that will do plans for residential lots; *"I made this decision for three to four years ago and are planning to use 20 hectare for this purpose. It is a way to release capital to invest in new properties that are further away from the city. I want to invest in agricultural land"*. Farmer C thinks that in a couple of years all his farm land will be exploited in one way or another. Farmer E said that he probably will be affected in some parts of its land holdings, but he does not see it as something negative.

The farmers had different opinions that divided them into two groups when it came to the question regarding the market value of agricultural land near the city or agricultural land situated further away. Farmer A says clearly that he thinks that it is the production value of agricultural land that is of importance when valuing the land. *"What matters for the market value of my farmland is rather the production value and that the farmland is situated here on the plain"*. Farmer C thinks it is clear that there is a difference in value but that is nothing he thinks about mainly because he does not own the land himself. To quote him; *"It is clear there is a difference, I pay quite dearly for the lease of agricultural land"*. Three of the farmers (B, D and E) believe that there is a difference in value and that agricultural land is relatively expensive because of its location. Farmer B says; *"Yes, there really is a difference. Farmland in my area costs about 180 000 SEK per hectare, to compare with an area that is planned for residential lots where you can get 2000 SEK per square meter"*. Farmer D is of the same opinion and said among other things: *"Agricultural land is very expensive, the reason for that is because of the high value of residential lots and industry land that is located near the city. Of course, it gives both advantages and disadvantages, especially if you are thinking about buying farm land"*. Farmer E means that it is Uppsala Municipality's comprehensive plan regarding the city's development that has greatest impact on valuing the agricultural land. To quote him; *"Land located near a city is always more desirable than land farther away"*.

### 5.1.2 Decision making

All farmers are making their decision in short term perspective. Two of the farmers (C and E) are saying that they are only taking decision on short-term and only one year ahead. The reason for that is according to farmer C that he his intending to retire soon but mention that the problem with the landowner contributes to the short term forward planning. Farmer E said his short-term planning primarily depend on the possibility to leave his farm enterprise within a year: *"I am a flexible person; I do not want to lock me up"*. Farmer A, B and D are saying that they also have short-term foresight but are taking their decision for two to three years forward. According to Farmer A, the short term planning depends on the current uncertainty in the profitability and low prices combined with high costs: *"You do not dare to plan more ahead than a couple of years"*. Farmer B are saying he just carry on with the farming and are planning for a few years ahead. The same farmer also mentioned that he is in the start up with the planning of a new dairy farming.

All of the farmers are saying they will carry on with their enterprise but it is only two of them that have some concrete plans for how to continue with the enterprise and how to expand. For example farmer B has a clear goal on where he wants to be in future: *"The goal is to come up*

to 1000 hectare, it will be both through private land purchase and land lease". Farmer E is saying that he will purchase some land from private landowners: *"But it is not because of the profit in farming business, there are no profit in that. It has other values, like doing land exchanges. That is the plan"*. According to farmer E there is no reason to purchase land by taking bank loan. Three of the farmers are just saying that they will carry on with the enterprise. Farmer C is saying that it is a sufficient level on the enterprise for him and his brother, mainly because it is only him that is doing the daily operation work.

None of the farmers experience some major differences in how they take their decisions for the agriculture land near the city in contrast to the agricultural land situated a bit outside city. Farmer A did not answer this question because he did not feel that his land holdings should be affected by the city development. Farmer D and E do not take this into account when they are making their decisions. Even Farmer B responds negatively to the question, but unlike the other farmers, he explains that at some decisions still take into account the land in question. *"In those cases that I know for certain that I may continue to use the land as farm land, it results in more effort from my part to operate in a sustainable manner, for example through liming of the soil. I do not put much effort into farm land that is located very near the city, because I know that in a few years it will be gone"*. Farmer C is answering that he just keep going and does not care that much about what he does with the farm land. He points out that the troubling situation with the landowner creates that behavior; *"It is tiresome to be a peri-urban farmer"*. Farmer C tells that he does not know which plans the landowner comes up with for the next coming years. In the middle of everything, a residential lot can be sold without him knowing about it. He keep saying that if he just get to know about things that will occur a year ahead, he still can keep planning the business as usual.

### 5.1.3 Driving forces/Influencing factors

The question about what factor that are the most important, differ between each farmer. But there is primarily one factor that are mentioned by all and that is profitability. However mentions farmers' different reasons why they consider profitability as the main factor. Farmer A consider himself as an entrepreneur, there is no need for him to stay in agricultural businesses if it is not profitable. He considered the fact that he is grown up at the farm, as no important factor that affects him to retain the farm at any cost. Farmer B is saying that he will continue farming as before and just keep going with the enterprise. Farmer C points out that it is the market that decides what happens with the land use, for example which crops he will produce. In contrast to the other farmers, farmer D, explained the most important driving forces behind his decision as the freedom to live at the countryside and being a farmer. He said that: *"I have been doing this all my life, took over the farm after my father"*. Farmer E mentioned three important factors for him; profitability, simplicity and enjoyable. He pointed out; *"If you do not make economical profit, it is better to quit"*.

On the question regarding which external factor that had the most importance for the farmers, gave rise to different answers among the farmers. Farmer A, B and C believed that politics have the most influence on how they make decisions. Farmer D could not come up with any factor that influenced that much. Farmer E considered there was no factor that had any greater impact. Farmer A reasoned that politics had the greatest impact and complicated things. *"Take for example the different pesticides that are forbidden here but not in other countries. This sort of thing affects the profitability"*. Farmer C does not only talk about politics as an important factor, mention also the fluctuations on market and the price on crops. To quote

him: *“The absolute hardest thing to do today as a farmer is to make trades on the market. It is harder to secure myself from these fluctuations than to take decision regarding land use. It is important to keep yourself updated about the market and create good contacts”*.

On the question about what affects the farmers their answer differed and some of them did not know what to answer. The answers that came up were politics and access to agricultural land. Farmer B was concerned about buying as much land as possible and was saying: *“Doing business by buying land have you never before lost money on. The land near the city will sooner or later be an area reserved for urban development”*. Farmer E thinks that the price for leasing agricultural land, land price and politics is the factors that will influence his decision making.

#### 5.1.4 Future

Two of the farmers want to expand their acreage and they are trying to find suitable land. Farmer A is one of the farmers that are trying expanding but are saying that the hardest thing is to get access to right type of land that is not situated too far from the farm center. *“It is not just me that am looking for agricultural land, there are several other people. As it is for now I have a radius of 19 kilometer between my shifts and I have about 30-40 shifts. But there is my pain threshold”*. Farmer B is very clear about that it is farms located a few miles from city that he give priority to when searching for new agricultural land. *“I prioritize land that I know I will get to have undisturbed even to the next generation”*. He will try to buy as much land as possible, the reason for that is according to him that it is safer to own the land rather than leasing. But the problem as he finds it is the high prices of agricultural land and there is no chance for him to make enough money on the farm to afford taking bank loan. He simply says: *“Unfortunately you need to have other businesses besides the farming”*. The other three farmers are all saying that they are not interested in expand their business according to land area. Farmer C is planning to quit in one or two years and are just saying that he needs to terminate his contract with the landowner. The only thing that he needs to take care of is his personal property like machines and other related things to the businesses. Farmer D is happy about the way it is for now and points out that if they were considering to expand they also be needed to hire a person. Farmer E is not thinking about buying new agricultural land and says it is too expensive. To quote him; *“We are not interested in owning land. It much better to invest in properties. I am telling you! Land disposal occurs only to the municipality or land that is supposed to be residential lots”*.

How the farmers think about the future and which visions they have for their farm enterprise differed a bit and gave rise to different answers. For farmer A the most essential with his farm enterprise is that it is profitable. *“It is hard to have a longer planning horizon because conditions can change rapidly in agriculture sector. You just have to adapt to the changes”*. Farmer B is more concerned that the enterprise continues to expand in normal pace. *“It is important that you have time grow, so it can be sustainable. Everything should harmonize”*. Farmer C does not know how much longer he will continue to be a farmer, since he just celebrated his 66 years old birthday. He simply says: *“It is my health that decides how much longer I continue with this enterprise. I have three children but I will never ask them right on whether they will take over or not”*. Farmer D has another approach and is saying: *“It is probably just trying to live on this company and have a good income. Simply enjoy the job”*. Farmer E is planning for buying more properties and expands that part of business and he considers the crop production depends on the profitability and that part is quite strained as it is



today. *"I am not that eager to like machines like some farmers, for me it is all about the money. If the profitability is not satisfying, then I will quit being a farmer. But as it is today I am already established and that is an advantage. But if I were in the situation that I should invest today, I would not do it"*. Farmer E explains that the reason why he continues as a farmer is mostly because he already has great capital that is invested in the enterprise and that makes it is easier to make money.

The question about how they look at future regarding land use and which threats and opportunities varies. Farmer A is confident that there are no special threats, especially not from the urban development. His only concern is that the enterprise continues to being. Farmer B is thinking about the growing population in the world and the decreasing land area that suited for food production. *"If you just can survive and endure in your enterprise, I believe there are good opportunities"*. Farmer C is of the opinion that land use will change in future and he also believes that it will be larger farm units and thereby fewer farmers in general. Farmer D thinks it is a threat in case farm land will be used to something else than just agricultural production. *"But I do not think that really will happen, maybe sometime. I have kids that in future perhaps want to take over and during their lifetime it may be some land use changes. That is the disadvantage to be living near a city; sooner or later you will be affected"*. Farmer E is more convinced that it does not matter what happens and to quote him: *"I am just the right size in my company and have a good chance to survive"*. In order to be a crop farmer in the future it requires different business structure than today. The future crop farmers will characterized by full-time employment and rather doing crop production on the side of the ordinary business. Farmer E experiences that the structural changes in Swedish agriculture goes very quickly, it will give rise to larger farm units and some farmers will probably go together in some type of cooperation to become larger units. *"But that will save you for perhaps 10 years, but if you do not make money today, you will not be able to do that later either"*.

Farmer C thinks it would be good if the company survives the day that he retires. Farmer E is feeling that the enterprise is going well and is telling about that they are being considered for a new bigger farm tenancy. It is still important that there is economy in the decision, it is then opportunities arise: *"That decision will we take that day it comes"*.

Farmer A does not think that long-term and does not worry about future. The decision making stretches a couple of years forward. Farmer B also says that it is just to deal with the problem when it occurs in future and what may affects us in our daily basis. Farmer C is considered the climate changes that something that will affect us and mention the problem with increasingly extreme weather. The temperature is nothing that troubles Farmer C, but is saying that it will probably lead to more vermin's. Farmer C are of the same opinion that Farmer A and B when dealing with the problem. Farmer D are saying that Uppsala as a city is growing explosively and sees that as the only disadvantage for future. *"It is clear that I am thinking about the future but it is hard to know what is going to affect me and my enterprise. It must be taken into account when it happens"*. Farmer E does not either take into account future changes and are saying that it is too long time forward to plan for. *"The only thing that could make me change the focus of my business is that there will be large changes in legislation that affects me or that it is unprofitable"*.

Farmers E believes that entrepreneurs should have clear requirements lists and stick to it. His personal goal is to have a few bucks over and have a pretty good time as a farmer. He is telling about the good thing about not knowing how the agriculture industry will look like in

10 years. *“The agriculture industries are changing fast and you have to adapt to the changes. I also think that it is too much focus on the total area that farmers access instead of talking about the importance in finding the economy in your business and to create an efficient enterprise. It is better to think about your own interests and start therefrom”.*

## 5.2 Institutional landowners

This chapter presents the results that have emerged after the interviews carried out with the participation of institutional landowners. It has conducted five interviews with a total of four participating organizations. The interviewed persons have had similar position or role in the respective organization. The interview template that was used during the interviews can be seen in Appendix 1. The empirical result have been sorted in five headings; land management, decision making and driving forces, policy and guidelines, strategy, and future.

### 5.2.1 Land management

All of the institutional landowners owns and manages agricultural land in Uppsala municipality. The organizations have one or more purposes with their ownership and management. Organization A owns agricultural land to meet specific needs within the organization. Organization A also farm part of the land by themselves and the rest of the land is leased to provide economic return. The land that is leased is primarily land that the organization can not use in their own business, but rather views as a possibility to generate return. Organization B and C owns agricultural land solely to generate good return from leasing all their agricultural land to farmers. Organization D have similar purposes with the ownership of land as organization A, the difference being that no land is farmed by the organization itself but rather all agricultural land is leased to farmers. The primary purpose of owning land for organization D is to meet specific needs within the organization.

There is no common or clear definition between the organizations to what is considered as peri-urban agricultural land. All organizations but one state that they own agricultural land that is in close proximity to the city. The organization that states they have no land close to the city admits one exceptions of a small agricultural unit of 20-30 hectare in close proximity to the city. This specific agricultural unit has been saved by the organization because expect exploitation opportunities in that particular district and strongly believes that something is going to happen in the future. They believe that the district has high exploitation values but also points out that it is very hard to value the land. *“There are always discussions about if there are extra values in the land. We have so far reasoned that there should be substation values if we should save any land”.* One of the organizations experience that they have land in very close proximity to the city and that this puts limits on their business.

All organizations lease agricultural land to local framers. Only one organization operates their own farming business. The land that is farmed by the organization is managed long-term. *“You can say that we apply multi-generation principle. We are very cautious with land degradation. One reason why we apply a long-term strategy is to ensure the business needs to be able to use the same type of soil”.* One of the organizations states that they in rare cases operate their own farming business. The reason has been that the agricultural unit have been between leases and investments had to be done to the estate. *“It is not our plan to operate farms by our own in large scale and long-term”.*

The institutional landowners apply different periods of time for the contracts of leasing agricultural land. Some are contracting farmers for only one year at the time while other uses five year contracts. In exceptions there are some contracts that are leased for at least ten years. In these cases the tenants have done large investments in the farm estate on their own. "It is important that they feel secure doing their investments in the farm estate".

None of the landowners routinely requires that the land is used for a particular type of production, it is rather up to the landowners to decide what they see fit. But in some cases it is required to operate organic production. The most important for landowners is that the land is used in a sustainable manner, which also gives good returns. The tenants themselves are free to choose the best farming methods and production type. Occasionally there may be a desire for a certain type of production, but it is exceptional. A landowner says that: *"We will manage the land in eternity and for the administration to go in the meantime, we must be involved and invest and modernize agricultural properties"*. Landowners mention all the importance of offering good agricultural properties that can operate rationally and that is well suited to today's market demands. Several landowners clearly speak about creating larger units to offer a competitive agricultural property. When it comes to rationalizing agricultural units so speaks more of the landowners to provide land primarily for those farmers who already runs good company. *"It is all about creating good conditions and the economy in their farming enterprises"*.

Several of the organizations express concerns about the fact that Uppsala limits to the area in some cardinal directions mainly because of the nature reserve. One of the respondent organizations owns arable land that is part of a nature reserve. *"That land is not considered to be exploitable for the urban development, an interesting issue to discuss and interesting choices of policy makers to implement"*.

One of the organizations complains of the problem of land use planning is often done in the short term. This places high demands on the organization and that need to be more flexible in its structure and make quick decisions about land use. The participating organizations have different strategies regarding their land use decision. One of the organizations as they engage in farming say that their approach is that the land to be used mainly for food and fodder production for their own animals.

Only one of the organization have a primary goal on keeping arable land for own farm operation and have requirements to adapt to the market and also generate returns in both the short and long term. Two of the organizations are strongly influenced by having owned agricultural property for a long time. Both then and today, these organizations have more of a managing role of the arable land and are not engaged in any agricultural operations. Today it is not just about manage the farm estates but it should also give satisfactory returns to the owner.

It is only when the leasing farmer decides to quit or by other ways not can continue farming, an estate comes out vacant and it is only then the instutional landowner are coming in a decision making process. Issues that is important to consider in one of the defendant. Is it a suitable farm to continue to invest in? Is it a farm we want to maintain in the long run? Is it viable in itself? Should it be combined with any other real estate? These issues are worked constantly but it is especially important to consider when an agricultural tenancy is available. The organization believes that it is a long term job. In case of change of agricultural land as the organization tries first of all managed directly see where their similarities to other

landowners. *"If the area where we want to be bigger so we are trying to switch to us land in that particular area"*.

It is clear from a number of players that it is important to be able to rationalize their landholdings and create efficient agricultural units. The organizations that historically have had a lot of agricultural land are now working to rationalize down the units by merging the agricultural land and selling of certain farm centre *"In some cases, three farms have been rationalized down to one unit and where we sold some buildings belonging to two of the previous properties, it is the buildings that cost money for us who are the owners"*.

Three out of four landowners states that exploitation of agricultural in their possession is taking place. One landowner states that they have not be affected by exploitation of agricultural land and refer to that they do not possess the land in the geographic areas that are currently being affected by exploitation. On the contrary there is one land unit that the organization has kept for this particular purpose. *"There are obvious exploitation values in this land, is situated right in the middle"*. There are different actors who take initiative to exploitation; the municipality or construction companies. *"More often we take the initiative ourselves to exploitation and new construction. It is better to control the development than to get request that does not fit in our plans"*. According to the landowner it is primarily marginal land that is of interest to develop, the good agricultural land is best kept by the owner. *"There are a lot of economic incentives in this; the land interests have a light weight in these perspectives. It is the politics which should control this better"*. Landowner A are saying that it is unusual that they buy new land, it is rather happens through land exchanges.

### 5.2.2 Decision making and driving forces

Landowner A is taking their decision primarily to support the organizational needs of arable land. Secondly to get the economical return of the land, either by farming the land by themselves or leasing land to farmers. The goal is to meet the first requirement, and then to create good returns for the organization. A problem that landowner A is experiencing is that some types of farm land can not be used in-house, for example natural pasture that have to be leased and which also give the best return. Landowner A have had their current business focus for a long time and have invested in their farm operation, therefore they consider it natural to continue with their focus.

Landowner B states that they in general does not end any leases and does not sell any land that with current tenants. It is first when the tenant terminates their contract that the landowner arrives to decision situation. *"At that point we look at if it is a farm to keep in the long term or not. It the farm commercially viable? Can it be aggregated with neighbouring farms? If it is not, we sell the farm"*. When exchanging land they look mainly at where they have land in contact to other land areas. In those areas where they already have a large amount of land, are they trying to acquire more agricultural land by exchanging land.

Landowner C have in the recent years began to focus on concentrating their possession of land to create core areas. Focus is on creating larger agricultural unit, by consolidating three different farms into one. Farm estates that no longer useful for the organization is sold. *"We try to keep as few buildings as possible, it is buildings which cost us money as property owners. The land does not cost us anything to own, it is just pure income"*. Landowner C

states that it is their responsibility to manage the capital in the best possible way and that is often only measured in economic terms.

Landowner D states that focus is to facilitate prerequisites for urban development, which is in line with the organizational interest and their societal mission. This shall be conducted in an economical responsible and sustainable manner. In this case landowner D does not have any agricultural view. It is important for the organization that the urbanization occurs in a controllable way where the new developments are concentrated rather than spread out. It is clear that residential developments are of primary importance for this organization. In the work to densify the city there are automatically some business which gets located further from the city centre, in these cases agricultural land is exploited. The development that is currently being conducted around Uppsala is occurring on agricultural land. *"It is what is appointed in the comprehensive plan to requisitioning for business development"*. What are of importance to us is the geographical locations of the land. When land use changes occur from agricultural land to exploited areas we try to look at how the land can be used during the transition periods. *"When we go from one type of land use to another we are working with urban agriculture for the individual who wants a cultivation plot. But it is not forever, it is only for a transition period and in these cases you can requisition land for urban agriculture or use margin land which is difficult to exploit. It is land which is not sufficient to nourish a viable farm"*. The important thing for landowner D is to facilitate prerequisites for exploitation on long term and ensure to own enough suitable land to meet the needs of society. *"We do not buy agricultural land for other strategic reasons than exploitation"*.

### 5.2.3 Policy and guidelines regarding land use

Landowner A have regulations which govern how they can act as landowners, further there are internal policy documents that clearly governs them to act strictly on market conditions. *"We can not lease land if we do not get full cost recovery"*. There are annual revisions of the governing documents to adapt to current conditions. On the other hand their unit have developed their own guiding documents to use in the daily business.

Landowner B does not have any governing documents or guidelines regarding land use. However there is a committee of the board of the organization which deals with issues regarding real estate and land use. On top of that there are an environmental policy which is used as a steering document. *"It is supposed to encourage environmental cultivation, e.g. ecological cultivation. We do this by choosing and prioritising such farms when we are investing"*. The landowner points out an example where a farm lease recently changed tenants. In this case the neighbour was allowed to take over the lease since the neighbour already were conducting ecological production.

Landowner C does not have any policy documents or guidelines which directly affects their decisions regarding land use. However the interviewee claims that there is a different market condition in today's society which leads the organization to take more consideration of their stakeholders than they used to do. When the city grows closer to the countryside in an increasing extent than before, this can cause limitations in how the farming business is run. For instance at planning an agricultural business in relations to its environment and neighbours. *"You do not place a cowshed or a manure facility in such way where you place the air for 25 neighbours"*. Landowner D does not have any particular document or policy guidelines for how the farm land will be managed in the organization. This is seen as a

disadvantage and is supposed to be changed in future. For now there is one type of document that is controlling some part of the management but is not up to date and not adjusted for this type of management.

#### 5.2.4 Strategy

Landowner A says that they have a strategy regarding their use of arable land for food production, fodder production and bioenergy production. The planning horizon for the decision making is short-term, mainly because of the quick changes in needs of the organization. There are some small numbers of areas where the planning is long-term, but is rather unexceptional.

To be able to meet future demands the landowner has different strategies depending on region and regional differences. *“In some regions we have withdrawal strategies and in the areas the organization has chosen to invest in we have more expansive strategies. Here in Uppsala the future strategy is to increase the total area of land”*. Regarding the question on which time-frame that are used for the possession of land, landowner A replies: *“We have an eternity-perspective since we expect the organization to live on, but on the other hand we do not have a long term plan on what to do. Some of our investments are taken on ten years perspective”*. The organization use long time-frames for some types of decisions: *“If we are to sell land we have to know that we do not have use for that particular land during the next 10-20 years”*.

The long-term goal with organization A is to continue to provide the organizations internal need for land and to manage this land in a good way. It is also about creating a sustainable and economic production for the farming business. To achieve their long term goals regarding the organizations internal needs of land it is important for the organization to keep their ownership of land and manage it well. But it is also about to be flexible within the organization and adapt to change. In addition it is about to find business solutions and continue to be economic in the land management. An important part of the management is to work with risk-policy regarding e.g. crop sales from the farming business. *“We have had a great success by being flexible in our business, by simply adjusting our business strategy”*. Regarding future strategic land purchases they have a plan for they are active and in which areas to invest, all in accordance to the organizations own need of land.

Landowner B views themselves to have an eternity perspective and a long-term plan with their management. *“It is impossible to give any exact time-frames but the far-sightedness is a guiding star for us”*. Landowner B has 90% of their assets in property in form of either agricultural land or woodland. On top of this 10% of the assets consist of stocks. The landowner took a decision in principle 20 years ago to redistribute the assets from 90/10 to 70/30. This is the primary reason to why the landowner in recent years have sold agricultural estates. *“The long term goal for the organization is to redistribute the wealth in order to improve return. That is what governs us”*.

Landowner C has in recent years been buying up land to a rather large extent. However since Swedish law prohibits institutional landowners to increase their total possession of land, the same amount of land that has been bought has also been sold. *“During the last one and half years or so there has been a lot of movement. It coincides with the current upsurge in the economy. There have been a long period of price increase on agricultural land, there are many who want to sell at the same time which creates a large supply”*. The areas primarily interesting for this landowner are neighbouring estates which comes to the market. The

properties we choose to sell are often those which the landowner considers not to be able to improve or where the tenant have ideas on how to improve the property. *"The land that is sold are often the land that is located in the margin or far away and where we can not see how to improve it in a good way"*. During the years the interviewee has been active in the business there have been large structural changes. This development has been necessary to focus the landholdings' around the farm estates that are viable. These land purchases have largely been conducted around Uppsala, since the landowner primarily own is farm estates in this area. *"We have probably been a major force in this structural change. There are many who have been given the opportunity to improve their estates"*. Regarding in which time-frame the decisions regarding land ownership are taken the interviewee states an eternity perspective. *"Our management will endure and it is our obligation that it persist"*. The management is about creating prerequisites for the business to endure.

Landowner D states to be active on the market regarding purchases of land. *"We are acquiring control over the development of the city"*. When a geographical area has been appointed in the municipal comprehensive plan the value of the land skyrockets. Landowner D explains that this is a problem when provisioning land, since to seller often has very high expectations regarding land value. *"This is why we have started to buy agricultural land which can be used to exchange land which is closer to the city. For many it is not about the money it is about getting the same area somewhere else"*. Long-term view is applied when it comes to decision making. *"We do not sell land unless it is going to exploitation; agricultural land is leased until the point where we sell it or use it in land exchanges"*.

Landowner D has an eternity perspective on their land ownership which in large part is due to the organizations societal mission. The strategic purchases we do regarding land currently have a time-frame to 2030 but our next time-frame will be to 2050. *"The primary for our organizations is to supply and create conditions for growth"*. It is important for the landowner to economize the land and create an effective use of land at the same time as creating conditions for the agricultural businesses around the city. The landowner states that in order to achieve the long term goals with the landholdings it is of importance create a better control over the management of the landholdings'. *"It is up to us to obtain order to better be able to bear responsibility for the management; there have been deficiencies in the previous management"*. Regarding future land use the landowner clearly know which areas they want to focus on, but it is also about finding the areas that are cost effective or finding potential land to be used in land exchanges. *"The city is enclosed by areas which constrain the development of the city and puts boundaries on how far the city can grow"*.

### 5.2.5 Future

The majority of the questioned institutional landowners seldom work with prognosis in their strategic decisions. The reason according to one landowner is that they seldom work at that level of detail in their day to day work. However in certain types of decisions some type of prognostic works is performed in order to make the decisions. For instance it could be about mapping which estates that are going to be kept and which are going to be sold. *"It is hard to predict the value development, but you have to look at the current situation. Focus going forward is to establish good agricultural units through rationalization and concentration of our properties to our core areas"*. Another landowner states that they do not systematically work with prognosis but they try to keep themselves updated on what is going on in the area around. *"It is the eternity perspective that governs us"*. Yet another landowner claims: *"Since*

*we have not been working strategic with our landholdings there have been no economic driving force or follow-up*". All landowners does not see any significant change of the future development of land use. Landowner D clearly points out that it is important that the area that is taken should be influenced by multifunction and that the change contributes a value.

Landowner A clearly have a vision on where they want to be with their land management and it is about to increase their total area of land. It is primarily about redistributing their land area according to a drawn up strategy which focus on maximize of the benefit for the organization. Landowner B claims to have a clear vision on creating viable agricultural units that can employ at least one farmer. As the market conditions change, what is a viable agricultural unit change: *"It is not the same farm today that lives up to that requirement as it were 15 years ago"*. The landowner indicates that if their tenant farmers businesses give a satisfactory surplus the benefits is transferred to them. Landowner D is clear that their work in the future will be about creating order in the land management and achieving satisfactory economic results. It is about clarifying which agricultural units to keep and which to sell. It is also about creating a value of the landholdings that gives good basis for their management.



## 6 Analysis and Discussion

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*This chapter includes analysis and discussion about the results that have emerged in this study, and it is related to the previous chapters that involves frame of references and literature review in order to answer to the aim of this thesis. The theoretical synopsis work as a guideline for the reader in order to present which theories that are of most importance and is seen as the main references. The analysis and discussion will be presented in each subgroup of landowners and is finally merged into a final discussion.*

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In order to understand the farmers and institutional landowners decisions regarding their land management and future land use, a model developed by Schoemaker (1993) have been used to analyze their decision making. Based on the result in this study, the farmers can be categorized into the “*Unitary Actor Model*”. The main reason is that farm businesses often is one-man enterprises and therefore it is usually only one person making the decision. According to Schoemaker (1993), a decision maker in this model is assumed to make all decisions based on a clear set of objectives and also take the decision in a rational manner. Even if the model mainly addresses large organizations, it assumes that there only is one person behind the curtain making all decisions and acting rational.

The institutional landowners can be categorized in at least two different types of models: “*Organizational Model*” and “*Political Model*”. The organizational model assumes that there are several individuals that share the same objective. However, the organization can be separated into several departments that have their own objectives and limitations but still they share a common objective. The political model assumes that there are individuals or departments that have sub-goals in order to reach the common organization objective. This model gives rise to a partisan behaviour and is ineffective from the organization’s perspective. When analyzing the institutional landowners there is only one that would be placed in the “political model”, due to theirs structure of several department with differing responsibilities. In contrast the other landowners is surprisingly well suited for the “organizational model”, they have clear perspective on their organizational objectives.

Landowners can be seen as a single population, however due to the fact that it is clear differences between farmers and institutional landowners indicate the contrary. There are significant differences in business conditions and decision making processes between farmers and institutional landowners. Therefore it is preferable to divide them into two categories.

### 6.1 Farmers

Zasada (2012) have developed a farm typology that are categorizing farmers into four typologies, in order to understand their decisions regarding peri-urban agriculture and adaption strategies. Farmer A and D can be categorized into “*Traditional Farm*”, mainly because they do not express any further will to expand and do not have any clear objectives for the future other than to continue farming as usual. Even if these farmers do not express a desire to expand, it might be reasonable to think that entrepreneurs should have a goal for the future farm business. For example, improve operations, increase profitability, become more efficient, more leisure time, etc. Farmer B is categorized in the “*Innovative Farm*”, mostly because this farmer is the only one that expresses clear objectives for the future and is in the

start-up with a new dairy farm. This farmer stands out in comparing to the other by being the most innovative, by seizing the opportunity in selling land in order to finance new agriculture operation. Farmer C is categorized into the “*Phasing-Out Farm*”, due to his statement on retiring soon. Under a couple of years he has been slowly decreasing his farm land and will just carry on with farming as long as he feels that the health is with him. Farmer E is the hardest one to categorize due to his rationality in decision and short-term planning, because of his characteristics he is placed in the “*Adaptive Farm*”. In order to further analyze the farmers' it is essential to look at possible other explanations in order to get deep knowledge about how they think regarding land use decision.

All interviewed farmers make up a homogeneous group regarding production focus and size of the cultivated area. The agricultural businesses have had the same production focus for a long time and it seems natural for the farmers to continue the given focus. This is in line with a typical agriculture business in the Uppsala region, since crop businesses dominates in the area (Länsstyrelsen, 2013). Four out of five farm enterprises are run as one-man businesses and only one is having a joint-stock business. The statistics support this point of view, and where 91% of the agricultural businesses in Uppsala County is individual firms and only 7% is joint-stock company (SCB, 2013). The farmers participating in this study both owns and leases agricultural land. The leased land is both from private and institutional landowners. Only two out of five farmers leases more or less all their agricultural land. According to SCB (2013) 56% of agricultural business in Uppsala County that owns their own land. The farm enterprises that choose to lease their land represent about 8%. There is a significant share, about 36% (SCB, 2013), of farm enterprises that chooses to both owning and leasing farmland.

According to Vandermeulen et al (2005), land resource is one of the most important factors for a farmer to consider. Farmers need to decide whether to own or lease agricultural land. Land scarcity are not seen as a major problem to farmers that own a large share of their agricultural land. The result in this thesis shows that there are two farmers that more or less lease all their agricultural land, and therefore are dependent on access leased land. Vandermeulen *et al* (2005) lifts the advantages and opportunities with only leasing land, less capital is needed for investing in land. The decision regarding owning or leases agricultural land may have impact on how effective the land is used. Further, this can be held to the fact that there are few farmers that chooses to lease all their amount of agricultural land, which may depend on the risk aversion.

According to Vandermeulen *et al* (2005) and Zasada (2011) peri-urban farmers faces different problems and one problem that is discussed in the literature is land scarcity. The result shows that three out of five farmers have whole or part of their landholdings in close proximity to the city. However, none of the three farmers feels that they are directly affected, but may be affected in the future in some way. Two of the other farmers are not considered themselves to be near the city, despite the fact that these farmers are included in the municipal comprehensive plan. One of these two farmers is saying that he is roughly 300 to 400 meters away from planned zoned areas. This can be seen as contradictory being so close by and still not having the experience of being affected. A possible explanation for this behaviour can be that he owns the most part of his agricultural land. He is certain that nothing will happen to the farm land, even though he lifts that it might be a problem in the future. Vandermeulen *et al* (2005) points out that a farmer that owns his land will not worry about shortage.

The leasing contract differs between the farmers and varies from one to five years depending on which land it concerns. It is reasonable to think that the time-limited contracts may have an impact on which time-frame the farmers take their decisions. Vandermeulen *et al* (2005) explain that the probability that a farmer having a short-term contract also will have strategies and preferences based on a short-term planning. Moreover, the result in the study supports the view that farmers plan short-term. Two of the farmers claim to only making plans one year in advance. One of the cases are strongly influenced by retirement and the second one strive for flexibility in the enterprise and opportunity to end business within a year. However, it is also mentioned by the farmers that the short time-limit contract gave rise to uncertainty in decision making. Some of the farmers intend to see it as an advantage instead and thought it gave opportunities and flexibility within the firm. The other farmers also admit that their planning is short-term, but is taking the decisions at least two to three years ahead. These three farmers experience that it rather depends on the uncertainty in the business and generally low profitability. The farmers simply do not dare to plan further ahead. In literature it is indicated that farmers do not generally plan ahead or use objectives in a clear and structured way (Willock *et al.*, 1999). Despite this, farmers tend to take long-term decision regarding some situations. For example, the farmer that is planning to start up a new dairy farm, which implies that longer time horizons is used regarding some decisions of strategic character.

Another thing that still indicates that farmers at some point take certain decisions in the long term is the highlighted desire to continue farming. Three out of five farmers express a wish for the business live on to the next generation. According to Öhlmér *et al* (1998) the highest value for some farmers is to stay at the farm and improve for the next generation. Although several farmers intend to continue farming for a long time, there is only two that mentions any concrete plans for how they plan to develop their business. The two that had concrete plans were the ones that were the youngest in the study. The strategies of young farmers is often more expansive than those of older ones, which can be a reason for the behaviour (Brandt *et al.*, 1999). Further, there are three farmers that express a will to continue their farm enterprise as usual and without doing significant changes. It would be reasonable to think that even though they want to continue with the business as usual, they probably have some ideas how to manage the business for future and adapt to changing environment. The literature stresses the importance of defining goals within the company and explain that it helps to establish priorities and focus attention (Willock *et al.*, 1999).

Two of the farmers express an ambition to increase their total acreage and expand. When acquiring new land it is important that it is suitable and close by to the farm estate. The farmers however points out that it is problematic to find suitable agricultural land due to the fact that is very expensive. It is not considered profitable to take bank loans to finance investment in agricultural land since the return from the farming does not correspond to interest on the loans. Vandermeulen *et al* (2005) states that peri-urban farmers´ sometimes perceived that there is no available land, due to the high land prices. Farmers that are willing to expand are more sensitive about the land availability. The farmers that want to expand in this thesis see the investment in land as a safe and long-term investment for the future, despite the low return on invested capital.

Willock *et al* (1999) identified four main values within farm business: economic values, social values, expressive values and intrinsic values. Further on, two objectives were recognised within these values and related to economic factors and job satisfaction. The two external driving forces the farmers´ claims to experience the most are politics and the market. All farmers in this study expressed the importance of profitability and economy in their

business. However there were different underlying values which affected the economic driving force in differing degrees for each farmer. Two farmers mentioned the importance of economy and profitability these two factors governs what they decide to do. Further, they seemed to be open for the possibility of changing business and/or occupation depending on profitability. Though some farmers said they found that economy was most important driving force, they were still very clear that it was a life-style they chosen. Moreover, the job satisfaction seemed to have great significance. Öhlmér *et al* (1998) and Willock *et al* (1999) have both done findings saying that farmers tend to care about more than just economic factors. The social values as well as intrinsic values is of importance when considering the decision making process.

The farmers does not experience that there have been any significant change in land use in recent years, it is rather the way of how the land is cultivated that have changed. What the farmers believe about the future land use differ between the respondents. One of the farmers clearly points out that the property he operates will not be an agricultural unit in 10 to 15 years' time. Although, some of the other farmers admit that they might be affected in the future. Which seem likely given their geographical location. In some cases it seems as just a matter of time, due to the fact that some of them already today is affected. However, of the three farmers which feel affected by the comprehensive plan, it is only one who regards it as a future threat. This is probably because this farmer almost exclusively leases land. The development and expansion of the city is not regarded by the farmers as a mentionable concern comparing to the unpredictable politics and the market. This could depend on the short planning horizon used by the farmers, where they in best case plan two to three years ahead. During this short period they do not perceive to be affected by the development of the city and hence does not regard it as a problem.

Vandermeulen *et al* (2005) and Zasada (2012) raise the problem with increased land value in the proximity of cities and peri urban areas as a problem. Farmers could in some cases make more money by selling land for exploitation than by continuing to operate their farm business. This would be the case if economical driving forces were the main force which is not always the case. One farmer can be considered to act in a rational economic manner where the purpose is to gain advantages and resources to continue the farming business. This farmer has recognized the opportunity to make money by selling land lots. In fact he has created a separate business solely for this purpose. This is one way to benefit from the changes that occurs due to urbanization. Simply through acquiring capital to invest in the farming business by buying new land at sufficient distance from the city and investing in new dairy farming.

The decisions regarding how the farmers operate the land differ among the farmers depending on if they consider themselves being affected by the city's development or not. Those who do not consider themselves to be affected, does not makes a difference in how they farm the land. In contrast, those farmers that express that they are affected, make differences in their decision regarding land use. The land that they know by certainty that they will be able to keep are cultivated in a more long-term and sustainable manner.

The same view applies when it comes to how agricultural land is valued by the farmers. Four out of five points out that there is a large difference between the lands' production value and the actual market value. It is only one of the farmers which does not see any difference in value and claims that the production value is the real value. The reason might be that the farmer does not experience to be in direct contact to the city and hence, does not see the alternative value of agricultural land as the other farmers' points out. One of the farmers

points out the huge differences in land value and has seized the opportunity to make money from this fact. This is an example on how landowners which see the alternative value of land by exploitation are more inclined to benefit from it. However, this is closely linked to values and tradition within farming, though some farmers can be thought to be more restrictive to this type of activities while others see the opportunities. According to Willock *et al* (1999) traditional farmers operates in an uncertain business environment. Which lead to that farmers tend to be more risk averse and slow to adapt to unproven ideas.

## 6.2 Institutional landowners

All actors' leases land to private farmers. Three out of four of the institutional owners leases all their land with a few exceptions. It is only one landowner which operates farming business by themselves. This is done to meet specific needs within the organization. There are no specific demands on how the leased land is used, except that it is expected to be cultivated. However, in some organizations there have been cases of steering towards a certain production focus, e.g. ecological farming. The form of tenure is controlled by the lease-contracts and the contract period varies between one to five years depending on the property. In rare cases the lease-contracts may be on ten years, this might be the case when the tenant farmers have done large investments themselves. The reason why the institutional landowners prefer not to have longer contracts is due to the flexibility it creates. The desire to have more flexibility is more distinctive for some organizations.

Among the institutional landowners it is not clear what is meant with peri urban agricultural land and some of them do not have a definition. However, all of them admit to owning land in close proximity to the city. There is a clear discussion among all landowners regarding future development of the city. Since, the city is limited to grow in certain directions because some areas are more protected than other, e.g. nature reserve. Vandermeulen *et al* (2005) explain that the increased urbanization has created competitors for the space between city and urban area, for example urban development, infrastructure, nature and tourism.

Two out of four landowners have a clear mission in managing and creating return from their agricultural land. The other two landowners also have a clear mission to primarily see to the organizations internal needs and secondarily creating return. It is clear that the organizations have different goal and purposes with their businesses, which is also reflected in their management of agricultural land. In addition, the organizations are strongly influenced by their stakeholders, which is also visible in their management. According to Lee *et al* (1999) this behaviour often occurs in the organization in order to meet stakeholders demands. Schoemaker (1993) explain that the decisions making in an organization is strongly affected by its surrounding environment. All landowners highlight the importance of rationalizing their properties and accentuate the weight that the farmers are given the best prerequisites to operate a rational farm business that lives up to current market demands. It is important for the landowners that the farm estates become competitive, and they highlight the importance of larger units. When it comes to decisions regarding land use, it is only when a lease becomes available that a decision is necessary, according to the landowners.

All landowners highlights the eternity-perspective when discussing the management of agricultural land. The decision-process is however still characterized by short term planning. One organization points out the problem how short planning horizons raises large demands on flexibility within the organization. All interviewees have different strategies regarding land-

use decisions. However, there is primarily one organization which takes concrete land-use decisions, since they are the only one which operates their own farming business. Another landowner also make concrete decision regarding land use but of entirely other reasons and is more affected by their social objective. Two of the landowners have primary goals within the organization which highly affects how they take decision regarding their management. The other two actors rather manage land by tradition with the main goal of creating return.

The landowners mention different factors to what affects them in taking decisions regarding land management and land-use. It is primarily economic driving forces which govern their decision-making, but it is also very clear that they are strongly influenced by the basic-values of the organization. The decisions that landowners make are often of structural character and consist of how to optimize their landholdings rather than what the land-use are going to be. Three out of four landowners claims to be affected by the exploitation around the city. The fourth landowner claims not to be affected. This could be put in contrast to the fact that the same landowner still chose to keep land in an area close to the city because of its presumed high exploitation value.

The landowners claim to be conscious about the strong economical driving forces when it comes to exploitation of agricultural land. This can also be seen in previous research by Zasada (2011), that farmers have to compete on the land market with non-agricultural land uses, which give rise to increased prices. Munton (2009) recognised strong urban impact on the agricultural land market, which lead to high land prices. Although some of the landowners buys and sells land, they more often try to exchange agricultural land. The main reason for this is that these actors is limited by the Swedish acquisitions law, which prohibits the institutional landowners to increase their total land area. Hence, they more often work with exchange of land.

When it comes to policies and guidelines it is only one actor who admits having clear governing policies on land-use and land management. In two of the cases there are guidelines which provide some degree of steering. One actor mentions as an example an environmental policy which gives guidelines in how decisions are made in certain issues. Otherwise, there is few guidelines for managing the land resource. There can be several explanations for this behaviour. One is that they are strongly affected by their values and goals in the organization and is more likely to strive for generating satisfactory return to its owners and shareholder. Another explanation can be that they are not seeing agricultural land as a scarce resource and therefore do not have strict guidelines regarding this resource. Further explanations can be that a landowner that owns a large share of their agricultural land will not see land scarcity as a problem in the same extent as those who leases land (Vandermeulen *et al.*, 2005).

All landowners claim that their land management is permeated by an eternity-perspective which also affects their decision-making. However, some admits to having a short planning horizon in practice. The strategies which recur among the landowners are structural rationalization and focusing and optimizing land ownership to core areas, which are of importance to the business. What seems to separate the actors is how the change is driven and which planning horizon that is used. One of the landowners points out the importance of being able to be flexible in its organization, to be able to take quick decisions and rapidly adapt to needs that arise.

One of the landowners is clear about that they do not only have an eternity-perspective but is carefully creating long term goals, even though it is hard to quantify on what time-frame.

However, one long term goal within the organization has been to redistribute their wealth to decrease the share of fixed assets. This includes agricultural land, where the plan is sell unprofitable agricultural units and concentrate their possession of land to some strategic units. But the overarching goal is to create return for the organization.

Two of the landowners claims to be active in the market and are buying up land or are engaged in land exchanges. The reason is to optimize and concentrate their possession of land. One of these two landowners is clear about that the land that is sold is mainly land that they themselves often do not see any potential or development-opportunities in. One of the actors believes themselves to be one major reason to the structural rationalization that has taken place around Uppsala during recent years. Some actors highlight the importance of taking control by themselves and choosing to sell land in order for exploitation. In this way they can control the development rather than adapting to someone else's plans. One organization explains this by their societal responsibility which is basically the reason to why the organization owns and manages agricultural land. They are clear about that they do not sell land to other purposes than to exploitation or to be used in land exchanges.

The majority of landowners do not work with prognosis tools in their strategic work. One of the landowners states that it mainly depends on that they are not working on that level of detail in their daily work. However, some organizations use prognosis in some types of decision-making. Another landowner highlights the importance of constantly keeping up to date on what is going on in the surroundings. To summarize, none of the organizations consider themselves to be in need for doing prognosis. They consider themselves to keeping update through other channels and indirect uses of sources of information in order to update themselves what is looming in the distance.

None of the organizations are particularly worried about the future and does not envision any significant change in land-use. This is despite that three of the organizations is providing land for development. The interviewers cannot see any drastic change in the future and instead points out the importance of continuing to structurally rationalize their possessions of land. Much focus is put on highlighting the importance of generating return but also that the tenant farmers can operate effective and profitable agricultural units.

## 6.3 Final Discussion

Decision making is a central activity in all types of organizations and especially when considering key decision regarding future direction and long-term planning within an organization (Nutt & Wilson, 2010). The result confirms the statement of Nutt & Wilson (2010) even though the decision process appears different for farmers and institutional landowners. The results clearly points out that the decision process differs between farmers and institutional landowners. That is not surprisingly, due to the fact that in most cases the farmer is operating one-man businesses compared to the institutional landowner that consists of larger organizations. This affects how the company takes strategic decisions and especially the extent to which it occurs within the company. According to Willock *et al* (1999), decisions in farm businesses is mainly done and implemented by a single person. Öhlmér *et al* (1998) points out that the farmer himself not only is the decision maker but also the one that implement the decision and evaluate the outcome of decision.

It is commonly assumed that strategic decisions are synonymous with long-term horizon, but according to Lee *et al* (1999) the time horizon of strategic planning is affected by the business environment and performance of the firm. This is also indicated in the result, the farmers confirms by saying that they usually do not plan long-term and in best cases a few years ahead. This may seem contradictory, as many of the farmers turned out to make decision in consideration of the next generation. One reason for the short-term horizon can be that the farmers only lease the land for a couple of years at a time. However, this explanation may only be valid for the farmers that lease a substantial part of their total land area. But one farmer that leased more or less all his total land area, expressed very specific that he had chosen the strategy to only plan one year ahead. It was a conscious decision where he wanted to have the possibility to quit farming within a year. In contrast the other farmers that wanted to plan for longer periods, but did not dare to, due to the uncertainty within business. This is consistent with Willock *et al* (1999) regarding that farmers being risk averse and according to Öhlmér *et al* (1998) farmers tend to search for options with a risk level that are low enough.

The institutional owners in contrast stated clearly that they had an eternal perspective on land management. But even though they could not say in which time horizon they were taking their strategic decision. One landowner said that they at least planned for a couple of years ahead. This fact can depend on several factors but one in particular might be that they do not consider their land resources as a scarce resource (Vandermeulen *et al.*, 2005), and do not see the point of making long-term planning. One explanation to this behaviour is that they by themselves want to have control over the development and consider themselves as strong players on the market. Another reason that can be of importance to the short-term behaviour, may be that they are mainly looking for short-term economic optimization, in on order to satisfy their stakeholders.

None of the farmers express any significant worries about the future. They are however well informed about possible future problems and reason about what may occur. The prevailing consensus among the farmers is to first act when the problems become a reality. It is nothing to worry about now, it is better to act when problems arise than worrying for nothing. The replies correspond well to the short planning horizon previously mentioned. This behaviour in decision-making is also supported by Mintzberg & Westley (2001) and their categorization regarding decision makers behaviour.

The underlying factors that influences decision making and that have been mentioned in the analysis can be categorized in the model developed by Brandt *et al* (1999). The influencing factors identified for the institutional landowners and farm enterprises are divided into: socio-economic environment, policy and culture. It is clear that the socio economic environment and culture have a large impact on their decision making regarding future land use. However, both the landowner groups discuss policy as a driving forces that affect them more or less in their decision making.



## 7 Conclusions

The aim with this study was to identify and analyse landowners underlying factors influencing their strategic decisions regarding future land use. The study shows that the farmers and institutional landowners make their decision in different ways. Farmers tend to make decisions incrementally often based on past experience and strive for avoiding risk. Institutional landowners make decisions based on more strategic and analytical nature, given the organizations' goals and vision.

Farmers and institutional landowners make long-term and short-term decisions. Both groups are characterized by a tension between short-term economic thinking and long-term management of agricultural land. Both groups emphasize an eternal-perspective and generational-perspective regarding land management.

The underlying driving forces that have been identified to influence landowners are socio-economic, cultural and political. The socio-economic drivers are primarily influencing through market conditions and profitability in the industry. Their cultural driving force is more characterized by tradition, lifestyle and job satisfaction. Finally, the political impetuses has great impact but have not been examined more closely in this study.

Farmers and landowners are different in the way that they have different prerequisites to take strategic decisions. Farmers are often sole proprietorships in which a single person both identify, decide, execute and evaluate decisions. Institutional landowners are larger organizations who have more resources in developing decision support to applicable land management.

### 7.1 Further studies

The findings in this thesis raise some suggestions and questions on further studies. It is noted that some of the farmers have an entrepreneurial mind set and have chosen to search side line businesses. The following questions could be used to further gain knowledge in this area. What is characteristic for farmers who choose to start up side line business beside their ordinary farm enterprise? Why do they choose to start a side line business?

This study only looked at a snapshot view of what influences decisions. The study does not take into account how driving forces change over time or in depth looked at how the stages in life affects the individual farmer's decisions. Thus the following questions could be useful in further studies. How do farmers make decisions over time and which driving forces are influencing the decisions? How does driving forces change over time due to age, life situation, experience etc.?

The results of this study gives examples of some strategies farmers use to adapt to changes. However no in depth investigations were made. To gain more knowledge the following questions could be used in further studies. What strategies are farmers adapting in their land management when facing land scarcity due to urbanization in peri-urban areas?

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# Appendix 1: Interview template for institutional landowners

## **General background**

Would you like to shortly tell about your organization and the department you are working at?  
What are your job assignments?  
What are your areas of responsibility?  
How many employees do you have that works with land management?

## **Land management**

How much hectare do you possess? In total?  
Which types of land?  
How much hectare would you classify as peri-urban?  
How is your agricultural land cultivated?  
How is your land holdings managed?  
How long is your lease-contract period?  
What demands are you making on management of agricultural land?

## **Decision making**

What is your role in the company regarding land use decisions?  
How do you make decisions regarding land use and what are the underlying factors?  
What are the most important factors/driving-forces behind land use decisions?  
- Why are these factors/driving-forces the most important?  
How do you go about purchase of new land?  
- What are the determinant factors?  
How do you go about divestment of land?  
- What are the determinant factors?  
How large share of your agricultural land is exploited for non-agricultural use? Divested?  
Do you have guidelines/policy-documents which govern your decision making regarding land use changes?

## **Strategy**

On what time horizon do you plan for your land holdings?  
What time horizon do you utilize on your investment decisions regarding e.g. agricultural land?  
What are your long-term goals regarding your land use (agricultural land)?  
What are your strategies to achieve these long-term goals?  
Do you use any form of prognosis in your strategic work?

## **Future and future scenarios**

How do you view the future development regarding land use?  
How do you think about future strategic land acquisitions?  
Do you have a vision/goal on where you want to be in 10-20 years? Regarding land management?  
How can these future scenarios come to affect you?  
What factors are according to you the primary factors that can influence your decisions regarding future land use? In what way? Motivate!  
What threat/opportunities do you see regarding future land use? How can these affects you?  
Do you take this into consideration at your decision making today?

# Appendix 2: Interview template for farm enterprises

## **General Background and Land Management**

What is the main focus of your enterprise?

-Why have you chosen this focus?

-For how long have you had this focus?

How large is the total hectare within the enterprise?

How is the farm land cultivated?

## **Decision Making**

Do you lease agricultural land?

- What is the contract period of your lease contracts?

- Who do you lease from?

How far ahead do you think in your planning?

What are your plans for the next five years?

## **Driving forces and influencing factors**

What are the most important factors/driving-forces behind your land use decisions?

Do you experience that your land use has changed in the last 10 years?

If yes; how has the land use changed, what have been the driving factors?

If no; how come land use has not changed, what have been the driving factors?

How do you believe that land use change will change in the next 10 years?

Do you own land in direct contact with peri-urban settlements?

Are you affected by the Uppsala municipality comprehensive plan regarding the city's growth?

Do you experience and difference in how you make decisions and plan strategically for land close to the city and land further away? In what way?

How do you perceive land value of peri-urban agricultural land and "ordinary" agricultural land?

-Is there any difference in value?

How do you view your land holdings and how do you think strategically about future land purchases/divestments?

What external factors affect you in your land use decisions?

## **Future**

What are your long-term goals/visions with your agricultural business?

-If none; How come?

What are your strategies to achieve these goals?

How do you view the future development regarding land use?

What threats/opportunities are there?

What factors are primary factors that affect your decisions regarding future land use?

How do you view the development of the enterprise the day you are going to retire or withdraw?

How do you view the future? Threats/Opportunities?