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Dual land use in the Food Valley region

Assessing and evaluating in what ways dual land use can be adopted by farmers in the Food Valley

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Colophon

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“Being an agrarian is above all a way of life. It is an existence interconnected with nature, which at the same time exploits that same nature until there is no more nature left. It is an existence of pride and independence, but at the same time, it relies on rules and subsidies. It is an existence in one place, based on the traditions and experiences of all previous generations. And at the same time, it is an existence on the frontline of the modern world and globalization.” (Geert Mak, 24 september 2021, NRC Handelsblad, own translation)



Figure 1 Reformatorisch Dagblad (2021)

Preface

Hereby, I present to you my Master's Thesis. This study represents the end of my Master's Programme in Spatial Planning, but also the end of my life as a full-time student. After completing the Pre-Master Spatial Planning 2020, the Master Planning, Land and Real Estate Development is the final step in my academic career. During this one and a half years, I acquired much field-related knowledge, but I also developed as a person. Moving away from being what your student life is about towards becoming a young professional in spatial planning.

Having an agricultural background, at the start of the Master's Programme, I was determined to focus my Master's Thesis on an agricultural subject. Using my knowledge as a spatial planner and my experience growing up in the agricultural sector during my thesis has been a desire of me for a long time. The Dutch agricultural sector is truly unique in a world-wide perspective. Our country is very densely populated, partially below sea level, and small in size. Nonetheless, the innovations of the Dutch agricultural sector have resulted in a high-tech production sector respected all over the world. At the same time, the position of the sector is increasingly being challenged by society, the market and politicians. Tension between different groups is growing, and farmers are becoming pessimistic about their future prospects. Farming, however, is not an ordinary job. It is a life style, dominating and controlling every day of your life, and that of your family. With this study I hope to contribute to the ongoing discussions about the agricultural sector, providing scientific proof of a phenomenon, therefore creating the possibility to provide a basis for future discussions.

Over the past few months my life has been almost entirely focused on finishing this thesis. Beyond any doubt, I would not have been able to finish this research without the support of several people. First of all, I would like to thank my supervisor from the Radboud University, Erwin van der Krabben. Thank you for providing me with feedback and our interesting discussions. I consider myself lucky to have you as a supervisor. Secondly, I would like to thank my supervisor from LTO-Noord, Tjerk Elzinga. For being there for me, providing the possibility to receive feedback from you and your organization. We live in completely different parts of the country; you are from Friesland and I am from Noord-Brabant. Nonetheless, we understood each other, and I always felt heard by you. Also, I would like to thank my family, friends and above all my loving partner Menno.

After driving more than 4.500 kilometers, 5 months of hard work, and the challenging consequences of living and studying in times of the COVID-19 pandemic, I hope you enjoy reading my thesis.

Luke den Boer

Tilburg, December 2021

Abstract

By publishing the National Strategy on Spatial Planning and the Environment the Dutch government has, among others, aimed to increase the application of dual land use in the Dutch agricultural sector. Being the main focus of this study, the NOVI also focusses on the Food Valley region. However, it remains unclear what the perception of farmers in this region is towards adopting dual land use policies. As the literature shows, it is important to understand the perception of farmers towards policies aimed at the agricultural sector because otherwise implementation might not take place. During policy implementation, and specifically with agricultural policies, the ‘ownership’ of a policy is transferred from the governmental level towards the farmers. If farmers perceive a policy as unwanted policy adoption will presumably not take place.

This study therefore focusses on the perception of farmers in the Food Valley, aimed at the extent to which farmers in this region believe that dual land use policies can be adopted. By applying a literature review, reference study and in-depth interviews this study provides an in-depth understanding on this phenomenon. The findings of this study propose several different challenges that will prohibit the adoption of dual land use policies in the Food Valley, despite a general willingness that exists among farmers. In other words, farmers in this region want to adopt dual land use measures, but are often confronted with a variety of barriers that prohibit a smooth adoption. An example is that there exists a general lack of trust towards the national government. An example highlighted by this study is that farmers are often depending on the government for subsidies, farmers experience continuously changing rules and low financial compensations. At the same time, this study highlights that farmers experience different legal constraints when wanting to adopt dual land use measures. For example, current spatial planning policies in the Netherlands prohibit farmers from using a plot of land for multiple purposes, because land is assigned either ‘nature’, ‘agricultural land’, or something else. Therefore, in practice, farmers find it difficult to combine nature and agriculture. This study also shows that the relationship between consumers and the agricultural sector is weakening. When implementing new policies, farmers often consider the opinion of consumers. This is because the agricultural sector is aware of the pressure that consumers put on farmers to change and become more environmentally friendly. However, farmers also believe that consumers are generally not willing to pay for the demands they make, while they often result in a weakening financial position of the farm. As a consequence, this study highlights that farmers are often not considered resistant towards adopting dual land use measures. Several issues, however, often result in a new direction to ensure the vitality of the sector in the future.

Therefore, the government has to implement several changes before farmers in the Food Valley can be considered non-resistant towards dual land use policies.

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1.0 Introduction

Since World War II, Dutch agricultural policies have emphasized the importance of the agricultural sector, providing Dutch farmers with the possibility to develop and exploit their business to its full potential (Meerburg & Neuteboom, 2010). As a result, Dutch agrarians have been able to lower the costs of agricultural products while simultaneously increasing productivity through intensification, expansion, and mechanization. Being a country where the population density is high, the Netherlands is often recognized as an agricultural powerhouse in production and trade (Dolman, Jukeman, & Ramaekers, 2019; Poppe, 2008). However, literature on the Dutch agricultural sector has identified the consequences of the ever-increasing intensification of Dutch farming operations. An example is a reduction in biodiversity threatening the survival of many species (Henle et al., 2008). Simultaneously, the eutrophication of the water, nitrogen emissions, use of energy in greenhouses, and soil subsidence result in a call for society to reduce the negative impact of the agricultural sector on the environment. At the same time, a wide variety of spatial objectives are to be realised, resulting in an increasing amount of land claims on former agricultural land (Diogo, Koomen, & Kuhlman, 2015; Koomen, Kuhlman, Groen, & Bouwman, 2005).

The emergence of societal, environmental, and spatial developments fits in a European trend of extensive social change. Also referred to as 'rural structuring' rural areas in Europe are experiencing a shift from a landscape that produces towards a landscape that consumes (Floysand & Jakobsen, 2007; Cloke, 2006). This means that there is a change in rural areas from a predominantly agricultural and manufacturing economy towards an economy focussed on services where the countryside is seen as a residential and recreational area (Woods, 2005). Consequently, these developments have resulted in an inevitable need for change to ensure the vitality of the Dutch agricultural sector in the rural areas of the Netherlands (Runhaar et al., 2016; Henle et al., 2008). In other words, the business model of the agricultural sector should not aim at maximizing productivity and profitability but rather cover a more complex range of production, rural development, environmental, societal, and food consumption outcomes (Bos, Smit, & Schröder, 2013). Literature, where agricultural change has been elaborated on, is dominated by studies on the application of dual land use. An example is Dessein, Bock, & de Krom (2013), who refer to dual land use in rural areas as multifunctional agriculture. Meaning that farmers go beyond the low-cost production of food and fibre where the agricultural sector can fulfil several other purposes for society, such as maintaining the landscape, biodiversity, and natural resources.

Despite positive results, the Dutch government has published the National Strategy on Spatial Planning and the Environment (or: NOVI), which aims to, among others, increase the application and importance of dual land use in several agricultural regions. In this policy document, the Dutch government argues the increase application of dual land use (or multifunctional agriculture). Meaning that a combination

of functions should take precedence over single functions to increase the added value of the agricultural sector in rural areas (Ministry of Interior and Kingdom Relations, 2020).

An example of a region where the NOVI is focused on is the Food Valley, located in the middle of the Netherlands. Originating from the initiative of three local city councils, this region aims to stimulate an innovative agricultural climate together with entrepreneurial businesses (Jonge, 2006). Studies by, for example, Crombach, Koene, & Heijman (2008) have elaborated on the added value of the Food Valley resulting from the dynamic concentration of research organizations, food companies, start-ups, pilot plans and academic institutions.

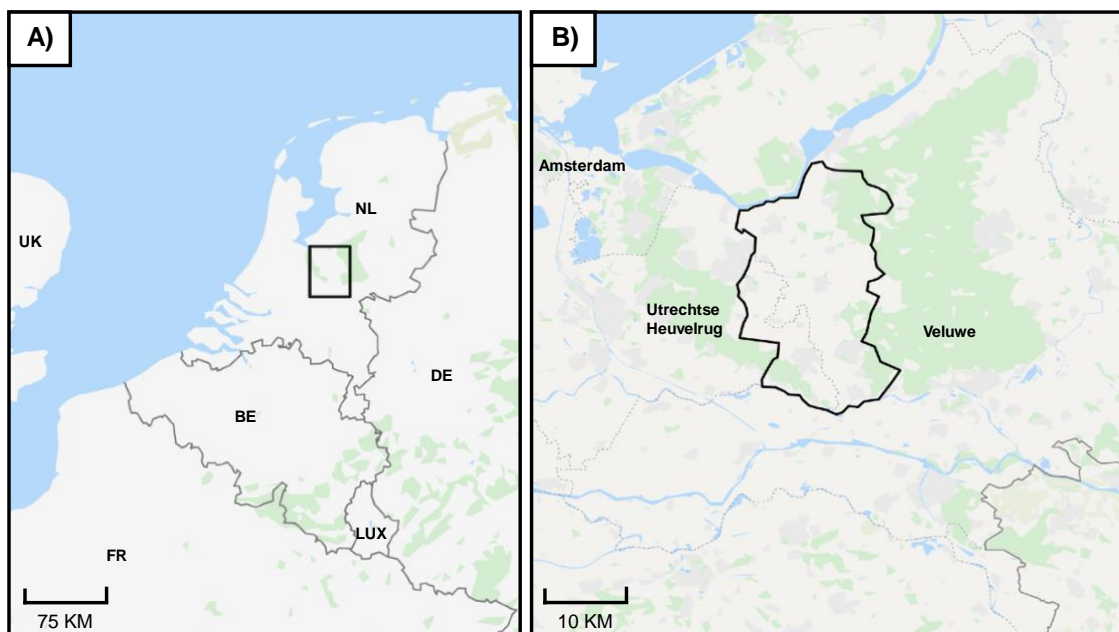


Figure 2 Location of the Food Valley in Western-Europe (A) and the Netherlands (B), own visualisation

However, literature on the Food Valley shows that, while the economy of this region is primarily agriculturally orientated, the phenomenon of rural structuring is threatening the future of the agricultural sector in this region. An example is the study of Gies, Lesschen, Kros, & Voogd (2020), who have discussed that the amount of agricultural land in the Food Valley has decreased by 12% or 4.130 hectares between the years 2000 and 2019, while in this period the amount of built-up land has increased by 28% or 3.023 hectares. On the contrary, the Food Valley is considered one of the most influential regions in damaging protected Dutch ecosystems through nitrogen emissions. The agricultural sector of the Food Valley is responsible for 20% of the total national deposition by nitrogen emissions on protected nature (Bastmeijer et al., 2021). On the other hand, the added economic value of the Food Valley is higher as compared to other agricultural regions in the Netherlands. The total economic size of the agricultural chain in the Food Valley (all businesses affiliated with the agricultural sector) has been valued at around

€57 billion. The economic importance of the agricultural sector for the people living in the Food Valley is therefore considered to be very high (Agricola & Kuhlman, 2015).

However, to reduce the negative externalities produced by the agricultural sector of the Food Valley, such as the number of nitrogen emissions, there is an increasing need for space. This is because different organisations aim to increase the land in use for nature, the energy transition, the housing shortage and other objectives by redeveloping agricultural land. Therefore Gies, Lesschen, Kros, & Voogd (2020) concluded that the monofunctional trend of using space should not be the way to use land. More than ever, it is necessary to find a way in which available space can be used sustainably by considering the spatial developments in the region and how they can be cleverly combined with the spatial functions of the sector (Lesschen et al., 2020).

1.1 The National Strategy on Spatial Planning and the Environment

The study of Gies, Lesschen, Kros, & Voogd (2020) is in line with what is being discussed in the NOVI about dual land use. In the NOVI, a consideration strategy has been elaborated on redefining the importance of dual land use in rural areas. Summarized, four characteristics can be identified which form the basis of this strategy (Ministry of Interior and Kingdom Relations, 2020):

1. Agricultural land with good soil conditions should receive protection over other functions to protect the land, while at the same time, these lands must be protected against redevelopment into other spatial functions.
2. Clustering of logistic centres in areas unsuitable for agriculture or outside of areas with essential and valuable landscape structures. Clustering limits the influence of dispersed locations on the landscape and the agricultural sector, reducing extra mobility
3. An assessment framework for energy, nature, agricultural and landscape values and help make informed choices about where renewable energy produced can be regarded as suitable ‘neighbours’ for existing use.
4. Land suitable for agriculture, nature and unique landscapes should not be built-up.

At the same time, the NOVI has served as a base for policies on the local and provincial levels to increase the application of dual land use. An example is the urbanization strategy Arnhem – Nijmegen – Food Valley, where one of the main objectives is to increase sustainable and intensive ways of using land (Kerris, 2021). However, while the Dutch government, both on the national and the local level, has addressed a possible solution to change the current way land is being used in rural areas, it remains unclear how this policy should be implemented. Simultaneously, the definition that the government provides on dual land use is considered vague. Therefore, this study follows the definition of dual land

use as discussed by Dessein, Bock, & De Krom (2013). According to their study, dual land use in rural areas focuses on farmers who go beyond the low-cost production of food and fibre, fulfilling several other social purposes, such as maintaining the landscape, biodiversity, and natural resources. Examples of ways in which dual land use can be applied are the use of herbaceous grassland, not mowing the borders of agricultural land to increase biodiversity or selling agricultural products at home.

1.2 Research goal and question

When implementing policies, governmental bodies need to consider how the public perceives the policy. (Bartkowski & Bartke, 2018; Görg, 2007) This has been elaborated on by several authors who argue that, for the agricultural sector specifically, if agrarians do not perceive a policy as a solution for current issues, the adoption presumably will not take place (Van Duinhoven, 2006; Pestman, 2001; Hajer, 1995). Alternatively, as discussed by Pannell et al. (2006, p. 2), *‘Adoption occurs when the landholder perceives that the innovation in question will enhance the achievement of their personal goals’*. So, while a wide variety of objectives challenge the vitality of the Dutch agricultural sector and that of the Food Valley in specific, the adoption of dual land use as suggested by the Dutch government might result in resistance among farmers in the Food Valley. This research aims to identify how the agricultural sector in the region of the Food Valley region perceives dual land use. This study also aims to propose potential policy options that help encourage farmers to adopt dual land use policies by providing recommendations to the Dutch government. Therefore, the following research question with related sub-questions have been formulated:

In what ways can dual land use policies be implemented according to the agrarians in the agricultural sector of the Food Valley?

1. Which factors constitute the perception of agrarians towards agricultural policies?
2. In what ways do farmers in the agricultural sector perceive agricultural policies?
3. How do farmers in the Food Valley perceive the adoption of dual land use policies?

1.3 Relevance of the study

In recent years, a wide variety of scholars, for example, Diogo, Koomen, & Kuhlman (2015) and Meerberg et al. (2009), have placed high emphasis on the prospects of the Dutch agricultural sector. Overall, the literature shows that the vitality of this sector is under threat. An example is a study by Bos, Smit, & Schröder (2012), who has discussed that pressure from society on the agricultural sector is growing. This pressure stems from the decrease in biodiversity, the increase in pollution, and the overall pressure on the environment caused by the agricultural sector. As a result, society is increasingly questioning the relevance of the agricultural sector (De Olde & Valentinov, 2019). On the contrary,

many agrarians have protested stronger environmental regulations and demanded more society appreciation in recent years (Van der Ploeg, 2020). Consequently, to ensure a future where the Dutch agricultural sector can co-exist with other economic, spatial, and societal developments, the national government has aimed at increasing the application of dual land use in rural areas. At the same time, Oosting & Corporaal (2000) have stressed that the societal relevance of the agricultural sector could be improved through the application of dual land use. By diversifying their business operations, Dutch agrarians can contribute to society in many ways, thereby possibly decreasing pressure from society. Moreover, several policy documents on the Food Valley have mentioned that intensive and sustainable land use is one of the main objectives for the region's future by increasing multifunctional uses of land (Kerris, 2021; Ministry of Interior and Kingdom Relations, 2021). However, it remains unclear how agrarians perceive dual land use as a solution for the problems identified. Because obtaining information is vital in ensuring that policy measures are targeted, efficient, and cost-effective when improving the agricultural sector's performance (Hyland et al., 2015; Blandford, 2007). On the contrary, existing literature on the perception of agrarians towards agricultural policies is often aimed at a specific policy. As discussed by Vanslebrouck, Van Huylenbroeck, & Verbeke (2002), the perception of agrarians towards agricultural policies differs across policies. At the same time, Vanslebrouck, Van Huylenbroeck, & Verbeke (2002, p. 490) argue that: ‘*the acceptance of measures by farmers remains a critical issue ... but the willingness to participate is a function of a number of farm and farmer characteristics*’ ,

As a result, a ‘literature gap’ can be identified when searching for studies explaining the perception of agrarians towards policies aimed at increasing the application of dual land use. This has also been discussed by Dessart, Barreiro-Hurlé, & Van Bavel (2019, p. 418) who argue that: ‘*previous academic attempts to take stock of the factors influencing farmers’ adoption of sustainable practices did not specifically focus on the role of behavioural factors, often resulting in an incomplete overview and limited theoretical understanding of how and why these factors affect decision-making*’. Consequently, this study focusses on understanding, among others, behavioural factors that influence the farmers in the Food Valley towards the adoption of dual land use practices. In other words, this research aims to contribute to the scientific discussion on factors that influence farmers’ perception towards agricultural policies.

2.0 Literature review and conceptual framework

Traditionally, it is assumed that politicians and public managers have a special responsibility to defend the public interest by creating policies through governance networks (Sørensen & Torfing, 2009). Based on the public debate, political decisions, policy formation and implementation but also complex interactions among public authorities, private businesses, and the civil society, defining the boundaries of the public interest is often considered to be difficult (Zohlnhöfer, Herweg, & Rüb, 2015; Meadowcroft, 2007). Elaborating on the process of public policy forming is, among others, the study of Cairney (2019, p. 4), who argues that *‘the policy process is complex, messy, and often appears to be unpredictable. The idea of a single process is often a useful simplification. However, when we scratch beneath the surface, we find that there are multiple policy processes: the behaviour of policymakers, the problems they face, the actors they meet, and the results of their decisions often vary remarkably’*.

In the literature, several authors have elaborated on producing public policies, also known as the study of *governance* or *governance networks*, elaborating on how different levels of government create policies (Arnouts, Van der Zouwen, & Arts, 2010). In this process, policies create or change a rule or instrument, implemented via governance structures to become *rules-in-place*. For this study that means that policies are aiming to influence the agricultural choice of measures and farming practices (Prager et al., 2011; Prager, Prazan & Penov, 2011). It is, however, argued that policies are not solely the product of processes controlled by the government. Instead, Sørensen & Torfing (2016, pp. 3-4) argue that *‘governing processes are no longer fully controlled by the government, but subject to a wide range of public, semi-public and private actors, whose interactions give rise to a relatively stable pattern of policymaking that constitutes a specific form of regulation, or mode of coordination’*. Elaborating on the work of Sørensen & Torfing (2009), Ansell & Torfing (2017) discussed that there is no single theory of governance. Instead, there is a wide variety of overlapping discussions and debates.

This phenomenon can also be identified when evaluating existing literature on theories of governance aimed at explaining the creation of spatial policies. Referred to as, among others, *landscape governance* (Görg, 2007) or *planning theory* (Hartmann & Geertman, 2017), and *policy entrepreneurs* (Westerink et al., 2017), several theories exist on how spatial policies are produced. In this study, dual land use is defined as an agricultural policy based on the spatial principles that are defined by the Dutch government. This is because dual land use policies are inherently connected to the use of agricultural land. In other words, in this study, dual land use is considered an agricultural policy, created through existing spatial planning practices.

Planning theory

The concept of planning theory has been developed and changed over time, and as a result, planning theory is considered to be an everchanging concept (Hartmann & Geertman, 2017). This is because theories shape spatial planning practices, but spatial planning practices also shape theories. They cannot exist without each other despite their constantly changing relationship. In the early stages of planning theories, debates were primarily object focused. Particularly after the Second World War when spatial planning policies aimed at (re)building the country. According to Gunder & Hillier (2009), in the 1970s, the perception of spatial planning policies changed towards a process-focused debate, such as introducing the well-known work of Rittel & Webber (1973) on ‘wicked problems’. Nowadays, planning theories have moved towards a process-focused debate, incorporating stakeholders and citizens into the planning process. In their work, Hartmann & Geertman (2017) conclude that the concept of planning theory is based on three structures identified as *the role of object*, *the role of the political dimensions*, and *the planning context*, which is the public debate.

Policy entrepreneurs

Planning theory views the process of policy creation through a top-down lens, often referred to as a hierarchical governance paradigm (Meijerink, Nooteboom & Termeer, 2008). This means that it is believed that policies are created at the macro level, after which policies are transferred to the micro-level. However, a different lens on the process of creating spatial policies is that of the bottom-up initiatives. Theories on bottom-up initiatives believe there is a shift from the hierarchical forms of government (top-down) towards less formalized governance networks, where policy is created through horizontal relations among interdependent actors (Koppenjan & Klijn, 2004; Hajer & Wagenaar, 2003; Pierre, 2000).

An example of such a theory is that of policy entrepreneurs. Literature on urban planning theories increasingly acknowledges the importance of individuals who initiate small-scale projects utilizing self-organization, initiating projects bottom-up (Edelenbos, Van Meerkerk & Schenk, 2016; Moroni, 2014; Boonstra & Boelens, 2011). The emergence of small-scale, self-organized initiatives often functions as a starting point of initiating change or drawing attention to a specific matter and, therefore, often triggering new dynamics and innovation (Partanen, 2015). Elaborating on bottom-up initiatives, Mintrom & Luetjens (2017) have characterised the phenomenon of self-organized actors as policy entrepreneurs. In their work, Mintrom & Luetjens (2017) define policy entrepreneurs as actors who seize opportunities while mobilizing others to find support for their proposed solution, also known as the process of up-scaling. However, policy entrepreneurs operating in bottom-up initiatives often have a hybrid origin, operating across different sectors. This means that policy entrepreneurs often know how to operate within the existing governance networks and, therefore, ‘upload’ a proposed solution (Mens, Van Bueren, Vrijhoef, & Heurkens, 2021).

Landscape governance

While the theories of policy entrepreneurs and landscape governance result from top-down or bottom-up processes, scholars have identified a third way of creating spatial policies, also known as hybrid or multi-level decision-making processes (Görg, 2007). An example of such a theory is landscape governance, where several different meanings exist on the concept of this theory (Westerink et al., 2017; Beunen & Opdam, 2011; Görg, 2007). In their study, Westerink et al. (2017) introduce a new way of approaching the concept of landscape governance by arguing that landscapes are complex social-ecological systems. This means that various land-use patterns and landscape identities have emerged, resulting from the complex interaction between humans and nature. In the different social-ecological systems, stakeholders build on social and economic relationships and interactions with a particular area.

In this process, Westerink et al. (2017) argue that when creating spatial policies, governance networks have to collaborate with the different relationships that exist in a particular area. Görg (2007) describes landscape governance as coordination among different actors within a system of institutions and regulations, usually represented by a combination of market, hierarchy and other ways of regulations. Within landscape governance, regulations often overlap the known border of organizations and the borders between society and politics.

The theories of planning theory, landscape governance and policy entrepreneurs all aim to explain different ways in which spatial policies are developed. From Table 1, it becomes clear that various approaches exist in creating spatial policies ranging from a top-down explanation to a bottom-up explanation.

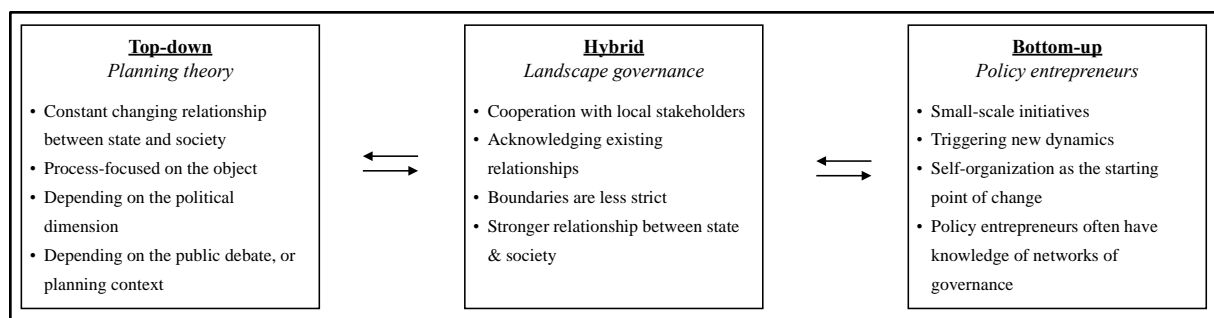


Table 1 Top-down and bottom-up approaches to spatial planning policies

2.1 Policy implementation

The concepts of *landscape governance*, *planning theory*, and *policy entrepreneurs*, among others, provide a general insight into the process of producing spatial policies. However, after a policy is created, the ‘ownership’ of a policy is transferred from governance networks to the executors of policy, giving the executors a key position in determining the performance of the policy outcome (Coolsmas & Montfoort, 2014). This has been highlighted in the study of Vanslebrouck, Van Huylbroeck, &

Verbeke (2002) who argue that policies will only be effective if the changes in agricultural practices result in actual improvement and if farmers will enrol in such schemes. Consequently, it is important to take into account the perception of the executors (from now on, simply referred to as ‘farmers’), towards dual land use policies because otherwise policy adoption will presumably not take place (Bartkowski & Bartke, 2018; Görg, 2007). In other words, the perception of the farmers is key to understand the extent to which the performance of the policy outcome matches the ambitions of the public policymakers, also known as the *conformity of policy* (Coolsma & Montfort, 2014). This means that a policy meets the ambitions of policymakers on the one hand and the characteristics of the executors on the other. During policy implementation, it becomes apparent to which extent policy conforms to the characteristics of the executors. According to Coolsma & Montfort (2014) the extent to which the executors *know* what the policy is about, *want* the policy to be implemented, *are able to* implement the policy and *need* to implement the policy all determine the performance of the policy outcome in the implementation phase.

In the literature several studies have aimed to explain the phenomenon that defines the conformity of policy. One essential requirement that characterizes the conformity of policy is the acceptance of farmers towards agricultural policies. Acceptance, however, not only refers to farmers that participate in certain agricultural schemes. Instead, acceptance means that farmers are included in a more sustainable way, creating awareness and changing attitudes and perception of farmers through policy implementation (Schroeder, Chaplin, & Isselstein, 2015). This means that policy implementation in the agricultural sector is often accompanied with far-reaching innovation through technological, social and cultural change. Literature on the implementation of agricultural policies has defined this phenomenon as *system innovation*. This is because policies in the agricultural sector are essentially concerned with behaviour change, or changing the way in which farmers operate which in theory has been defined as the theory of system innovation (Janssen et al., 2010).

As a result, most scholars on agricultural policies do not refer to the conformity of policy. Instead, studies on agricultural policies focus on the *adoption* of a policy, which means that a farmer adopts a policy in their way of working, ranging from zero to 100% (Pannell & Claassen, 2020; De Rosa, Bartoli, & Chiappini, 2012; Prager, & Posthumus, 2010). This distinction in policy implementation is essential because the decision of an individual farmer to adopt a policy is not only determined by factors relating to the farm and its management. Whereas most businesses base their decisions merely on economic principles, agricultural businesses often behave differently (Vanclay et al., 2006). This phenomenon has been elaborated on in the study of Pannell et al. (2006) who argue that farmers' adoption of agricultural policies depends on a range of factors such as personal, cultural, social, and economic factors.

For dual land use specifically, although the theoretical concept of dual land use in rural areas has been elaborated on, the literature has not yet addressed how the future implementation is translated into actual change. More specifically, how dual land use is supposed to be adopted by agrarians in the Netherlands and the Food Valley in specific is unknown.

To understand existing theories and literature, the following will introduce existing concepts and sub-concepts that are relevant for this study. First, existing literature on the characteristics of the Dutch agricultural sector is discussed, followed by existing theories on the willingness of executors to implement policies.

2.2 The independent variable: the characteristics of the executors

In the previous century, literature on the agricultural sector focused on the idea that farmers are primarily driven by profit maximization (Gasson, 1973). However, recent studies show that decisions in the agricultural sector are virtually always based upon a far more complex range of considerations (Hyland et al., 2015). In other words, a farmer that participates in initiatives or developments is not determined only by financial incentives. Different studies have elaborated on this phenomenon, discussing that the agricultural sector is a diverse mix of several dominant *streams of thought* (Hyland et al., 2015, Vanclay et al., 2006; Edwards-Jones, 2006). An example is a work of Frouws (1998), who discussed the different discourses within the Dutch agricultural sector. Conceptualized as ‘rural discourses’, Frouws developed a framework providing a general concept of the different understandings and interpretations within the agricultural sector. Frouws has identified three discourses characterized as competing concepts in rural areas by applying a discourse analysis perspective, as shown in Table 2.

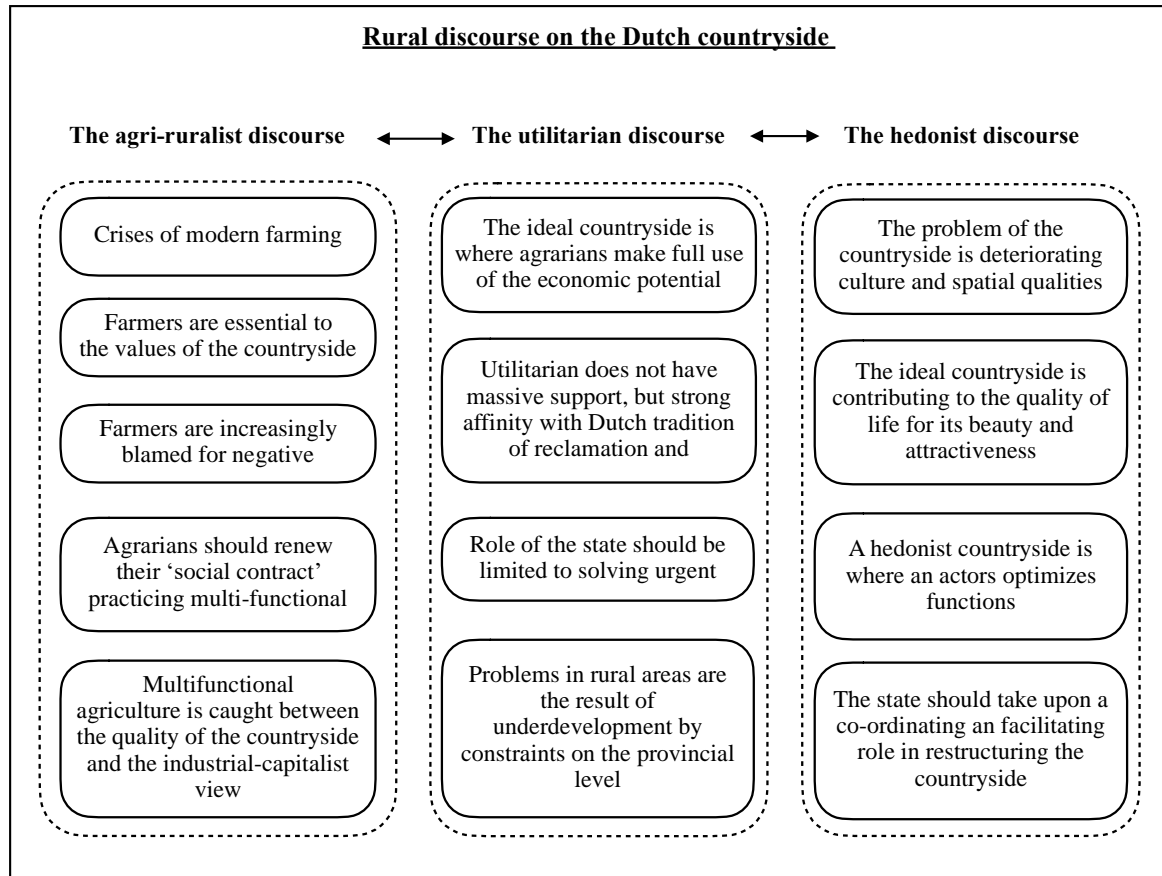


Table 2 Discourses in the Dutch countryside (Frouws, 1998)

Several authors have further elaborated on the work of Frouws. An example is a study by Hermans et al. (2010), who argue that the discourses on the Dutch countryside have incorporated their perspective on sustainable agriculture over time. Excluding each other to a large extent, the three different discourses reveal an intense struggle over the future for the Dutch countryside. In this debate, every rural discourse differs in its appreciation of the current state, problem analysis, upcoming trends, desired solutions, and visions for the agricultural sector. The agri-ruralist, utilitarian and hedonist discourses can be understood as that farmers in the agri-ruralist discourse believe that the current practices in the agricultural sector are not considered problematic. In contrast, the hedonist discourse believes that the agricultural sector is in serious trouble.

The agri-ruralist discourse

The agricultural sector always leaves room for development. However, the current identified problems have little to do with the sector itself, but instead are resulting from the outsiders' perception on the sector. This discourse is focused on a more traditional view of the sector. Within this discourse, the family is considered one of the most critical aspects of the agricultural sector. At the same time, the agri-ruralist believes that the future of Dutch agriculture is quite positive, even if farmers in this discourse

acknowledge that there is always something to be desired. This means that one is never 'perfect', so continuous innovation is necessary for the sector.

On the other hand, for the sector's future, it is vital to work on their 'license to produce' by meeting some of the non-agrarian public demands. Farmers in the agri-ruralist discourse believe that, even if they disagree, societal demands will not vanish. Therefore, the sector needs to acknowledge that there exist a group of people 'out there' with other views on the sector that should be taken seriously. Also, the Dutch government should make more clear choices between multiple conflicting goals. Often, farmers in this discourse find themselves in an uncertain position because the government refrains itself from making decisions, which can either be good or bad for the sector.

The utilitarian discourse

Farmers in this discourse acknowledge that the Dutch agricultural sector is not only operating or depending on the national market. Instead, Dutch farmers are operating on an increasingly competitive global market. At the same time, the current developments in the agricultural sector are perceived as problematic. The ever-increasing intensification of Dutch agricultural practices has created several different negative externalities. The costs to decrease the negative externalities are challenging the competitiveness of the Dutch farmer on the global market. At the same time, farmers in this discourse believe that one of the most problematic aspects of the agricultural sector is a lack of entrepreneurial drive among other farmers. Farmers argue that the sector has yet been unable of meeting the demands of the market. Farmers in the utilitarian discourse believe that they, however, do not lack an entrepreneurial drive. At the same time, the utilitarian discourse considers a clearly defined but limited role for the national government in ensuring a level playing field, specifically on the international level. Government initiatives threatening the competitiveness of the sector are seen as a threat. Simultaneously, the future of Dutch agriculture is aimed at efficient and cleaner technologies rather than expansion since space in the Netherlands is limited.

The hedonist discourse

In the hedonist discourse, farmers believe that a network approach should bring together various local and regional actors, both inside and outside the agricultural sector. Farmers in this discourse believe that to define the sector's future, it is essential to acknowledge actors such as NGOs, landscape conservationists and others. Within the hedonist discourse, it is believed that the agricultural sector is in serious trouble. Examples such as the swine fever, Asian bird flu and other diseases are challenging the sector, as are the current ongoing environmental degradation of the Dutch landscape due to the negative externalities of the agricultural sector. Farmers in the hedonist discourse believe that is important for the sector to move away from current practices and to focus on regional development. This means that farmers must focus more on landscape maintenance, diversity of productions, organic farming and

others. During this shift communication with other actors and groups of society is important. Through communication the sector is able to receive feedback from different groups in society as a way to define developments in rural areas together.

Important economic drivers within the hedonist discourse is the regionalisation of production and consumption. The market and society should focus on buying products locally through increased local branding. Specifically for the hedonist discourse bottom-up initiatives are stimulated, not depending on governmental bodies. However, farmers in the hedonist discourse believe that there is a role for both the national, provincial and the local level to provide opportunities to break through administrative barriers and making the regional and local agricultural production networks perform better. Finally, the hedonist discourse believes that there is a limited possibility of solving current issues in the agricultural sector through the application of new and innovative technologies. Instead, farmers in the hedonist discourse believe that the most crucial aspect is to change current agricultural practices and for the sector to develop towards a way in which the negative externalities will be diminished by moving away from current (intensive) agricultural practices.

	<i>Ontology</i>	<i>Agency</i>	<i>Motivation</i>	<i>Relationships</i>
	<i>Focussed on which entities?</i>	<i>Who should act?</i>	<i>The primary reason for action</i>	<i>The primary relationship between entities</i>
Agri-ruralist	Farmers (and their families)	Agricultural sector, together with the state	Traditional values	Farmer as custodian of nature and landscape
Utilitarianist	Consumers and producers	Market actors, enterprises, and local governments	Material self-interest	Market relations, nature, and landscape only as production values
Hedonist	Tourists, city dwellers, animals	People in networks	Pleasure seeking, self-fulfilment	Nature and biodiversity have intrinsic value

Table 3 Summary of Dutch rural discourses

Considering the study of Hermans et al. (2009) and the study of Frouws (1998), an overview can be provided of the different ways of thinking that exist among agrarians in rural areas in the Netherlands, as shown in Table 3. When considering the development of the different rural discourses defined by Hermans et al. (2009), it becomes clear that various beliefs exist on the future of the Dutch countryside. The hedonist and the utilitarian discourses are seen as two opposites, with the agri-ruralist discourse in the middle. At the same time, every agricultural discourse has incorporated a (sustainable) future of rural areas, done so in a specific economic, ecological, and social way. Different discourses can also overlap

or exclude each other since an individual agrarian can agree with different aspects of different discourses simultaneously (Frouws, 1998). Consequently, there is no common understanding of the future direction of rural areas, and that of the agricultural sector in specific within the discourses in rural areas (Horlings & Marsden, 2012)

2.3 The dependent variable: perception of agrarians towards dual land use

In general, when implementing policy, it is essential to gain an understanding of the characteristics of the executors since they inevitably influence the perception towards policy. In other words, the perception of the executors are deciding the extent to which the performance of the policy outcome matches the ambitions of the public policymakers, also known as the *conformity of policy* (Coolsma & Montfort, 2014). This means that a policy meets the ambitions of policymakers on the one hand and the characteristics of the executors on the other. During policy implementation, it becomes apparent to which extent policy conforms to the characteristics of the executors. According to Coolsma & Montfort (2014) the extent to which the executors *know* what the policy is about, *want* the policy to be implemented, *are able to* implement the policy and *need* to implement the policy all determine the performance of the policy outcome in the implementation phase.

However, for the agricultural sector in specific, policies aimed at changing the agricultural sector are essentially concerned with behaviour change or *system innovation*. This means that there is far-reaching innovation applied through technological, social and cultural change (Janssen et al., 2010). Therefore, most scholars on agricultural policies do not refer to the conformity of policy. Instead, studies on agricultural policies focus on the *adoption* of a policy, which means that a farmer adopts a policy in their way of working, ranging from zero to 100% (Pannell & Claassen, 2020; De Rosa, Bartoli, & Chiappini, 2012; Prager, & Posthumus, 2010). This distinction in policy implementation is essential because the decision of an individual farmer to adopt a policy is not only determined by factors relating to the farm and its management. Whereas most businesses base their decisions merely on economic principles, agricultural businesses often behave differently (Vanclay et al., 2006). This phenomenon has been elaborated on in the study of Pannell et al. (2006) who argue that farmers' adoption of agricultural policies depends on a range of factors such as personal, cultural, social, and economic factors. Nevertheless, also depends on the characteristics of the policy that is being implemented.

In the literature, several studies have aimed to explain the extent to which factors influence the adoption process of agricultural policies (Mintrom & Luetjens, 2017; Prager, Prazan, & Penov, 2011; Defrancesco, Gatto, Runge, Trestini, 2007). The identified factors are often classified into four different groups being environmental/technical, personal, economic and institutional (Dessart, Barriero-Hurlé, & Van Bavel, 2019; Prager & Posthumus, 2011, Vanslebrouck, Van Huylenbroeck, & Verbeke, 2002).

As discussed in the study of Prager & Posthumus (2011), no scientific evidence exists that one factor is superior in explaining the extent to which farmers are willing to adopt a policy. Instead, the adoption process of agriculture policies is determined by an interconnected mix of the variables that have been mentioned.

2.4 Conceptual model

The conceptual model shows the essential concepts and variables that guide this research and their relationship with each other. The conceptual model guiding this research stems from the perception of agrarians towards the application of dual land use. In the conceptual model phase A highlights the interconnected different rural discourses that exist within the agricultural sector. Based on the different characteristics of every discourse, an individual farmer aims to formulate a general way of thinking, to be able to form an opinion on developments in the agricultural sector. This process is crystallised in phase B, where the farmer forms different streams of thought. This phase is essentially concerned with formulating different values and norms that guide a farmer in everyday life. Between phase B and C is the implementation of agricultural policies. This policy is transferred through the streams of thought towards the different concepts that guide a farmer in the adoption process of agricultural policies. It is within phase C that the dependent variables are shown. This is because how the adoption process is defined is resulting from the streams of thought, as well as the characteristics of the policy that is implemented. After phase C the final phase is phase D where all factors that constitute how a farmer perceives the adoption and implementation of an agricultural policy is defined as the perception of the farmer towards agricultural policies. Phase D therefore highlights the extent to which agricultural policies will be adopted by the individual farmer, based on their perception.

The following four concepts, resulting from the paragraph that highlights the dependent variables are shown in the conceptual model:

1. *Environmental/technical*: the extent to which measures can be implemented due to the physical state of the farm (technical) and the environmental consequences it has
2. *Economic*: the financial consequences dual land use can have for the farm and the farmer
3. *Personal*: norms and beliefs that guide a farmer in daily life, but also the general idea of a farmer towards the agricultural sector
4. *Institutions*: Groups that create stable expectations on the behaviour of others, enabling thought, expectation, and action by imposing form and consistency on human activities.

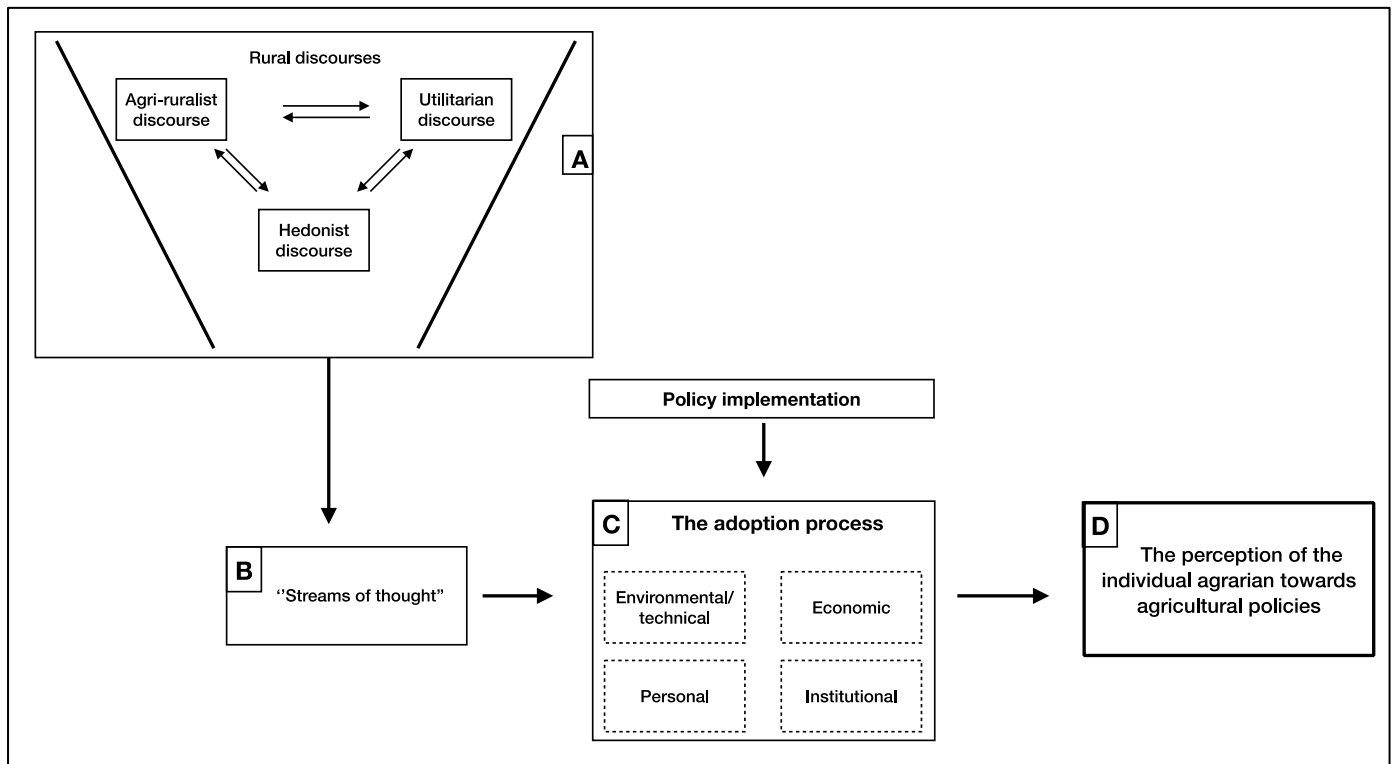


Figure 3 Conceptual model

To understand all dependent variables, it is vital to elaborate on the definition of institutions a bit further. In this study, institutions are understood in the broadest sense, meaning that institutions are socially constructed groups of people with almost the same way of thinking, expecting a particular type of behaviour from others. Examples of institutions are, therefore, society or the government (Hodgson, 2006). During this phase, the dependent variables of the adoption process influence the perception of the individual agrarian to adopt agricultural policies aimed at increasing the application of dual land use. Consequently, the studies of Prager & Posthumus (2011) and Vanslebrouck, Van Huylenbroeck, & Verbeke (2002) have discussed different existing studies on the perception of agrarians towards agricultural policies, serve as the basis of the conceptual model guiding this research.

3.0 Methodology

This chapter describes the methodology of this research. When undertaking research, it is essential to emphasize the importance of the research design because this will have a significant potential payoff in terms of the research quality (Farthing, 2016). This chapter starts with explaining the research strategy and the research philosophy. Followed by the data collection, data analysis, and operationalization. The final part of this chapter discusses the validity and reliability of this research.

3.1 Research strategy

Research is guided by different considerations and decisions, for example, the subject of study and the applied research methods. To understand the different considerations made, it is crucial to explain the *architecture* of a study. Referred to as the research strategy, a researcher elaborates on the applied procedure within the study, providing as a guideline for the research (Creswell & Creswell, 2018; Van Thiel, 2014)

Qualitative research and public administration

This study aims to acquire in-depth knowledge about the perception of the agricultural sector in the Food Valley towards policies aimed at increasing the application of dual land use on agricultural land. Therefore, a qualitative inquiry is the most suitable since it allows for an in-depth analysis of the behavioural change, the actors involved, and how they interact (Runhaar et al., 2016). Interpretation and understanding meanings of concepts such as dual land use and the possible problematic developments in the agricultural sector form the core of this study. According to Hennink, Hutter, & Bailey (2020, pp. 10-11), ‘*qualitative research is an approach that allows you to examine people’s experiences in detail by using a specific set of research methods (...) perhaps one of the most distinctive features of qualitative research is that the approach allows you to identify issues from the perspective of your study participants and understand the meanings and interpretations that they give to behaviour, events or objects*’.

Case description

As in this research, studies in public administration often specific problems or ‘a case’ form the core of a study. As mentioned before, to address the knowledge gap on the perception of agrarians towards dual land use, this study has the design of case study research: it investigates the different perceptions of agrarians towards dual land use. This research focuses on the region of the Food Valley, a network of municipalities, agricultural companies and affiliated businesses aiming to become the most advanced agricultural region in the world (Jongen, 2006). However, different opinions exist on the exact number of municipalities that are affiliated with the Food Valley. As an example, documents and agreements published by the Dutch government lack to provide a clear definition of the Food Valley (Ministry of Agriculture, Nature and Food Quality, 2019). Therefore, this study follows the definition provided by

LTO-Noord referring to the Food Valley as the thirteen cooperating municipalities of Ermelo, Putten, Nijkerk, Barneveld, Leusden, Woudenberg, Scherpenzeel, Renswoude, Ede, Wageningen, Veenendaal, Rhenen and the Utrechtse Heuvelrug. The thirteen municipalities are all located between the nature reserves of the Utrechtse Heuvelrug and the Veluwe, in the middle of the Netherlands, as shown on figure 2 (LTO-Noord, 2020).

Within the context of the case under inquiry, a case study offers the possibility for an in-depth study. This means that a case study allows the researcher to derive an intimate understanding of a single or small number of cases in their real-world contexts (Yin, 2011, pp. 3-4). Simultaneously, within case study research, the researcher is invited to apply different methods and sources for data collection (Van Thiel, 2014). As a result, this research has applied different types of methods for data collection: literature review, in-depth interviews and reference study, which contributes to the validity of the study in terms of triangulation.

When conducting research, a researcher must be aware of his or her values and assumptions and how this (possibly) influences the research and the choices made. Because this research is part of an internship at LTO-Noord. It is essential to acknowledge that the case studies are viewed from the perspective of this organisation.

At the same time, this study does not incorporate the perception of the entire agricultural sector of the Food Valley. It is therefore vital that the researcher is aware that the results of the data collection are interpreted both from the perspective of agrarians affiliated with LTO-Noord, as well as that there remains a group of agrarians in the Food Valley that is not incorporated in the study. This aspect of the study will be further elaborated on in the discussion section of this study.

3.2 Research philosophy

A researcher always brings certain beliefs and philosophical assumptions into research to understand a phenomenon, otherwise known as the research philosophy (Guba & Lincoln, 1994). The researcher must be aware of the assumptions made since they inevitably influence the choice of theories that guide the research. The research philosophy refers to the beliefs and values that guide the research design, data collection, and data analysis. It also refers to what the researcher believes to be the truth, reality, and knowledge. Questions of the research methods and strategies are therefore secondary to paradigm questions (Guba & Lincoln, 1994). A paradigm is defined as the primary system of beliefs that guide the researcher, incorporating certain assumptions or research beliefs into the research on the ontology, methodology and epistemology of scientific research (Guba & Lincoln, 1994). The ontological question refers to the form and nature of reality, whereas the methodological question focuses on how the

researcher goes about finding out whatever they believe can be known. The epistemological question focuses on the nature of the relationship between the knower and would-be knower (Guba & Lincoln, 1994).

In this study it is believed that understanding the nature of the problem requires a constructivist approach. This research is guided by the idea that people do not understand the world objectively or directly. Instead, perceptions are channelled through the human mind (Creswell & Creswell, 2018). It is within this channel between the eye (what we see) and the brain (how we understand) that an individual becomes aware of a phenomenon and how it is perceived, as shown in figure 5. Meaning that, influenced by our individual or social characteristics people can look at the same but perceive something different (Moses & Knutsen, 2019). Therefore, this study follows a holistic approach to study how people experience and what kind of meaning or interpretation is assigned to dual land use in the agricultural sector of the Food Valley (Van Thiel, 2014). Within the constructivist paradigm of case study research, a researcher acquires multiple perspectives of those involved in the case, aimed to gather a collectively agreed upon and diverse notion of the phenomenon under inquiry (Lauckner, Paterson, & Krupa, 2015).

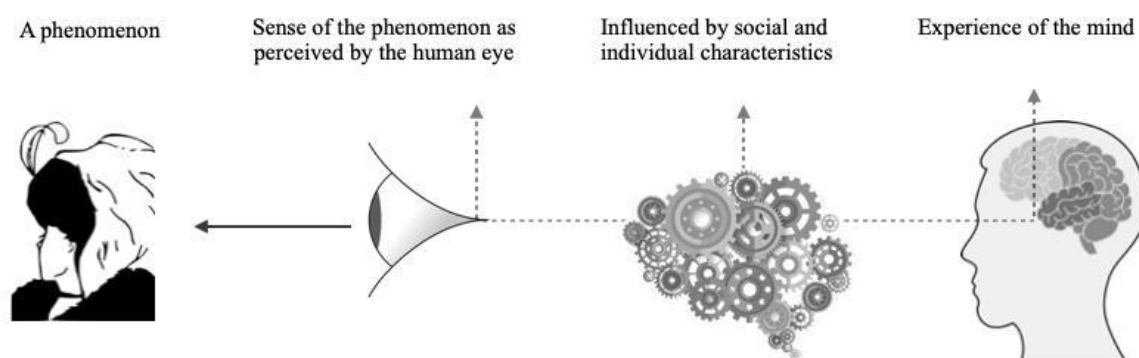


Figure 4 Constructivist paradigm (own visualisation)

3.3 Data collection

Several different data collection methods exist, which often can be applied within a variety of research strategies (Van Thiel, 2014). This paragraph explains how the phase of data collection for this research, followed by explaining how the collected data has been analysed. Finally, this paragraph will elaborate on the operationalisation of the theoretical concepts which guide this research.

Literature review

The first phase of this research consists of desk research to obtain existing knowledge on the topic under inquiry. As Van Thiel (2014) discussed, desk research supports the researcher in becoming familiar with existing literature serving as a basis throughout the study. In this study, the desk research consists of two phases. The first phase focuses on the literature review to identify the problem statement and

develop the theoretical and conceptual framework. By conducting a literature review, the study elaborates on the researchers' knowledge about a particular topic, including the key variables, theories and phenomena. At the same time, a literature review provides the possibility to relate to new findings in the discussion section of a study. If there is no review of the state of previous literature, the researcher cannot elaborate on how the findings contribute to the field of study. Secondly, the literature review is applied to create the methodology connected to the research strategy, data collection, selection of sampling, data analysis, reliability and validity and the sources of interference that guide this research (Van Thiel, 2014).

Reference study

A document analysis or reference study is a method often used in case study research to portray and enrich the context of the case and therefore contribute to the analysis of the case under inquiry (Simons, 2012). As a result, this research has applied a reference study to search for clues that provide a general understanding of the perception of agrarians towards agricultural policies. A purposive sampling strategy was used to select relevant studies for the analysis. Since this strategy is not based on underlying theories, Tongco (2017) argues that it is up to the researcher to determine criteria to select relevant sources for the reference study. Therefore, the studies used in the reference study should at least meet the following criteria:

- The study focuses on the perception of farmers towards environmental or spatial policies aimed at the agricultural sector
- The study has been carried out in this century
- The study has been carried out in a European context

By applying these criteria, it was possible to select relevant studies that provide a general understanding of the perception of agrarians towards environmental or spatial policies aimed at the agricultural sector. In total, fifteen studies have been selected.

<i>Number of document</i>	<i>Topic</i>	<i>Author(s)</i>	<i>Year</i>	<i>Keywords</i>
1	The willingness of farmers to participate in agri-environmental policies	Vanslembrouck, Van Huylenbroeck, & Verbeke	2002	Agri-environmental policies, behaviour, participation
2	Soil conversation: the role of institutions	Prager, Prazan, & Penov	2012	Sustainable land use, policy implementation, institutional analysis

3	Farmers' acceptance of environmental policies	Schroeders, Chaplin, & Isselstein	2015	Conservation, farmers' values, farmers' behaviour
4	Behavioural factors for adopting sustainable farming practices	Dessart, Barreiro-Hurlé, & Van Bavel	2019	Conservation, behavioural science, environment
5	Farming communities and land-use change	Rogge & Dessein	2015	Rural change, spatial transformations, production factor land
6	Triggers for participation among farmers	Mann	2018	Conservation, innovation triggers
7	Policy impact on agrarians perception	Oñate & Peco	2005	Policy impacts, irrigation, Spain
8	Succession and the future of farming	Williams & Farrington	2006	Farm succession, land-use implications
9	Farmers participation in subsidy schemes	Christensen, Pedersen, Nielsen, Mørkbak, Hasler, & Denver	2011	Preferences, participation, choice experiments
10	Affecting farmers' willingness to participate	Franzén, Dinnézt, & Hammer	2016	Stakeholder participation, water management
11	The effect of policy instruments on farmer's decisions	Branth Pedersen, Ørsted Nielsen, Christensen, & Hasler	2012	Policy instruments, farmers, motivation
12	Perceptions about land use	Gilg	2009	Urban growth, farmers, food, land-use change
13	European farmers' decision-making	Bartkowski & Bartke	2018	Agricultural policy, soil pressures, behavioural studies
14	Institutional-economic conditions and motivational drivers	Brouwer, Lienhoop, & Oosterhuis	2015	Choice experiment, willingness to accept compensation
15	Farmers participation in agri-environmental policies	Defrancesco, Gatto, Runge, & Trestini	2007	Italian rural areas, non-participation, attitudes

Table 4 Studies included in the reference study

In-depth interviews

Interviews are often applied in case study research since they offer a flexible way of collecting data (Simons, 2012; Yin, 2009). After the desk research and the reference study, semi-structured interviews have been applied, which allow for an in-depth analysis of the perception of the agricultural sector in

the Food Valley on dual land use. This has also been discussed by DiCicco-Bloom & Crabtree (2006), who argue that in-depth interviews allow discovering a shared understanding of a particular group. This study has used purposive sampling to select candidates for the interviews. There are several forms of purposive sampling, where in this study, stratified sampling has been applied. Selecting specific experts, stratified sampling focuses on the characteristics of the group of participants (Campbell et al., 2020). In this research, experts were selected based on the content of their daily life. To acquire knowledge about the perception of agrarians on dual land use, it is necessary to speak with agrarians who feel engaged in agricultural discussions. At the same time, the agricultural sector of the Food Valley is very diverse. Therefore, it is vital to ensure that not one part of the sector is overrepresented in the data. As a result, participants have been selected based on the following criteria (Campbell et al., 2020):

1. The interviewee is the owner of an agricultural business located in the Food Valley
2. The interviewee is the owner of a commercial and professional agricultural business, according to the following criteria:
 - a. Operates in rural areas
 - b. Operates with a reasonable amount of land or animals
3. The interviewee has the ambition to continue their commercial agricultural business in the future.
4. Selecting the interviewee will not result in an overrepresentation of a specific type of agrarian in the agricultural sector of the Food Valley.
5. Selecting the interviewees will result in a representation from farmers living in different parts of the Food Valley.

To safeguard the privacy and anonymity of the interviewees, a detailed overview of where the interviews have taken place will not be provided. However, in table 5 an overview has been provided with the number, type of farm, municipality and date of the interview. Eleven in-depth interviews have been conducted with a diverse selection of agrarians located in the Food Valley.

<i>Number of the interviewee</i>	<i>Municipality</i>	<i>Type of farmer</i>	<i>Date interview</i>
A	Renswoude	Free range chickens and young cattle	28-09-2021
B	Barneveld	Free range chickens	04-10-2021
C	Leusden	Milk cows	04-10-2021
D	Renswoude	Milk cows	08-10-2021
E	Barneveld	Sheep herder and calves rearing	11-10-2021
F	Lunteren	Veal calves	11-10-2021

G	Barneveld	Veal calves	12-10-2021
H	Nijkerk	Veal calves and calves rearing	15-10-2021
I	Woudenberg	Milkcows	18-10-2021
J	Lunteren	Free range chickens	19-10-2021
K	Ermelo	Milkcows	20-10-2021

Table 5 Characteristics of the interviewees

Moreover, to ensure the quality of the data obtained from the research interview, the Interview Protocol Refinement (IPR) framework has been applied within this research (Castillo-Montoya, 2016). When applying the IPR, most emphasis is placed on the relevance and context of the interviews, which fits within a constructivist approach to research (Moses & Knutsen, 2012). Furthermore, the IPR framework consists of four phases being aligning, constructing, receiving and piloting. The first phase refers to ensuring that the interview questions align with the research question. Secondly, it is crucial to construct an inquiry-based conversation. The third phase is to receive feedback on the interview protocols and finally to pilot the interview protocol.

Through applying the IPR framework, it becomes possible for the research to create a research instrument (the interview) that is congruent with the aim of the research. In this case, congruent refers to the interviews being anchored in the purpose of the study and the research questions (Castillo-Montoya, 2016). Consequently, the questions in the interviews have been derived from the conceptual framework and were structured in four main topics, personal, environmental/technical, institutional, economic. The interviews were held in person in face-to-face conversation and usually lasted more than one hour, even almost two hours. The interview guide that is the product resulting from the IPR framework can be found in appendix 1.

3.4 Data analysis

This paragraph describes how the collected data has been analysed. First for the reference study and second for the in-depth interviews.

Reference study

The first phase of data analysis is through analysing the content of the studies included in the reference study. Bowen (2009) discussed that a reference study or document analysis is a systematic procedure to review or evaluate, combine elements of the literature review and the in-depth interviews, also referred to as the content analysis and the thematic analysis. Therefore, a reference study provides a general understanding of the perception of agrarians towards environmental/spatial agricultural policies. The documents from the reference study have been analysed according to open, axial and selective coding.

This process has also been applied during the analysis of the in-depth interviews, which will be discussed hereafter.

Open coding allows the researcher to select a word or short phrase from the data, which most often corresponds with the primary topic of a passage in the data (Saldaña, 2009). During the open coding process, the conceptual framework and the corresponding conceptualization served as the starting point. The labels of the code groups correspond with the conceptual framework. While it is not possible to directly compare the code groups with the conceptual framework, it provides a general overview of the critical concepts found in the data. After the process of open coding, the process of axial coding was conducted. Axial coding aims to find a pattern, or different patterns, in the data resulting in different themes. Since this study is deductive in nature, labelling different units of data with a code and assigning different codes to a corresponding code group or ‘theme’ creates the possibility to find patterns in the data (Van Thiel, 2014). During the final selective coding phase, the related themes are assigned to the variables corresponding with the conceptual framework and possible new emerging variables. During this final phase, possible patterns from the conceptual framework will be investigated, therefore providing the possibility to answer the sub-questions and the main question that guides this research.

Primary data analysis

As mentioned before, in total, eleven interviews have been conducted, recorded and transcribed. After, the process of transcribing, the interviews have been analysed through the programme of Atlas.ti. With the programme of Atlas.ti it is possible to divide the data into units, label the units with a code, and compare different codes with each other. As mentioned before, in total, eleven interviews have been conducted, recorded and transcribed. In qualitative research, a code is often defined as ‘*a word or short phrase that symbolically assigns a summative, salient, essence-capturing, and evocative attribute for a portion of language-based or visual data*’’. (Saldaña, 2009, p. 3). As mentioned before, in this research, open and axial coding have been important ways to analyse the data. These forms of coding have been used as a guideline but did not serve as a strict rule. This is because coding is a flexible process, and therefore also in this research, different ways of coding methods have been applied.

The findings of the study are elaborated on in chapter 4. This means that the findings resulting from labelling the data into codes and constructing the themes will be elaborated in this chapter. In this chapter, the corresponding codes will be referred to, corresponding to the designated code by Atlas.ti. Referring to a specific code therefore looks as follows: [28:02], where the first number refers to the corresponding source and the second refers to the corresponding code of that source. In addition, the data refers to the transcriptions from the interviews. It is essential to mention that in the transcription, information is left out on purpose in a small number of cases. This is to protect the interviewees' privacy and the third parties mentioned during the interviews.

3.5 Validity and reliability

Validity and reliability are essential criteria in creating sound scientific research. The validity of research refers to the internal and external validity. Internal validity means that a researcher has measured the effect he/she intended to measure (Van Thiel, 2014). External validity refers to the extent to which a study can be generalized.

Ensuring the validity is mainly influenced by the fact that this study is qualitative in nature, and this type of research is often subjective. At the same time, this study applies data triangulation to increase the validity of the study. This study can be used as a framework for other agricultural regions in the Netherlands in terms of external validity. The generalizability of the study has been increased by interviewing different types of farmers. Nonetheless, this study only focuses on the region of the Food Valley and therefore it is possible that findings in other regions might differ.

The reliability of research focusses on the extent to which a study can be repeated. Therefore, it is essential to ensure the accuracy and consistency by which the variables that guide the research are measured (Van Thiel, 2014). The more accurately and consistent the variables are measured, the higher the chance that results are not coincidental. The variables measured within a study should be as precise as possible to increase the accuracy of the measurement instruments applied in a study (Van Thiel, 2014). Therefore, this study uses existing theories that have been used as a basis for the conceptual model guiding the study.

Other scientists should be able to follow the same procedure and find the same result. It is vital that the researcher documents and operationalizes all the procedures applied in the study. However, achieving a reliable study can be difficult in qualitative research using interviews, clarifying the importance of elaborating on the choices made in the study. To ensure the reliability of the study, triangulation will be applied, as discussed by Van Thiel (2014). Triangulation is a way of ensuring that the data collection and data analysis are done by using different data sources and methods. Therefore, applying triangulation will positively affect the reliability and validity of the study (Van Thiel, 2014).

4.0 Findings

This chapter outlines the coding process of the reference study and the in-depth interviews. The empirical findings reflect on the process of open, axial and selective coding, first for the reference study and second for the in-depth interviews. The open coding process helped to get familiar with the data, labelling all possible relevant bodies of text. Secondly, all coded bodies of text have been coded according to a corresponding theme in the axial coding process. In the last analysis phase, all themes have been assigned to a concept, guided by the conceptual model. The themes guiding this research correspond with the conceptual model, which consists of 4 themes (environmental/technical, personal, economic, & institutional) explaining the perception of agrarians towards dual land use.

After elaborating on the coding process, this chapter will discuss the empirical findings of this study, both for the reference study and the in-depth interviews. Discussing the findings will be structured based on the four concepts resulting from the conceptual framework. Moreover, to understand the findings of both the reference study and the in-depth interviews, it is essential to consider the focus of both studies. The reference study is focused on identifying the core concepts found in the existing literature on the perception of the agricultural sector towards (spatial) agricultural policies. On the other hand, the in-depth interviews are, for the most part, focused on the perception of agrarians in the Food Valley towards dual land use. Elaborating on the differences and commonalities between both studies can be found in the discussion of chapter five.

4.1 Coding of the reference study

As mentioned before, a total of fifteen studies have been used as input for the reference study analysis. All the studies used in the reference study have been selected using specific terms based on the criteria as discussed in the methodology in the online database of the Radboud University Library. The terms that have been used are *agriculture*, *agrarian*, *farm/farmer*, *environmental*, *policy/policies*, *perception/perceptions*, *impact*, *acceptance*, *influence*, *decision/decision-making*, *willingness*, *measures*, and *participation* in different orders and with varying combinations.

The first phase of open coding of the fifteen studies resulted in a total of 205 quotations that have been assigned to the data. The number of codes per source ranged from eleven codes for source 3 (Schroeder, Chaplin, & Isselstein, 2015) as well as source 7 (Oñate & Peco, 2005) until eighteen codes for source 10 (Franzén, Dinnétz, & Hammer, 2016). The remaining sources received a number of codes between eleven and eighteen, with an average of fourteen codes per source. This means that not one source provided an exceptional amount of data compared to the other sources. Hence, almost every source provided an equal amount of data. An example of the data that has been labelled during the open coding process are the following two bodies of text:

From the study of Prager, Prazan, & Penov (2012): “[2:8]: *without cooperation from the farmers, the state officials have little chance of finding or controlling the wells that are scattered around large fields and can easily be hidden*”.

From the study of Brouwer, Lienhoop, & Oosterhuis (2015): “[14:11]: *whether or not farmers already take nature conservation measures was expected to be a strong predictor of farmers’ environmental attitudes based on existing research related to agri-environmental agreements but only shows up as a positive driving force in one of the latent classes identified in the German sample*”.

The second part of the analysis has been carried out in terms of axial coding. Therefore, all 205 quotations have been assigned to a corresponding theme, representing a general description of the quotations. These themes are not related to a theoretical concept but are instead the product of the researcher's interpretation. In total, eighteen themes have been assigned to the quotations resulting from the axial coding phases shown in table 6. A review of which codes have been assigned to which sources of data can be found in appendix B, the so-called codebook.

Code and the corresponding number	Number of quotations	Code and the corresponding number	Number of quotations
(1) Easy implementation of policies		(10) Legal rights of the land	
(2) Emotional connection with the farm		(11) Necessity for policy	
(3) Engaged farmers		(12) Physical state of the farm	
(4) Environmental awareness of farmers		(13) Policy information	
(5) Examples of others		(14) Pressure from institutions	
(6) Farmers view of the sector		(15) Relation with society	
(7) Financial consequences for the farm		(16) Resistant to change	
(8) Historical developments		(17) Subsidies	
(9) Legal boundaries		(18) Trust in governmental bodies	

Table 6 Themes of axial coding - reference study

After the second part of the analysis, the third (and final) part of the analysis was carried out in terms of selective coding. As mentioned before, selective coding is the process in which the different themes resulting from the axial coding phase are assigned to a concept corresponding with variables from the conceptual model. The concepts where the themes have been assigned are known as (1) *environmental/technical*, (2) *personal*, (3) *economic*, and (4) *institutional*. Table 7 summarises the results of the open, axial and selective coding phases, explaining which themes from the axial coding process have been assigned to which concept.

<i>Open coding (205 quotations)</i>	<i>Axial coding (18 themes)</i>	<i>Selective coding (4 concepts)</i>
1- It is clear that financial and practical reasons are most important 2- The measure is not applicable given the farm situation 3- e.g., planting has been done already . . . 204- Non-participants, and especially non-adopters are reluctant to request technical information from neighbouring farmers 205- It can be concluded that non-adopters have a profit-oriented approach	Easy implementation of policies	Environmental/technical
	Environmental awareness of farmers	
	Legal boundaries	
	Legal rights of the land	
	The physical state of the farm	
	Emotional connection with the farm	Personal
	Engaged farmers	
	Environmental awareness of farmers	
	Examples of others	
	Farmers view on the sector	
	Historical developments	
	Resistant to change	
	Financial consequences for the farm	Economic
	Necessity for policy	
	Subsidies	
	Policy information	Institutional
	Pressure from institutions	
	Relation with society	
	Trust in governmental bodies	

Table 7 Coding results from the reference study

4.2 Coding of the in-depth interviews

Discussed in the methodology, coding the in-depth interviews has taken place in the same order as coding the data from the reference study. In total eleven in-depth interviews have provided a rich amount of data, since data saturation has been achieved from the researchers' perspective. This means that interviewing more participants would presumably not result in new insights. From the first phase of coding, the eleven interviews resulted in 375 quotations during the process of selective coding. The number of codes per source ranges between 25 codes for interview three and interview 7 and 47 codes for interview one and interview 8, where an average of 34 codes have been assigned to every interview. Consequently, the most minor coded interviews do not differ greatly from the average codes per interview. An example of the codes that have been assigned to the data during the phase of open coding are the following two bodies of text:

From the first interview: "[1:1]: Yes, that is the current point of view, it is very widely supported. That there are mentions of yes, of course, something should be done, that is not up for discussion. But in what way?"

From the eight interview [8:7]: *“True, but that also counts for me. I am now 54 years old, and most likely there will be no successor. This makes me think, we have to make certain choices. I also have to consider my future”. We do not want to leave this place, so that makes you wonder: what can we do?”*

As for the reference study, the second part of the analysis consists of the process of axial coding. During this process the total amount of 375 quotations have been assigned to a total of 28 themes. Consequently, the 28 different themes take into account all different common aspects that can be found in the data. For the in-depth interviews, the themes are based on the researcher's insight, and therefore not based on a theoretical concept. All the themes that have been assigned to the quotations can be seen in table 8, also explaining the number of quotations that have been assigned to every individual theme. This can be understood as the number of times a theme corresponds with a specific part of the interviews. A detailed overview of the number of quotations per interview that have been assigned to the theme, the so-called codebook, can be found in appendix C.

Theme and the corresponding number	Number of quotations	Theme and the corresponding number	Number of quotations
(1) Age of the farmer	6	(15) Lack of trust in governmental bodies	31
(2) Availability of policy information	21	(16) Legal boundaries	25
(3) Available space for dual land use	10	(17) Negative business case for dual land use	10
(4) Depending on governmental bodies	17	(18) Opinion towards governmental policies	18
(5) Economics of the agricultural business	33	(19) Physical state of the farm	15
(6) Emotional connection with the agricultural sector	9	(20) Positive representation towards society	9
(7) Farmer as maintainer of rural areas	12	(21) Pressure from institutions on agricultural land	14
(8) Farmer is environmentally concerned	18	(22) Pressure from institutions to behave environmentally friendly	15
(9) Farmer is in favour of dual land use practices	23	(23) Productivity of the farm	24
(10) Farmer is not in favour of dual land-use practices	8	(24) Relation with bank	10
(11) Farmer is unable to cover the costs	10	(25) Relation with society	31
(12) Financial benefits from dual land use	14	(26) Trust in governmental bodies	16
(13) Historical developments in dual land use	8	(27) Use of subsidies	28
(14) Historical relationship with government	18	(28) View of the farmer towards the agricultural sector	27

Table 8 Themes of axial coding - in-depth interviews

After the axial coding process, the final step of the analysis has been conducted, also known as the selective coding process. As mentioned before, during this phase, all themes are (if possible) linked to a concept corresponding with the conceptual framework, as discussed in chapter 2. The concepts where the themes have been assigned to are therefore also known as (1) *environmental/technical*, (2) *personal*, (3) *economic*, and (4) *institutional*. Summarized in table 9 are the results of the open, axial and selective coding processes. This table explains to which concept the themes from the axial coding process correspond best with. It is possible that one theme can correspond to more than one concept. To remain consistent, table X does not explain themes that correspond with more than one concept. This explanation will follow in the next paragraph, where the results from the analysis will be further elaborated on.

<i>Open coding (375 quotations)</i>	<i>Axial coding (28 themes)</i>	<i>Selective coding (4 concepts)</i>
<p>1- Yes, that is the current point of view, it is very widely supported. There are mentions of yes of course something should be done, which is not up for discussion. But in what way?</p> <p>2- In discussion with other stakeholders such as municipalities, provinces and everyone that has something to do with this, such as nature organisations, where every organisation has different preferences.</p> <p>.</p> <p>.</p> <p>.</p> <p>.</p> <p>.</p> <p>.</p> <p>.</p> <p>.</p> <p>.</p> <p>374- All legal rules in the Netherlands are so short-term. Everything that you do should really be on the long term, with a</p>	Available space for dual land use	Environmental/technical
	Farmer is environmentally concerned	
	Legal boundaries	
	Physical state of the farm	
	Age of the farmer	Personal
	Availability of policy information	
	Emotional connection with the agricultural sector	
	Farmer as maintainer of rural areas	
	Farmer is in favour of dual land use practices	
	Farmer is not in favour of dual land use practices	
	Productivity of the farm	
	View of the farmer towards the agricultural sector	
	Economics of the agricultural business	Economic
	Farmer is unable to cover costs	
	Financial benefits from dual land use	
	Negative business case for dual land use	
	Use of subsidies	
	Depending on governmental bodies	Institutional
	Historical developments in dual land use	
	Historical relationship with government	
	Lack of trust in governmental bodies	
	Opinion towards governmental policies	
	Positive representation towards society	

vision for the future, improve your farm. 375- Yes, we were too late for the subsidy. The asbestos was removed in October, but the regulation was empty on the 1 st of October. So we did not receive a single cent, we were miserable. We did hand in the request, but there was no money left from the subsidies.	Pressure from institutions on agricultural land	
	Pressure from institutions to behave environmentally friendly	
	Relation with bank	
	Relation with society	
	Trust in governmental bodies	

Table 9 Coding results from the in-depth interviews

4.3 Findings of the reference study

This paragraph will elaborate on the findings resulting from the process of open, axial and selective coding. First, the findings related to the environmental/technical concept will be provided, followed by the economic, personal, and institutional concepts. Every concept will be assigned with a general description of the common characteristics found when coding the data, as well as quotes from the data referring to a specific body of text that shows an example of where the concept has been found in the data.

Environmental/technical

From an environmental/technical perspective, most of the studies from the reference study indicate that the environmental awareness of farmers is an essential factor in the adoption process. Often agricultural policies are aimed often at decreasing the negative impact of the agricultural sector on the environment. As a result, it is required that farmers acknowledge the potential negative influence of the agricultural sector on the environment while at the same time accepting that measures should be implemented to decrease the consequences of agricultural operations on the environment. [3:3] ‘*who found that improvement of the environment is one reason for farmers to join AES and hence perceived as a valuable outcome*’. [4:9] ‘*similarly, people seek to reduce the unpleasant emotions associated with environmental and moral concerns (e.g. guilt) and to experience instead positive emotions of self-satisfaction in what is called the ‘warm-glow’ process*’.

At the same time, in a technical sense, several studies indicate that smooth implementation of agricultural policies into existing agricultural processes is an essential requirement for a farmer to adopt an agricultural policy. This means that if a policy demands a farmer to restructure his daily routine, more resistance can occur. [6:2] ‘*this requires the farmer to register each time they use the technology for each plot. It is plausible that farmers perceiving this as administrative overload are less likely to participate in the program*’.

Moreover, the technical aspect of policy adoption also refers to the legal possibilities for a farmer to adopt agricultural policies. First of all, land leasing is a common practice in the agricultural sector. The process of adopting agricultural policies can be perceived as very difficult or even impossible due to legal constraints because the operating farmer has few rights to determine what happens with the leased land. To implement new agricultural policies, a farmer that leases land depends on the owner of the land. [10:14] *“Landowners were 3.5 times more willing to create a new wetland than were the leaseholders”*. [5:8] *“Some of these activities are considered industrial or commercial activities and are not allowed within the agricultural zones according to the spatial planning legislation.”*

Economic

The expected financial consequences determine the economic perspective for agricultural policy adaptation. This is because most farmers argue that their main objective is a profitable agricultural business in the first place. Often, new agricultural policies are associated with increased financial risks. This is even the case when investing in specific policies results in a higher profit in the future. [11:3] *“in total, these results indicate that farmers are more concerned about loss of yield than about environmental and health risks when they consider the use of pesticides.”*

Consequently, a lot of agricultural policies can result in negative financial consequences for the farm. Therefore, governments often apply a form of subsidies to create financial incentives for farmers to adapt to a specific policy. Subsidies, however, are often associated with a significant number of negative externalities. Farmers are therefore often considered to be reluctant towards subsidies. Examples are that subsidies increase the farmers’ dependency on the farm, that receiving subsidies often results in more administrative work or that the subsidies are simply too low. [9:8] *“Our descriptive results suggested that 72% of the Danish farmers disagree with or are neutral towards the statement that subsidy schemes are an easy source of income”*. [7:4] *“As in many areas of Spain, the Regional Agriculture Department blamed the limited implementation of this scheme on budget restrictions, especially since in Murcia irrigation is a top priority and agri-environmental measures have more budgetary limits”*.

Personal

Several sources have identified that farmers’ decisions are not only based on economic or environmental/technical characteristics. An example is that many farmers are considered very emotionally engaged with the sector and its developments. Farmers live in an environment of rural norms and values that are intertwined with agricultural business operations. [12:8] *“there is a definite role for farming as an intrinsically valued provider of rural environmental public goods, based on cultural heritage, biodiversity and environmental quality”*.

In the broader perspective, the general perspective of the individual farmer towards developments in the agricultural sector also influences the perception of agrarians. In a historical sense, previous agricultural policies which resulted in a negative consequence for the agricultural sector can result in resistance among farmers. At the same time, existing knowledge and a positive experience with new agricultural policies can take away any possible resistance towards a policy. The familiarity of farmers with specific agricultural policies, through their own experiences or the told experiences of others in the rural community, can decrease resistance towards agricultural policies. [2:5] *'Farmers' previous experience with conservation measures motivated many to continue the application of reduced tillage and cover crops in the German and Czech case''*.

Institutional

From an institutional perspective, the most critical aspect is considered to be policy information. Even for farmers that are environmentally aware, as discussed in the environmental/technical section, it is important from a governance perspective to communicate on the reason behind the implementation of a policy. At the same time, governments have to communicate or inform farmers about what kind of issues the agricultural policy offers a solution, and in what way the objectives of a policy will be achieved. Farmers that are not adequately informed are often resistant since they are unaware of what the government expects the agricultural sector to do. [9:10] *'We also found that there is a great deal of uncertainty among farmers concerning the consequences of enrolling in subsidy schemes with respect to the degree of overlap with other subsidy schemes, and the extent to which cross-compliance might be put into force''*.

At the same time, the reference study indicates that farmers experience pressure from institutions. For example, farmers can be less resistant to adopting agricultural policies because they know that the government expects farmers to behave in a specific way. [4:15] *'When deciding whether to adopt a more sustainable practices, farmers are influenced by what they think others expects from them, i.e. injunctive norms, also known as 'subjective norm' in the theory of planned behaviour''*.

The final aspect of the relationship between institutions and farmers is that of society and the agricultural sector. This is because institutions are not solely governmental bodies but can also be related to a group with common characteristics. Overall, the reference study indicates that farmers' view on society is not very optimistic. A large number of farmers in the reference study have indicated that, while the agricultural sector is trying to meet the requirements of society, the consumers in the supermarket make different choices. As a result, farmers can become more resistant to change because of the considerable uncertainty stemming from the consumers' choices. [12:11] *'Though people express a desire to eat local, sustainable food or preserve the environment, they buy cheap, industrially produced food from around the planet and act in ways that harm rather than preserve the environment''*.

4.4 Findings of the in-depth interviews

After analysing the reference study, this paragraph will elaborate on the findings from the in-depth interviews. The results in this analysis are the product of open, axial and selective coding as described in the methodology section. As for the analysis of the reference study, the analysis of the in-depth interviews will be structured based on the four concepts that provide the basis of the conceptual framework, where every concept will be associated with different statements supported by different quotes from the data.

Environmental/technical

From the in-depth interviews, the most critical finding in light of the environmental/technical concept is the legal boundaries that farmers in the Food Valley experience when wanting to adopt dual land use measures. Several farmers have indicated that they perceive a range of legal boundaries to apply dual land use on their farms. An example is that several farmers discussed that the Dutch spatial planning policies prohibit farmers from using their land for different purposes because legal frameworks offer no or little flexibility. In other words, the legal framework of a plot of land assigned as ‘agricultural land’ often does not allow for nature preservation at the same time because in that case, land has to be assigned as ‘nature’, while according to several farmers, it is possible to do both simultaneously. [3:4] *‘Because you are not allowed to do that according to the rules. You cannot use the land that you use for your chickens for something else. In my thoughts, it is not allowed to use a plot of land for two things simultaneously, because that is the rule.’* [10:6] *‘Governments often say many things such as dual land use, you know the farmer should go for a field with solar panels, because underneath there is water storage or biodiversity, so they say, but then when I want to do something with nature conservation suddenly it is not possible?’*

Moreover, the interviews also indicate that the physical state of the farm often prohibits farmers from applying dual land use. An example is farmers who lease land. When farmers lease land, this requires them to ask for permission of the leaser if the land is to be used in different ways than agreed upon in the lease contract. This is often perceived as a significant boundary for farmers who lease land to apply dual land use [11:20] *‘, But exactly, we are ‘locked in’. We have a leased farm. So, no matter what, we always have to ask for permission from the leaser. Part of the land and the buildings are not owned by us’*.

Farmers also discussed that their perception towards dual land use, and the resistance that occurs, is resulting from the idea that land with good soil conditions will be sacrificed for dual land use practices. Farmers indicate that farmland is, in the first place, used to produce food for the people that live in the Netherlands. It is therefore considered as a big taboo to restructure valuable and precious agricultural land with good soil conditions for other functions. In other words, farmers believe that, agricultural land,

above all, should be used to produce food which is best done on land with good soil conditions. Therefore, farmers have the idea that dual land use prohibits farmers from using the land to produce food because of legal constraints and because farmland with good soil conditions is not being protected. [3:5] *“We do not have that possibility. For dual land use, we should obtain more land. Because dual land use creates a plot of land which you cannot use for the cows or the manure anymore”*. [4:6] *“Every way of dual land use, or at least most of them, to not acknowledge the primary function of land which is food production. Nevertheless, biodiversity and everything that is all window-dressing. The soil quality will just go from bad to worse”*.

Economic

From an economic perspective, several different themes have been discovered in analysing the in-depth interviews. One of the most critical aspects influencing a farmers’ perception on dual land use is the economic consequences for the farm. Most farmers indicated that, among others, the farm is a company aimed to be profitable. In this case, resistance towards dual land use is mainly the result of uncertainty. Several interviewees mentioned that the traditional way of farming is one they know, where they feel familiar with the farms’ financial position.

An example is a decrease in meat prices or a decrease in prices for the food they produce. Farmers have experience with this phenomenon, resulting in the possibility for farmers to assess which financial consequences certain negative developments have for the financial position of the farm. However, as discussed by the interviewees, the business model behind dual land use is often new and unknown. Farmers in the Food Valley often have the perception that if there is no evidence of a profitable and robust business model, new and innovative ideas are doomed to fail. [1:20] *“You know, it is so easy to say. You should do this and that, but is there a positive business case? With many things, the answer is no”*. [10:3] *“But that is also what I consider to be difficult. Many people say that you should apply dual land use, or that you as a farmer should find different ways to make money but if you cannot create a good business case with your farm, that means your farm has no future”*.

On the other hand, farmers also indicate that there is little resistance towards forms of dual land use that require little investments or result in small financial risks for the farm. Examples mentioned are using herbaceous grassland or waiting with mowing the grassland until all nesting birds have left. [3:20] *“Something else is the walnut trees that I mentioned earlier. They have a relatively positive business case, even if it takes the trees a long time to grow. That could be a solution in the range where the chickens walk. That also means we do not have to mow the grass because it is already done by the chickens. In that case, it is easier to create a closed business case than when you need grass”*.

From an economic perspective, what is often also mentioned in the agricultural sector are subsidies. As mentioned in several interviews, farmers in the Food Valley are very resistant against subsidies for various reasons. First of all, farmers perceive subsidies as something undesired because it means that a certain development is not profitable. In other words, farming operations should be profitable and not rely on subsidies. At the same time, there is much resistance among farmers in the Food Valley to be depending on the government in terms of subsidies to keep the company profitable. Farmers do not wish to be depending on others, so if new developments (even if they agree with the policy) require receiving subsidies for a solid business case, several interviewees indicate that they will refrain from doing so. [9:27] *‘And then they received a check-up for the shelterbelt. As a farmer, you are obliged to prune it once every few years with stringent rules. You have to bring the branches back into the wall, which he did very neat. However, according to the rules of the subsidies for the shelterbelt, it had to be one to two metres wide or something, and then with the check-up, they said it was not neat enough. As a result, the subsidies for that year were not paid out, and that creates so much frustration’*. [8:41] *‘That is what you see when you receive your subsidy with many objectives that you should all meet. And then most farmers begin to wonder what they are doing for only a few hundred euros a year’*.

Personal

The findings indicate that farmers in the Food Valley often mentioned personal themes that influence their perception of dual land use. One of the most prominent examples is that the interviewees mentioned that the term ‘dual land use’ did not sound familiar at the start of several interviews. As an example, during most of the interviews, the interviewees indicated that they assumed that dual land use was only focused on solar panels and windmills. [2:9] *‘No, that is true. However, the term dual land use I have never uh... I had to Google it for a moment. Nevertheless, now I am aware of what it means’*.

Also, most farmers indicated that the adoption of agricultural policies depends on the consequences it has for the productivity of the farm. This has been mentioned before in the paragraph related to the economic concepts, but also for the personal motivation of the farmer, and agricultural policies must benefit the main objective of the farm. Several farmers discussed that if something will not benefit the productivity of the farm, it feels useless to put energy and effort into it. [1:19] *‘And then you think to yourself, it is great that people have come up with this solution, but first of all I want to be a farmer, and I want to take care of my animals’*. [7:11] *‘The most important aspect is something they forget. Food production. That should be a top priority but instead it is being forgotten’*.

Moreover, more than half of the interviewees indicated that if policies aimed at increasing the application of dual land use will bring a solution towards the pressure on agricultural land, the need for farmers to become environmentally friendly and the need to produce food, farmers are very willing to cooperate. In other words, the findings show that farmers agree with the objectives of dual land use as

discussed by the Dutch government. If farmers can continue their farming operations simultaneously, for example, by also contributing to the state of the biodiversity, then it is perceived as something that should be done as soon as possible. Several farmers have also pointed out that they identify new possibilities when applying for dual land use. An example is that by selecting specific types of herbaceous grassland, it is possible to reduce the amount of expensive protein-rich grass. [9:9] *‘‘Yes, with herbaceous grassland that becomes less. An example is clovers which we can easily feed to the young cattle. That makes it a lot easier to adopt such kinds of policies.’’*

The final important aspect of personal factors that constitute farmers' perception towards dual land use is the view that farmers have towards the agricultural sector in general. While most farmers favoured dual land use, albeit under the conditions mentioned earlier, many interviewees also discussed their (primarily negative) view towards the developments in the agricultural sector. On their farm and in the sector, most farmers have identified a wide variety of threats. This is mainly the result of a difference between the perception of the farmer about the sector and how the government and society want the sector to operate. As a result, there exists an overall perception that, despite all the efforts, farmers will never meet the demands of others in how the agricultural sector should operate. As a result, the interviewees indicated that their perception of new agricultural policies is based on emotions such as: [2:2] *‘‘And how many young people I meet who want to become a farmer, they say I am not sure how but I want to become a farmer. That is something I like to see. The older generations, well yeah, they are musty and tired. The younger generations do not, I believe. We have already experienced so many developments in the sector and then you start recognising things, you know ‘here we go again. Everything is repeating itself’.’*

Institutional

During the interviews, most farmers indicated a variety of institutional aspects that are influencing their perception of dual land use. First of all, farmers indicate that society is increasingly questioning Dutch farming operations. The interviewees mention that they feel a boundary in the relationship between the citizen that lives in the city, and the farmer that works on the land. Therefore, several interviewees provided examples of how they are trying to repair the image of the farmer, but also that dual land use could be applied to benefit the relationship between society and the agricultural sector. [11:1] *‘‘Yes, that is true. However, you know we also have to sell ourselves’’. [2:23] ‘‘It is beautiful here right, in the summertime, people enjoy it and come to look at our farm. Nevertheless, that is also our intention’’.*

At the same time, the interviewees also mentioned some critiques towards society. Farmers in the Food Valley perceive that they are already implementing many measures to, for example, decrease the sectors' negative impact on the environment. Therefore, some farmers indicated that dual land use is not perceived as an opportunity. Instead, the perception is that consumers (and therefore society) are not

willing to pay more for environmentally friendly food, because dual land use is considered to require extensive financial investment. As mentioned in the paragraph elaborating on the economic themes, farmers are willing to decrease their production but only if the public is willing to pay a higher price for the products so that the financial benefits for the farm will not decrease. [1:39] *‘‘You know people would rather buy some plastic vegetables for six cents instead of vegetables from the region that is a little more expensive. That is also how the market works. Moreover, again, the story often sounds very promising but I know that reality is different’’*. [4:33] *‘‘If society is not willing to pay then there is no reason. It is about how society treats the farmers. That is what I find essential. If there is a market for it, I do not have a problem with dual land use.*

On the other hand, the interviewees highlighted that they have severe trust issues with the national government, resulting from a wide variety of historical developments. First of all, the interviewees discussed that the national government often does not comply on their promises. This is, for example, because new elections result in a new formation of political parties where previously made agreements are not complied with. Farmers, however, find this one of the biggest reasons for resistance towards governmental policies for the agricultural sector [11:44]. *‘‘Rules in the Netherlands are always for such a short period. Everything that you do should be focussed on the long term, and in that way increasing the potential of your company or whatsoever’’*.

Also, the interviewees feel that the national government has no idea how a farm works. According to the farmers, many national agricultural policies often fail to connect the policy objectives and the practical implementation on the farm level. In other words, farmers have the idea that politicians are unaware of what it entails to be a farmer. Developing policies that work in theory, but that are difficult to implement in reality [7:22]. *‘‘That is because of the conditions of the scheme. There was a professional ban. You were not even allowed to buy another company. That is, of course, quite strange’’*. [9:31] *‘‘But there are also many contradictory things, the national rules sometimes hind as well. In the past, you could count you were included, and now you are not. And then I think to myself, you know, I will just quit with this policy because now I suddenly have to find a way to dispose of that manure’’*.

During the interviews, more reasons have been mentioned for an average feeling of the ‘untrustworthy national government’ among farmers in the Food Valley. Therefore, most of the farmers indicated to be very sceptical towards new initiatives such as increasing the application of dual land use. [7:6] *‘‘And now they are backing down because suddenly biomass is not good for the environment? So, then you become very hesitant with such things. For example, all the measures to increase biodiversity, I am just mentioning something. I wonder if that is going to help us’’*.

On the contrary, however, farmers in the Food Valley have indicated that the image towards the government on the local level is quite the opposite. A majority of the interviewees discussed a healthy relationship with local politicians and appreciated the farmer-minded approach most political parties in the region have. Therefore, most farmers feel supported by the local government. For example, local politicians are turning their backs on the national government, trying to change the public debate favouring the agricultural sector. [6:4] *‘‘But you know, here we also are a fully acknowledged discussion partner at the table of the municipality. I feel that they all have respect for us’’*. [8:44] *‘‘No, absolutely. You can see that in the discussion on nitrogen emissions. The spotlight was placed on our region and then the local government responds and simply takes the initiative. The politicians then say that we deal with the region and that farmers are doing their best to achieve a sustainable agriculture’’*.

Finally, several interviewees discussed that their relationship with the financial sector often obstructs the implementation of innovative developments. This is because financial institutions are often considered not willing to cooperate in financing innovative projects. Agricultural developments such as building a new barn, is not considered an issue, because this are traditional ways of investing in projects.. Most issues with the bank arise when a farmer asks for a loan for a new, innovative type of development where the bank is asked to take more risk. Therefore, farmers can be resistant to dual land use. After all, they have the feeling that they will be able to finance the project because they will not receive a loan from the bank. [1:27] *‘‘But financially, you know. He has a manure basin that he no longer needs. He wants to store rainwater there so that he can use it in his greenhouses. However, that will not work out because it requires quite a large investment. Of course, he has the option of subsidies, but financially that will not work out. The bank will not do it, and those are excellent plans’’*.

5.0 Discussion

This chapter will elaborate on discussing the findings as presented in the previous chapter. At the same time, this chapter will discuss the meaning of the differences and commonalities between the literature study, reference study and in-depth interviews.

5.1 Discussing the findings

This research is based on a qualitative research inquiry, where the data has been provided for by applying triangulation through the literature study, reference study, and in-depth interviews. The literature study focussed on providing a general understanding of the characteristics of farmers. The data from the reference study provides the possibility to compare the in-depth interviews with existing literature, where the in-depth interviews focus on farmers' perception in the Food Valley towards dual land use policies. This study will therefore elaborate on the most important main findings.

‘The farmer’

As mentioned in the literature study, ‘the farmer’ is a concept that does not exist. While farmers are often considered as one homogeneous group, every farmer has distinct characteristics. The literature study shows that three distinct discourse or ‘streams of thought’ can be identified, whereas it is essential to mention that a majority of the farmers cannot be fully classified according to one of the discourses. Instead, the ‘streams of thought’ of the individual farmer will vary across different discourses. The first discourse is the agri-ruralist discourse where farmers believe that the agricultural sector always leaves room for new developments. The problems identified by others are, however, considered not to be an issue of the sector itself. Rather, the problems identified have more to do with the outsiders’ perception. Farmers in this discourse believe that the future of the Dutch agricultural sector is quite positive. The second discourse is the utilitarian discourse. Farmers within this discourse believe that Dutch farming operations take place within an increasingly competitive global market. To decrease the negative externalities of the sector, the competitiveness of Dutch farmers is being challenged on a global scale. The final discourse is that of the hedonist, where farmers believe that a network approach should bring together different actors from inside and outside the sector to define the future of the agricultural sector. Farmers in this discourse believe that the current intensive way of the agricultural sector has little chance of surviving in the future.

The phenomenon of different discourses among farmers, defined by Frouws (1998) as *rural discourse*, has also been identified through the reference study, specifically during the in-depth interviews. When conducting the interviews, it became apparent that the interviewees could be classified according to the different discourses of Frouws. In other words, during the interviews, several farmers often mentioned

specific norms, values and terms varying across discourses, comparable to the theory of Frouws on rural discourses.

Interpreting the findings

The reference study shows several characteristics that provide a general insight into the farmers' perception of agricultural policies. When interpreting the findings, however, it is crucial to take into account that the perception of farmers is defined by different factors that are all interconnected. One factor has been highlighted as the environmental awareness of farmers, which is (partly) influenced by another factor being the values and norms that guide the farmer in daily life. In other words, the characteristics that guide the farmer in daily life, defined as the norms and values, also influence the perception of a farmer towards the environment. At the same time, the perception of a farmer towards the environment influences how values and norms in daily life guide a farmer. So, the perception of farmers towards agricultural policies is the result of mutually dependent factors.

The Food Valley and the government

As mentioned, this study uses a reference study to compare the findings of the in-depth interviews with existing theories on the subject. As a result, the findings of the in-depth interviews imply that several common characteristics are shown between the existing theories and the findings of the interviews. Only a limited number of differences can be identified. This can be explained because the reference study and the in-depth interviews both focus on the perception of agrarians towards agricultural policies. Although the focus of the in-depth interviews is on dual land use, the focus of the data in the reference study is on different topics. Considering the differences in the findings, this can mainly be explained because the in-depth interviews focus on a specific subject in a specific region. As mentioned in the finding, the farmers in the Food Valley highlight the exceptional relationship between the agricultural sector of the Food Valley and local government officials. This appears to be the result of the historical characteristics of the Food Valley. The agricultural sector has defined this region for centuries, maintaining a solid relationship between society, politics and the sector. The farmers in this area feel heard and valued by local politicians, which is especially the case in the municipalities of Ede and Barneveld.

This is in sharp contrast with what the farmers in the Food Valley indicate about the national government. From the perspective of the reference study, the findings show that farmers are not necessarily resistant to national governments. More often, policy information is not available, or subsidies are perceived to be too low. The lack of trust in the national government from the farmer's perspective in the Food Valley can be explained because of the different relations between the different levels of government. Because farmers in the Food Valley have an excellent relationship with the local level, they may be able to identify the shortcomings from the national government because this body of government will not provide the same support.

Importance of concepts

Furthermore, when comparing the literature study with the in-depth interviews, a significant difference can be identified. This study, first of all, supports the notions of Dessart, Barriero-Hurlé, & Van Bavel (2019), Prager & Posthumus (2011), and Vanslebrouck, Van Huylenbroeck, & Verbeke (2002). They argue that farmers' perception of agricultural policies can be divided into four concepts: environmental/technical, personal, economic, and institutional. The findings of the in-depth study indicate that the perception of farmers towards dual land-use policies can also be classified according to these four concepts. However, the studies in the literature study argue that no scientific evidence exists that one concept is more important in explaining the extent to which farmers are willing to adopt agricultural policies (Pannell et al., 2006; Vanclay et al., 2006). The findings of the in-depth interviews do not support this phenomenon. The farmers in the Food Valley indicate lower importance of environmental/technical aspects. At the same time, the economic and institutional aspects are overrepresented in the data compared to their importance in the existing theories. A possible explanation for this is that several farmers indicated that, in the first place, the farm is a business aimed at making a profit. Even if the adoption of policies will benefit the environment, farmers in the Food Valley say that resistance will occur if it negatively influences the farm's financial position. This study shows a contradiction that exists in comparison between the in-depth interviews and the reference study. Therefore, the findings of the in-depth study indicate that on the local level, a difference exists in the importance of the concepts that guide a farmer in the perception towards policy adoption.

6.0 Conclusion

This chapter will elaborate on answering the questions that have guided this research. First, all sub-questions will be discussed, followed by an answer to the main question. The conclusions that will be discussed in this chapter are based on the study's findings and the discussion section as highlighted in the previous chapter.

6.1 Answering the sub questions

Sub-question 1: In what ways can the characteristics of the agricultural sector be defined?

This paragraph will provide an answer to the first sub-question, where the characteristics of the agricultural sector will be elaborated on according to the findings of the literature study.

The farmer

The literature study highlights that, albeit society, the government, and other researchers often refer to 'the farmer', the idea that one type of farmer exists is inaccurate. As Frouws (1998) discussed, different *streams of thought* together form the generic opinion of the agricultural sector, resulting from four different discourses that exist in the agricultural sector. First of all, the agri-ruralist discourse explains that a group of farmers foresee a positive future for the agricultural sector. According to the agri-ruralist discourse, farmers perceive the current problems identified by different institutions as having more to do with outsiders' perception than with the agricultural sector itself. However, farmers within this discourse also put empathy to keep their 'license to produce' in mind, meaning it is essential to maintain a strong connection with society.

On the other hand, the utilitarian discourse argues that farmers in this discourse believe that the current situation in the agricultural sector is perceived as problematic. Farmers cannot meet the demands of society because of the lack of entrepreneurial drivers in the sector. Within this discourse, it is believed that the agricultural sector should not develop towards further intensification. Farmers should instead focus on clean and efficient technologies which diminish the negative externalities of the sector. The hedonist discourse is the final type of farmer identified by Frouws (1998), described as an actor living in rural areas in a network of local and regional actors that define the countryside's future. Within this discourse farmers believe that farmers have to move away from current agricultural practices focussed on intensification. Instead, the agricultural sector has to focus on regional development, stimulating bottom-up initiatives and re-establishing the relationship between farmers and society. The different discourses of Frouws show the differences among opinions that exist within the agricultural sector.

From the findings of the in-depth interviews, reference study and the discussion, it becomes apparent that this study supports the notions of Frouws (1998) that different rural discourses exist. However, when implementing policies, it is crucial to understand that there is no one type of farmer. Because most

studies or policies often refer to ‘the farmer’, this study has identified a knowledge gap. This means that policy adoption might not occur because there is no match between the characteristics of the policy and the characteristics of the farmers. Moreover, as a result, the policy objectives will not be met. At the same time, the literature study highlights the importance of social and cultural change necessary in the agricultural sector when implementing policies. The implementation of policies in the agricultural sector can therefore be considered more challenging than in other sectors because of the distinct characteristics of the sector. This study, therefore, highlights the importance of solid politicians that must find a connection with existing (local) networks, thereby cooperating to develop policies within the identified differences that exist between the rural discourses. The literature study shows that because there is no one type of farmer, making a ‘one size fits all type of policy can be challenging because most farmers cannot be categorized according to the previous discourses. Instead, the opinion of farmers varies across different discourses and possible unidentified discourses as well.

Sub-question 2: Which factors constitute the perception of farmers towards agricultural policies?

This paragraph will elaborate on the second sub-question to explain how farmers can perceive agricultural policies.

The conceptual model highlights the four concepts that together constitute the perception of agrarians towards agricultural policies. This study supports the notion of existing literature on this phenomenon by Prager & Posthumus (2011) and Vanslebrouck, Van Huylenbroeck, & Verbeke (2012), who have presented four theoretical concepts that shape a farmers’ perception towards a agricultural policies. The first concept is the environmental/technical concept is essential in shaping a farmers’ perception of agricultural policies. This concept consists of the extent to which policies are perceived to benefit the environment, reducing the negative externalities of the agricultural sector on matters such as nitrogen emissions, animal welfare, and the decrease in biodiversity. For the most part, the second concept is focused on economic aspects related to the financial consequences agricultural policies have for the farm, or at least how farmers perceive it. At the same time, the economic aspect is related to the possibilities is finding ways to finance new investments. The third concept relates to personal factors, often based on previous experience of farmers or colleagues with agricultural policies and the norms and values that guide the farmer in daily life. The final concept is institutional, focusing on the relationship between different institutions and how agrarians perceive this. Institutions, in this study, relates to the different levels of government and the relation between the agricultural sector and society. The definition of an institution is that it demands people to act in a certain way. Therefore, society and the government, shaped as institutions, pressure the agricultural sector to operate according to the standards as defined by them, ultimately influencing farmers' perception of agricultural policies.

This study, however, does not support the notions of Posthumus & Prager (2011), who argue that no scientific evidence suggests that one of the four concepts, as mentioned earlier, is more important. The findings of the in-depth interviews highlight that farmers place a high emphasis on the economic consequences for the farm, and the institutional relationships in place as compared to the other concepts. In the interviews, the farmers discuss that, among other factors, they consider themselves as food producers and the owner of a company aimed at making a profit. Secondly, the interviewees have emphasised their relationship with the government on the national and the local level. Farmers argued against placing lower emphasis on the importance in terms of the environmental/technical concept. This is, therefore, in contrast with the findings from the literature study. Because this study shows that, even if farmers are environmentally aware and there are no technical boundaries or limitations in policy adoption, adoption will presumably not occur if the policy is perceived to result in negative financial consequences for the farm. An important finding that can be added to this conclusion is that farmers in the Food Valley indicate that it is not necessarily about profit. If environmentally-friendly measures can be applied and there are no financial consequences for the farm, farmers are less resistant to policy adoption.

Sub-question 3: In what ways are dual land use policies resulting in resistance among farmers in the Food Valley?

This paragraph will elaborate on answering the third sub-question guiding this research. The conclusions from this chapter result from the findings of the reference study, in-depth interviews and the discussion.

The relation with the government

This study shows that farmers are often relying on governmental subsidies when new agricultural policies are being implemented. Examples are subsidies for solar panels and complementary subsidies that fill the gap between the price that the market offers for a product and the costs of production. Farmers in the Food Valley, however, are very reluctant towards receiving subsidies. First of all, farmers indicate that subsidies are associated with a severe amount of administrative work. At the same time, subsidies are often accompanied by various rules and restrictions. Farmers in the Food Valley highlight that this restrains the personal freedom of the farmer to decide what happens with the land and the farm, whereas it is also perceived to be very challenging to comply with all the different existing rules and restrictions. Moreover, farmers who receive subsidies have the impression that it is difficult to explain to society why they receive financial compensations.

Farmers believe that subsidies will have to accompany dual land use policies in the Food Valley. This is because farmers believe that dual land use will weaken the financial position of the farm. Farmers believe that dual land use policies will decrease the farm's production because more land will be used for other purposes. Most farmers, therefore, indicate that they are only willing to adopt dual land-use

policies if it increases the farm's financial position, meaning that the policies are connected to a decent business case.

While farmers in the Food Valley are not necessarily resistant to dual land use policies, general perceptions towards the government often prohibit the adoption of agricultural policies. This is because this study shows that farmers in the Food Valley have a general lack of trust towards the national government. Policies and agreements often only last for a short period, making it difficult and unpredictable for farmers to invest in policies. At the same time, the government often changes the 'rules of the game' when subsidies are provided. A farmer receiving subsidies is very dependent on governmental bodies for a part of their income, where uncertainty and confusion start to arise when the government decides to change the conditions for subsidies. Moreover, this study also indicates that farmers willing to dual land-use practices have identified a gap between theory and practices. The government often defines the conditions for subsidies by consulting different civil servants without awareness of the knowledge that exists among farmers about the land and area in which they live. This study highlights that farmers believe that policies and subsidies do not match the desires and needs of the agricultural sector, resulting in resistance towards agricultural policies. As mentioned before, farmers in the Food Valley are not resistant to dual land use practices. This study shows that the experience of farmers with existing agricultural policies, however, have resulted in resistance because farmers believe that dual land-use policies will not match reality.

On the contrary, this study also indicates that resistance with the government only exists on the national level. Farmers in the Food Valley have pointed out their appreciation towards the local levels of government, where resistance is very low. On several occasions, the local level protected the interests of farmers in the Food Valley. In return, respect and appreciation define the relationship between the farmers and the municipalities in the Food Valley. This study shows that the local government can understand the main concerns of farmers in the region. The farmer-minded approach of local politicians reduces resistance among farmers towards agricultural policies. Farmers experience that the local government is prone to listen to the concerns of farmers but also to translate their concerns into policy.

Legal restrictions of dual land use

Farmers in the Food Valley show that, besides the factors mentioned earlier, legal restrictions increase the resistance towards dual land use policies. This study highlights that a significant number of farmers have, in varying degrees, experience with dual land-use practices. Nonetheless, this research indicates that legal restrictions largely oppose farmers' intentions in the Food Valley. In other words, farmers are unable to realise projects that increase the adoption of dual land use practices on farms in the Food Valley. For example, a farmer with free-range chickens cannot apply dual land use because initiatives

are prohibited by regulations that decide when eggs can be labelled as free-range, therefore having negative financial consequences.

In other words, the results of this study show that farmers with free-range chickens who adopt dual land-use measures will face severe financial consequences because that means eggs will be sold as regular eggs. Although a farmer with free-range chickens is used as an example, this phenomenon occurs at many different farms.

At the same time, property rights and land ownership are two essential aspects that influence how farmers operate their companies and decide on land management. Consequently, land leasing is a common practice in the Food Valley. Land leasing is characterised by many legal restrictions for the farmer that leases the land because lease contracts are generally aimed at a long-term agreement about the use of the land. As a result, this study shows that farmers who lease land have few legal possibilities to determine what happens with the land, other than what has been agreed upon in the lease contract. Because the land ownership is with the leaser, a farmer that leases land has to request permission if dual land-use policies were to be adopted.

A third legal restriction identified in this study is that of spatial planning regulations. Farmers in the Food Valley indicate that plots of land are always allocated according to its primary function. So, agricultural land is primarily labelled as 'farmland'. This, however, comes with critical legal restrictions. According to the specific regulations attached to the label, farmers in the Food Valley show that land labelled as farmland can only be used accordingly. This study shows that farmers experience being prohibited from using a plot of land for different reasons. Land use for nature preservation and agriculture at the same time is seen as impossible, according to the farmer in the Food Valley. Based on the legal restrictions mentioned in this paragraph, resistance exists among farmers in the Food Valley because it is perceived that land use regulations prohibit the adoption of dual land use policies.

The productivity of the farm

The final factor this study highlights is that society is demanding change in the agricultural sector in varying ways. Therefore, farmers indicate that the connection between where food comes from (the agricultural sector) and the people who buy the food (society or consumers) is lost. Farmers in the Food Valley believe that, among other factors, they are in the first place working to provide food for society. Therefore, new developments in the agricultural sector should be considered financially attractive and to benefit the farm. Instead, current developments often result in a situation in which a farmer has to apply for subsidies because consumers are not willing to pay more for a product, as mentioned before. At the same time, however, farmers feel resistance towards new policies that do not benefit the farm. Most often, farmers work for long hours, aiming to increase the productivity of the farm. If a policy

decreases the productivity of the farm, a contradiction will emerge with all the hours of work that a farmer has put into increasing the productivity of the farm. However, the emergence of resistance in terms of reduced productivity can be explained in light of the availability of policy information. If the government cannot communicate why policies are being implemented and which objectives should be achieved, it is difficult for farmers to agree with new policies.

6.2 Main question: In what ways can dual land use policies be implemented according to the agrarians in the agricultural sector of the Food Valley?

This study discussed farmers' perception in the Food Valley towards the adoption of dual land use policies. The results of this study provide the possibility for a recommendation towards the national government in what ways dual land use policies can be implemented in the Food Valley. Therefore, this paragraph will elaborate on answering the main question guiding this research. This conclusion is based on the literature study, reference study, in-depth interviews, the discussion chapter and the answers to the previous sub-questions.

This study shows that farmers in the Food Valley cannot be considered entirely resistant towards dual land use practices and the adoption of dual land use policies. However, the findings propose that, albeit there is a general willingness among farmers to adopt land-use policies, the ongoing developments in the agricultural sector result in resistance towards adopting dual land-use policies. Feelings of frustration, distrust and scepticism are widespread across the agricultural sector of the Food Valley. To summarize, this study shows that farmers in the Food Valley have a particular lack of trust in the national government and expect severe legal and economic challenges when adopting dual land use practices. At the same time, this study shows that farmers in the Food Valley have knowledge on experiences with dual land use practices, because of their own experience or through the told experience of other farmers.

Consequently, the experiences show that the general understanding of dual land use implies several legal and economic challenges. Therefore, it is essential for the government to acknowledge the current shortcoming that triggers resistance among farmers to increase the probability that farmers will adopt dual land-use policies. Therefore, this study highlights several recommendations which will be discussed hereafter.

First of all, if the government wishes to propose dual land-use policies, it is essential to provide assurance about the government's commitment for a long time. This study shows that most policies often only last for the period of one government, and therefore not more than four years, making it difficult for farmers to invest in new policies. Farmers in this study highlight that it is essential to understand what is expected

from them and within which time frame. So, the government has to guarantee the duration of a policy that is communicated towards farmers. In this way, farmers can estimate what the adoption of dual land use policies will require from their farm and what it means in terms of financial and time-related investments. Secondly, legal restrictions on dual land use have to be limited. This study shows that the government has to increase the harmony among different policy fields. This can be achieved by communicating and conversating with the agricultural sector to identify the legal boundaries currently preventing several farmers from adopting dual land-use practices on their farms.

Also, this study shows the importance of the relation between the agricultural sector and the consumers. The government has to find a way in which consumers start paying for the demands made by society. Consequently, this study shows that in this way farmers will also rely less on subsidies. The results of this study highlight that farmers are considered very resistant to subsidies. Even though subsidy provision is a practice often applied in Dutch agriculture, farmers consider that they have no choice. In other words, farmers believe that the necessity for subsidies is an indication that certain business models are not working, for example, because society or consumers do not want to pay for the investments of the agricultural sector in decreasing the negative externalities of the sector. Consequently, farmers in the Food Valley indicate a prominent role for the government to communicate to society why products are increasing in price. Farmers in the Food Valley believe that society will understand the importance of the sector in providing food, and simultaneously farmers will depend less on subsidies.

As highlighted in the literature study, several theories exist on the creation of (spatial) policies. This study proposes that, if the government aims to increase the application of dual land use practices, the best way to organise this is through the theory of landscape governance. This hybrid model of theory development acknowledges existing relationships within land-use patterns and landscape identities. Through landscape governance the national government can increase the strength of the relationship between the state and the farmers. At the same time, the national government can increase the application of dual land use practice in the agricultural sector by cooperating with local stakeholders. In this way the national government will be provided with the possibility to acknowledge the experience that exists among farmers about ways in which land can be used. At the same time, this study highlights that if the national government increases its willingness to listen to the knowledge and experience of farmers the adoption of dual land use policies will take place. Farmers show that they want to be treated with equivalence to other institutions in society, instead of top-down policy implementation which, as shown by this study, often results in resistance among farmers. At the same time, bottom-up initiatives can help the adoption of dual land use policies, however, farmers in this study also acknowledge that they need the national government in policy domains such as the legal constraints referred to the use of land.

To conclude, this study highlights, a wide range of issues exist that result in resistance among farmers' perceptions in the Food Valley towards the adoption of dual land use practices. This study also shows, however, that the resistance towards dual land use is not necessarily based on the characteristics of dual land use. Instead, the lack of trust in the government, legal restrictions and financial uncertainties are the consequence of years of (often negative) experiences of farmers in this region. As a result, the recent debates about and with the agricultural sector have developed a general scepticism towards new developments in the agricultural sector. This study, therefore, highlights that it is essential for the national government to work on the relation with the agricultural sector by rebuilding trust and restoring a mutual understanding. In this way, the government establishes possibilities to, in cooperation with farmers, increase the future opportunities for the agricultural sector. Farmers are willing to change, understanding the necessity and consequences of years of intensification, while still requiring an intensive amount of technological, societal and cultural change. At the same time, current debates and developments do not assure farmers in the Food Valley that the future of their farm is protected.

To finalize this study, a quote has been selected from the in-depth interviews. This quote provides a valuable summary of the perception of farmers in the Food Valley towards their position between society, the government and the market [4:29]:

‘‘Yes, there must be a subsidy, however you should not call it a subsidy. It is a service for society. Please let the farmer take care of maintaining rural areas, even if that requires a shift in ways of thinking for a lot of famers. There is a lot of motivation among farmers, but I also feel that farmers are not acknowledged by society. You do not count. But we have so much knowledge here, in the sector, an awful lot of knowledge. But I believe we are not allowed to use it. If you look at this region, farmers are constantly looking for opportunities, they are very flexible. If farmers want it, it will be done. Farmers seize the opportunities they see, they will not chase us away. Even if the consumers want the best for the animals, but then in the supermarket they look for the cheapest product’’.

6.3 Relevance of the study

As this study shows, the debate about the future of the agricultural sector in the Netherlands has become ever so heated in recent years. This research contributes to the public debate by, first of all, identifying new insights into the perception of farmers towards agricultural policies. At the same time, the results of this study provide new insights into the relationship between the agricultural sector, the different layers of government, the market, and civil society. This is because, during the in-depth interviews, most conversations have been based on the broader perspectives of the farmers towards their (future) position in the Netherlands. When conducting the interviews, most farmers indicated that, for example, they are willing to invest in increasing the biodiversity on their land. At the same time, farmers also expect consumers to be unwilling to pay extra for their products to finance the investments of increasing the

biodiversity on Dutch farms. The perception of farmers towards agricultural policies, and dual land use in specific, can therefore be explained by taking into account a comprehensive perspective on all developments currently taking place in the agricultural sector.

At the same time, this study provides new findings on how policies can be structured to increase the willingness of farmers to adopt agricultural policies. Over the years, the business model of the Dutch agricultural sector has been aimed at maximizing productivity and profitability. Nowadays, pressure from both the civil society, the government and the market on the agricultural sector demands that farmers will operate across a more complex range of factors such as environmental and societal outcomes. Consequently, the Dutch government needs to understand what causes resistance among the target group, which are the farmers in the Food Valley. Identifying the different reasons that cause resistance among farmers makes it possible to prevent resistance from occurring. Also, this study provides the possibility for the Dutch government to understand how the adoption of dual land use practices can be increased among farmers in the Food Valley. At the same time, this study provides LTO-Noord with information on how to represent the agricultural sector. Considered a lobby organisation, LTO-Noord aims to represent the opinion and interests of the agricultural sector. Therefore, information on farmers' perception is one of the essential foundations on which LTO-Noord can lobby for the agricultural sector.

Considering the scientific relevance of this research, the contributions are mainly focused on filling in a research gap identified in the literature. According to the best knowledge of the researcher, no studies exist on the perception of farmers towards dual land use policies. This study, therefore, contributes to extending the wide range of available literature on the perception of farmers towards agricultural policies. As mentioned before, this study also implies the perception of farmers on the current developments taking place in the agricultural sector. This allows for further research into what these implications mean for the relation between farmers and other institutions. In other words, this study provides the possibility for further research into the current relationships between the agricultural sector, society, the market and the government and what that means for the agricultural sector. This creates possibilities for the literature to provide new possible insights or solutions on how the current problems in the agricultural sector can be solved in cooperation and dialogue with the agricultural sector.

6.4 Limitations of the research

In every study, different limitations can be identified that ultimately influence the results of the research. Semi-structured or in-depth interviews are a way of inquiry often applied in research. Literature on interviews has, however, also identified different limitations on semi-structured interviews. An example is a study of Hatry, Newcomer, & Wholey (2015, p. 368): ‘*Semi-structured interviews are time-consuming and labour intensive and require interviewer sophistication. Interviewers need to be smart,*

sensitive, poised, nimble, and knowledgeable about relevant substantive issues’. This study, therefore, takes into account that any research approach is never ‘perfect’. However, through careful considerations, the quality of this research has been guaranteed as much as possible

Moreover, this research is structured through a case study analysis. While case study, as discussed by Flyvbjerg (2006, p. 241) is ‘*essential for the development of social science, for example, in understanding the degree to which certain phenomena are present in a given group or how they vary across cases*’. In this study, case study research is applied because it provides the most advanced way of understanding when researchers place themselves within the context being studied (Flyvbjerg, 2006). On the contrary, case study research often receives substantial critique that researchers have to consider. First of all, the data for the reference study and the participants for the interviews have been selected based on purposeful sampling. While this study elaborates on a purposeful sampling strategy, possible interesting cases have not been included in the research. In an ideal situation, however, cases would have been selected on theoretical grounds. This has been found to be impossible because no existing research on the topic is available. At the same time, as is often the situation with case study research, due to the limited number of participants in the study, the validity and reliability of case study research can be endangered (Van Thiel, 2014). However, this study takes this into account by applying data triangulation. By applying a diversified approach to the research, this study aimed to gather different data types, such as reference and in-depth interviews.

Moreover, the final possible limitation of this study is related to the focus on the Food Valley. Because this study only focuses on one agricultural region in the Netherlands, the possibility to generalise the research results for other agricultural regions is limited. While this study will indicate farmers' perceptions in other regions towards dual land use, a 1:1 comparison is not possible. This is because the Food Valley is considered a distinct and unique agricultural region in the Netherlands. The farmers in the Food Valley operate in an area with distinct regional characteristics such as the region's proximity towards nature reserves, the relation with the local government and unique historical developments that have shaped the identity of farmers in this region. With the feasibility of the study in mind, including a different agricultural region has however been considered impossible.

LTO-Noord

As mentioned in the methodology section, this study is part of an internship at LTO-Noord. Therefore, there is a possibility that the results of this study are influenced because of this internship. LTO-Noord is considered a lobby organisation for the agricultural sector. During this research, the influence of LTO-Noord on the study has been limited because this organisation was found to be only interested in the study results. Because LTO-Noord is considered a lobby organisation, they need to understand the general opinion on specific topics. As mentioned before, this study provides LTO-Noord with the possibility to represent farmers more informed. Nonetheless, during the research process, LTO-Noord

has provided significant help during times of confusion. Offering help and providing new insights has most likely increased the quality of the study.

However, it is vital to communicate about the influence of LTO-Noord on the study so that readers can take this into account when interpreting the research results. Consequently, the internship is not considered to be a limitation if communicated in a transparent manner to the readers.

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A. Appendix 1 – Interview guide

Even voorstellen: introductie over mezelf en het onderzoek

Laat de geïnterviewde zich voorstellen

Wat wordt er gedaan met de resultaten? Terugkoppeling

Disclaimer: als er bepaalde onderwerpen/vragen zijn die u niet wilt beantwoorden om welke reden dan ook laat dit dan weten dan gaan we door met de volgende vraag.

INTRODUCTIE

Vanuit wetenschappelijk onderzoek en verschillende beleidsdocumenten van de (Rijks)overheid wordt veel aandacht besteed aan het toepassen van meervoudig grondgebruik op agrarische grond. Door de overheid wordt benoemd dat het toevoegen van meerdere functies op één stuk grond kan bijdragen aan het oplossen van verschillende ruimtelijke problemen. Het toepassen van meerdere functies op één stuk grond moet leiden tot een sterkere positie van de agrarische sector in de Nederlandse maatschappij.

Voor het toepassen van meervoudig grondgebruik ligt de verantwoordelijkheid of het ‘eigenaarschap’ bij de boeren. Zij zijn de eigenaar van de grond. Zowel uit de bestaande onderzoeken als de beleidsdocumenten van de literatuur is echter niet duidelijk hoe meervoudig grondgebruik in de praktijk moet worden opgepakt door de agrarische sector. In mijn onderzoek neem ik dan ook als uitgangspunt dat er wel over boeren wordt gesproken, maar niet met. Daarom ben ik benieuwd hoe boeren in deze regio denken over het toepassen van meervoudig grondgebruik, en daar zou ik graag met u over in gesprek willen.

1.1 Waaruit bestaat uw bedrijf, en uw bedrijfsactiviteiten?

1.2 Wat is de richting waar u heen wilt gaan met uw bedrijf? Hoe ziet u dit voor zich?

1.3 Voorziet u daarbij problemen?

1.4 Heeft u ooit gehoord van meervoudig grondgebruik?

1.4.1 Ja: Wat houdt deze term volgens u in?

1.4.2 Nee: Welke associatie heeft u bij deze term?

(toelichting: binnen dit onderzoek wordt de term meervoudig grondgebruik in een hele brede zin gebruikt, namelijk dat er meerdere functies op één stuk grond worden toegepast).

The economic paradigm

2.1 Zou er volgens u een toekomst zijn waarbij u meervoudig grondgebruik toe past binnen uw bedrijfsstrategie?

2.2 Welke financiële gevolgen, zowel positief als negatief, denkt u dat meervoudig grondgebruik voor uw bedrijf kan betekenen?

2.3 Hoe denkt u over de investeringskosten voor het toepassen van deze vorm van meervoudig grondgebruik?

2.4 Vindt u deze vorm van meervoudig grondgebruik, of een andere vorm van meervoudig grondgebruik, financieel risicovol?

The innovation – diffusion – adoption paradigm

3.1 Met betrekking tot de term meervoudig grondgebruik, begrijpt u wat dit volgens de overheid inhoudt?

3.2 Wat vindt u van de mening van de overheid en onderzoekers dat meervoudig grondgebruik de positie van de agrarische sector kan verbeteren?

The adopter perception paradigm

4.1 Vind u dat de agrarische sector dient te innoveren, en zo ja op welke manier?

4.2 Denkt u dat uw land geschikt is om meervoudig grondgebruik toe te passen? Denk hierbij aan:

- De bouwmogelijkheden (juridisch/planologisch)
- De bereikbaarheid van uw bedrijf
- De inrichting van uw land

4.3 Wat denkt u van meervoudig grondgebruik binnen de agrarische sector? Ziet u bedreigingen of knelpunten, bijvoorbeeld als andere boeren wel meervoudig grondgebruik gaan toepassen?

B. Appendix 2 – Code book of the reference study

ATLAS.ti Report








Reference study

Codes

Report created by Luke den Boer on 8 Nov 2021








- Easy implementation of policies

Used In Documents:

 1 Source 1.pdf  3 Source 3.pdf  5 Source 5.pdf  6 Source 6.pdf  7 Source 7.pdf  8 Source 8.pdf  10 Source 10.pdf  11 Source 11.pdf  13 Source 13.pdf  15 Source 15.pdf












- Emotional connection with the farm

Used In Documents:

 1 Source 1.pdf  3 Source 3.pdf  4 Source 4.pdf  5 Source 5.pdf  7 Source 7.pdf  8 Source 8.pdf  12 Source 12.pdf













- Engaged farmers

Used In Documents:

 1 Source 1.pdf  2 Source 2.pdf  4 Source 4.pdf  6 Source 6.pdf  7 Source 7.pdf  8 Source 8.pdf  10 Source 10.pdf  11 Source 11.pdf  12 Source 12.pdf  13 Source 13.pdf  14 Source 14.pdf








- Environmental awareness of farmers

Used In Documents:

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- Examples of others

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- Farmers view of of the sector

Used In Documents:

 1 Source 1.pdf  3 Source 3.pdf  4 Source 4.pdf  9 Source 9.pdf  10 Source 10.pdf  11 Source 11.pdf  12 Source 12.pdf  13 Source 13.pdf  14 Source 14.pdf  15 Source 15.pdf




- Financial consequences for the farm

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 1 Source 1.pdf  2 Source 2.pdf  4 Source 4.pdf  5 Source 5.pdf  6 Source 6.pdf  7 Source 7.pdf  8 Source 8.pdf  9 Source 9.pdf  10 Source 10.pdf  11 Source 11.pdf  12 Source 12.pdf  13 Source 13.pdf  15 Source 15.pdf




- Historical developments

Used In Documents:

 2 Source 2.pdf  4 Source 4.pdf  7 Source 7.pdf  8 Source 8.pdf  15 Source 15.pdf








- Legal boundaries

Used In Documents:

 2 Source 2.pdf  3 Source 3.pdf  5 Source 5.pdf  6 Source 6.pdf  7 Source 7.pdf  9 Source 9.pdf  10 Source 10.pdf 11 Source 11.pdf 14 Source 14.pdf







- Legal rights of the land

Used In Documents:

 2 Source 2.pdf  3 Source 3.pdf  5 Source 5.pdf  8 Source 8.pdf  9 Source 9.pdf  10 Source 10.pdf  12 Source 12.pdf 13 Source 13.pdf




- Necessity for policy

Used In Documents:

 1 Source 1.pdf  4 Source 4.pdf  5 Source 5.pdf  10 Source 10.pdf  11 Source 11.pdf  14 Source 14.pdf








- Physical state of the farm

Used In Documents:

 1 Source 1.pdf  10 Source 10.pdf  13 Source 13.pdf  14 Source 14.pdf  15 Source 15.pdf

- Policy information

Used In Documents:

 2 Source 2.pdf  3 Source 3.pdf  4 Source 4.pdf  9 Source 9.pdf  10 Source 10.pdf  11 Source 11.pdf  13 Source 13.pdf 14 Source 14.pdf

- Pressure from institutions

Used In Documents:

 2 Source 2.pdf  4 Source 4.pdf  6 Source 6.pdf  8 Source 8.pdf  12 Source 12.pdf

- Relation with society

Used In Documents:

 3 Source 3.pdf  4 Source 4.pdf  5 Source 5.pdf  12 Source 12.pdf

- Restistant to change

Used In Documents:

 1 Source 1.pdf  4 Source 4.pdf  9 Source 9.pdf







- Subsidies

Used In Documents:

 1 Source 1.pdf  2 Source 2.pdf  6 Source 6.pdf  7 Source 7.pdf  8 Source 8.pdf  9 Source 9.pdf  10 Source 10.pdf 11 Source 11.pdf 14 Source 14.pdf 15 Source 15.pdf

- Trust in governmental bodies

Used In Documents:

 2 Source 2.pdf  6 Source 6.pdf  7 Source 7.pdf  9 Source 9.pdf  12 Source 12.pdf  13 Source 13.pdf

C. Appendix 3 – Code book of the in-depth interviews

ATLAS.ti Report

Thesis - Interviews

Codes

Report created by Luke den Boer on 9 Nov 2021

○ Age of the farmer

Used In Documents:

 1 Interview 1.docx  2 Interview 2.docx  6 Interview 6.docx  8 Interview 8.docx








○ Availability of policy information

Used In Documents:

 1 Interview 1.docx  2 Interview 2.docx  3 Interview 3.docx  5 Interview 5.docx  6 Interview 6.docx  7 Interview 7.docx  9 Interview 9.docx  10 Interview 10.docx  11 Interview 11.docx

○ Available space for dual land use

Used In Documents:

 1 Interview 1.docx  2 Interview 2.docx  3 Interview 3.docx  5 Interview 5.docx  6 Interview 6.docx  7 Interview 7.docx  9 Interview 9.docx












○ Depending on governmental bodies

Used In Documents:

 3 Interview 3.docx  4 Interview 4.docx  5 Interview 5.docx  6 Interview 6.docx  7 Interview 7.docx  8 Interview 8.docx  9 Interview 9.docx  11 Interview 11.docx







○ Economics of the agricultural business

Used In Documents:

 1 Interview 1.docx  2 Interview 2.docx  3 Interview 3.docx  4 Interview 4.docx  5 Interview 5.docx  6 Interview 6.docx  7 Interview 7.docx  8 Interview 8.docx  9 Interview 9.docx  10 Interview 10.docx  11 Interview 11.docx






○ Emotional connection with the agricultural sector

Used In Documents:

 2 Interview 2.docx  5 Interview 5.docx  7 Interview 7.docx  8 Interview 8.docx  10 Interview 10.docx  11 Interview 11.docx








○ Farmer as maintainer of rural areas

Used In Documents:

 2 Interview 2.docx  4 Interview 4.docx  8 Interview 8.docx  9 Interview 9.docx  11 Interview 11.docx

○ Farmer is environmentally concerned

Used In Documents:

 1 Interview 1.docx  2 Interview 2.docx  3 Interview 3.docx  4 Interview 4.docx  5 Interview 5.docx  8 Interview 8.docx  9 Interview 9.docx






- Farmer is in favour of dual land use practices

Used In Documents:

 1 Interview 1.docx  2 Interview 2.docx  4 Interview 4.docx  5 Interview 5.docx  6 Interview 6.docx  8 Interview 8.docx  9 Interview 9.docx  10 Interview 10.docx







- Farmer is not in favour of dual land use practices

Used In Documents:

 3 Interview 3.docx  4 Interview 4.docx  6 Interview 6.docx  7 Interview 7.docx  10 Interview 10.docx





- Farmer is unable to cover costs

Used In Documents:

 1 Interview 1.docx  2 Interview 2.docx  4 Interview 4.docx  8 Interview 8.docx  9 Interview 9.docx  11 Interview 11.docx







- Financial benefits from dual land use

Used In Documents:

 1 Interview 1.docx  3 Interview 3.docx  5 Interview 5.docx  7 Interview 7.docx  8 Interview 8.docx  9 Interview 9.docx  10 Interview 10.docx  11 Interview 11.docx

- Historical developments in dual land use

Used In Documents:

 1 Interview 1.docx  5 Interview 5.docx  7 Interview 7.docx  8 Interview 8.docx  10 Interview 10.docx  11 Interview 11.docx

- Historical relationship with government

Used In Documents:

 2 Interview 2.docx  4 Interview 4.docx  5 Interview 5.docx  6 Interview 6.docx  7 Interview 7.docx  8 Interview 8.docx  9 Interview 9.docx  11 Interview 11.docx

- Lack of trust in governmental bodies

Used In Documents:

 1 Interview 1.docx  2 Interview 2.docx  3 Interview 3.docx  4 Interview 4.docx  7 Interview 7.docx  8 Interview 8.docx  9 Interview 9.docx  11 Interview 11.docx






- Legal boundaries

Used In Documents:

 2 Interview 2.docx  3 Interview 3.docx  5 Interview 5.docx  6 Interview 6.docx  8 Interview 8.docx  9 Interview 9.docx  10 Interview 10.docx  11 Interview 11.docx

- Negative businesscase for dual land use

Used In Documents:

 1 Interview 1.docx  4 Interview 4.docx  5 Interview 5.docx  7 Interview 7.docx  11 Interview 11.docx






- Opinion towards governmental policies

Used In Documents:

 1 Interview 1.docx  2 Interview 2.docx  3 Interview 3.docx  4 Interview 4.docx  6 Interview 6.docx  7 Interview 7.docx 8 Interview 8.docx 11 Interview 11.docx






- Physical state of the farm

Used In Documents:

 1 Interview 1.docx  2 Interview 2.docx  5 Interview 5.docx  6 Interview 6.docx  7 Interview 7.docx  8 Interview 8.docx 10 Interview 10.docx 11 Interview 11.docx







- Positive representation towards society

Used In Documents:

 1 Interview 1.docx  2 Interview 2.docx  5 Interview 5.docx  8 Interview 8.docx  11 Interview 11.docx







- Pressure from institutions on agricultural land

Used In Documents:

 1 Interview 1.docx  4 Interview 4.docx  6 Interview 6.docx  7 Interview 7.docx  9 Interview 9.docx  11 Interview 11.docx






- Pressure from institutions to behave environmentally friendly

Used In Documents:

 1 Interview 1.docx  5 Interview 5.docx  6 Interview 6.docx  8 Interview 8.docx  9 Interview 9.docx  10 Interview 10.docx 11 Interview 11.docx






- Productivity of the farm

Used In Documents:

 1 Interview 1.docx  2 Interview 2.docx  3 Interview 3.docx  4 Interview 4.docx  5 Interview 5.docx  7 Interview 7.docx 8 Interview 8.docx 9 Interview 9.docx 10 Interview 10.docx 11 Interview 11.docx







- Relation with bank

Used In Documents:

 1 Interview 1.docx  6 Interview 6.docx  8 Interview 8.docx  9 Interview 9.docx  10 Interview 10.docx




- Relation with society

Used In Documents:

 1 Interview 1.docx  2 Interview 2.docx  3 Interview 3.docx  4 Interview 4.docx  5 Interview 5.docx  6 Interview 6.docx 7 Interview 7.docx 8 Interview 8.docx 9 Interview 9.docx 10 Interview 10.docx 11 Interview 11.docx

- Trust in governmental bodies

Used In Documents:

 1 Interview 1.docx  2 Interview 2.docx  5 Interview 5.docx  6 Interview 6.docx  7 Interview 7.docx  8 Interview 8.docx  9 Interview 9.docx  11 Interview 11.docx











- Use of subsidies

Used In Documents:

 1 Interview 1.docx  2 Interview 2.docx  3 Interview 3.docx  4 Interview 4.docx  5 Interview 5.docx  7 Interview 7.docx  8 Interview 8.docx  9 Interview 9.docx  11 Interview 11.docx

- View of the farmer towards the agricultural sector

Used In Documents:

 1 Interview 1.docx  2 Interview 2.docx  3 Interview 3.docx  4 Interview 4.docx  5 Interview 5.docx  6 Interview 6.docx  7 Interview 7.docx  8 Interview 8.docx  9 Interview 9.docx  10 Interview 10.docx