
Producing Nature

Enacting new spaces
during nature conservation on private land in
the Eastern Cape, South Africa
and the Ooijpolder, the Netherlands



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List of abbreviations

VVN	Voedsel voor Natuur (Food for Nature)
VNC	Vereniging Nederlands Cultuurlandschap (Association for the preservation of Dutch cultural landscape)
WNF	Wereld Natuur Fonds (World Wildlife Fund)
CAE	Certificate of Adequate Enclosure
PH	Professional Hunter
STEP	SubtropicalThicket Ecosystem Planning Project
ECparks	Eastern Cape Parks
GUP	Gemeentelijk Uitvoeringsplan (Municipal action plan)
LOP	Landschapsontwikkelingsplan (Landscape development plan)

Preface

This thesis finds its origin in a personal interest to link a biological science background with a social science research. Analyzing the social aspect of nature, and the natural factors influencing society, it pursues a better understanding of the environment that we are part of. Illustrated by two cases on different sides of the world, it aims to disclose our relationship with the environment and how natural elements find different meanings through space and time. Furthermore, this thesis represents a personal challenge to de-romanticize an earlier, singular view on what constitutes nature and how humans should behave conserving it. Rethinking the concept of nature, this thesis stands for a more comprehensive understanding of our relation with the environment. A type of analysis and practice that should be based on an interdisciplinary approach and must recognize the dynamic and fluid interactions that are constructing spaces through time.

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Summary

Nature conservation at the turn of the 21st century is increasingly shifting in meaning, practice and purpose with its implementation on private land. Taken up as an agricultural activity, farmers are changing the interaction with their environment as they continue to reconstruct nature with a new set of strategies. Analyzing the interaction between humans and their environment, this thesis pursues to understand how nature conservation as a reciprocal and continuous interaction between people and 'living nature' is redefining our understanding of spaces. Theorized as processes of co-production, the thesis takes an ethnographic approach on cases from the Eastern Cape, South Africa and the Ooijpolder in the Netherlands to illustrate spaces as mutually constituted and as socio-natural entities. Comparing cases on both an abstract and practical level, it aims to understand how changing social relationships and biophysical elements are producing new kinds of spaces on private land through time.

In the Eastern Cape, private landowners have developed new relationships with *their* wildlife that can be owned, sold and used as a commodity if adequately enclosed. Receiving a clear economic value, game farming is allowing farmers to use wildlife as a source of capital to make a living from the resources on their land. Influenced by an external demand for trophies or photographic safaris, management is influenced by a desire originating somewhere else, while simultaneously adapted to protect it from unintended and unwanted local appropriations. In the Ooijpolder, similar, yet totally different conservation practices are taking place as farmers are setting aside parts of their land to do 'landscape farming'. Engaging in partnerships with governments or well established conservation organizations, farmers are again incorporating natural elements within their farming operations that became disconnected or ignored during the modernization of agriculture. Developing hedges, trees, pools or grassland meadows on their land, farmers are receiving a mix of public and private funding to compensate for its management and earn an additional bonus. Creating a landscape based on cultural and historical elements, nature conservation on private land in the Ooijpolder is attracting urban visitors for recreational activities, blurring access and the meaning of public and private on the farm.

Analyzed as processes of co-production, the 'privatization of nature' is allowing farmers to (re)establish relationships with resources from their direct environment. Constructing exclusive, closed spaces in the Eastern Cape and opening up spaces in the Ooijpolder, nature conservation on private land is providing farmers assets to co-produce an ecological capital on their land and move away from the 'squeeze' in conventional agriculture. Enacted during ongoing interactions of coproduction, spaces should not be seen as fixed entities already 'out there'. They are better treated as relational and relative, constantly humanized as people are taking part in constructing nature to their benefit and interest.

1 Introduction

With the turn of the 21st century, the conservation of nature has shifted in practice, meaning and purpose with a diversification into state, communal or private land (Suich et al., 2009). Environmental conservation practices are no longer solely associated with nature reserves managed by governmental departments or non-governmental conservation agencies that critically defy the advance of modernity and its negative influence on natural resources (Fairhead et al., 2012). Instead, the group of actors involved with conservation is restructuring itself as the opposition between an expanding global economy and the preservation of nature is being bridged. As a consequence, nature conservation is now increasingly integrated into commercial, economic and legal systems of private ownership that were once perceived to be threatening and degrading the environment (Mol and Spaargaren, 2000). As such, nature conservation no longer necessarily entails a conservative approach of enclosure, protection and often non-utilitarian use, but is expanding towards “alternatives” (Franklin, 2008, 43) that allow different commitments and relationships to be created. At the same time, the appropriation of our environment is no longer solely dependent on what it physically contains or has to offer to society. Often initiated by external actors, natural resources and ecosystems are now valued for the potential they have to restore lost characteristics or the potential to represent fundamental elements of a particular environment. Legitimised by dominant scientific discourses on the loss of biodiversity, environmental problems or global warming, economics and politics guide action towards biodiversity reserves, ecosystem services and carbon compensation (Fairhead et al., 2012). Incorporated in a global economy, natural elements are expressing themselves as a commodity that can be bought, sold and owned in order to fit the international market system, but may also provide a landowner or farmer with a new asset to continue living on his land. Contributing to such an “economy of repair” (Fairhead et al., 2012, 242), ‘green land’ is being ‘grabbed’, a process that is appropriating nature in a new way on a global level (Vidal, 2008). As these appropriations involve new kinds of interactions and relationships between humans and their biophysical environment, they entail both risks and opportunities for different groups of people at different places.

Nature conservation implemented and practiced on private land could be interpreted as expanding conservation strategies into areas where they exist next to farmland and become intertwined with agricultural activities. Farming however, revolves around the constructing of nature, generating nature instead of only food and thus implies a continuous relation between a farmer and his environment (Koningsveld, 1987, Van Der Ploeg et al., 2006). Contemporary practices are however blurring the boundary between what is farmed and what is wilderness, changing not only definitions of what constitutes nature, but also what type of management is considered appropriate to protect it. “Farming the wild or wilding the farm” (Carruthers, 2008, 160) implies changes at the level of social interactions and environmental properties. A blurry phenomena that is producing a new type of landscape that is changing our understanding of spaces. Nature conservation or redesigning the relation between farming and nature not only changes properties of farming and nature, but also introduces new relationships and/or reshapes existing relationships between the farm, people, activities and the (global) economy. This thesis describes and analyzes how these new relationships are shaping new types of spaces on private land. Identifying such spaces as mutually constituted and as socio-natural entities, nature conservation it is treated like agricultural practices, an intervention in nature with “biodiversity as a product” (Schaminée and Weeda, 2009, 6). Focusing on empirical examples from case studies in South Africa and the Netherlands, conservation is treated here as an ongoing interaction between the ‘social’ and the ‘natural’, mutually shaping and transforming each other in time and space. Managing it, “is the guidance of decision-making processes and implementation of practices to purposefully influence interactions among and between people, wildlife, and habitats to achieve impacts valued by stakeholders” (Riley et al., 2002, 586) and thus not only contains an environmental, but also a social dimension.

1.1 The concept of co-production

This thesis pursues an analysis of human-environmental interactions. The position it takes is that nature or the environment is the product or outcome of the interactions with the social and vice versa: the social as a product of its interaction with the natural. Social and biophysical elements and properties interplay. In agro-ecological sciences this process has been conceptualised as co-production: the “ongoing combination, interaction and mutual transformation of social and material resources” (Van Der Ploeg et al., 2006, 200) or “to the ongoing interaction, mutual transformation and dependency between humans and nature—that is, between the social and the natural” (Renting and Van Der Ploeg, 2001, 96). Agriculture is conceptualised as a combination of both social and natural factors. This in contrast to the traditional perspective whereby independent natural resources are only subject to natural laws. Instead, ‘living nature’ is constructed, reconstructed and differentiated within long and complex historical processes, through which particular characteristics are built into the resources concerned (Van Der Ploeg et al., 2006). These theoretical assumptions situates co-production in a political ecology framework, placing humans in a direct relation to their natural environment (Peluso and Watts, 2001, Paulson et al., 2003). I have visualised this relationship in Figure 1: Individual or collectives of people through the processes of labour are interacting with certain biophysical properties at a certain moment in time. Labour in this analysis is defined as the actions, often involving certain instruments, technologies and knowledge that individual or groups of people are performing to build in certain characteristics and patterns into the environment (Van Der Ploeg et al., 2006). Theoretically this means that natural resources cannot be understood properly outside the forms of land use within which these are combined and reproduced, and enriched in such a way that they fit well the other elements that form part and parcel of the same land-use practices. In this way, people are creating changes and transformations to their benefit and interest inside other biophysical elements. As such, landscapes, or the environment around us, are an active human construction that stands for an “imaginative construction” that defines how people perceive their natural environment. In her historical analysis of the Serengeti landscape, Shetler (2007) describes such constructed imaginations as people that are perceiving a landscape as an “interpretation influenced by historical experiences, social identity, and political power, rather than by objective visions of the physical land” (Shetler, 2007, 4), giving them power to shape and reproduce a particular landscape according to their imagination. Peluso and Watts (2001) describe this process as “nature becoming humanized” (Peluso and Watts, 27), as it gets appropriated by human action. At the same time, humans and their practices have been and will always be dependent on the properties of the biophysical elements around them that have to be taken into account during practices of labour. The geographical presence of animals, plants, soil types or climate exhibit characteristics that force humans to work with. The growing speed of grass in our gardens for example, demands the regular action of mowing. Depending on the geographical sites where grass can grow in our garden, the fertility of the soil and climatic conditions, it can further force people to fertilize or irrigate their lawns, while trying to transform them into the image of a garden they have in their heads. The result of this interaction leads to the co-production of a particular garden. Labour and environmental properties are thus influencing each other, as they shape the type of labour performed and the way environmental elements are expressing themselves. This interaction leads to the production of a particular product, the balance between environmental properties and human labour at a certain place in time, but simultaneously to a specific history between the environment and the humans living in it (Van Der Ploeg et al., 2006). Processes of co-production are thus taking place where humans and other biophysical elements meet and influence each other. Visualised by two pair of opposing arrows in Figure 1, their interaction is in essence reciprocal, as spaces of interaction are simultaneously inducing new types of labour and biophysical properties as a result of an earlier outcome. Conceptualised as such, it is producing a specific type of product that is dynamic and flexible in its shape as the dotted arrow represents the on-going process of co-production through time. As the expression of a social and biophysical interaction, it is further directly related to the idea of space as its enactment constitutes the physical environment that we are part of. Such interactions are however not homogeneously distributed, geographically fixed or independent from each other. Resulting from interactions during co-production, its outcomes are multiple and dependent on the specific social relationships and environmental properties present that is crossing throughout space and time. Influenced by and influencing particular forms of human labour and biophysical properties, the reciprocal character co-production consequentially allows enacted

interactions to induce change and movement somewhere else. A process that is creating an overlapping pattern of interactive spaces that is relating processes of co-production throughout space and time (Figure 2). As such, spaces are not only defined relative to the subject living in it (Ingold, 1987) or to an image that is being constructed (Shetler, 2007), but related to several processes of co-production simultaneously.

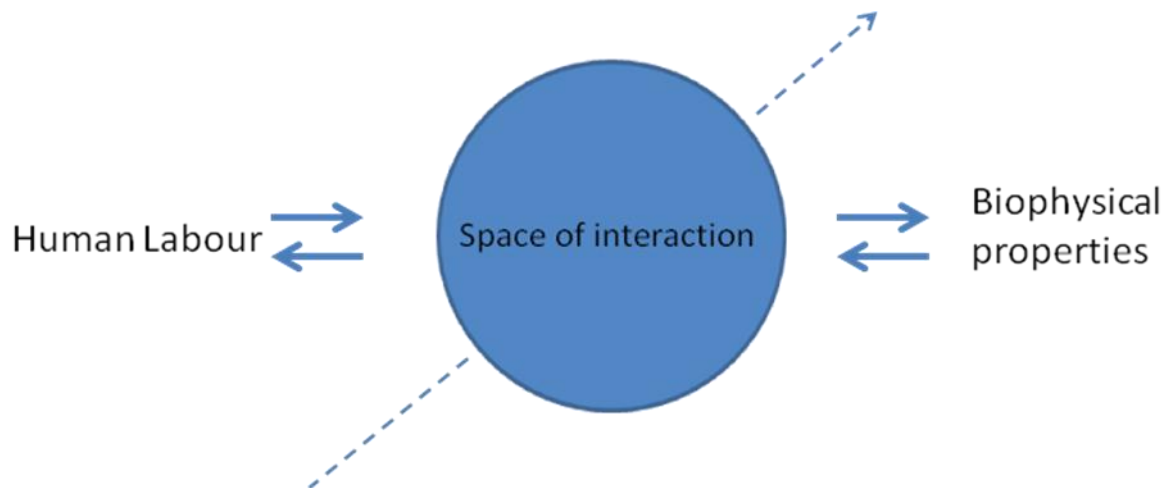


Figure 1: Schematic overview visualising the interaction between labour and biophysical properties enacted as a 'space of interaction' at a certain moment in time.

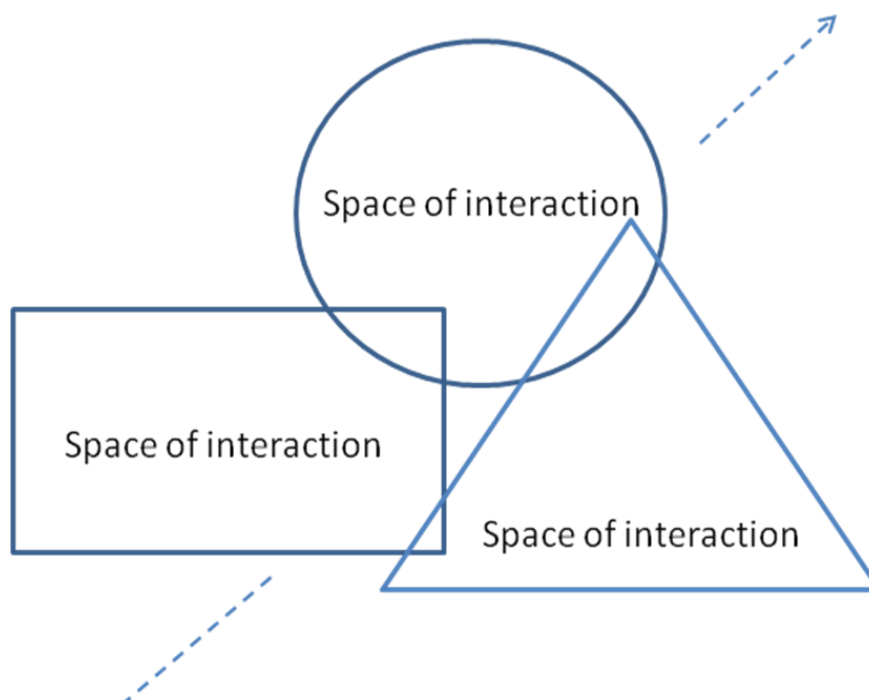


Figure 2: Relation of different outcomes of co-production visualising interaction spaces of human and biophysical interaction at a certain moment in time.

1.2 Labor and agency

Although performed by social actors, labour is not an independent or singular action. As the example of the labour in our gardens shows, we work with a particular image of a garden in our head that is humanizing our environment. This image has to be viewed as an outcome of a process of negotiation inside specific social relations influencing the social actor performing the labour. Like a garden, what we define to be natural can be considered as images coming out of such a negotiation process, shaping the kind of nature conservation labour through which we are interacting with biophysical elements. As such, different images are creating heterogeneity of outcomes of co-production that may stand for different meanings, functions or values of nature. Labour however, also has to be considered as a type of action, a form of human behaviour that is directing its practices towards biophysical properties. As an action, labour is a dualistic process, influenced by and influencing social structures, those regular patterns of human behaviour in society (Bilton et al., 2002). Consequentially, labour is inducing new changes and movement in contemporary structures and relations that will influence processes of co-production in the future. Such social structures are specific cultural styles and formats in society, and while used by humans become affirmed, shaped or changed (Long, 2001). This process of using and re-shaping is what “metaphorically transmutes individuals into social actors” (Long, 2001, 18). A social actor is thus a person who is influenced by society, but influences society at the same time. The ability to take part in the dualistic process of human behaviour is conceptualized as agency. Long (2001) states human agency as the “individual capacity of an actor to process social experience and to devise ways of coping with life” (Long, 16). “They attempt to solve problems, learn how to intervene in the flow of social events around them, and to a degree they monitor their own behaviour” (Long, 2001, 16). Agency is thus the capacity of an actor to shape the world to his own interest and to reflect on it. Agency is however a concept as much socially constructed as the process it entails. It is culturally specific and expressed differently in local places and has to be translated from this context to be meaningful. Comparable to the outcomes of co-production, the dualistic interaction between agency and structure thus leads to multiple social realities with different norms, interest and forms of knowledge that will create different imaginations of biophysical elements (Long, 2001).

1.3 Network and discourses

To further understand human action as an outcome of social relationships and how this is influencing different types of labour, we have to conceptualize the factors linking the social relationships with the social actors performing it. These social relationships constituting a particular action create a pattern of interactions that we call a network (Bruun and Hukkinen, 2003). This network is constituted by a constant process of negotiation between different actors having the ability to use their agency to influence the type of action and the meaning given to it (Long, 2001). By negotiating, people act on each other, trying to convince, enrol or persuade each other into a particular direction. Each actor however, interprets this ‘message’ in a specific way, translating it to his own and acting again with this translation upon other actors. It is the degree to which one can use his agency to influence the process of translation in other actors that composes the power or domination of certain social actors that lead to the implementation or acceptance of labour or human behaviour (Long, 2001, Bruun and Hukkinen, 2003).

The use of agency in a social network makes use of ‘discursive means’ to influence other actors. A discourse contains a set of statements of knowledge that explain reality and make claimants about what is true. These explanations help people to create order and give meaning to the world around them and the actions they perform in it (Long, 2001). Discourses are however variable and different social actors make use of different discourses when involved in negotiation processes. Dependant on the type of discourse dominant and powerful in specific social relationships, it can lead to the delegation of decision making of management or the control of resources to a certain type of discourse. This type of power, to influence the behaviour of people and to decide what ought to be done, is related to what Foucault calls governance (Foucault, 1997, Oksala, 2007). In this concept, the relationship between power and knowledge becomes manifested in dominant routines and institutions that guide actions and behaviour. A discourse is thus a combination of knowledge and power that link

ideas of thought with practices in the field (Foucault, 1998). Emerging out of a process of negotiation as different knowledge interacts with each other and in which it gets appropriated by social actors. This creates a dominant knowledge that explains reality and intrinsically forces people to shape their reality according to this knowledge. A particular power is thus constituted, shaping our actions and view on reality from within. The understanding of reality and what actions ought to be performed are thus produced by a combination of power and knowledge. Active in the social relations around networks of nature conservation, the different discourses present must be identified and analysed as an active process, expressing itself in both language and actions.

1.4 Problem statement

This thesis is treating nature conservation on private land analytically as an outcome of processes of co-production. Theorizing the continuous process of people working and living in and with the environment, outcomes of co-production are an actual and historic expression of the interactions between humans and other biophysical elements (Renting and Van Der Ploeg, 2001, Van Der Ploeg et al., 2006). Conceptualised as such, processes of co-production are producing specific types of spaces that are dynamic and flexible through time. Treated as such, spaces become both relative and relational as enacted interactions during processes of co-production. In the Eastern Cape and Ooijpolder respectively, changing processes of co-production are reconstructing spaces as nature conservation is being implemented on private land and is changing the expression of social relations and biophysical properties in the field. More insight into these processes is essential if we want to understand how landscapes are expressing themselves through time and to understand how private landowners are incorporating conservation practices as a part of their agricultural operations. At the same time it may provide us with a better understanding of the different meanings people can attach to plants, animals or landscapes, forcing us to rethink our relation with nature and the meaning of its conservation.

1.5 Research Questions

Treating nature conservation on private lands analytically as an outcome of co-production, the thesis aims to place local interactions between humans and the environment in a regional and historical context. Comparing nature conservation as a process of co-production in the Eastern Cape and the Ooijpolder, it further aims to find parallels, similarities and differences in nature conservation on a global level. Conceptualised into a general research question and three sub research questions that changed shape as the research was being conducted, they help linking the theory of co-productions with labour, social relations and interactions in the field.

General research question

The general research question during this thesis aims to understand how processes of co-production are giving new meaning and interpretation to the concept of space. As such, it explores how co-production can be used to rethink spaces during nature conservation on private land:

How are spaces constructed through processes of co-production during nature conservation on private land in the Eastern Cape and Ooijpolder?

Sub-research questions

Breaking the general research questions into pieces, three sub-research questions are orienting the thesis towards different social actors, labour and biophysical properties that are involved with the production of space during processes of co-production. As such, the first sub question is exploring the contemporary expressions of the Eastern Cape's and Ooiypolder's landscape and other biophysical elements in its historical context:

What are the historical and contemporary expressions of co-production during nature conservation on private land in the Eastern Cape's and Ooiypolder landscape?

In continuation with the first sub-question, the second aims to analyze how contemporary processes of co-production are changing the character of social relations and biophysical properties in the Eastern Cape and Ooiypolder regions:

How are processes of co-production changing the social and biophysical properties during nature conservation on private land in the Eastern Cape and Ooiypolder?

As such, the final sub-question is focussing on how nature conservation is finding new strategies to become implemented on agricultural land and how farmers and private landowners are developing strategies to incorporate nature conservation as an essential part of their business:

Why is nature conservation in the Eastern Cape and Ooiypolder incorporated as an agricultural activity on private land?

1.6 Methods of work

This thesis takes an ethnographic approach to gain knowledge on the process of co-production during nature conservation on private land. Ethnography studies social actors in their contexts. It asks questions to examine and explore their behaviour and tries to understand their relation to each other and their environment. To study social actors in their context, ethnography actively places itself into this context in order to be able to study actions and accounts 'in the field', producing descriptions and theoretical explanations of what is happening at a particular place in time (Hammersley and Atkinson, 2007). This requires a flexible and dynamic research design that should be interpreted as a process in which the research gets constructed as it is being conducted. Such an approach forces an ethnographer to be adaptive and flexible to unexpected and unstructured research situations while doing research as empirical situations can be more complex as anticipated during the writing of a proposal.

To get a detailed account of particular situation, ethnography entails a critical and detailed focus on a particular social phenomenon. By focussing on the specific, instead of the general, its aim is to analyse and inspect the underlying foundations of a particular case. During such a process, general theories are used to link the abstract concepts with their practices on the ground and can be reconstructed, evaluated or changed during such interactions (Harvey, 2005b, Hammersley and Atkinson, 2007). The following paragraph will further describe the methods and fieldwork practices conducted to form this thesis and give a short description and explanation of each.

Fieldwork

Getting a detailed account of a particular situation necessitates the use of diverse range of research sources to get access to relevant information. Doing ethnography thus entails a mix of participation and observation, interviewing, literature reviewing and document analysis that have to be balanced with a feeling for research access and the quality of field relations that changed per case study example. In the Eastern Cape, participation, observation and ethnographic interviews were conducted by doing intensive fieldwork during a two week stay on the case study game farm, while document analysis and literature reviewing was performed before and after the stay on the farm as well as several explorative interviews. In the Netherlands however, long term stays on the farms were not possible nor relevant while document and literature reviewing was alternated with semi-structured interviews with the various social actors described and several observations and visits in the field. Reflecting on these two approaches, the intensive yet informal stay at the South African game farm, allowed me to experience life on the African countryside as I joined evenings at the local country club, met and visited other farmers, drove 'the van' into town to do some shopping and spend time at the family's holiday cottage at the sea. Feeling treated and welcomed as a friend, it remained crucial not to forget to take some distance and remain as neutral as possible while developing questions and analysing results. Awareness while doing fieldwork that was less imminent in the Ooijpolder, where field relations were much more formal and structured, although conversations have always been very welcoming and relaxed.

Participation and observation

Participating and observing are two main methods used in ethnographic research. While doing ethnography, participation and observation go hand in hand however, as they entail the placing of the researcher in the social context by exposing him or her to the culture and people present. During the thesis' fieldwork, my position as a researcher took place on the boundary of participating while observing or observing while participating, depending on the opportunities and chances arising and the access and quality of field relations established. Doing observation and participation for an extended period of time and by revisiting key actors, gave me the opportunity to give an in-depth view on the situation. Aiming to view reality 'through their eyes' (Hammersley and Atkinson 2007, 151) it enables a researcher to understand the meanings actors attach to their practices and the relation with their environment. Participant observation also gives the opportunity to have informal conversations, crucial to get more or different types of access and develop field relations. Aware of this opportunity, a researcher can use this activity to steer the conversation into the topics of interest to his research, leading to a very informal type of interviewing.

Interviewing

An interview is “a conversation directed towards the researchers particular needs for data” (Hammersly and Atkinson, 2007, 94). Interviews differ in set-up and type according to the degree to which they are structured. As this thesis makes use of an ethnographic approach, the interviews were not be formally structured, but provided a space for the interviewee to tell his interest, issues and view on the topic discussed. The interviews did however include an active process of directing and shaping the conversation into the topic of interest to the research. Preparation on how to open the interview or conversation and to introduce the topic, how to react on possible answers and how to be able to still cover all the topics of interest is therefore of importance. A skill that has to be developed in combination with time and effort to build trust and respect in order to establish sustainable relationships.

Document analysis

Information does not necessarily have to be acquired through the practice of interviewing or participant observation. Although these methods can lead to a wide range of information, it is always brought in an oral or visual way and transferred in direct contact with the researcher. Documents or other artefacts however provide a source of information that is actively produced by the actors involved or contains accounts by other people studying the same social actors or social phenomena. They thus make part of the lives of the actors and context one is studying.

1.7 Thesis organization

Analyzing spaces on private land as processes of co-production, the thesis uses empirical data from two case study regions to illustrate and produce a set of arguments. Treating both cases in their historical and regional context, the chapters and paragraphs in this thesis are structured as follows:

At first, the thesis will describe nature conservation initiatives on private land from each case study independently. These two sections can be read parallel to each other although the second section describing the Ooijpolder region is already making some connections with the Eastern Cape's game farming industry described in the first. Both sections are following up the theoretical framework and research questions presented in the introduction. Opening with a regional background and historical overview that embed the empirical data in their contexts, each section is presented in a similar way and will be placed in its historical context at the end.

Following these two sections that represent the empirical data of the thesis, a third section will bring both cases and their local context together. In this section, nature conservation on private land will be further analysed by comparing the Eastern Cape and the Ooijpolder according to issues that have been identified in the two earlier sections. Having linked both cases, a final section will relate the historical, local and empirical information of both cases back to a theory of co-production and the production of spaces.

2 Wildlife management in Eastern Cape

The conservation of African wildlife is no longer the monopoly of national parks. During the last decades, wildlife conservation has been diversified as a livelihood strategy with its implementation on private lands (Carruthers, 2008, Langholz and Krug, 2004, Bothma and du Toit, 2009, Suich et al., 2009). In the Eastern Cape South Africa, private landowners created diverse organisational structures to manage, conserve and make a living out of wildlife. Small, regular farmers converted partly or totally into 'game farming', turning agricultural or grazing land into a fenced off area for game hunting and local game meat production (Smith and Wilson, 2002). Local or international investors bought up large pieces of adjacent farms and created 'private game reserves'. Turning agricultural landscapes into 'wilderness areas' and offering tourist a chance to experience African wildlife close by from one of their luxury lodges while claiming to contribute to its conservation at the same time (Shamwari, 2012). Other farmers or groups of landowners decided to manage their land in a cooperative way in so called conservancies (Downsborough et al., 2011, Smith and Wilson, 2002) or formed partnerships with para-statal organisations offering stewardship programs for landowners to manage their lands environmentally friendly. While yet another, fairly new, phenomena is the emerging of 'eco-estates', where residential communities are being created in a natural landscape (Ballard and Jones, 2011).

The diverse ways in which landowners have developed new relationships with wildlife, have led to a new appropriation of these natural resources. Especially on private lands, animal species have now received a clear legal status and financial value (Snijders, 2012). Depending on the market or industries addressed by the farmer, wild animals are valued for the products or services they provide. This new appropriation of wildlife and nature leads to a new way of man 'working in the environment', changing the way they intervene in nature and aim to build in specific characteristics and patterns. Conventional agriculture or cattle farming have been exchanged for game species introduction and transportation, the veterinarian discipline is extending its practices to animals previously only studied by biologist and the culling or breeding of species leads to new motivations to manage animal populations. All expressing a specific process of co-production between landowners and wildlife. Following and identifying specific human wildlife interactions throughout history until its most recent developments, this thesis section zooms in on a specific case on the use and perception of wildlife on a private trophy hunting game farm in the Eastern Cape. Located along the Great Fish River on the 19th century frontiers of the former British Cape Colony, this case identifies current expressions of co-production by describing and analysing the game farms landscape and activities in the historical and local wildlife management context of the Eastern Cape. The empirical data from the case study game farm and the broader context of the modern wildlife industry are further analysed in their historic perspective and how this relates to modern day thinking about wildlife in Africa.

2.1 Early settlers and the beginning of the Cape Colony

Using wildlife as a natural resource is not new in southern Africa. Pre-colonial societies performed environmental management, regulating and controlling the use of natural resources to their interest (Anderson and Grove, 1987a, Murombedzi, 2003, van Sittert, 2005). Because of their technological limitations, wildlife and especially big game populations were still abundant during the arrival of the first European settlers at the end of the 17th century (Murombedzi, 2003). Their arrival in Southern Africa drastically changed the relationship between man and wildlife with decades of hunting expeditions into the interior, pushing back the wildlife frontier as they moved further inland at the end of the 18th century. Trading meat, skins and ivory for the markets in Europe, commercial hunting expeditions paved the path for early settlers and a further wave of colonial expansion into the interior (Carruthers, 2008, Murombedzi, 2003, Anderson and Grove, 1987b). Offering a primary source of meat for early settlers, wildlife products were further used as a way to finance missionaries, to feed railway employees, mine workers and soldiers or as a strategy to be welcomed by native inhabitants

along the way (Anderson and Grove, 1987a). The abundance of wildlife thus facilitated colonial expansion and the advance of its modernity into Africa. Perceiving the landscape they encountered as 'empty' and 'waiting to be colonized', they arrived with an explorative attitude to rationalize its wilderness. Restructuring it to serve the needs and interest of the modern man. An ideology that ignored the people and their practices already present in the landscape, legitimizing the advance of modernity on their civility and proper knowledge how to use land (Adams and Mulligan, 2003). The first colonisers who started moving inland to settle across the frontiers depended on wildlife as a source of food during their journeys, but already changed their attitudes and perceptions as their livelihoods transformed from subsistence hunting into agriculture or livestock keeping when they settled down permanently. Wildlife became a threat to their livelihoods and damage causing animals were labelled as 'vermin' species (Murombedzi, 2003). In the Cape, rules and laws considering the regulation of hunting were targeted by the then Dutch colonial administration in the seventeenth century. Although predator hunting was stimulated by a payment of premiums and motivated by a negative value judgement (Brown, 2002), the shooting of all other animals was prohibited and eventually hunting licences had to be acquired to hunt large wildlife in the Cape (Brown, 2002, van Sittert, 2005). In reality however, distance and remoteness of rural landowner, made governments unable to enforce their legislation. Continuing with the arrival of the British, who attempted to change and reinstall hunting legislation, control of wildlife use at the beginning of the 19th century tended to diminish the further one moved away from town (van Sittert, 2005). Farmers thus remained to use wildlife as a 'res nullius' resource, being no one's property until taken control of (Carruthers, 2008). Wildlife hunting thus continued as a means for subsistence consumption or for the commerce on markets which had expanded from animal products like meat, ivory or skins, to whole specimens to natural history museums or live sales to zoos (Murombedzi, 2003, van Sittert, 2005).

2.2 Rural and urban perceptions of wildlife in the Cape Colony

The continuation of hunting and the continuous expansion of British and Boer into the South African interior, eventually led to the great extinctions of wildlife in the middle of the 19th century (Carruthers, 2008). During this time, wildlife was seen as animal species to be hunted, either for the market by settlers or as a sport by sportsmen. In these different utilisations of wildlife, we can already identify a difference in interpretation of wildlife between farmers settlers who, led by a market of question and demand, killed large proportions of wildlife to sell on the market and urban sportsmen performing a cultural, British recreational activity, influenced by adventurous narratives in books (Carruthers, 2005). Tensions and feelings of disgrace between the two parties were present, finding it hard to understand each other's practices while stigmatizing each other ideology (Carruthers, 2008). When wild ostrich feathers became a lucrative product in the Cape colony around the 1850s, the opposition between commercial and sports hunters on how to save the ostrich becomes clear as the former sought after domestication for private use and the latter into game laws, making ostrich and other game a public good managed by hunting permits (van Sittert, 2005). An agreement eventually legislated and secured wild ostrich hunting to a closed season and hunting permit, but also changed the animal's status once enclosed on private property, giving landowners private ownership of ostrich. Moving from wild to private property and a rise in feather price, the ostrich status eventually became classified as a domestic animal in 1884, falling under the same legislation as other livestock (van Sittert, 2005). During this similar period, other wildlife species were still targeted as hunting species outside controlling game laws (van Sittert, 2005). The 'act for the better preservation of game' was eventually enacted in 1886 to be able to protect species vulnerable to extinction and the 1900 'London Convention Concerning the Preservation of Wild Animals, Birds and Fish in Africa' aimed to standardize wildlife management across the British colonies in Africa, allowing sports and low subsistence hunting, but criminalizing financial gain out of wildlife (Suich et al., 2009). van Sittert (2005) describes however that the urban sportsmen lobby in the Cape, has to be understood in a context of a rural depression and multiple exemptions for private landowners, remaining to use wildlife for their own use on their own land. Although this continued the opposition between urban sportsmen and countryside farmers on how to use wildlife, it also created a monopoly position for rural landowners who were being exempted of game laws. Using their independence and freedom to

act, they could continue using wildlife as they pleased, as well as sharing it as alms among the poor, increasing their moral status and influence on the countryside (van Sittert, 2005).

During the same time in the Transvaal, the extinctions of the great numbers of game motivated private property owners to take initiatives into protecting game on their land. A change in wildlife perception of rural, Boer, wealthy landowners made them value wildlife for their “aesthetical and recreational values” (Carruthers, 2008, 164). A trend similarly to the urban, sportsmen in the Cape, whose morals and attitudes towards wildlife had changed from “sheer pleasure in slaughter” (Carruthers, 2005, 189) towards ideas of ‘being a nature lover’ within a generation. Appreciating wildlife for its aesthetical and recreational values, landowners in the Transvaal, as well as urban sportsmen in the Cape, thus saw wildlife as a part of their identity, keeping alive a romantic idea about their past (Brown, 2002). The arguing for self-control and ownership can be seen as an active expression and acknowledging of a deeply embedded relationship between the South African and ‘his wildlife’, creating a sense of belonging legitimizing their claims. Active expressions of this identity are multiple and varied in the whole of Southern Africa. Similar examples are the construction of dams and irrigation systems of white farmers in Zimbabwe and in the imagination of an untouched African landscape which is expressed in the discourse driving the establishment of Trans frontier conservation areas (Hughes, 2006, Draper et al., 2004). Making more lobbies for private ownership of the wildlife on their territories and the exclusion of non-owners, lead to the establishment of so called “wild kampen” (Carruthers, 2008, 164), which can be seen as the precursors of the contemporary private game ranches. These actions created a social division between land owning and landless people, excluding the latter rights to access and use certain resources. These people, settlers as well as native Africans, still depended on small scale subsistence farming but their lifestyle was constrained, stigmatised and even made illegal by the lack of property and the eventual illegal making of selling biltong (Carruthers, 2008). At the same time, wildlife around densely populated native settlements started to become rare, while native access to guns was restricted by gun laws, taking away pre-colonial strategies to switch to a hunting livelihood during periods of famine (Anderson and Grove, 1987a). Society in the Cape Colony thus became divided as landless and native people were excluded from preserving and using game. What makes the Cape colony different however, is the way rural landowners not only aim to preserve wildlife, but also aim to use it in a utilitarian and commercial way (van Sittert, 2005). The switch of ostrich from a wild to a domesticated farm animal, was accompanied by other proposals to domesticate eland or buffalo as well (Bothma and Rooyen, 2005). These ways of using wildlife became more profound after the Union of South Africa in 1910, when urban, sportsmen power diminished and rural landowners could openly lobby for utilitarian discourse as wildlife management devolved to the province (Carruthers, 2008). Species like springbuck remained abundant on private properties after the disappearing of their great numbers in their ‘bokketreks’ and other ungulates were already being farmed for international zoo trade (van Sittert, 2005). Officially, domesticated animals were considered those which were “kept and maintained in a menagerie or zoological garden”(van Sittert, 2005, 285), but landowners with an enclosed area eventually took the permission to hunt and sell excess permits they did not use, inviting urban sportsmen to come and hunt on their farms (van Sittert, 2005). At the same time, the provincial state launched a new vermin bounty program in the light of pastoral betterment or as van Sitter (2005) argues as a “government dole for a drought and depression wrecked countryside” (van Sittert, 2005, 286). Vermin bounty systems had been picked up earlier by the rural community during Dutch and British colonial administration in the 17th and 19th century and were also present in other parts of southern Africa, creating market for bounties and a way to make money from the subsidy of shooting vermin (van Sittert, 2005, Murombedzi, 2003).

2.3 Modernizing agriculture and the development of a new industry

On a national level during the 1920s and 1930s, wildlife protection and agricultural modernisation were considered non-compatible (Carruthers, 2008). The department of agriculture regarded wild animals as disease-spreaders and provincial administration was abolishing and reducing previously set up game reserves (van Sittert, 2005). Wildlife was however not considered useless by all farmers. Beinart (2000) describes the story of Sidney Rubidge on WellWood estate, a landholder and sheep farmer in the Graaf-Reinet area of the Karoo, whose practices as a farmer show signs or environmental concerns and responsibilities (Beinart, 2000). While anti-game campaigns were still present and scientist still focussed on the improvement of domesticated animals to produce more food, some farmers let game numbers on their farms rise and selling game meat (Beinart, 2000, Carruthers, 2008). Such initiatives were backed in the 1950s by two American ecologist arriving in Zimbabwe who argued for the first scientific investigation of wildlife opportunities to provide food, boosting commercial game farming with a scientific basis into the second half of the 20th century (Carruthers, 2008). Breaking the non-utilitarian ideology of the 1900 London Convention, the Zimbabwe's Wild Life Conservation Act of 1960 was the first in southern Africa that allowed private landowners to start experimenting with 'game cropping', setting the basis for a new kind of agricultural activity on African farms (Suich et al., 2009).

What became different in use and perceptions of wildlife on private properties in the 1950 and 1960s was the role and relevance of science. Not science in terms of the natural history and collection of specimens by hunters that legitimized the Hunt of game at the end of the 19th century (Anderson and Grove, 1987a, Murombedzi, 2003, Carruthers, 2005) but scientific ecological and behaviour research to study the biology of animals in their habitat and explore its potential as a source of protein next to cattle and other livestock (Carruthers, 2008, Suich et al., 2009). Wildlife now included a new, scientific value, which saw wildlife as something to be studied, resulting in new strategies to manage wildlife. 'Killing animals in the name of science' now contained the control of an 'equilibrium', by culling the excess amount of animals that was calculated to be the 'carrying capacity' of a landscape (Carruthers, 2008). Although developed and promoted on private lands, it was the Kruger National Park that was first to implement the commercial culling and selling of animal products based on a scientific model. This created a new tension between advocates of purely aesthetic value of wildlife similarly to the different discourse of sportsmen hunters and rural landowners. Leaky in Carruthers (2008) states that "... if wildlife and wilderness were regarded solely as items that generate money, their days were surely numbered" (Carruthers, 161), while others stated that "if wildlife did not generate money, if they could not pay their way, that was when their days were surely numbered" (Carruthers, 161). A tension still valid for today's tension between nature conservationist and private game farms (Cousins et al., 2008).

With the promises of wildlife as a protein source and the ability to live next to domesticated animals, game ranch numbers and with them numbers of game began to rise (Carruthers, 2008). The scientific view towards wildlife resulted in a mechanical approach to conserve through management. This management was based on equilibrium models of ecosystems, justifying human intervention to reach optimum species numbers and hunting quotas (Carruthers, 2008). Nature, both in national parks as on private lands, was actively managed by controlling species numbers for conservation, but also for production. While first wildlife management research was only explored scientifically and exchanged between national parks and private lands, the development slowly created the establishment of organisational structures around wildlife management. University courses in wildlife management were provided on Pretoria University and veterinarians could specialize in wildlife diseases at Onderstepoort University. Other institutes like the Centre for wildlife management, focussed on practical issues while the Mammal Research Institute focussed on scientific research. These developments were all bottom up as they were initiated by the game ranchers themselves without any government support. The industry had to develop its own way, creating new techniques, skills and open export markets, leading to an increase in game ranches and including game numbers from the 1950s onwards (Carruthers, 2008). Slowly however, the initial enthusiastic potentials of wildlife management for meat production were diminishing and more detailed as specific studies revealed that domestic livestock still was the most efficient producer of protein (Carruthers, 2008). This forced

game ranchers to diversify and to look for other strategies to create benefits out of wildlife. Because these factors depend on local context, there is no optimum model for wildlife management, but a mix between the selling of meat, live animals, trophy hunting, ecotourism and mixed farming with livestock. Consequentially, the contemporary wildlife industry is not the homogenous business of wildlife meat production as it once was envisioned in the 1950s and 1960s (Carruthers, 2008).

2.4 The modern wildlife industry

At the beginning of the 21st century, wildlife management and conservation has evolved into a diverse and variable industry in size, scale and scope. It is an important contributor to the Eastern Cape's economy, generating millions of rand in income a year (Sims-Castley, 2002, Niekerk, 2006). It combines local farmers with international hunters or international businessman investing in former farmlands and creating luxury lodges. Although adding financial value to nature by appropriating it for a hunting or eco-tourism market, the line between managing wildlife, ecosystems or biodiversity and conserving or preserving it is vague and blurry and will be put differently by different people. Most game farmers and hunters, see themselves "as conservationist", wanting their "grand, grandchildren to be able to hunt bushbuck". Advocating that the sport of hunting is the only strategy to successfully preserve nature and wildlife in Africa (Swan et al., 2000). At the same time, eco-tourism is a concept combining tourism with environmental conservation and social development, conserving natural habitats and improving local well-being (Wood, 2002). It similarly advocates value to nature, although it appropriates it in a non-consumptive way. Both however require the 'adequate enclosure' of a population of animals on a designated territory. Labelled as game farms, wildlife ranches or private nature reserves, the requirement of an adequate enclosed property, does not mean just anybody can start game farming. Increasing in numbers in the Eastern Cape from the 1990s onwards, game farming has been considered a booming industry in the beginning of the 2000 (Sims-Castley, 2002, Smith and Wilson, 2002), but to be able to establish a game farm, one needs to invest in both land and money to convert your farm into an adequate and profitable game farm. Not everybody however, is able or willing to afford these initial investments as obstacles and risks can be high. Conventional pineapple or cattle farmers in the Bathurst area show an affection and little twinkle in their eyes when asked about having their own game farm, but the time between the first idea of starting your own game farm and the first introductions of game species on your land may take several years of saving, planning and waiting.

Game farms are however only legal and official when the farmer has received his certificate of adequate enclosure (CAE) (Province of the Eastern Cape). This means that the landowner has to put up a game fence, adequately enclosing the game species living on his land of which he, when approved, has the legal ownership. The certificate of adequate enclosure is a result of a change in wildlife landowner relationship after the Game Theft Act of 1991 (Republic of South Africa, 1991). Landowners now legally own wildlife on their lands before it has been shot, as was not earlier the case with *res nullius* (Carruthers, 2008). Articulated within the rights and conditions of the Certificate of Adequate Enclosure:

"A CAE permits a landowner, any full-time employee under the authority of the landowner and any other person in possession of a relevant permit/license acting with the written permission of the owner to at any time by means other than fire or poison to hunt such protected wild animals as specified therein; permits a landowner, or person under his/her authority as mentioned above, to: sell or donate any animal which has been captured or the carcass of such animal" (Province of the Eastern Cape).

Once enclosed on the private property of the landowner and listed to the CAE, living wildlife has thus become private property. As a consequence, this has diversified into a freedom to develop your own type of properties, management strategies and activities to use 'your wildlife'. Although we are familiar with the main activities undertaken in the game industry like hunting, eco-tourism and meat production (Niekerk, 2006), this freedom has resulted in a complex mix of farms having separate hunting and photographic safari sections, trophy hunters providing local game meat production or cattle walking next zebra and blesbok that are changing social interactions and biophysical properties on the countryside. An enclosed area is further very relative, different animal species require different types of fencing forcing landowners to decide a priori what kind of species they want to keep on his/her property. The prerequisite that one needs to keep ones animals enclosed in a particular area, leads to an administrative classification of animals (Snijders, 2012). According to their behaviour of being a 'jumper' or a 'duiker', their size and relative threat or ability to be dangerous to people, different animals require different types of fencing. Big, jumping animals like a kudu or an eland require a high, 2.4 meter fence. Smaller animals like a duiker or a grysbok require a 1,4 meter and an additional netting fence, preventing them from escaping under the fence (Province of the Eastern Cape). Dangerous animals, like lions, elephants or rhinos require a further, special permit to enclose and Threatened or Protected species (TOPS) require an additional permit 'to use' after the Biodiversity Act 10 of 2004 (Province of the Eastern Cape, 2007).

2.5 Different organizational structures

Enclosing your farm is however not the only way to engage in wildlife management. Active wildlife management and conservation on private lands has also diversified into cooperation's of multiple landowners and governmental partnerships aiming to voluntarily manage natural resources in an environmentally friendly way (Downsborough et al., 2011). Not obliged to enclose their property with an adequate game fence, but also not having full, individual ownership of the wildlife present, these categories of private landowners have formed a cooperation to manage their land collectively (Figure 4). They are defined as conservancies: "a group of neighbouring, mixed farms that, under auspices of the provincial conservation authority, that is managed according a single management plan and has a strong conservation ethic" (Smith and Wilson, 2002, 3). Conservancies are however a broad category, as the only qualification to be met is a cooperation of landowners who join their management planning to achieve a common goal. Other definitions lack the prerequisite of mixed farmers and properties may range from a few thousand to ninety thousand hectares (Downsborough et al., 2011, Smith and Wilson, 2002). The field of wildlife management by private landowners can thus be classified according to different characteristics. Size, utilisation and type of organisation can be determined as the major dimensions, while number and types of species, geographical location, time of land use change and degree of land use change are minor, but equally important when looking at a specific case. Smith and Wilson (2002) extended the quantitative data of these dimensions on the spread of private wildlife management in the Easter Cape. Although their study only contains a fraction of the total amount of game farms in the Eastern Cape around that time when compared to exempted numbers of farms, its diversification of classification gives us more insight into the variety of wildlife management in the Eastern Cape, managing to list a total of 75 private enterprises involved in wildlife management and to structure them according to their characteristics.

The lack of strict management goals and regulations on conservation has also led to the presence of multiple reasons for their establishment. A conservancy in the Bathurst community consist of mixed game and cattle farms, in which each farmer keeps his own cattle separate by cattle fences, but game is managed corporately and is only limited in its movement by an adequate game fence enclosing the total conservancy property. Enclosed game makes it the conservancy's property and allows them to hunt species outside their hunting seasons. In this conservancy, farmers divide their game for local biltong or venison production, but also invite or ask neighbouring farmers to shoot an animal, who may then receive a piece of meat of the animal in return. Hunting incentives and an increase land security when being documented as a conservation area are thus playing a strategic role in the decision of creating a conservancy as well. To further show the diversity of conservancies, a piece of land on

the other side of the same town is not enclosed by a proper game fence and no game species were introduced. Instead, landowners aim to restore the original thicket vegetation by clearing out alien vegetation and allowing indigenous plant species to return. This former farm land was bought by group of 5 stakeholders who divided the land into different portions, owners of the portions have changed during the years, but the management and aim has remained the same, using the 'farm' for recreational purposes by restoring the landscape as it was before agricultural degradation and transformation practices.



Figure 3: Game mixed with cattle on a conservancy close to the game farm.

After a passive approach in the wildlife industry during its early developments in the 80s and 90s, governmental legislation and organisations are trying to get more involved with the way private landowners manage the wildlife and nature on their properties. The game theft act of 1991 was a first, legal change giving landowners the opportunity to have full ownership of the wildlife on their land. The total freedom of choices and decisions of total ownership has however also led to overstocking and the introduction exotic and non-indigenous species, degrading instead of improving local biodiversity when managed in a bad way (Kerley et al., 1999). Trying to give more guidelines into the type of management appropriate for managing wildlife on a farm, conservancies, which are a governmental initiative, can be viewed as an effort to have farmers creating larger areas for wildlife and nature management and steering its management in an environmentally friendly way. The two examples described above however, show that local people can pick up a similar idea differently, having different motivations and enacting the idea of a conservancy in a different way. To foster more environmentally management of private land, the 'para-statal' Eastern Cape Parks (ECparks) organisation involves private or communal landowners into stewardship programs in partnership with ECparks (Figure 4) (Jackelman et al., 2007 (1st draft for external review), Eastern Cape Parks, 2009). This, less formal or open government organisation, has been shown to be more favourable by local farmers compared to district or provincial government programs (Cumming, 2007). By "securing

biodiversity assets of both immediate and long term value through voluntary agreements” (Steyn), engaging landowners either set aside a part of their land for total nature conservation or decide to use their land in a sustainable matter. ECP provides landowners with four options, each containing different levels “to support and encourage you (the landowner) in your responsibility of managing and protecting natural assets that are in your care” (Steyn). Option one, a conservation area, in which the landowner wants to keep “the natural systems on their land” (Steyn). This partnership contains “very few” restrictions but the area needs “to maintain its natural character” and “an alien invasive plant clearing plan” has to be in place (Steyn). In return, landowners receive advice and support through “basic extension services and guidance” (Steyn). This ‘lowest’ level of partnership can be used as a way to enter the stewardship program, stepping through the subsequent levels of partnership until the ‘highest’ level of conservation as a nature reserve has been reached. Conservation area of level one is thus not a goal of ECP, which often aims to get farmers into higher levels of partnerships and encourages every landowner to form a level four, nature reserve at a certain stage. Joining in such a partnership then legally declares the land into a nature reserve, agreeing to manage the land “according to the norms and standards laid down for nature reserves”, not just preserving but actively stimulating by restrictions or stimulation of certain types of land use during a minimum of 30 years. Important however is if your piece of land is able to qualify for higher level of partnership in a protected environment or nature reserve. Land has to contain “critically important species, habitats and sufficiently large to be self-contained ecosystems” (Steyn). Forming a nature reserve is thus not a priori possible for every farmer and as the project aims to protect “80% of the land that has important biodiversity value” (Steyn) that is not yet incorporated into formally protected areas, active searching, identifying and approaching farmers in these biodiversity hotspots areas is prioritized.

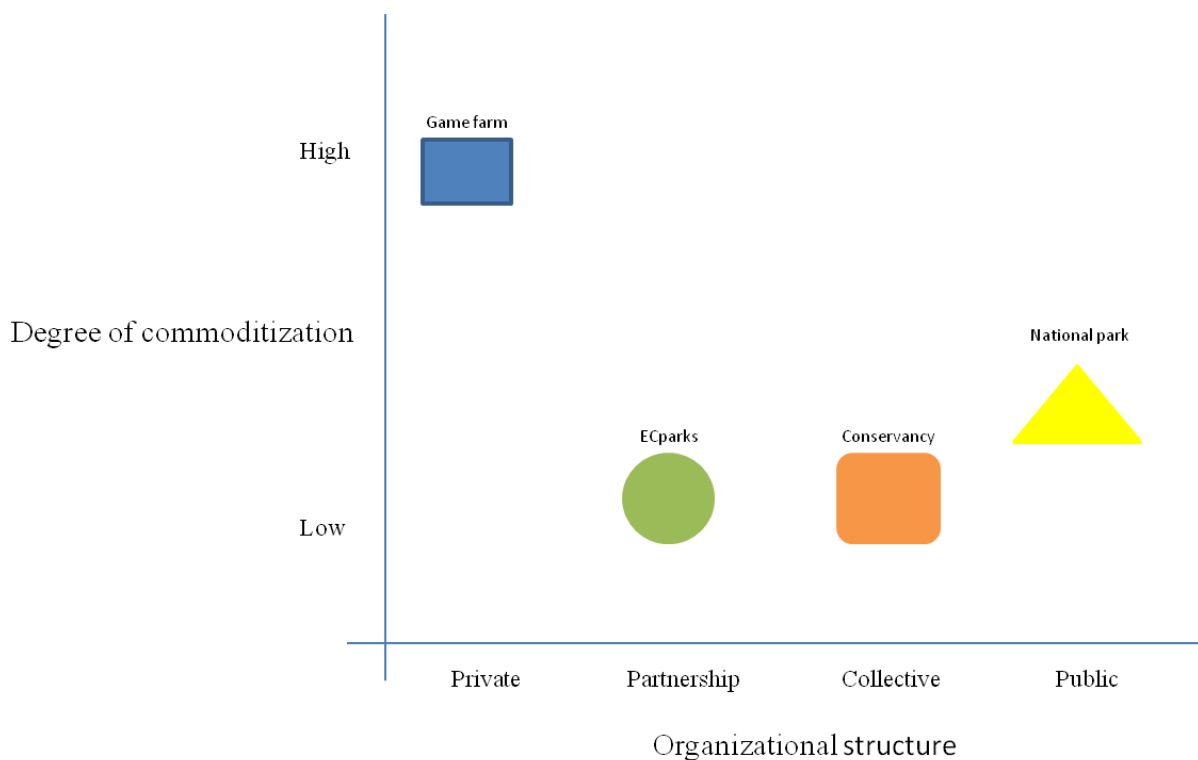


Figure 4: Diagram illustrating different outcomes of co-production during nature conservation in the Eastern Cape in relation to their organizational structure and degree of commoditization.

3 A game farm in thicket

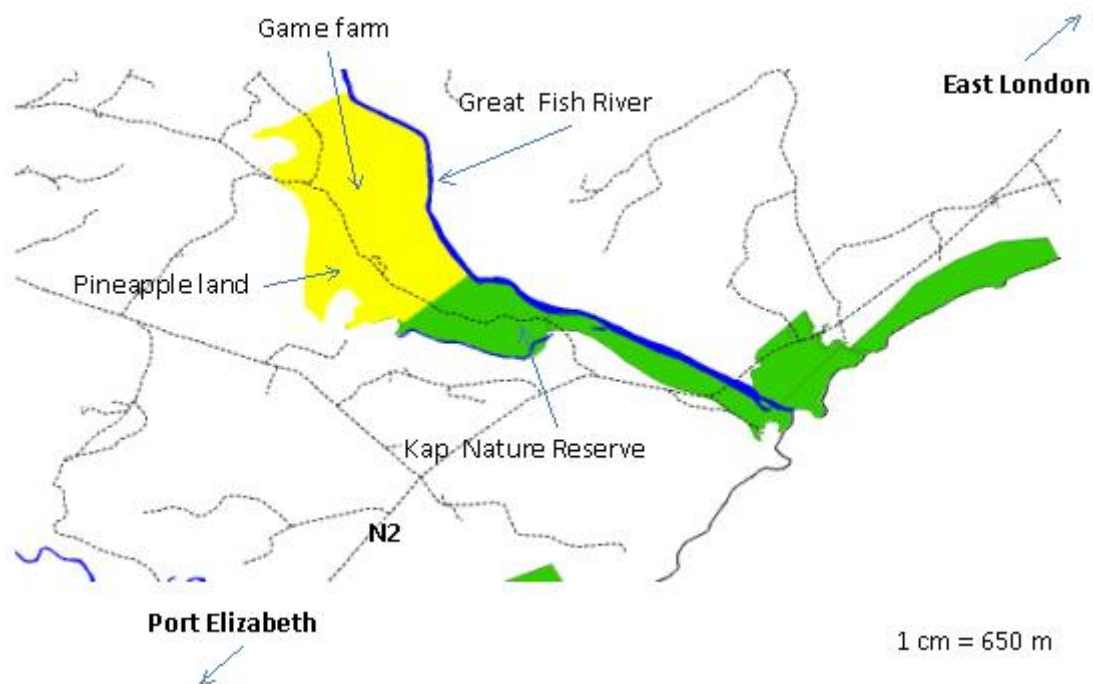
The previous chapter has introduced wildlife management in the Eastern Cape as a diverse and variable practice. Analysed as spaces constructed through co-production, Figure 4 compares different expressions by plotting them according to two main characteristics. To get a more comprehensive understanding of the construction of spaces, this chapter focuses on the particular case of game farming from Figure 4. Game farming seems a paradoxical, contradictory concept. It is containing two concepts that one would find impossible to bring together, as they indicate each other's opposite. Game is defined as wild animals, supposing living free and outside of the direct control of humans. It only contains those animals that 'know how to play the game' of the hunt and the sport of hunting them contains "a freedom from a constricting western lifestyle" (Anderson, 1888, 3) that was found in the "savage loneliness" of Africa (Harris, 1840, 62). A farm however, entails the direct influence and management of natural resources, be they plants or animals, in interaction with humans (Renting and Van Der Ploeg, 2001). Aiming to understand this paradox, this chapter analyses the social and biophysical properties interacting and changing spaces around game farming in the Eastern Cape and how game farmers derive an income from conservation practices on their land.

3.1 Case study site

Crossing the boundaries of farms of two brothers, the game farm is located on former pineapple and cattle land at the mouth of the Great Fish River in the Eastern Cape Province (Map 1 and Map 2). Its 600 hectares contain a variable and hilly landscape with steep hills, valleys and small plateaus and a stretched area along the banks of the Great Fish River. The history of former land use is still visible in the game farm landscape today, as the original thicket vegetation has been partly degraded by cattle grazing and former pineapple lands on top of the plateaus now constitute open, grassland vegetation contrary to the densely vegetated thicket on the uncultivated hills and valleys. Established on the north eastern part of the total farm area, the game farm lies between the Great Fish River at the bottom and the main road crossing the farm at the top of the major plateau. It borders the small municipal Kap River nature reserve in the east and a neighbouring cattle farm in the west. Although the game farm constitutes an important part of the total farm area, the major share of the farms territory is in use as pineapple land and managed and owned by the youngest brother. The current location of the game farm is therefore a strategically chosen trade-off between having to fence as less meters as possible and to give up as less pineapple lands, locating most of the game farm on still arable, not transformed land and making use of the already existing game fence of the Kap River reserve.



Map 1: Locality map illustrating the location of the game farm in South Africa.



Map 2: Study area map showing the case study site.

3.2 Game farm neighbors

Although enclosed and fenced off by proper game fences and shields signalling ‘Danger, wild animals’, the game farm is not an isolate piece of land without any interactions with its neighbours. As described before, game fences are only properly enclosed to a limited amount of animal species. Depending on the types of species the farmer considers important to own, it leaves other species able to cross the game fence and enter or exit the game farm as they please. Similarly people, although legally trespassing and poaching when entering and taking out animals from the farm, can see the establishment of a game farm and the sudden arrival of game as a new resource and strategy for their livelihoods. Hunting for bush meat is common in Southern Africa and enclosing areas with fencing does not stop people from putting, snares or hunting with dogs on fenced of game farms or nature reserves (Hayward, 2009). A study into bush meat hunting in the Eastern Cape by Hayward (2009), reveals that people do not only hunt because they are poor. Although one of the poorest regions in South Africa, most communities in Haywards South African study area own cattle or livestock and it are often the ‘relatively wealthy city dwellers’ who are seeking reminders of their traditional lifestyles in hunting for bush meat (Hayward, 2009). Local communities could however also see their cattle and livestock as a form of capital or insurance, not using it for a relative expensive protein source, when a much cheaper source is at hand next door. Together with an urban bush meat demand for its taste, it creates a market and trade which has gained a new influx with the arising of nature reserves and game farms. The game farmer as well as the adjacent municipal nature reserve manager says they sometimes have to cope with animal losses due to “poachers” entering from the other side of the Great Fish River, the former Ciskei homelands and home to rural communities with cattle like those in the former Haywards (2009) study region. Hunting for bush meat on the game farm or nature reserve is thus a joint problem for the nature reserve and the game farm, who has a staff member patrolling for snares and fence damage daily or may temporally rely on a ‘natural guard’ when a group of hippos is spending some time in the river.

3.3 Local people around the game farm

Other game farm neighbors are actually living and/or working on the farm. Although unable to enter the game farm, its establishment and functioning does affect their livelihoods. A much used argument for the development and further growth of the wildlife industry is its employment potential (Sims-Castley, 2002). It is true that especially private game reserves focused on eco-tourism create a new type of employment in the area (Sims-Castley, 2002). On the case study game farm however; only two men are involved with hunting of lynx, trekking trophy animals for clients and patrolling the fence. Professional Hunters or hunting outfitters further bring a staff member to skin and take care of the animal and the taxidermist employs various teams of skilled people who work in different stages of mounting an animal. These workers seem motivated and enjoying their job, receiving bonuses from visiting hunters providing them with better means to support their families than the ordinary 'pineapple picker'. These jobs are however only available for people trained in the skills of tracking and skinning game, just like luxury eco-tourism lodges require employees trained in tourism and the hotel and catering business. The wildlife industry thus requires different type of skills and in the case of a hunting game farm, also requires less workers than a conventional cattle or pineapple farm. Increasing employment in other areas and sectors, it increases unemployment among unskilled farm workers on the countryside, not only taking away their jobs, but also access to sites that could be valued and attached with a spiritual or religious places located within the game farm (Luck and Vena, 2003). Transforming pineapple lands into game farms, economic progress for some, is making previous livelihoods not viable anymore. At the same time farmers are indicating that turning into game farming is partly motivated by labor issues and problems with their employees. The local taxidermy owner, also a game farmer, tells me that "99% of the game farmers he knows", switched into game farming because of such problems. Compared to pineapple farming, switching to game farming reduces the amount of employees you need from 15 unskilled pineapple pickers, to 1 or 2 trained game trekkers and skinners who 'know what to do', saving not only money on wages, but troubles as well.

3.4 Game farm establishment and development

A game farm needs, just like an ordinary farm, to be productive or, in some way or another, to be able to generate its own income. Starting in the beginning of the 2000s, the game farm was established for international trophy hunters to 'buy' a trophy bull and hunt it on the farm. Economic attractiveness of game farming, especially around the booming of the hunting and game breeding industry at the end of the 1990s, are an important motivation, but turning into game farming is more than just a change in land use driven by money as it is often portrayed by booming financial figures in reports (Sims-Castley, 2002). Land rights issues, loss of agricultural subsidies as well as the issues around labor as described above are playing an important role at the background influencing farmers decisions (Carruthers, 2008). A passion for game, the hunting tradition and living on the countryside are the further factors that can shape the dream of an initial game farm long before its actual establishment that had to be postponed "due to lack of investment" at the time. A passion that is shared by visiting farmers, who say they "would like to start a game farm as well, but lack the financial capital to make the investment. As a realization of a long term project, the game farmer continues to shape and adapt his game farm accordingly. Although the game farmer introduced as much game as possible in the beginning, it takes time for populations and trophy bulls to establish. Ostriches were introduced later, "just to have something different" and other animals have disappeared or had to be taken off the farm. Eland for example, died of disease and wildebeest had to be shot as they infected neighboring cattle. Genetic variants like black impala or golden wildebeest, ironically categorized by the farmer as 'funnies', are not present on the game farm, although these subspecies seem to be 'hot' in game auctions advertisements (Wild & Jag, 2012, South African Hunter, 2012). Other animals, like the rhino are still part of a long term dream of the game farmer, which might never be introduced because of its costs and the long term of its investment.

Both owners have followed a professional hunter (PH) education and although they do not actively practice as a PH guiding clients, the hunter skills and knowledge has their personal interest and is of importance when managing a hunting game farm. International hunting is however dependent on tourism, a flexible and unpredictable industry dependant on economic situations overseas. The

economic crises in America and Europe decreased the numbers of hunters visiting the game farm, as both the game farmer and the local taxidermy owner are noticing that overseas clients are “coming down less”. It thus remains questionable if contemporary economic figures of trophy hunting and eco-tourism are still as positive as they were 10 years ago (Sims-Castley, 2002). Absorbing this unpredictable lack of income, the game farm diversified its activities by the intensive breeding of buffaloes and Sable antelopes two years ago. Intensive breeding of wildlife has become a lucrative business with breeding animals being auctioned for further breeding and sold to and from both private game farms and national parks (Bothma and Rooyen, 2005). Financial investment is thus needed throughout the game farm to enrich, expand or diversify.

3.5 Game farm management

The thicket biome

The landscape on the game farm consisted out of transformed pineapple lands and partly degraded thicket vegetation used for cattle grazing. Detailed botanical and environmental studies in combination with GIS mapping techniques put the game farm area into the subtropical thicket vegetation biome, a geographical area in which vegetation shares specific characteristics, clearly distinct from other areas (Vlok et al., 2003, Cowling and Hilton-Taylor, 1997). Eastern Cape subtropical thicket is considered a transition zone between subtropical forest, Karoo, Fynbos and grassland vegetation. It is a complex biome, with still debated boundaries and multiple subtypes, reflecting a variable and unpredictable climate of average yearly rainfalls varying between 200 mm and 2000 mm and subtropical and steppe temperatures (Kerley et al., 1995). Its origin and classification have been subject to debate in botanical sciences during the past 50 years. Recently, its subtypes and characteristics have been re-described, re-categorized and mapped as part of the Subtropical Thicket Ecosystem Planning (STEP) project in 2001. Identifying its “biodiversity features, including lands classes, as targets for systematic conservation planning” (Vlok et al., 2003, 29), aiming to better protect the diverse and endemic species living in thicket (Vlok et al.).

Of the recently 112 subtypes described, the game farm contains two subtypes located in the Fish biogeographical region along the Great Fish River. Fish valley thicket subtype dominates the majority of the game farm, covering the slopes of the hills, valleys and lower banks of the great fish river. Its vegetation structure has been severely or moderately degraded in some areas, but seems to be more intact or as the farmer says: “virgin thicket”, in other areas. Fish valley thicket is an example of a new subtype distinguished by Vlok et al. (2003) and earlier consisted of the more general Valley subtype. Valley thicket is characterised by dense, impenetrable, vegetation in the deep incised river valleys with well drained and fertile soils. It's vegetation species grow in diverse ways and include succulents, evergreen plants and grasses creating an ecosystem with low affection from drought or hot temperatures (Kerley et al., 1999). Above the well-drained and fertile soils of the river valleys, the highest part of the game farm, located along its western border along the main road, has been categorized into Crossroads grassland thicket, a mix of thicket with grassland vegetation types (Vlok et al., 2003).

The STEP conservation project aims to map thicket diversity and associated flora and fauna biodiversity in a GIS database to more effectively develop conservation strategies for protection against further degradation or loss. Identifying those areas which are worth or have the potential to be conserved (Boshoff and Wilson, 2004). Processes of thicket transformation and degradation are associated with the arrival of colonial pastoralist 200 years ago and the subsequent disappearing of mega-herbivores like elephant, rhino or buffalo passing through these areas (Kerley et al., 1995). Mega herbivores are believed to have played an important role in the thicket ecosystem, dispersing seeds and creating open spaces for new plant development. The other way around, evergreen thicket provided these animals and other herbivores with a continuous source of food, hence the rich biodiversity in both herbivores and predators.

Managing a landscape

Farmers farming in the area today, are the descendants of the 1820 British settlers arriving in the beginning of the 19th century as the British government provided them with ‘empty’, arable land that could be turned into agriculture or used for goat and cattle grazing. Creating at the same time a buffer zone to defend the colony from the adjacent Xhosa tribes on the other side of the Great Fish River (Lester, 1997, Brunger, 2003). As a result, agriculture, goat and cattle farming has been the dominant land use since, slowly transforming the landscape (Figure 5) . Especially the free roaming of goats and cattle is associated with significant changes in thicket vegetation structures and landscape transformations and are still considered problematic today. Famously demonstrated with fence line contrasts and umbrella shaped trees in goat degraded areas and the arrival of alien invasive species which are now targeted by alien eradication programs in conservation areas or environmentally friendly management (Kerley et al., 1995, Lechmere-Oertel et al., 2005). Alien invasive vegetation can also be problematic on the game farm, as some can be poisonous for game as well. The game farmer has targeted this plant species with herbicides one time, but “when neighbours are not eradicating this Inkberry plant species as well”, seed dispersal by birds is making management in vain. The game farmer felt isolated and stopped eradicating invasive species, arguing that it is a public problem and therefore “the responsibility of the state” to control it.



Figure 5: Former pineapple land on the game farm landscape



Figure 6: Contemporary game farm landscape with communal agricultural land in the distance on the other side of the river.

Involved in cattle and pineapple farming since several generations, the game farm family has been turning geological suitable land into pineapples lands and letting cattle graze on the remaining hills, riverbeds and grassland plateaus (Figure 6). The creation of a game farm, can thus be considered to be a major land use change in the area since several decades. The history of the former land use is however still visible in the landscape. Pineapple plants are often left in the ground and open patches in the thicket vegetation reveal the earlier presence of cattle grazing. The transformation of thicket into pineapple lands has also resulted in open areas on the former pineapple lands on the tops and less steeper hills of the plateaus, now slowly turning into grassland and low growing bushes. These open places, situated in Crossroads grassland thicket, but also stretching deep into valley bush ticket subtype, are now ideal hunting places and used by the game farmer to guide his clients on the farm and monitor game populations. Certain animal species, especially trophy species such as Nyala or Impala also use the areas to graze on the fresh green grass, making it easy to find them and providing a clear view to take a shot. These open areas are thus an important part of the game farm landscape, functioning as the place where animals and humans meet and interact by management or hunting activities. The grassland character of this area is however actively maintained. The regular cutting of bushes, giving grass a chance to grow, is performed on the youngest brother part of the game farm (Figure 7). The older brother sees it as a waste of time, but similarly stresses the importance of an open view to be able to spot game and acknowledges that he will have to clear out the bushes once it is growing too dense. Situated top of the hills, these grasslands have a wide view on the surrounding farms, river and ocean, which is an appreciated scenery for both farmer and visiting hunter. The lower and hilly areas of the game farm, still densely covered with valley thicket, create a diverse vegetation landscape of very open and very densely grown vegetation. A diversity that is appreciated by both the farmer living in this landscape and the hunters visiting the farm. Thicket vegetation not used earlier has thus gained an aesthetical value creating an attractive surrounding for hunters to shoot their trophy, adding in an ‘true hunting experience’.



Figure 7: Mowing practices inside the game farm to keep an open landscape on the plateau.

(Re)introducing animals

Most game farms are located on former agricultural land. Land that earlier required the active eradication of wild animals, is now actively used to (re)introduce wild animal species. Former farmlands were however not empty. The hilly geology limited farmers in the amount of land available for agriculture and left patches of bushes free for wildlife and vegetation. Especially the impenetrability of the valley thicket vegetation gave antelope species and other smaller mammals a chance to survive the intensive hunting during the 19th century, while eradicating mega herbivores such as rhino or elephant (Kerley et al., 1999). Hunting of damaging ‘vermin’ species such as bush pig, vervet monkeys or caracals as well as traditional bushbuck hunting during hunting seasons already took place on these farmlands before the establishment of the game farm. Enclosing a specific area and addressing an international market focused on the hunting of trophy animals, requires however the (re)introduction of more and different species. Game farm trophy species on the farm now include impala, waterbuck, zebra, kudu and nyala. After their introduction on the game farm, population numbers have been increasing and remain to require an active management and intervention by the game farmer. To prevent overstocking, vegetation degradation, competition and genetic inbreeding, the farmer shoots, captures or brings in new genetic variants to keep his game farm healthy. This type of management is also promoted in game farm and hunting magazines, trying to restore or mimic the natural processes or genetic interchange by movement, population control by predators and resting of land by changing the areas where animals are allowed to walk (Fourie, 2012). For every game farm it goes however, that the smaller your farm is, the more intensive you will have to monitor and manage it.

3.6 Categorizing animals

Depending on the background knowledge one uses, the animals on the game farm can be divided into different categories. Bushbuck and Kudu are classified as indigenous species according to an animal-ecology perspective (Skinner and Chimimba, 2005). They are categorized as being native to the area and its original vegetation biome, not causing any degradation when occurring in an equilibrium state with their environment. Impala and nyala are however not considered indigenous to the coastal areas of the Eastern cape (Skinner and Chimimba, 2005). Their transportation from more northern, savanna or dry thicket vegetation biomes gives them a different diet and behavior, disturbing the equilibrium state of the original ecosystem on the game farm (Kerley et al., 1999). Their presence can also influence the movement and feeding behavior of indigenous species, as they are now 'forced' to live in the same habitat with new species. Nyala is however a popular and expensive trophy animal according to the game farmer and therefore an important asset on the farm. The game farmer 'knows' every nyala bull, recognizing him by the shape and size of his horns, regularly checking the numbers and activity of his female herds and development of young bulls. An activity he performs less with his herd of impala, who are ten times less worth as a nyala and not as popular, only checking if their numbers are not exceeding and they start competing with available food with the other animals.

The game farmer monitors and manages populations of the animal species that he owns, that is, the animal species that are documented on his CAE, are enclosed by the game fence and thus legally his property. The game farm contains however more species than only those listed on the certificate. Various mammal species, like a bushpig, warthog or blue duiker, are able pass through the fence and therefore not contained in the game farm area. Not actively introduced by the game farmer and already present for its establishment, these 'older' populations are now legally divided from the new arrived trophy animals. Being already present in the area and not belonging to private landowners, these animals have developed different relationships with farmers and are subject to different legal classifications. These animals apply to national legislations of damaging causing vermin or rare and scare endangered species listed as a TOPS (Province of the Eastern Cape, 2007). Their use and interaction with humans is fixed in legal documents giving farmers rights to shoot them anywhere at any time, only during hunting seasons or only after the application of special permit per individual animal (Province of the Eastern Cape, 2007). The arriving of international hunters, diversifying and enriching their trophy collections of exotic Africans species, has however given game farmers and hunting outfitters opportunities to also appropriate such animals in new ways. The consequences this has for animal classifications into formal and informal categories will be illustrated by describing two examples of animals which relationship to humans have changed which in turn have redefined their environmental properties at the same time.

Blue duiker

Blue duiker are southern Africa's smallest antelope species weighing about 4kg in mass and mature adults standing 30cm at shoulder height. Although widely spread throughout the western and central regions of the continent, in southern Africa, their distribution is limited to the coastal zones of the Eastern Cape and parts of Natal (Skinner and Chimimba, 2005). In relation to its limited distribution in this sub region, it has received a status of endangered animal and is therefore restricted in its use and interference by humans (Province of the Eastern Cape) . Difficult and seldom seen by humans in the thick bushes of their natural habitat, blue duiker are however quite common according to the game farmer who has been living next to these animals all his life. The game farmer tells me "he does not understand" why the blue duiker is on the endangered list. "It has been on there since I was a child. But there are plenty of them around here". Contesting ecological knowledge, he argues that "if they'd come and did research" they would find out that it is not as "scarce" as presented. Being listed as a TOPS species and being the smallest antelope species in this sub region, is making blue duiker a lucrative and expensive trophy animal for international hunters. Compared to the wider distributed duiker species, blue duiker is 10 times as expensive to hunt and its economic value is more than 10 times as much when compared to common duiker in the Eastern Cape (Niekerk, 2006, Eastcape and Karoo safaris). Obtaining legal ownership of the blue duiker, would require the game farm to adapt his game fence and introduce single animals to establish a stable population after which he would still

have to apply for a hunting permit per individual animal. Instead of making this expensive investment, the game farmer uses his knowledge of the animals behavior, as he knows the little, densely vegetated bushes where it hides and the best strategy to find it. Answering the demand for trophy blue duiker, he now receives trophy hunters and their outfitters who have obtained a blue duiker hunting permit earlier, saving him from costs and troubles. The game farmer takes the hunter to the best places to spot a blue duiker, on the edges of the thick bush of his hiding place, giving the hunter a chance to shoot the small antelope. Though not agreeing with its classification of endangered species, criticizing legislation and science to not take an effort into studying what is happening on his farm, he actually does “not mind” it, because it increases the value of the trophy, making more money out of it. This makes blue duiker an endangered species and trophy animal at the same time, although it has never been actively introduced and intended to become one in the first place.

Lynx

Another popular hunted species is the caracal, rooikat or lynx as it is more often named by farmers and hunters. Lynx, as well as jackal, have a long relationship as damage causing animals with farmers and are legally classified as 'vermin' (Skinner and Chimimba, 2005, Els, 2012b). First as a killer of sheep and young cattle, the establishment of game farms has turned lynx' natural prey into a farming resource and thus continues the conflict between farmer and predator. The game farmer noticed “an increase in antelope numbers” after he started hunting lynx. Their dependence on the numbers of game and the ability that young calves can develop into trophy animals, make predator control an important activity of game farming. Every morning two packs of hunting dog, specially trained to only hunt lynx, and two staff members patrol the game farm and surroundings in search of lynx. As a lynx is officially categorized as a vermin species, farmers are allowed to shoot them anywhere and anytime (Province of the Eastern Cape, 2012). Due to its history as a livestock predator, and still perceived as “threat to their livestock” (Els, 2012b, 31), the history of lynx hunting in the area has often resulted in a negative association with lynx presence, making neighboring farmers reluctant and happy to have specialized lynx hunters to hunt lynx on their property. Like blue duiker, lynx are a shy and seldom seen animals. Although widely distributed throughout the whole of southern Africa (Skinner and Chimimba, 2005), its nocturnal activity and not abandoning and returning to a kill, ignoring put out bait, make it a very difficult animal to spot or hunt. Its instinctive reaction to flee up a tree where it feels naturally safe when threatened, make dogs chasing and shooting the animal from a tree the best possible manner to hunt lynx (Els, 2012b). Once tracked and ‘treed’ by a pack of hunting dogs, it gives an almost guarantee to shoot a lynx. Making it more suitable as a trophy species than the fleeing jackal, another common vermin species on the farm, which requires a good shot as it runs for many kilometers when chased. Although still classified and hunted as a vermin species, the emergence of the international trophy hunting has given lynx hunting a new meaning (Figure 8). When a lynx is tracked and hunted up a tree by a pack of dogs, the staff members contacts the game farm over the radio, who will call his contact in town to check if there is a potential client in the neighborhood interested in shooting a trophy lynx. Depending if a client is able to come, a lynx can be hunted as a vermin species in the morning, but shot as a trophy in the afternoon.



Figure 8: Trophy lynx after a successful hunt

Because of its historical relationship with humans, a trophy lynx still remains a vermin lynx for a farmer. The new market that has been developing around lynx hunting raises questions on its effect on the population, the animals behavior and its conservation. Some professional hunters have even specialized on lynx hunting, guiding trophy hunters or controlling lynx on different farms to allow to protect both game and livestock (Els, 2012b). As a result, antelope species are now widespread on these farms and used for trophy hunts. Even the rare oribi is more abundant on some cattle farms than they are in a local nature reserves. A local farmer told me he does not believe they “will ever exterminate the lynx” as there are “still sufficient areas where they are not hunted and can retreat”. Although prosecuted by both management and trophy hunting, “they always seem to get the upper hand” (Els, 2012b, 31). The effect of predator eradication programs and prosecution by intensive hunting on lynx populations or behavior, remains unknown. Conservationist like the neighboring Kap reserve disagree with the lynx hunting and argue that lynx and jackal are needed to prevent “other vermin to take over” and balance the ecosystems food chain. An awareness and knowledge that is shared by a trophy hunter journalist who describes their “important role in the ecosystem” to prevent other problems species like mice and rats to “spiral out of control and impact on the food consumed by most herbivores” (Els, 2012b, 33). Although the perception of lynx by both game and sheep farmers is understandable, “we should be careful not to do the same as what happened with the lynx or wolf in Europe” as an originally German farmer said in a discussion with his neighbor. He further argued that richness and value of biodiversity is not yet fully appreciated by local farmers and as there still seems to be a division between “good and bad animals”.

3.7 Hunting

The hunter arrives full of anticipation and excitement, for the third time in South Africa, he is to shoot his first Lynx. Clamped in the back of the van between his hunting rifle and his wife, their hunting outfitter has been guiding them from the south of Namibia into South Africa moving east along the coast until the center of the Eastern Cape. Booked in advance, they are enjoying their hunting safari for a week, collecting new species to enrich his trophy room back home. The little group was called an hour ago. A Lynx had been “treed”. A local professional hunter drives the hunter and his associates to the farm. As they leave the main road, the landowner’s 4x4 takes over and guides them down a steep, dusty path, passing stubborn bulls and opening barbed wire cattle fences reaching the caracal’s spot as close as possible. Giving themselves away in the thicket bush by the sound of howling dogs and a farm staff-member holding his walkie-talkie. The last couple of meters are made on foot, through the bushy slopes on the hill. The hunter is guided to the tree, spotting the lynx lying on a branch he aims his rifle. As he shoots, the dogs dive down into the bushes, collecting the trophy for their trophy hunter. The hunter looks relieved, as if he finally did it. To my question what African animal is still on his list he answers: “a leopard”.

Hunting in the game farm area is a diverse practice. It can appoint to international clients, enriching their trophy rooms with exotic African species, an ordinary farmer protecting his crops from warthog or vervet monkey damage or a neighboring farmer who is asked to shoot some female kudu on a game farm to control the population. The history of trophy and recreational hunting in Africa can be traced back to the arrival of British sportsmen and early explorers and adventurers collecting exotic animals and bringing them back home to display (van Sittert, 2005, Carruthers, 2005, Murombedzi, 2003). Moving from colonial expeditions to collect huge amounts of animals or the need to hunt for subsistence, the practice of hunting eventually developed into ‘The Hunt’ at the end of the 19th century (Anderson and Grove, 1987a). Different than just ‘hunting’, ‘The Hunt’ although influenced by its preceding hunting, contains a moral dimension of sportsmanship, manliness and a domination over nature. Using specific material, conducting a certain hunting code and following a fixed pattern of tracking, positioning and taking trophy picture, the Hunt almost becomes articulated as a ritual (Anderson and Grove, 1987a). Associated with wealth and prestige, the mounting of trophies in the beginning of the previous century was legitimized on a scientific basis of natural history and taxonomy, creating a competition between different trophy hunters for trophy size that is still alive today. Contemporary hunting magazines always contain an article describing “Bosveld-liegendes” or “big game hunters of yesteryear” in their issues continue to display trophy pictures and hunting stories of modern trophy hunter throughout southern Africa and award systems still publish annual trophy lists (Wild & Jag, 2012). The game farm answers for the demand of oversea hunting clients, which has been taking the form of a developed touristic activity in South Africa since the 1970s (Niekerk, 2006). Coming to South Africa’s third largest hunting and game farming province to hunt in malaria free territory and chose from a diverse range of trophies, they are collecting species of the “tiny ten” (Els, 2012a, 39) (small antelopes of southern Africa, including: oribi, suni, klipspringer, damara dikdik, sharpes grysbok, cape grysbok, steenbok, natal red duiker, common duiker and blue duiker; of which the scarce blue duiker, the local cape bushbuck or the rare oribi are special to the Eastern Cape (Els, 2012a), but can also choose to hunt more ordinary game such as kudu, nyala or impala. Trophy hunters usually combine their hunting safaris with an additional few days of sightseeing or other touristic activities. Booking their hunting safaris in advance and usually in their home countries instead of the photographic safaris or other touristic activities which can also be booked on site. Game farms or hunting outfitters do not display their activities on local tourist information offices, instead, they travel to advertise on hunting shows in Europe and America, visiting the clients at their home, booking safaris to fill a new hunting season. Clients usually buy a ‘package’, booking to shoot several animals in a certain period of time, which the hunting outfitter will provide. The game farmer himself does not seek contact with clients. Professional hunters contact the game farmer, and are themselves in contact with clients or hunting outfitters visiting the area and knowing their trophy interest. Other professional hunters have their own game farms, but an informal network between landowners, game farmers, hunting outfitters and professional hunters exist to help clients find their trophy at the time they visit the area. A hunting client is therefore not restricted to hunt at a certain game farm or with certain

professional hunter. Only guided by his hunting outfitter, who also books his accommodation and meals, they can get a call for a lynx in the morning, and find conditions perfect for bushbuck to shoot in the afternoon. Trophy hunting is also not restricted to the enclosed area of a game farm. Certain trophy species are abundant and distributed outside the game farm. An ordinary cattle farm located between the town of Port Alfred and the Indian ocean, also contains Cape bushbuck and oribi. Local professional hunters are in contact with landowners and give them a share of the profit when they can let their clients hunt on their property. Thus also incorporating ordinary farmers in the hunting industry.

From trophy picture to a mounted animal

An important ritual after a trophy hunt is the trophy picture of the hunter and his trophy on the site of the kill. This elaborate process, includes photo-shoot from multiple angles, different positions and with diverse backgrounds. Taking a trophy picture is therefore a delicate process and receives special attention in PH courses and practical hunting guides (Swan et al., 2000). A trophy picture is therefore 'not just a dead animal, but a living memory', remembering the hunter of his experience of the hunt and time in the bush. After a picture, hunters are after the trophy, this contains the head and neck of an animal and its horns. In other cases, hunter chose to bring home the whole specimen, being positioned in active position to looking as realistic as possible. After the animals 'skinned' by a staff worker, the meat is sold to a local butcher or often given to PH staff or farmworkers, the skin and head go to the taxidermist. Here a team of skilled workers take care that each trophy gets the personal attention needed, and that both large and small animals are mounted with equal dedication. Restoring them to their former glory during a delicate, multi stage process which can take up to several months. When fully mounted, the trophies are carefully packed and prepared for shipping to the client. A process which requires as much consideration and planning as the mounting, to fill in all the documents and transport permit giving the place, date and way in which an animal was shot to make sure it was hunted legally and professionally.

Local hunting

Game farm hunting is not only restricted to trophy size bulls or international clients alone. Controlling game populations, recreational bushbuck hunting in winter season and vermin shooting is performed by various farmers in the farming community and contains elements of a long tradition of hunting in the area. Neighboring farmers are invited to shoot excessive kudu females or a blesbok population that is carrying diseases on game farms or conservancy estates. These farmers enjoy hunting as a recreational activity, not being able to pay the huge fees to enter the game farm as a client to shoot a kudu or nyala bull. Local hunters are often given a share of the meat for their service, processing it on their own farms in to biltong or venison. Allowing neighboring farmers or friends to cull some animals on their game farms, local farmers combine management culling with recreational, small scale biltong hunting. Although sometimes booking multiple days trophy hunting safaris in Namibia or Botswana, the switch into game farming has made recreational hunting possible throughout the year and, not being restricted to hunting seasons or permits and being able to shoot a whole new range of species that have been introduced.

3.8 Intensive wildlife breeding

In southern Africa, game farming or wildlife production stands for a sustainable consumptive or non-consumptive utilization of natural resources in harmony with the environment (Bothma and Rooyen, 2005). Eco-tourism or hunting are utilizing and producing wildlife benefits in an extensive way, keeping their game roaming 'free' on large pieces of land. Activities like safaris, wildlife photography or trophy hunting, aiming to give oversea visitors an 'African experience', meeting African wildlife close by in their natural habitat however, require the extensive management of these animals. The development and growth of this extensive wildlife industry has however diversified into an intensive wildlife breeding industry interacting with hunting game farms, national parks and private game reserves in a complex market of auctions, wildlife capturers and transporters and veterinarians to exchange wildlife. These farm activities show similarities between the ostrich domestication and attempts to domesticate buffaloes or eland in the 19th century. Animals of diverse wildlife species are kept in small enclosures to ensure permanent supervision and reach maximum control. The product produced is however no longer a skin, meat or feathers, it is an African experience as 'farmed' wildlife is introduced into private game reserves for hunting or safari purposes. A buffalo can thus be born as a 'domesticated' animal but die as a trophy on a hunting farm or of old age in a nature reserve, representing true African wilderness. The modern wildlife markets have thus given a new impulse for farmers to divert to intensive wildlife production, supplying the demand of extensive wildlife game farms and game reserves. Wildlife breeding, especially that of lucrative species, can thus be interpreted as a farm diversification within the game farm industry, shifting livelihood dependency away from only trophy clients and tourism. It remains to be seen however how sustainable and profitable these investments will turn out in the future, as warnings about 'game price bubbles' and a market where auctions prices are not based on utility value but on future expectations (Steinmann).

Sables and buffaloes on the game farm

Diversifying their game farm activities, game breeding provides a long term investment and no longer direct dependence on international hunters and economic situations oversea. Preferably, the game farmer would have liked to see "his buffalo and sable walking around freely with the other animals on the game farm". Using wildlife for breeding purposes requires however a stricter, more intensive means of production. Noxious plants, lynx and poachers forces the game farmer to keep the animals in smaller areas, being able to keep a better eye on them. Aiming to produce more, disease free and healthy buffaloes, a smaller place also allows him to regularly feed, check their health and additionally treat them with medicine or give them food supplementation. The breeding of buffaloes can be considered as a return of an extinct species in the game farm area (Figure 9). As an indigenous species to the coastal zone in the Eastern Cape area, it finds a suitable habitat between the thick bushes along the southern coast of South Africa (Skinner and Chimimba, 2005). Like elephants and rhinoceros, these mega herbivores have played a role in the construction of the thicket biome where they used to pass through these biomes (Kerley et al., 1995). In South Africa, 'wild' buffaloes now only occur in small populations in Addo and Kruger national park (Skinner and Chimimba, 2005). On private property however, their numbers are increasing with 8 to 12 % a year, reaching numbers of more than 30.000 buffaloes on 2.400 listed private estates that hold buffaloes (Pretorius, 2012). Buffaloes are very diverse in their morphological features and reveal a great difference in their sizes and shapes (Skinner and Chimimba, 2005, Bothma and Rooyen, 2005). The buffalo is however listed as one species by zoological taxonomy: *Syncerus caffer*, with two subspecies, *S.c. nanus*, the west African forest buffalo and *Sc. Caffer*, the savanna buffalo in east and southern Africa (Skinner and Chimimba, 2005). In buffalo trophy hunting and breeding, the Rowland ward records makes another, geographical distinction between the northern (east Africa) and southern (southern Africa) savanna buffalo (Bothma and Rooyen, 2005). In South Africa, the southern savanna buffalo is further sub divided into the 'Lowveld' or 'Kruger' buffalo, the KwaZulu Natal subpopulation and the Addo buffalo (Pretorius, 2012). These animals are not only divided according to their geographical distribution, but also according to the type of disease they might carry and their physical features which are important for trophy award measurements (Pretorius, 2012). Characterized by their relative smaller size and horns which curl back to the top of their heads, the mature Addo buffaloes on the game farm will give a

significant different trophy compared to east African or Kruger buffaloes, whose horns make a drop along their ears and grow towards the sides. Depending on what trophy measurement you aim to collect your trophy points, your trophy buffalo can be appointed a different trophy award or record. The American Safari Club International measures buffalo trophies in their total length, following the line of the horn from tip to tip. The Rowland Ward trophy system, continuation of trophy publications from the work of the British James Rowland Ward in the 19th century on the other hand determines trophy size by measuring the distance between the two tips of the horns (Gandy and Reilly, 2004). The existence of these two dominant trophy awards systems, creates a certain demand in buffalo characteristic which is expressed in hunting and breeding buffalo trophies. The other wildlife bred on the game farm, sable antelopes, are originally home to the northern savanna woodland vegetation in the north of the southern Africa sub region (Skinner and Chimimba, 2005). They are farmed in similar ways like the buffalo, although their plots are located on the higher, grassland sites of the game farm where they can graze. Like buffaloes, sable antelopes can reach mean financial values of several hundred thousand rands, with extreme auction prices for trophy animals reaching millions of rands. The intensive breeding of both sables and buffaloes is however focused on the breeding and selling of female animals. “Female calves are worth more than the bulls, for which I can only get a butchers price”. For a bull calf to develop into a valuable animal, its only chance is to reach its mature size at a reasonable trophy size of his head and horns.



Figure 9: Wild or domestic? Buffalo herd on the game farm

3.9 Modern game farming in its historical context

Modern game farming is often portrayed as a new phenomenon of a booming industry, motivated by attractive financial incentives and employment potential taking shape in the 1990s and early 2000s (Sims-Castley, 2002). Taking a closer look on contemporary game farming is revealing similarities and parallels with earlier wildlife utilizations. The intensive breeding of buffaloes and sables compares to earlier attempts and proposals for wildlife domestication in the 19th century. Their process of domestication is however no longer classified as such, for landowners already legally own every type of animal once they have it adequately enclosed on their property. Legally speaking, the game theft act of 1991 makes it easier for game farmers to breed diverse kind of species to their or the markets preference and still sell them as 'wild' animals. Wildlife is thus being farmed to become wild. This stresses another difference of wildlife management a century ago. The 19th century ostrich industry was an active pursuit of landowners to use the wildlife on their land for production purposes, while the modern game breeding industry could be considered a response to the growing demand of the extensive wildlife industry of hunting farms and game reserves. Starting as proposals and attempts to extensively produce meat, extensive wildlife farming evolved into hunting and tourism activities when only meat production was not as promising as envisioned (Carruthers, 2008). As the market and demand was growing, so did the numbers of game and game farms. A development that would be interesting to follow as current game auctions in South Africa advertise 'black impala' or 'golden gnu' and private game reserves make sure people can spot Big 5 on their estates or try to attract attention by having 'white lions' (Reeves-Williams, 2012). A quantitative analysis of a possible trend of moving towards more exotic and extraordinary animals falls out of the scope of this Thesis, but indications could be present in debates about the presence and breeding of genetic variants and rumors about game reserves buying herds of antelopes to 'feed' their lions, not to mention the presence of Bengal Tigers on Wild & Jag (2012) game auctions lists. This possible trends however can also be interpreted as subsequent bubbles where a new species or genetic variant are incorporated into the wildlife market until their demand is saturated (Theunissen, 2012). The lucrative business of buffalo or color variant breeding would only be contemporary and maybe make way for new animal like the rhino market if its trade in rhino horn would be legalized. A market one South African game farmers are already anticipating, as they are 'producing' rhinos and their horns in great numbers on their farms (Dewsbury, 2012).

Returning to the case study game farm and its hunting activities, van Sitters (2005) historical review of wildlife utilization in the Cape indicates that already in the 19th century landowners made use of the demand to hunt game on their estates by urban sportsmen. Even earlier however, colonial hunters had to pay a permit in the form of gifts and presents to obtain permission to hunt on the territory of native Kings (Mason, 1987, MacKenzie, 1988) and gave them a short term asset to control European advance. Niekerk (2006) remark that paying for hunting only started at the 1970s it thus only partly correct as it only indicated the start of a worldwide industry attracting clients from all over the world to experience a similar African hunting experience as did the early African adventurous. Contemporary trophy hunters buy, enjoy and reproduce this African hunting experience in similar ways as their colonial predecessors. Hunting stories of colonial hunters fascinated the public back home as do the trophy pictures, hunting websites and magazines of the modern hunting market today. A market that runs parallel to the wilderness and nature documentaries, programs and books of the eco-tourism industry that broadcast African wildlife as a world heritage (Carruthers, 2008). Semantics about hunting have changed considerably however, as killing for mere fun as it was practiced in the 19th century is practically impossible and morally unacceptable by society (Carruthers, 2008). These feelings already changed around the turn of the 20th century, as the expansion of the British colony and growth of its population disapproved the massive killing and extinctions of the once numerous herds of game, perceiving game as a "precious inheritance to the empire" (Buxton, 1902, 116). This change has taken shape with hunting ethics, 'clean shots' and the 'humane' killing of an animal during a hunt in contemporary hunting literature. A process hunters take high appeal of and consider important to tell, or defend, as their practices are still regarded as controversial among the non-hunting public in society (Swan et al., 2000). Compared to the beginning of the previous centuries, international trophy hunters, clients or tourists are species collectors. An ambition that could be considered a derivative of recreational hunting's association with natural history and taxonomy at the beginning of the 20th

century. They return to the southern African sub region to enrich their trophy collections as they learn more about the regions smaller and less famous species. A local professional hunter (PH) says he is “displaying smaller antelope species at his home, showing visiting hunters their beauty”. Trophy hunters also wanting to extend their collections with caracals and leopards or even jackals, are giving landowners a new opportunity to get a value out of ‘vermin’ compared to the bounty markets in the previous centuries. Where trophy animals in the 1900s were distinctively classified as game, modern trophy animals include both these older game and vermin species like the lynx, jackal, lion or leopard. Some of which have received an endangered status today, while others remain to be listed as vermin.

Instead of killing for mere fun, modern hunters, local as well as international, see hunting as the only viable way to conserve African wildlife. This is a discourse which was already present in the lobbying for game laws and the struggles between 19th century rural landowners and subsistence hunters. Recreational hunting puts an economic value on wild animals, giving them an tangible value. The statistics around numbers of game support the hunters argument that a regulated and sustainable hunting system increases animal numbers and stimulates wildlife conservation. Banning legal hunting on the contrary, led to a decrease in species numbers as is represented in the game statistics from Kenya after the banning of legal hunting 30 years ago (Akama, 2008). These clear figures would have to speak for themselves. Making a benefit out of wildlife is however not as simple and clear as presented. Although often portrayed and described as such, wildlife, or even game, is not a single commodity. It is a diverse concept, producing exclusive spaces where only some social actors are appropriating animal species with a specific character and value. Activities and management practices on the game farm already presented a bias in the conservation of wildlife by the modern wildlife industry. Introductions and breeding programs are focused on valuable animals whereas vermin species are still hunted outside the close up regulatory system of introductions and breeding programs. Although many former vermin species, especially predators, are now incorporated in the modern hunting industry and its conservation activities, a game farming continuous some historical human wildlife relationships dividing wildlife into good and bad animals as the example of lynx hunting shows us. At the same time, the difference in market value between trophy species throughout time, creates a bias towards those animals that are considered more valuable by the current market, shaping management strategies that favor the presence of a nyala over an impala.

4 Nature conservation on private land in the Netherlands

Nature in the Netherlands is, like in South Africa, a relative concept. What is nature varies widely between contexts. Some would argue there is no pure nature left, saying that man has put his footprint on every square meter of soil and water in the Netherlands. Others stress the diversity and richness that the long presence of human activity has brought to the environment (VNC, 2007) and yet another group of people sees opportunities to create an prehistoric wilderness without human presence in the Dutch landscape (Helmer and al., 1992). Together, these assumptions and expectations of what constitutes nature, tell a complex history of nature conservation and management strategies that have been evolving throughout the last century. A process that is still alive, as tension rise when polders have to be 'given back to nature' to compensate environmental damage elsewhere (Volkskrant, 2012), red deer on the Veluwe have to 'draw a ticket' to make sure they do not extend the maximum amount of places on the other side of an ecoduct (Marijnissen, 2012) and the disappearing of rabbits on Schiermonnikoog is having "big consequences for the dune landscape" (Natuurmonumenten, 2010). Such discussions leave their footprint on the landscape, as specific regions and species are managed according to different or changing management systems. With the entering of the new millennium however, Dutch policy on nature conservation has been integrated into a broader approach, combining it with disciplines as water management, recreation, agriculture or spatial planning, incorporating areas outside nature reserves and involving society as a whole by denoting it to its "own responsibility" (LNV, 2000, 17). In the Ooijpolder, a low lying area between the river Waal and an old glacial moraine in the Eastern part of the Netherlands, this implementation has given local farmers opportunities to integrate nature conservation practices as an agricultural activity, extending the multi-functionality of agriculture in the region. At the same time, these developments have brought a new set of social actors to link policy with local practice on the ground or develop new ideas in discussions and agreements with landowners. This case in the Netherlands describes the structure of this emerging network and analyzes how knowledge and power around conservation issues is finding its way under this construction. As a process of co-production, it focuses on two examples within the case study area as it examines how such networks give new meaning and function to natural resources on private land and expresses itself in the landscape. This thesis compares meanings and values with practices and how they relate to older and other expressions of co-production in the historic context of nature conservation and agriculture in the Netherlands. Like the South African case before, we ask ourselves what is new during nature conservation on private lands in 2013. In a context where multiple interpretations and meanings of what is nature are openly acknowledged, this thesis aims to understand what is legitimizing and driving the use of nature conservation as an economic activity on private land.

4.1 The birth of nature in the Netherlands

During the history of discourses on land planning in the Netherlands, nature can be considered as a relatively new concept taking shape at the turn of the 20th century. Before this time, land was only classified as urban, cultivated or arable and the beauty of nature was only ascribed to the exotic and unfamiliar flora and fauna of the tropics (Coësel, 2012, Coësel et al., 2007). Being abundant and not in use, the cultivation of forest or swamps was considered legitimate and much knowledge of local flora and fauna was lacking (Coësel et al., 2007). Nature, as the biophysical environment around us, has however always been present in the Dutch landscape and has been in interaction with human presence ever since. Its birth with the private investment to protect a swamp area from waste deposition of neighbouring Amsterdam resulted in the first piece of land that was designated as nature (Schaftenaar, 2005). This new appropriation is best described as a new kind of interest and connection with the biophysical properties and characteristics of the local environment that started taking shape in the second half of the 19th century (Coësel et al., 2007). Paintings of the 'The Hague school' focused attention on the beauty of the Dutch landscape and romantic poets described the processes of spring or characters of plants (Coësel et al., 2007, Van Zanden and Verstegen, 1993). At the same time, associations for entomological and botanical research arose to 'catch up' with knowledge on the indigenous flora and fauna as interest in nature was lagging behind compared to Germany and England. Focusing and appreciating the local environment in line with the wider growth of a new Dutch self-consciousness and identity that took shape after a period of French occupation and a stagnating economy in contrast to neighboring countries (Coësel et al., 2007). Growth in self-confidence however, also initiated the arrival of modern industry and technology, introducing revolutionary changes in agriculture and leading to an increase in urbanization, changing the interaction between humans and their environment that had established itself during the previous centuries. Prosperity during the 19th century thus took an ambiguous turn, as an increase in industry and technology was welcomed and anticipated, but the speed and quantity of this process included a loss of beauty and reminders of the landscape that was being criticized (Berkel van, 2006). At first however, conservation remained subject to values of beauty or memory and the degree to what cultivation could add to productivity. Amateur botanic F.W. van Eeden for example described the land on the Veluwe as "vicious and empty" (Berkel van, 2006, 21) that should be cultivated, but the cultivation of dunes along the north sea coast was considered a "loss of wilderness" and waste as it only resulted in "poor potato fields" (Berkel van, 2006, 22). It was only however during the first decade of the 20th century that action to unite and protect those uncultivated areas from industrialization or agricultural cultivation took shape.

At the turn of the twentieth century, the growing interest, documentation and concern of the local environment initiates a period of 'biological awakening' (Coësel et al., 2007, Schaminée and Weeda, 2009). During this period, a series of magazines, books and field guides on the lives of local flora and fauna and their interaction with the environment became popular among a middle class that picked up nature studies as a leisure activity (Coësel et al., 2007, Schaminée and Weeda, 2009). Nature was now made accessible outside the specificity of the intellectual society and studied in a new way, by a new field of actors. Independent of the academic society, amateur biologist studies contained an ecological character that was yet unfamiliar with the taxonomic and physiological character of scientific research before (Coësel et al., 2007, Schaminée and Weeda, 2009). During this same period, industrialization, urban expansion and agricultural innovations were bringing change to a familiar, rural landscape. 'Rurality' at the end of the 19th century, arose as an anti-urban, anti-industrial sentiment (Woods, 2011) and its landscape and the nature it contained was now associated with vulnerability to this change. Educated and concerned about their own environment, the small, but new arising middle class was creating a foundation for further organization and active preservation of this rural landscape.

Slightly paradoxical, the development and enactment of these middle class initiatives was based in an urban setting, making the city the main place where nature is appropriated and concerns about its vulnerability arose. The Amsterdam Plantage, an area that already contained a botanical and zoological garden with rich collections of exotic specimen, acted as a place of tranquility and green in a loud and grey city (Coësel et al., 2007). It is in this area that the famous Dutch amateur biologists Thijssse and Heimans gained the respect of the established scientific researchers at the zoological department of the

university that is closely related with the zoological garden. Knowledge is shared and Thijsse and Heimanss display a simple, but popular exposition of the diversity of flora and fauna of the Dutch dune landscape. The area is attracting several nature enthusiasts who together with Thijsse and Heimanss discuss possibilities to organize and plan for the preservation of nature in the Netherlands. These possibilities are given shape with the formation of several private organizations focusing on the preservation of nature of which many are still active today. One of the most famous of these associations is the 'Vereeniging tot behoud van Natuurmonumenten' (the association for the preservation of natural monuments), founded in 1905 and the first Dutch association to actively purchase a pieces of land to protect it from industrial expansion (Coësel et al., 2007, Schaminée and Weeda, 2009). Selected on their aesthetical as well as scientific values, they were summarized by a key term 'natuurschoon' (aesthetics of nature), including those features that were special and characteristic for the Dutch environment and supporting the cultural value of the country (van Koppen, 2002).

4.2 Management by doing nothing

With these initiatives, a new question on what to do with nature arose at the beginning of the previous century. Based on a romantic idea of a harmonious nature and a desire to 'return to nature', human intervention by management was not considered necessary and nature was expected "to save itself" (Schaminée and Weeda, 2009, 119). To preserve nature, it required the purchase of nature reserves focusing the practical activities of nature associations into fund raising, inventories of important areas left and a lobby on Dutch government for involvement, awareness and support (Gorter, 1986). At the same time, attention and importance was dedicated to public involvement by opening many nature reserves to the public. Creating an opportunity for recreation, nature conservation association's membership numbers during the 1920s was growing as did the recognition of the importance of green areas for public health and wellbeing (van Koppen, 2002). Another key aspect of human presence and nature conservation is the continuation of local economic activities that persisted inside the declared nature reserves. In the Naardermeer, the first Dutch nature reserve, Natuurmonumenten gained an income from the harvesting of reed that was necessary to repay the loan needed to buy the area in the first place (Schaminée and Weeda, 2009). Fishing and hunting, reed harvesting or wood collection thus continued as an essential activity within the nature reserves. A type of management, or preservation of nature, that lead to a new dichotomy between what is urban and what is rural, requiring a strict separation between the two and relating nature with the concept of rurality, defining it as being separated from industrial or urban expansion (Woods, 2011).

4.3 Semi-natural landscapes

The momentum in nature preservation that was initiated during the period of biological awakening and with foundation of several nature organizations around 1900, did not continue further into the 20th century. Government policy during the crises in the 1930s and after the second world war, saw a continuation of cultivation of arable land and degradation of the landscape in the name of labor programs and rebuilding of the economy (Coësel et al., 2007, Schaminée and Weeda, 2009). Protests and action of nature conservation organizations in vain, the preservation of nature did not receive considerable attention until a new wave of environmental awareness took shape in the 1960s. By that time, nature preservation organizations realized that arguments for the preservation of nature had to be more profound if they were to be taken into account during policy making. To be considered more profound, nature conservationist sought legitimization in an outlined inventory of threatened environments (Gorter, 1986). With the establishments of these lists, nature had to be classified based on certain criteria, in- or excluding areas on the basis of their importance. Primary criteria contained a combination of recreational and biological criteria that were influenced by their contribution to the national 'natuurschoon' as in the first half of the 20th century. In an effort to be heard in a context of agricultural revolution and new land policies, criteria had to be made more explicit and divided the value of nature into scenic and scientific criteria (Gorter, 1986). Combining nature preservation with

science, especially plant sociology, new insights about the dynamics of a landscape and the relevance of human intervention for criteria as biodiversity or the presence of rare species became relevant (Schaminée and Weeda, 2009). Conceptualized as 'semi natural landscapes' the recognition that human intervention had been influential in the construction of a landscape and is essential to preserve certain characteristics of a landscape was presented by biologist Westhoff (Coësel et al., 2007, Schaminée and Weeda, 2009). This recognition gave human intervention an active place in the preservation of nature while the study of its management and control was further developed as an academic discipline in various institutes and made a special study at Wageningen University (Coësel et al., 2007). Management however did also require money, money that was now sought in government subsidies, intertwining and making nature conservation partly dependent on government action.

Similar to the period of biological awakening at the end of the 19th century, the new wave of environmental awareness that is taking shape from the 1960s, involved a part of society that became educated and concerned about the environment and active to demand attention and take action (Coësel et al., 2007). The scale and context of the green wave in the 1960s however, was new and turns out to be decisive for the future direction of nature preservation in the Netherlands. Leisure time, luxury and economic prosperity had become available for almost everybody and the social middle class contained the majority of the population compared to the small group of elites that were concerned about nature at the end of the 19th century. Nature organizations memberships were growing again and new environmental organizations arose after several environmental disasters lead to awareness on the negative effects and limitation to economic growth (Coësel et al., 2007). Concern was now not only focused on specific landscapes or species, but on the total environment including air, water and soil. At the same time, nature or environmental conservation was no longer only related to scientific or esthetic value. Reflecting on our impact and interaction with our surroundings, conservation becomes valued for the sake of conservation, developing a moral judgment or ethical code on our relation to nature (van Koppen, 2002). Influenced by what was first formulated as 'land ethic' by Leopold in 1949 (Leopold, 1970 [1949]), norms and values were taking shape that valued the presence of a total ecosystem, giving it rights to exist. This ecosystem was however also appropriated as a natural resource, the growing knowledge of natural systems of relations and interdependence, reveals an awareness that legitimizes the conservation of these ecosystems on the basis of their potential use to humans or as Gorter (1986) describes it "natuurbehoud is zelfbehoud" (the preservation of nature contains the preservation of ourselves) (Gorter, 411).

Under these pressures, that were also taking a more offensive and confronting approach with activist groups as Milieudefensie or Green peace, the government took it's the first steps to intervene and control the unlimited expansion of modern agriculture. Governments motivated the development spatial planning programs that incorporated a dedicated care to both nature and cultural landscapes that should be designated to a specific area or integrated by matching agriculture with landscape management and nature reserves, owned and managed by nature organizations (van Koppen, 2002). Government policy thus slowly developed from an indirect approach, financing the acquisition of nature reserves by Natuurmonumenten or Staatsbosbeheer (State forest management) to a direct control and preservation of regions of 'natural beauty' and species in several nature conservation and species acts and a governmental control of the spatial planning in a landscape the 1960s and 1970s (Kuindersma et al., 2004), strengthening the position of nature conservation as a land purpose.

4.4 New nature

Nature preservation took a new dimension when nature reserves were actively created from previously used agricultural land (Kuindersma et al., 2004). These changes, that became national policy from the 1990s onwards (Ministerie LNV, 1990), find their origin in new ideas about ecosystems and natural processes and a context where the expensive and intensive management of nature until then became criticized (Schaminée and Weeda, 2009). Spontaneous examples of fallen trees and abandoned or ignored pieces of land gave space for natural processes to take over and continue to develop the landscape without the direct influence of humans. These phenomena were recognized by ecologists who lobbied for a change in nature conservation focusing on the prerequisites needed to create a platform where nature could develop itself, independent from any human influence (Helmer and al., 1992). In this new approach, it is believed that nature can be created and prehistoric wilderness can be restored. With this knowledge, attention is focused on the restoration of natural systems, aiming to introduce big herbivores controlling vegetation growth, reintroducing key species like the otter or beaver or ambitious plans to reintroduce or attract top food chain predators of which some, like the sea eagle (Staatsbosbeheer, 2013), have already returned in various regions. In these scenarios, nature conservation focuses not only on the past, but also on the future, as it enables itself to create new types of nature, 'nieuwe natuur' ('new nature'), within an already urbanized and cultivated Dutch landscape (Metz, 1998). This development has led to remarkable cooperation's and changes in land use and planning discourses. Nature organizations like WWF and Stichting ARK combined forces with mining companies in the Millingerwaard (Metz, 1998, Bekhuis et al., 2005). Financing the construction of a new wilderness with the winning of sand and clay. At the same time, dikes, formed to protect humans against the water, are taken down to give rivers and sea more space involving local governments, nature organizations, water boards and the recreation sector (Metz, 1998). Land, previously used as grazing land or agriculture is now given back to nature and separated from any (direct) human presence.

With the ability to 'create' nature, conservation was no longer destined to be a defensive preservationist act, but became an active pursuit of more and better nature. These possibilities were picked up by governmental policy that saw an opportunity to compensate for nature that has been lost. New nature policy plans to enlarge and improve the quality of nature in the Netherlands and a plan to connect local nature reserves through an ecological infrastructure of old and new nature is given shape in the ecological main structure (EMS). Nature degradation or transformation is allowed to take place, but compensation legislation is enacted to compensate the loss of nature in one place, with the creation of new nature somewhere else. Nature has thus become something that can be designated and planned to fit within certain boundaries where it is desired. This approach to create and plan more qualitative nature, led to a lack of specific attention towards single habitats and species (Kuindersma et al., 2004). Idea is that biodiversity and endangered species will profit and reestablish their populations within the newly created and connected nature reserves enlarging and improving their habitat as ecological processes (Kuindersma et al., 2004). The focus of nature conservation has thus changed from a growing list of species and habitat specific conservation to a holistic approach on ecological processes and systems in the 1990 national nature policy. At the same time, European Natura 2000 (N2000) legislation influenced by international declarations on the conservation of biodiversity and wildlife species focus policy on a regional and species preservation policy that combines the preservation of sites of natural beauty and species to protect areas as habitats for species to live. Similar to ideas of the EMS to connect multiple European nature reserves, European policy focuses on specific areas and species, setting their member states targets. Forcing national policy to implement policies and enact them parallel to the creation of nature in designated sites. The preservation of regions and species effective before the EMS domination thus returns, but protecting them as specific goals and targets that were set beforehand, preserving a specific type of nature or defining a specific type of nature that has to be created (Schaminée and Weeda, 2009) (Kuindersma et al., 2004, Boer de et al., 2008).

Although based on natural processes and an independence from human intervention, the initial idea to conserve nature through an EMS in combination with the creation of nature was failing (Boer de et al., 2008). Nature was being isolated from man as it was left to be defined by ecologists and biologists alone

who lobbied for an active separation between human and natural activities. This singular view on nature created opposition among traditional nature conservationist valuing nature in a semi natural landscape, farmers feeling threatened by the expansion of nature reserves and people appreciating the beauty of this new nature, but not feeling any connection with it (Dubbink and Zadelhoff van, 2005). Together with implementing complexities and difficulties around the EMS, government policy was forced to broaden its scope and search for new legitimations at the turn of the 21st century. Dubbink and Zadelhoff van (2005) describe this transition in the policy process as an undermining of the total legitimization of science that had been developing from the second world war and the search for a new way of legitimizing nature policy to the public. In a global context where participation of civil society is considered legitimate and labeled as 'good governance', Dutch nature policy took a new turn with the 2000 'people for nature, nature for people' act (LNV, 2000). Policy was now develop to conserve and create nature that had to be meaningful and be based on a participatory approach. Designed by multiple actors besides the government alone (Turnhout and van der Zouwen, 2010, LNV, 2000). This new approached took place as new actors were invited to participate at the beginning stages of the policy process and government positioned itself among other parties in search of consensus and debate (Turnhout and van der Zouwen, 2010). Establishing multiple nature goals and different types of nature, nature could now be defined as large scale ecosystems, semi natural culture landscapes or as an environment containing multiple functionalities for both people and nature whose value.

4.5 The Ooij region

The diversity of what constitutes nature in the Netherlands can be reflected by the way it is expressed during conservation practices. These do not only differ because of the variable environmental properties or a specific human history, but are also containing a different view on what is nature and what is considered important to protect it. Geographic location, physical circumstances and (possible) species present do however steer different organizations into a specific area where they believe their idea of nature are suited best. Creating different zones where nature is being defined in different ways. In the Ooijpolder region, these different conservation practices have expressed themselves as different outcomes of co-production in the landscape, displaying the variety of what is considered nature in the Netherlands. Starting in the northern area of the Ooijpolder, the river landscape consist out of inner and outer dike areas on the southern banks of the river Waal. This area is designated as a bird and habitat reserve as part of the N2000 guidelines that adheres to European nature conservation targets and makes part of a larger nature reserves in the outer dike areas along the Waal and Rhine (Kennis, 2008). At the same time, the area is an example of Dutch of 'new nature' where cultivated land has been 'given back to nature' and the river has received more space to regain its natural character (Metz, 1998, ref). This includes a landscape transformation that sets specific targets to create and maintain a suitable area containing alluvial forest, swamp and grassland habitats for endangered bird species (Hut van der et al., 2005). Management in these areas includes the cutting of trees and the removal of sand and clay layers to create habitats. Other species like the beaver or Scottish galloway cattle and Polish koniks horses are introduced to restore disrupted ecological processes and create a dynamic vegetation structure for a diverse landscape. Aiming to restore a wilderness area from before human presence, past and contemporary human intervention is used and appreciated to improve conservation practices. Stone factories that have been dominating the riverbanks from the beginning of the 20th century, still leave their landmark on the area. Their digging and winning of clay has removed river depositions from outer dike areas where the river was limited to lay its deposit after dike and canal techniques improved from the 15th century onwards (Bullinga and Offermans, 1993), but also mined in inner dike areas, forming different geological structures and soil types to emerge creating a more diverse geological landscape that could be picked up to create habitats for multiple species. At the same time, history is also preserved and appreciated as old field ovens and chimneys are protected as a cultural heritage (Gemeente Groesbeek). Nature conservationist further optimize these possibilities as new alliances with clay and sand digging companies were formed to create better circumstances and finance the cost of the creation of this new nature (Metz, 1998, Bekhuis et al., 2005)). Provinces and water management are further discussing how to implement the envisioned nature types and calculated water capacities set by policies. Such goals and targets have to integrate with practical and efficient

management in the reserve. Preventing the area from turning into a forest, a nature type not envisioned in this area, koniks horses and galloway cattle keep the landscape open and make use of an efficient, economical and 'natural' management of the area. To be able to move between the different sections of the reserve however, the area should be designed in such a way that channels and large water areas do not make certain areas inaccessible, turning the reserve into a group of little island without the regular grazing of these animals. This has expressed itself as a designed and calculated landscape that allows herbivores to migrate and flee to higher areas during flooding to create a diverse vegetation pattern.

A different type of nature reserve borders the southern boundary of the Ooijpolder that consists out of old deciduous forest and natural springs on the glacial moraine. This area has been subject to multiple human transformations into agricultural fields and pastures on the slopes of the moraine (Gemeente Groesbeek, Schulte, 1983). Clean water and fertile soils on the bottom were already recognized and used by Romans who settled on the high moraine to control their trade routes and border of the empire. Forest zones on top of the moraine were exploited for agricultural cultivation during periods of prosperity or necessity and were transformed into heath land areas that can still be found today. Eventually, private property of much of the moraine area until the second half of the 20th century led to a reestablishment and planting of forest gardens that were used for recreational activities and an appreciation of the a romantic landscape of the uncultivated, 'wild', areas on the slopes attracting painters, poets and the first tourists to the region. The area is now divided and managed by the provincial organization 'Geldersch landschap' and Staatsbosbeheer that control the areas on the hills and valleys bordering the Ooijpolder. Their management aims to control natural values such as biodiversity and cultural history of the landscape by preserving a diversity of open fields on the bottom, forest on the slopes and the park like gardens around the old villas and castles on the top (Geldersch Landschap, 2013). Trees are actively cut to keep viewpoints open connecting the forest hills with the open areas of the river delta, little streams have been brought back to the surface and former private gardens are set open to the public, protecting and restoring the natural and cultural value of the landscape.

In between however lays an agricultural landscape consisting of small villages and farms that have been subject to different periods of agricultural practices, spatial planning and nature conservation initiatives. Before the arrival of industrial revolution and innovations in agriculture, hedges, groups of trees or pools together with dominant agricultural practices created variety in an already ecologically variable environment that is characteristic for the Ooij polder region (Bullinga and Offermans, 1993). Plant and animal species were thus offered an extra variety next to the biophysical differences in geology, soil type or water flow, giving more species opportunities to find a suitable habitat. This produced a landscape of large and subtle diversity in which elements developed and used by humans were appropriated by certain species as well. Compared to our contemporary time in which biodiversity and ecological variety are appreciated and considered important for the survival of the planet, it is slightly paradoxical, but true that Dutch biodiversity was at its highest before any profound nature conservation was taking place.

4.6 Early landscape formation in the Ooij

Agricultural practices, and subsequent ecological diversity, were dependent however on soil type and geological differences that created the physical properties within which humans had to adapt their labour to influence the landscape. The present landscape is dominated by the steep moraine in the south, that suddenly cuts of a lowland river landscape that is stretching east, north and west. This geology is the result of the second last ice age 200.000 years ago that created several hills and valleys halfway the country and influenced the flow of the big rivers in the Netherlands. After the retreat of the ice, a short, warmer period during which rivers deposited sand and clay, was followed by the last ice age in which geological differences in the landscape were further specified. During this cold and dry period, ice did not reach the area, but sand depositions by wind created alleviated stretches that can still be found along the line Persingen, Zyfflich, Mehr and Rindern in the lowland area (Bullinga and Offermans, 1993, Eck van, 2005)). After this period 12.000 years ago, climatic condition started to improve for vegetation structures to cover the land again and the river continued to be the dominant

determining the landscape by its flow and depositions. Before any major human impact or control on rivers, the river flooded and regularly changed flow. This resulted in a pattern of depositions, depending on the size and weight of the deposited particle when the river flooded. Large and heavy sand and gravel particles were deposited close to the rivers natural flow, while smaller and lighter clay particles were carried up as far as to the bottom of the moraine. As the water retreated and the ground dried, the fine clay particles set in the soil while sand or gravel particles did not because of their bigger size, raising the ground where they were deposited (Bullinga and Offermans, 1993). This created a landscape pattern of higher, sandy soils close to the river or its earlier flows and a lower, type of clay soils towards the moraine. Together with the older elevated sand tops from the last ice age, this created the conditions to which humans had to adapt their strategies to settle, live and farm. Doing agriculture on the higher sandy soils and cattle grazing on the lower clay soils (Map 4).



Map 3: Locality map illustrating the location of the Ooijpolder case study in the Netherlands.

4.7 Human influence on the landscape

The most dominant human impact on the landscape was expressed with the construction of the first dikes along the river, the eastern dike bordering the Duffelt area and a southern part along 'het Meertje', an artificial run off area for the Dutch and German polders in the Duffelt area (Bullinga and Offermans, 1993, Eck van, 2005, linking all three parts together forming the circle of Ooij in 1300. The ooiij region was however divided and governed by four different districts, failing to effectively organize themselves together. Because of concern and troublesome conditions, dikes were finally strengthened and brought to the same level of quality as those of neighboring Duffelt with an official dijkbrief from the court of Gelre in 1580, centralizing and improving management and maintenance that had been lacking before. Human presence is however older than the first dike constructions. People had been occupying the naturally higher soils on the levees close to the river or wind deposited sand in the lower clay land. The settlement on these areas is still present contemporary villages like Persingen, Ooij or Millingen and can be found back in the direction of the major infrastructure dating from the Roman period that was always directed east-west on the elevated grounds. With the

containment of the river however, human settlement and their influence would take a definitive turn on its effect on the landscape. Enclosing the area created a polder made it possible to cultivate and appropriate land for human use. Settlements extended their reach as dikes connected and created more opportunities for villages that started little fields of agriculture or fruit trees that did well on the sandy soils (Bullinga and Offermans, 1993). These fields were separated from each other by maythorn hedges or rows of willows that simultaneously functioned as a source of wood that was also collected from the willow forests in the outer dike area. At the same time, the clay soils in the inner dike area were too heavy and difficult to use for agriculture, but functioned as perfect cattle grassland that was separated into different plots by digging narrow trenches filled with water in the land.

The arrival of dikes in the landscape gave the interaction between humans and their environment a new dimension that affected later processes of landscape formation. Dikes did not totally protect people from flooding that could now result in a sudden dike break-through, suddenly flooding the area with a lot of water. These forces created deep holes just inside the inner dike area and that now remain as deep ponds in the landscape. In order to deal with the threat of flooding and to prevent water pressure outside the dikes to rise, people in the Ooijpolder constructed lower parts in their dikes to allow water into the inner dike area. While this forced farms and villages to artificially elevate some of their houses, it also left a little layer of clay every winter that naturally fertilized their lands. The developments of dikes also created an active separation of inner and outer dike areas. The outer dike area, still regularly influenced by the river was mostly covered by willow forests. Being unsuitable and too dangerous for settlement and agriculture, these areas were used as grazing lands and contained an important source of wood. With the construction of lower, summer, dikes later inside the outer dike area, the course of the river was eventually controlled during the drier summer period, only flooding a few times a year, creating wet, swampy areas as the water was unable to drain directly back into the river. The old inner dike landscape was further divided as the old sand and clay depositions were appropriated in different ways with the intensification of agriculture by artificial fertilizer, barbed wire and machinery. Agricultural resources could now be imported from outside the area and water management innovations could align water levels with agricultural preference, making people independent from internal resources or land use limitations of the region. These changes that took place from the beginning of the previous century, now removed the old division of agriculture and cattle in the inner polder, removed swamps and made water pools or the system of canals between the grasslands dispensable.

Agriculture or cattle are however not the only human activities in the Ooij or ways that people made use of it. The brick industry as a result of the possibilities to mine clay, has left a major impact on the landscape in the Ooijpolder as well. These activities were already present during the Roman period with a stone and kettle industry in the Ooij. The industry expanded its influence with the development of the city of Nijmegen next door that created a new market and demand for brick with its expansion in the fourteenth century. Starting at a small scale in the outer dike areas, where the combination of sand and clay had the right quality, holes were dug to mine and replanted with willow afterwards to improve the process of clay deposition. At the nineteenth century however, the clay mining industry extended its scale to the inner dike areas where holes were dug until groundwater levels at 1 or 2 m depth were reached. These holes now filled with water from below and could no longer be redeposited by clay from the river, giving plants and animals a chance to create a diverse pattern of vegetation in these areas, forming the basis of the contemporary 'Groenlanden' nature reserve.



Map 4: Ooijpolder landuse in the middle of the 19th century (watwaswaar.nl, 2013).

4.8 Nature conservation initiatives in the Ooijpolder

Before I start describing the practices around nature conservation on private lands in the Ooijpolder, it is important to understand how nature and agriculture interacted with each other during the last decades. The previous paragraphs on the history of nature conservation in the Netherlands and the landscape formation in the Ooijpolder, already indicate the dominant influence of agriculture on the environment. This has created both opportunities and limitations, as human presence created a more variable landscape, but also constrained it with the need to intensify and separate agriculture from everything that did not add to its productivity. To improve this latter development, pieces of land that had become separated after generations of inheritance, were relocated, joined or exchanged with other farms. Farmers could now produce on a bigger scale, issues around water management or infrastructure could be tackled more efficiently and new farms were allocated on specific sites. These processes that were officially legislated as land consolidation in 1926 are the early predecessor of the contemporary spatial planning act that aims to improve the total structure of a rural area, including agriculture, nature, cultural history, landscape and recreation (van den Brink and Molema, 2008) (Smit, 1993). With these acts, the government took an active position in the spatial planning of agriculture and other landscape elements from the start of the previous century. It is important to note however, that the first government attention in the Ooijpolder was not to intensify agriculture, but to declare the Oude waal area in the west as the first nature reserve in the Ooijpolder in 1984. Because of its small size and irrelevant geographical location in the Netherlands, the Ooijpolder had long been ignored by any type of government intervention to improve the area as it did in other areas along the Waal and Rhine. When plans to expand the city of Nijmegen with new suburbs in the Ooijpolder and a plan to transpose the flow of the river Waal in 1965 were presented, they were opposed heavily by local inhabitants in a period where environmental concern and awareness was gaining support. Initially postponing plans to develop the area, the government started to recognize the scenic and natural values of the area that became prominent in local policy ever since. The recognition of natural values and the development of scientific nature conservation that took place during the 1980s created a new struggle between the use of land by agriculture or nature. United as they were against the plans to intervene in the area in 1965, farmers now found themselves isolated from other inhabitants as nature had gained its positions as a dominant land claimer (Smit, 1993). The initiative from Ooijpolder farmers to improve the agricultural productivity in their area by land consolidation, was already applied in 1973. By the time it was accepted in 1985, spatial planning was no longer only focused on agriculture, the

developments in the country as in the Ooijpolder itself, forced spatial planning to design an area where nature, as well as agriculture could function next to, but separate from, each other (Smit, 1993).

The possibility to designate land as agriculture and nature next to each other, was interpreted as a clear and rigorous separation between the two. Dominant views on ecology and nature conservation argued that nature and agriculture could only be successful if it obstruct each other's practices. These assumptions initiated the idea to locate all agriculture to the inner dike area, and return the outer dike areas to natural processes. This was picked up by the spatial planning commission between 1989 and 1991. These initiatives forgot however about the recreational, clay and sand mining and sociocultural values of the area, leaving out specific partners as they developed their plans (Smit, 1993). Attention was only given to the support of natural processes and wide areas of nature along the river and an intensification of agriculture inside the dikes, removing hedges and trees blocking the necessity to intensify. Ideas to develop incorporate more stakeholders with nature conservation in the area did however not stop after spatial planning commission presented its plans. WWF and Stichting ARK elaborated ideas to create large and separated nature reserves in the outer dike areas. They recognized the multi-functionality of such an area and the opportunity to incorporate different stakeholders. With their 600 hectares pilot study in the Millingerwaard in 1992, they combined forces with clay and sand mining companies to "contribute the ecological restoration of the area" (Bekhuis et al., 2005, 6). Giving the river more space to 'work' also meant that additional space was gained for water to be maintained, protecting the inner dike areas from flooding. Attention for these multifunctional areas spread and were stimulated by European and national policy with the treaty of Arles to reduce peak water levels of the Rhine by 30cm in 2005 and the Dutch space for river management plan to create a safe water flow for the calculated amount of water increase with rainfall and sea level rise. At the same time, the region was labeled as a natural area that was open for recreation and tourism. Branding the area as the Gelderse poort where visitors could enjoy a wilderness area, the regions cafeteria, hotels and infrastructure develop to make the region accessible and enjoyable for tourists (Bekhuis et al., 2005),

By the end of the twentieth century, nature conservation had thus established its position among spatial planning and policies on a national and local level. In fact, it had gained a rather dominant position, being able to compete with agriculture and legitimating itself as a developed scientific discipline. In the Ooijpolder however, agriculture and nature conservation were not the only land uses possible or pursued. Clay and sand mining, water management, tourism and recreation and socio cultural monuments demanded attention in spatial planning at the end of the 1990s. After developments and drafts for a restructuring of the ooiypolder, a final version was presented in 1996. Its vision contained the active separation between agriculture and nature conservation, thus only focusing on these two aspects, adding ecological connection zones and changing water systems in the inner dike area. This local spatial design is followed up however in 1998 with a landscape policy plan for the municipality of Ubbergen, approaching a landscape as a broader idea and protecting all its separate entities (Gemeente Groesbeek). This design was added with plans to develop neglected tourism and recreation possibilities and facilitate an infrastructure that supports these activities.

4.9 People for nature, nature for people

Restructuring plans or spatial designs however, contain a very static character that forces the region to focus and adapt on different situations or visions. At the same time, the region and local municipality felt overwhelmed and threatened by developments imposed on them (Gemeente Groesbeek). With the act on 'People for nature, nature of people (LNV, 2000), the ministry selected the Ooijpolder region as pilot study to search for new ways to incorporate conservation strategies in the agricultural landscape and to search for new initiatives to finance it. 'Proeftuin Ooijpolder', the pilot study that later changed into 'Verkenning groene diensten' forms the basis that created space and attention to change static landscape designs into a design that acknowledges the continuous development of a landscape (Proeftuincommissie Ooijpolder-Groesbeek). As national policy promoted government through participation, decentralization and searching for new types of financing local municipality grasped its chance to take part as a pilot region and developed not a spatial planning plan, but a landscape

development plan (LOP). The new character and capacity of a LOP is that it is presented as a process. To keep such a process alive, the municipality established a local landscape fund ViaNatura, that also functions as a mediator between farmers, biologist, citizens and the municipality and links possible projects with subsidies or private funding. The LOP now contains a vision and strategy for the further developments in the Ooijpolder region. Focusing on aspects where options can be combined and strengthen each other, the plan aims to 'innovate and broaden' the region as it tries to bring stakeholders that have become separated together again. Several topics now dominate the spatial planning program which are allowed to intervene and be combined into future projects. Containing natural, ecological and cultural historic values, topics also focus attention on recreational activities, water management and how they should relate to each other in creating several scenic options. To translate these visions into projects and elements on the ground, the landscape has been divided into specific landscape types which (should) contain typical landscape elements. The area of the 'Zoom' for example, follows the peripheries of the Ooijpolder following the inner side of the main dike from west to east. This area is considered important for its openness in east-west direction, meadows and river landscape and living and recreational area for local and non-local inhabitants. This creates an appreciated contrast in the landscape between the higher moraine and the less easily approachable outer dike areas that border it. To strengthen and further realize the characteristics of this region, the landscape development program has designed several elements that this area can contain. Showing varieties between hedges, flower fields or little channels, it provides a framework in which chosen elements can be chosen, combined or rearranged.

The landscape development plan proposes projects and has developed a framework of types and elements that will characterize the landscape in the region. This framework is not only a development changing spatial planning and land use options in the region, it also functions as a frame of reference and accountability that should attract and provide guidelines to new partners, financing and the stakeholders involved. To elaborate on these developments, the next two chapters will focus on two project examples on nature conservation in the Ooijpolder. Figure 10 presents these two examples (VVN and VNC) by plotting them in relation to the outer dike and moraine nature reserves already present. Like in the South African game farming case, these chapters analyze the construction of spaces through processes of co-production. Aiming to understand the paradox of 'farming nature', these chapter analyses the social and biophysical properties interacting and changing spaces around game farming in the Ooijpolder and how game farmers derive an income from conservation practices on their land.

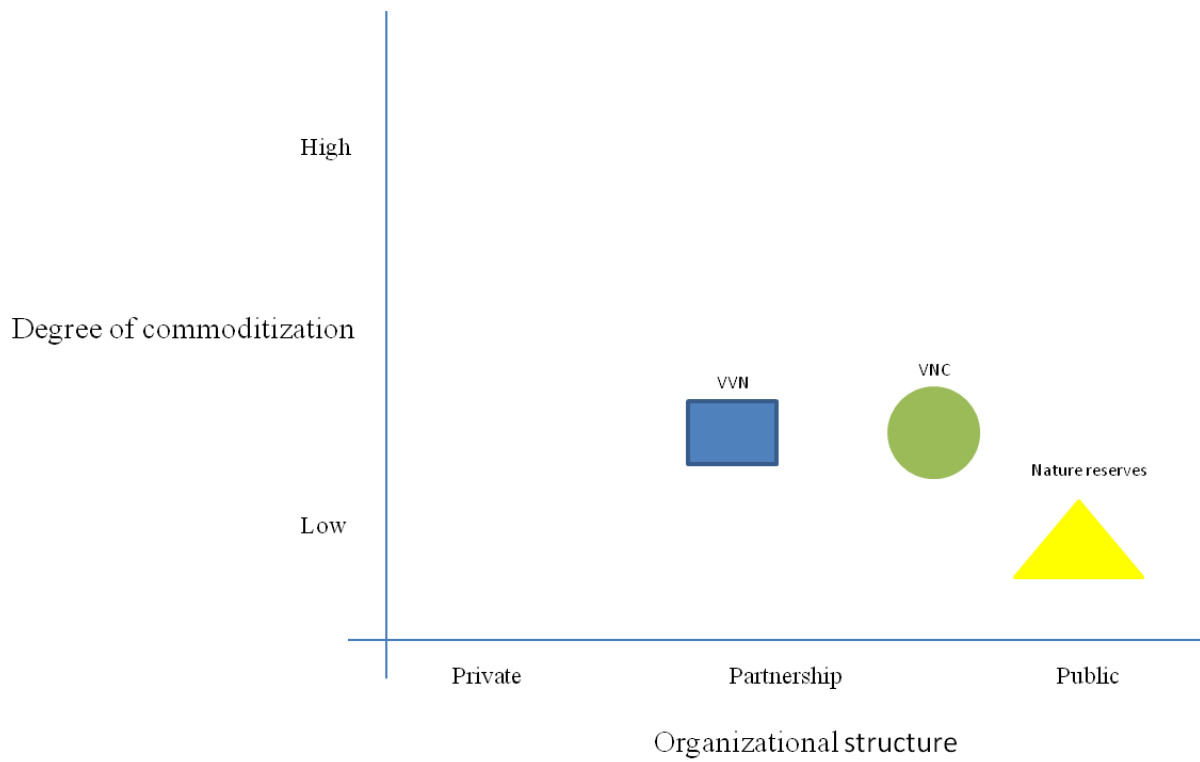
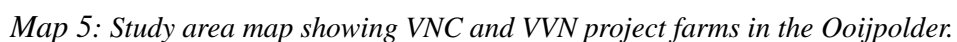


Figure 10: Diagram illustrating different outcomes of co-production during nature conservation in the Ooijpolder in relation to their organizational structure and degree of commoditization.

5 Voedsel voor natuur

‘Voedsel voor natuur’ (VVN), “food for nature”, is a joint initiative between established nature conservation agencies WWF Netherlands and Stichting Ark and the local agricultural association the Ploegdriever that is being realized within the LOP. Similar to the ‘Proeftuin ooijpolder’ pilot in 2000 (Gemeente Groesbeek), VVN aims to try new structures to incorporate modern farming and nature conservation activities on private land by finding an innovative way to finance management with public and private money to enhance ‘nature-based’ businesses and alternative incomes for locals (Bekhuis et al., 2005, Voedsel voor natuur, 2007). WNF and Stichting Ark are no newcomers to Ooijpolder. Being progressive and innovate nature conservation agencies, WNF and Stichting Ark were active in creating partnerships with clay mining companies and the introduction of konik horses and galloway herbivores in the Millingerwaard in 1992 (Bekhuis et al., 2005), creating the first wilderness areas in the Netherlands. Their way of working contains the set-up of a pilot initiative in which new ideas on nature conservation are tried. When successful and mature, control is devolved to other parties who will take over management. Such an approach was also taken during the start of the project in 2004 that is part of the WWF ‘One Europe more nature’ project, demonstrating new strategies to incorporate nature conservation in an agricultural landscape and the provision for farmers to derive an income from nature conservation (Bekhuis et al., 2005). Functioning as a pilot study, the aim is that after its establishment, monitoring and control of the project are being devolved to Via Natura, the local landscape fund in the region. The prime, ecological target in this project, is to connect the nature reserves in the outer dike areas, that are the extension of the 1992 pilot in the Millingerwaard and the forest on the moraine. The vision of ecologist in this project is that eventually “red deer from the German Reichswald can feed in the grassy outer dike areas again” as well as smaller mammals, insects and plants to find suitable habitat, migrate and create stable populations. Creating ecological corridors that should give animals the opportunity to migrate and spread between different nature reserves and environments thus sounds very similar to the EMS that was being developed in the 1990s. What is different however, is that the old separation between farming and nature conservation that was sought on purpose, is now ignored and used as an essential prerequisite in this example. Ecological values are thus no longer the sole destinations of the land. Combining nature conservation with agriculture demands a distinction in land use that designates the area into different zones and land uses. Hedges that have remained present on the farm land have to be continued to be managed and be of relevant use to the farmer if they want to be maintained as a shelter for birds and insects. Natural meadows that allow new species of plants to take root will have to be designed and designated while being able to fit into the practical business of farm. At the same time, parts of the land will remain in agricultural use as they were, creating a mosaic of agricultural and nature conservation activities in the land that is also made accessible by a hiking trail for visitors. Nature thus has to find a balance with agriculture and requires management that is ‘practical’ for the farmer and ‘fits into his agricultural business operations’. Support and contribution to the initiative was however also sought outside the two parties involving society and business and volunteering Agricultural and Flora and Fauna groups doing management and monitoring that give advice on possible ecological changes. Its incorporation in the LOP further makes sure that the project is streamlined and fitted into the vision of the region, while new partners and finances were further sought, as society as a whole was invited to invest and contribute the landscape in the project.

Graphically, the case study example is located in the most eastern part of the Ooijpolder (Map 5). The possibilities of the LOP, the presence of WNF and Stichting ARK close by and the importance and opportunities coming from the city of Nijmegen next door created the context in which the project could take shape. The LOP provides a vision of multi-functionality of different aspects in the region while providing municipal support and legitimacy because of the participative way in which the plan was given shape. Its location close to the Gelderse poort, made possibilities visible for Stichting ARK and WNF, who saw such an opportunity as an extension of their earlier project in line with an ambition to 'support the conservation and/or restoration of landscapes and ecological processes' in a combination with supporting people socially and economically. In comparison with the living river project in 1992, farmers have now become the centre instead of the periphery of attention, also for WNF and Stichting ARK. Noticing a shift in land use towards further intensification and total abandonment of some farmers of their agricultural activities that might endanger the "plant and animal communities associated with them" (Bekhuis et al., 2005, 2), these nature conservation organizations advocate to combine rural development with nature conservation, innovating the rural economy. From a geological perspective, the case study example is situated on the frontier of the higher and sandier 'Oeverwal' soils in the north that extends into the heavy clay soils of the 'Kom' in the south west. The difference in soil type has resulted in a clear distinction between agricultural fields and cattle grassland before the arrival of intensive agriculture (Bullinga and Offermans, 1993) as is visualized with the white (agriculture) and green (grassland) colors in Map 6 and Map 7. This old distinction is further illustrated within the LOP as the Oeverwal areas should contain elements such as hedges and fruit trees next to agricultural land and the lower, Kom area should retain its open character and contain wet meadows and ditches (Gemeente Groesbeek).





Map 6: 1868 old military map of the VVN project area (watwaswaar.nl, 2013c)



Map 7: Old RAF (1944) aerial pictures of the VVN project area (watwaswaar.nl, 2013a).

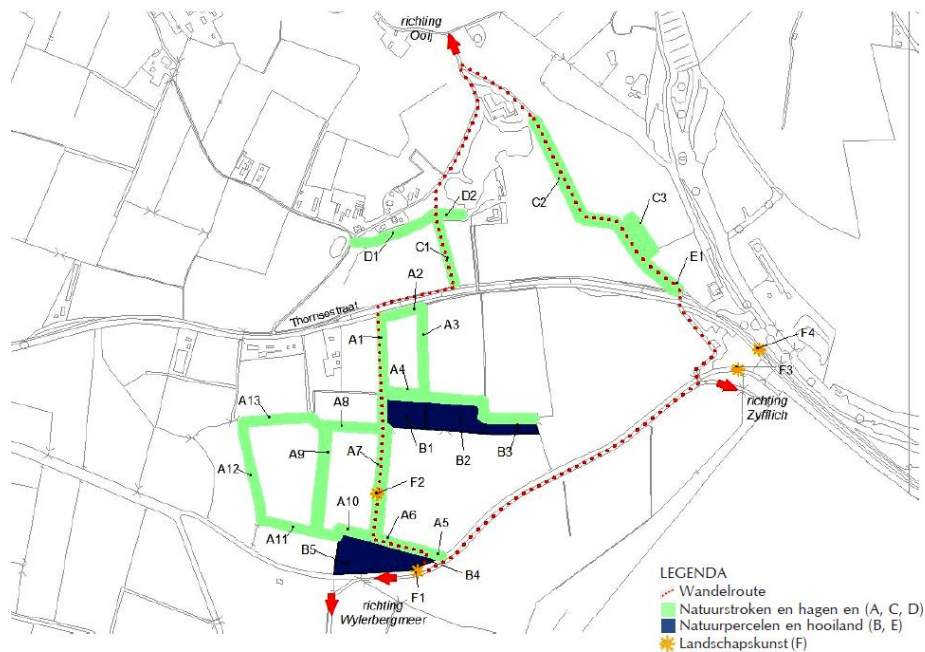
5.2 Neighbors

The case study example is located in an area bordering the Ooijsche graaf in the north and a main water drainage channel 'het Meertje' in the south. In the east and west, the VVN area is limited by neighboring farmers who conventional agriculture on their land. These lands can be divided into fields that are property of neighboring farmers, land that is leased by the farmer involved in the VVN project, or land that is leased from the VVN farmer. A situation that because of the 'arrival of nature' has not resulted into any open conflicts yet. The area is further intersected by a provincial road, that divides the area into two parts. The Ooijsche graaf is an inner dike nature reserves that borders the northern part of the project area. It finds its origin in a cut off flow from the river a long time ago and makes part of the Gelderse Poort nature reserve managed by Staatsbosbeheer. Property and managed by the regional waterboard, 't Meertje's' primary function is to drain the excess of water from the polder into the river. Especially during the wetter period of winter, the channel is prepared to contain more water as river banks vegetation is cut down and the channel is 'cleaned up'. Together with the Wylerbergmeer recreation area, this channel is also functioning as an ecological corridor, connecting the project area with the moraine in the south and with other polder areas towards the east and west. Part of its flow have even already been adapted to such an ecological function during the land consolidation between 1995 and 2005 (Stichting Via Natura Loket groenblauwe diensten, 2011). During the development of the project, Stichting Ark also extended its visions and targets outside the pilot study area. The water board has often been approached by ARK ecologists to consider changing annual channel maintenance and vegetation clearings. Such alternatives would contain a less rigid and drastic clearing of the main water drainage 'het Meertje', but a phased or partly maintenance where not the totality of the vegetation and associated hibernating insect eggs or larvae are removed. In a similar way, the province of Gelderland has been approached to reconsider its maintenance on vegetation sites on road verges. For safety reasons, vegetation has to be trimmed regularly up to a certain distance from the road, outside this area, vegetation could be given a chance to establish a robust structure for insects and plant species to survive. How contradicting and different view on nature conservation sometimes may be, is exemplified when efforts to poor the soil and hence give different plant species a chance, are conducted in the Dutch road verges that contains the regularly removal of nutrients from the area in the form of plant material. An action that would opposes the creation of a stable ecological corridor or shelter for animals and insects. Received with interest and room for debate, such proposals are changing and variable in success every year according to ecologists.

5.3 Buying your own hedge, tree or eco-tunnel

VVN is not only a pilot study to try new partnerships between farmers and nature conservationist, it is also looking for new structures to finance nature conservation. Parallel to the hunting game farm in South Africa, it expresses a commoditization of natural resources that were not directly incorporated into any type of market system before. Where nyala, buffalo or lynx receive a price for which they can be shot or sold, hedges, natural meadows or trees are priced in terms of their initial costs, management and a compensation for the ground. Such economic values are estimated and categorized for every landscape element next to other characteristics in the LOP. Oeverwal elements for example, consisting of two low maythorn hedges, a hiking path between fruit trees and a selection of willows in the lower parts. Designed with a minimum width of 8 meters and managed for a period of at least 15 years, such a landscape element is estimated at a 110 Euros per 100 meter in length, a year (Gemeente Groesbeek). These indications present the economic costs that these elements require to be produced, the challenge for most projects from the LOP however, is to find money to realize them. Next to the 50% that WNF contributed to its pilot case, the project had to be self-sufficient towards the future and try a new financial construction for which both the LOP as the 'One Europe, More Nature' projects were aiming for. Such a solution was found in "probably the first landscape auction in the world" (Figure 11) (Veilingskrant, 2007). During this event, the construction and management of several elements were secured their 'selling' to a variety of businesses, companies or individuals, that are considered new partners of the project since. Their buying of a hedge, tree or eco-tunnel, does not make them the actual owner of the element, but owner of its management. For a period of 10 years, the

buyer is assured that his element is managed and expressed in a particular way, producing and conserving a typical environment. Incorporating nature in a financial system driven by a market system of availability and demand, can thus be interpreted as a commoditization of nature. Receiving a new value that assures its existence, different characteristic of nature can now be labeled with an exact price and fit into the financial system of a project, government or farm.



Map 8: Contemporary map and design of landscape elements on the VNN project (Voedsel voor natuur, 2007).



Figure 11: Headline of landscape auction financing the VVN project (Veilingskrant, 2007).

5.4 Landscape elements

The VVN project consists out of several elements that create a mosaic pattern in the landscape. Located in an area where they are suited and function best, the project is distinguishing several landscape elements which are often separated into different parts to be able to 'sell' them during the auction. The northern part of the project area, located between the farm and the motorway, is dominated by two types of hedges (respectively C and D in Map 8) that link the area in several directions. In the most eastern part of the project, two stretches of 'scheerhaag' directly connect the farm with the main road in the south which are complemented with two stretches of 'struweelhaag' in the western part of this area. Ideas to create the eastern sheerhaag were initially formed during Proeftuin Ooijpolder initiative in 2000 and eventually received a subsidy for a few years until it was incorporated in the VVN in 2007. Scheerhagen are relatively low compared to 'struweelhagen', a different type of hedge, as their annual management is stricter keeping them short and dense. Typical to the elevated areas of the Oeverwal, they functioned as cattle boundaries on the meadows next to the farm and are uncommon in other areas in the Ooij (Gemeente Ubbergen, 2010). Having lost their historical function with the arrival of barbed wire (although the 'introduced' eastern sheerhaag is now used as a cattle and sheep boundary by the farmer) sheerhagen are now advertised as 'an absolute must for landscape and cultural history lovers' (veilingskrant). Having gained a cultural value, sheerhagen are also relevant as breeding and hiding places for several species of birds and insects that can move along its vegetation. Scheerhagen further function as a 'guiding element' along footpaths or biking routes with limited scenic disturbance but yet take a prominent position in the landscape (Gemeente Ubbergen, 2010). Struweelhagen on the contrary are less fixed in their growth and structure as there are allowed to grow up to heights of 2 to 5m. Having functioned as sources of wood in the past, these elements are constituted by a mix of plant species. As they are being allowed a certain amount of freedom in shape and size, struweelhagen receive a wilder and dynamic character that allows a less intensive and cheaper management. These properties are expressed as a lower economic value on the landscape auction as a 75m of struweelhaag needs a minimum bid of 518 euro and a 96m sheerhaag demands at least 1556 euro. Such calculations are thus easily understood if one compares only management costs, but seem less clear if we want to add biodiversity, cultural or scenic value.

Struweelhagen are landscape elements that can be found in the southern part of the project area as well, where they are not managed at all unless they grow into the neighbor's property. Here, their wild and dynamic character makes them perfect for a combination with natural meadows to create a "robust ecological corridor" (Voedsel voor natuur, 2007, 10) represented as 'A' in Map 8. Abundant in the project area, these so called 'groenstroken' (green stretches) form elongated stretches of vegetation running from north to south through the area. Stretches are however much wider than single hedges or ditches. Varying between 10 and 20 meters in width (Voedsel voor natuur, 2007), these landscape elements are allowed to be dynamic in growth and structure and combine a multitude of habitat, shelters or food sources through which more species might find a suitable passage way. Struweelhagen are present as short and long stretches in straight north-south or east-west directions. They have usually formed spontaneously in ditches where several bushes took root, giving them their elongated character that makes them ideal as guidelines for both people and animals. These ditches are reminiscent of a system of channels that was used to separate plots and cattle in which water level started to drop when water levels in the Ooijpolder were actively lowered for agricultural benefit (Bullinga and Offermans, 1993). Especially in the southern and lowest part of the project area, this history can still be found as struweelhagen follow the line of plot boundaries that are present on old 1868 maps Map 6 and Map 7. Although some trees and bushes were transplanted from neighboring sites, most struweelhagen were already present before the start of the project, having survived the cutting and rigorous management during the intensification of agriculture only a few years ago. The struweelhaag in the northern part described earlier, shows this persistence as it can be found as a boundary between grazing and agricultural land on military map from 1868 that continues to be present on later RAF aerial photographs in 1944. Not being considered any annoyance or limitation to agricultural practices on the farm before, these elements are now incorporated into the agricultural business. With the extension of agriculture however, grassland and natural meadows have been disappearing from the lower Ooijpolder. Especially corn has been replacing cattle grassland during the

previous century that has removed a biotope for several characteristic species of bird and a rich grassland flora (Gemeente Ubbergen, 2010). Such elements are now actively (re)produced as elongated meadows contain several meters of grassland that connect two layers of wider meadows (B in Map 8) and link the project with other grassland areas outside the project area (Figure 12).



Figure 12: Ditch, hedge and stretch of grassland on the edge of an agricultural field functioning as a footpath, ecological corridor and landscape element at the same time.

5.5 Managing landscape elements

Being part of agricultural or intensive grassland use before, initial management contained the sowing and regular mowing of these newly formed grass parcels and the introduction of trees and hedge species (Veilingskrant, 2007). Aiming to derive the soil from nutrients, giving more plant species a chance to grow, the management resulted in a close cover of grass dominated by a few species. To change this process, dairy cattle that were not being milked, not milking anymore or pregnant were introduced on the plots in 2007 and other meadows were sowed with hay from the neighboring dikes (Figure 13). These cows are grazing the natural grasslands and elongated stretches connecting the different zones of the project area. These stretches are designed in such a way that they create a circle and do not make a dead end, preventing that “cows feel cornered” when they feel chased by hikers or their dogs. At the same time, cows are allowed to feed and enter the struweelhagen that follow these stretches as well. During hot summer days, the farmer often encounters them in the shadow of these hedges, sheltering against the sun and creating hedge structures in which they feel comfortable. From the farmer’s perspective, cows that ‘are not making money’ are still providing him with an income as their function has periodically changed into ‘natural grazers’. Operationally, it does not make a big difference as these cattle have to be separated from the main group anyway, grazing a different kind of

grass and not receiving any additional fodder to prevent them from becoming too fat. It seems the grasslands in the project are attending such a diet, as the farmers perceives his cattle to be “fit and healthy” and clients to which he has sold some of these cattle “did not complain yet”. From an ecologist point of view, the extensive and irregular grazing of cattle has created a variable grassland landscape, being closer to its ecological function of containing a wide variety of species. Such a mechanism is similar to the introduction of herbivores in the outer dike areas several years earlier. What is new to this project, is however that these 'herbivores' are domestic animals and still part of a productive farm. Groups of cattle are replaced every spring as new cows are given rest and grazing does not continue into winter. When youngsters, the cows are often very curious and not used to people, curiously stalking people passing by. For a nature conservationist this might give the area a less 'wild' character or even be uneasy or intimidating for others. Those who identify and appreciate an old agricultural landscape however, will perhaps turn on a smile as they feel (re)connected with farming, cattle and the landscape. In essence however, the presence of domesticated cattle, functioning as inducers of natural process, connects the ecological and agricultural use of this land, leaving a blurry boundary between what can be considered natural or cultural. A question that is also being asked about the herbivores in the outer dike areas (Metz, 1998) as they are introduced, wear ear tags and are genetically monitored. At the same time, surplus animals are relocated, or bulls are interchanged between different reserves and meat is being sold as 'wilderness meat' to private individuals, turning them into a product as well.



Figure 13: Cows on the VVN project: Dairy cattle or 'natural grazers'?

Mowing the stretches of meadow next to the struweelhagen is being practiced however next to the grazing of cattle. A management activity that is interpreted differently among ecologist and biologist as it might “disturb the wildness and robustness of the corridor”, but also adds to the diminishing of the soils nutrients, giving different plant species a change. Such trade-offs are also present on the dike bordering the projects area in the north east, were a natural meadow on the slope of the dike gives permanent shelter to insects when left alone, but may lead to suffocation or domination by some plant species when not mowed at all. This type of management, is further influenced by practical limits of the farmer, who only owns a mower which is 3 meters in width. A feature that also explains why it

were farmers that advocated for wider footpaths during the early negotiations of the landscape development program. Practical characteristics and different biological knowledge, thus together steer the expression of elements in the environment. Farmer's practices however, can influence these expressions in often very subtle and small ways as well and the new constructed landscape elements provide the farmer with new opportunities. The natural meadows that encircle an agricultural field for example, are a perfect turning point for agricultural machinery when present on the field. At the same time, the sporadic disturbance of the vegetation, creates space and opportunity for new plants to grow, improving the variety and dynamics of the meadow. In a similar way, farmers and biologist might decide to close off one of the sections or a specific zone to "experiment" what will happen and cattle is sometimes allowed to feed on the reminiscent on the agricultural fields after harvest, also giving other animals and plants a chance to profit from this temporary extra space. Finally, the stimulation of trees, hedges and grassland increases the presence of wildlife on the farms territory. As in South Africa, farmers that like to hunt may see their chances and opportunities to hunt increase and diversify. Such initiatives are however not new to the area, the farmer suspects that one of the reasons "why there are so many hedges left on his farm, is because his grandfather liked to hunt" and his hunting companion and neighbor has created his own 'little garden', sowed with 'hunting seeds' to create an attractive shelter and feeding place for pheasants or hares.

5.6 Ecological corridors on the farms courtyard

Hedges, trees and grasslands are not just limited to the project area. When describing the site and neighbors of the case study, the area was already introduced as a zone that should ecologically connect nature reserves and link to other blue and green elements in the landscape, as well as being accessible and open for visitors linking the area with external people. This vision is expressed in the connecting lines of landscape elements, an eco-tunnel below the highway and a pedestrian bridge creating a new entrance to the region in the south. What can easily be forgotten when only focusing on this project however, are the small and subtle elements that are present in the farmer's yard and court. Eye-catching when studied on maps or aerial photography is the large pond that is situated just behind the farm. This pond, a result of a dike break in the past, can not only be used as a place for swimming or ice skating in summer or winter seasons, its shorelines also create opportunities for several plant communities that may hide animal species which are also making use of the elements in the ecological corridor on the project. Giving vegetation a chance to develop decreases the extension of the pond by the damaging of the steep shorelines. Having had intensive contact with a biologist during the implementation of the VVN project, the farmer learned that diversity could be increased when water vegetation was regularly cut. That this management had to happen in phases, not with a total removal of the vegetation together he learned the next time. In a similar way, excess wood material from trees bordering the pond are piled up out of sight and create a perfect temporary shelter for wildlife. Other little corners and edges on the court are forgotten or ignored during maintenance and create cornerstones for temporary vegetation or animal life. Together with a high hedge keeping the ugly silage hill out of sight, open windows in the stable allowing birds to nest inside and a row of apple trees whose fruits are used for own consumption, the landscape elements of the project are continued on the farm itself.

6 Delta plan Ooijpolder

Landscape development and nature conservation in the Ooijpolder took a new turn when it was incorporated as one of the examples for rural development and conservation practices in the Vereniging voor Nederlands Cultuurlandschap (VNC) 'Delta plan' in 2008. Evolved out of the association 'Stichting Das en boom', VNC focuses on the agrarian cultural landscape that has created specific habitats for various species of plants and animals. Their plan named 'Nederland weer mooi' (the Netherlands beautiful again), is an initiative to protect, restore and manage the cultural history of the Dutch agricultural landscape that has been transformed due to processes of land consolidation and intensifying agriculture (VNC, 2007, VNC, 2008). In their proposal, VNC stresses the disappearance of hedges, footpaths, ditches or pools and the inaccessibility, isolation and loss of cultural and ecological value in the landscape it has resulted in. VNC aims to restore such elements, which only have persisted in reserves or are marginally protected with unpredictable subsidies (VNC, 2007), on a national scale. Building on earlier acts and initiatives for ecological and cultural historic conservation on agricultural lands, it argues that such a vision can only be realized when it is systematic and well-considered. To realize this vision, landscape elements have to be located on places where they are possible to co-exist next to agricultural activity. Like the VVN project, it should not conflict or block any agricultural practices, but fit into the farming operations practically. Along this line, the proposal has calculated 200.000 km of hedges, flower grasslands, channels or recreational routes that can be realized along 1 million hectares of grasslands and 0,8 million hectares of agricultural land in the Netherlands (VNC, 2008). Similar to the intensive land consolidation strategies in the previous century, it aims for an incorporation of multiple stakeholders, national or even European implementation and a solid and attractive incentive for farmers to participate. Focusing on this last incentive, it stresses the necessity that farmers have to be able to make money out of landscape development or management if it wants to be successful and implemented on a larger scale. In search for such a solution, the pilot in the Ooijpolder is financed by a mix of public and private money that has been able to set up thanks to a pilot investment of the government and a 1,6 million euro donation of the Postcode Lottery. Divided in public subsidies and private sponsor money or interest rates from 'Stichting Landschapskapitaal', a local Landscape fund, and regional account that has been established next to the Via Natura fund. This construction has given farmers the opportunity to receive annual subsidies for their management, but also a compensation for the ground they make available and an extra bonus to be able to make a profit during a fixed period of 30 years.

To explore how such ideas and initiatives are expressing themselves on farms in the Ooijpolder, the thesis focuses on another example just a few kilometers away from the VVN project. Compared to the previous example however, this farm is part of a larger pilot study that involves a dozen farmers in the same area and aims to create a 25 hectare network of different landscape elements. In addition to the initiatives taken by Via Natura and the LOP before, VNC argues to have brought a "business attitude and money" to the area, "involving also the larger farmers" that has accelerated and institutionalized landscape development and conservation practices into the agricultural economy.

6.1 Site and neighbors

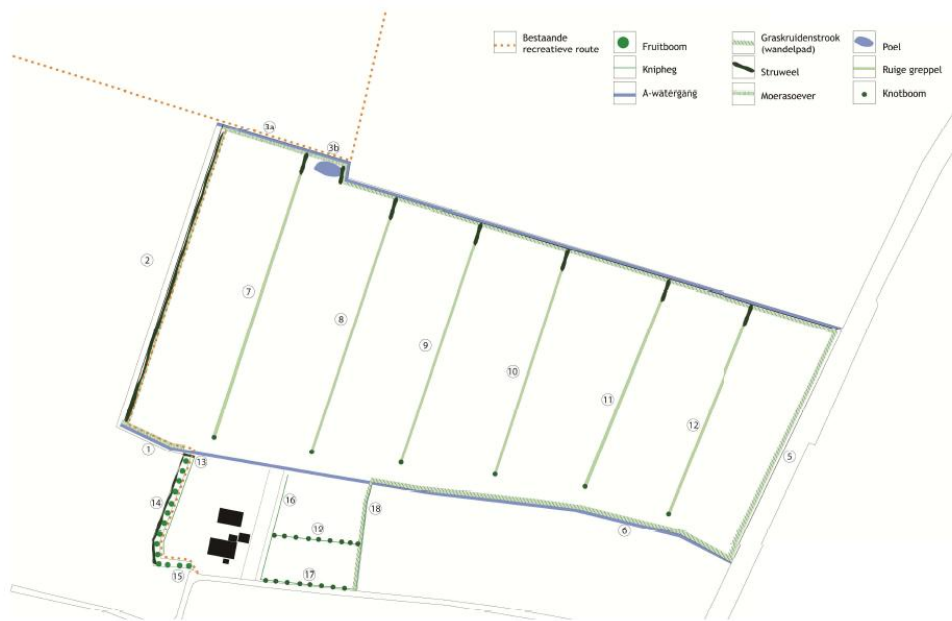
Located north of the little village of Persingen in the center of the Ooijpolder (Map 5), the second case study example is situated on the boundaries of the heavy clay soils of the Kom and the island like sand hill that was created during the last ice age. Geographically, the example is located in a similar area as the VVN project and functions as an ecological corridor between the moraine forest and the outer dike wetlands, but also an attractive recreational area for citizens of the city of Nijmegen next door. In the south, the village of Persingen is bordered by 'het Meertje' that further connects the area as a blue corridor with the VVN project and a little wetland private nature reserve that functions as the first step into the direction of the river. On the project area itself, the three most eastern fields located next to the public road are leased by the case study farmer, but are incorporated in the project as well. No longer obliged to pay rent for the soil that is not in agricultural use, the case study farmer is doing management activities on the grassland meadow and 'rough ditches' for which he receives the estimated subsidies while the official owner receives the financial compensation for the value of the ground. To the north and west, the project area is further bordered by a small clay mining pit and neighboring fields of grassland and agriculture that is not incorporated into the project area. Created along several landscape elements and already partly present before the start of the project, the area is connected through a network of footpaths that are now incorporated in the landscape development plan and connect the project with similar initiatives in the Ooijpolder. Finally, a large part of the project area is intersected by a pair of main water drainage channels which are owned by regional water board. As some elements make use of the ditch or slopes on the southern edges of these drainage channels, additional permits had to be acquired before constructing them and management on the projects elements in partly conducted by the water board.



Map 9: Old military map(1868) illustrating the landscape and land use on the VNC project area (watwaswaar.nl, 2013c).



Map 10: Old RAF (1944) aerial pictures of the VNC project area (watwaswaar.nl, 2013b).



Map 11: Contemporary layout of the VNC project area showing the design and location of various landscape elements (Kruis van der, 2010).

6.2 Types, management and subsidies

Located on the border of two different soil types, the project area is divided into two different landscape types that should contain characteristic landscape elements (Gemeente Groesbeek, Gemeente Ubbergen, 2010). Around the farmhouse and courtyard, the higher sandy soil makes up landscape type Persingen that is characterized by grassland stretches, hedges and fruit trees. Map 9, Map 10 and Map 11 show the change in land use and incorporation of natural elements from the 19th century until the current design on the farm. Above the southern main drainage channel, the northern and biggest part of the project area is categorized as landscape type 'Kom', a wet and clay soil area that should contain elements such as struweelhaagen, pools or swamps (Gemeente Ubbergen, 2010). Different than the VVN project, the VNC deltaplan is partly financed by public subsidies and hence contains less space to 'experiment' with different management techniques. These subsidies are only granted when elements and their management are conducted in a predetermined way, containing standards that should produce a certain type of 'nature, landscape or agricultural nature' (Provincie Gelderland, 2010, Verburg, 2009). Active on a national scale, these three categories could be interpreted as what constitutes nature in the Netherlands. Subdivided into specific types, they can be drawn on a map and be realized in the field by an associated management plan. Producing a landscape, is thus limited to element and management standards that guide the process into a predetermined target from which a farmer can choose elements to 'farm' from a municipal document.

6.3 Expressions in the field

Like the expression of landscape elements in the VVN project, many of the landscape elements built further on previous elements that determine the location of new ones. The struweelhaag bordering the western border of the project for example, was already present before the start of the project, but is a relatively new element that has been created as a 'green compensation' during the land consolidation between 1995 and 2005. During the same period, new sets of ditches have been created that divide the northern part of the area into rectangular ditches for a more efficient agricultural use (Figure 14). Old maps and aerial photographs in Map 9 and Map 10 from the 1850s onwards however, display similar ditches that divide the grassland area into different parcels. Maintaining the 'open character' of the Kom. Ditches are now fenced off from cattle grazing to create narrow, but elongated stretches of 'rough ditches' by introducing a combination of low growing trees every 1,5 meters (Kruis 2010) as presented in Map 11. These elements were further enriched with single willow trees on the southern tip of every ditch and a 30 meter stretch of struweelhaag in the north, keeping a gap open at the top to enable agricultural machinery to pass. Another stretch of struweelhaag is planted on the southern side of the most southern water channel, elongating an already existing struweelhaag next to the farm's courtyard. In this way, the spontaneous (natural) process of struweelhaag formation is speeded up, enriching the construction of the hedge by adding it with multiple species, a process that normally takes 100 years per new species to establish (VNC, 2007). Struweelhagen are landscape elements that can be found both in the Kom as in the Persingen landscape type. A characteristic they share with grassland meadows that also often accompany hedges or rows of trees to form a combination of several elements and may function as a footpath as well. Grassland meadows represent the historic character of a species rich grassland landscape that remained typical for the Ooijpolder until the extension of agriculture. Returning by the space that has been set aside by farmers along the edges of their fields, a meadow habitat emerges again as plant species introduced during earlier sowing on dikes and have found their way or were actively spread with hay depositions (Beekers et al., 2011).

Other elements have literally transformed earlier elements as they are categorized as typical landscape features and important habitat for certain species. Such transformations are best illustrated by the pools and swamp banks that were dug in the northwestern corner of the area (Figure 15). Paradoxically, pools, that were often constructed as a drinking place for cattle or livestock, were not common in the Kom area of the Ooijpolder as water was always abundant in the ditches dividing the grasslands. Cultural elements in the area that are most closely related to a pool are the abandoned clay pits as a result of the clay mining industry. Pools function however as an important breeding place for amphibians of which rare species are present in the Groenlanden nature reserve. An ecological corridor

with the swamps and streams on the bottom of the moraine would increase their numbers and stabilize their survival in the Ooijpolder. Elements like north-south bound struweelhagen and rough ditches in this way function as an ecological corridor providing shelter and protection as the amphibians move from pool to pool. Next to these elements, swamp banks are created along the southern edge of the water drainage channels. Their soft slopes create a slow gradient of water drained soil and accompanied vegetation types that eventually ends with a grassland meadow stretch on top, bordering the agricultural land and connecting the area with the meadow stretches along the struweelhaag in the west. Before the arrival of fertilizer and the construction of the 'Duitsch Nederlandsch gemaal' that lowered ground water levels in the Ooijpolder, plants and animals associated with this habitat could enter the then water rich polder during controlled human river flooding, that were used to fertilize the country. The direct connection with the river took place with the construction of the fish stairs next to the 'Duitsch Nederlansch Gemaal', a water pumping station in the south western corner of the polder. Creating swamp habitat in the polder again, should provide suitable habitat for swamp species and create the former interchange between river and polder again.

The dominant, grassland meadows, struweelhagen and rough ditches in the northern part on the farm create a line like pattern of elongated stretches that link the southern border of the project area with neighboring land in the north. They differ however, from the line like elements that are constructed around the farms courtyard and in the fields east of it. Located on the landscape type Persingen, its dominant land use has been agriculture instead of cattle grassland as is also reflected in the single agricultural patches on old maps in Map 9 that can be perceived as an agricultural island in a green sea of meadows . With the technological innovations and the lowering of the ground water level in the Ooijpolder, agricultural activities have extended into the Kom soils as well. Rough ditches, pools and swampy banks now change into rows of fruit trees and scheerhagen in combination with an elongation of the earlier described struweelhagen and grassland meadows. Any direct evidence for the presence of these former two elements has not been found in the village of Persingen as long row of fruit trees still remain typical for the Duffelt polder in the east. Fruit trees and hedges have received however a cultural historical character that allows them to be introduced on a small scale on or in the proximity of the farms courtyard (Gemeente Ubbergen, 2010).



Figure 14: Ditches separating agricultural lands incorporated as 'rough ditches' as part of the landscape development plan on the farm.



Figure 15: Construction of a pool and swamp banks on the northern border of the farm.

6.4 Nature conservation as part of a multifunctional farm

Like the first farm in the Ooijpolder, the second example uses conservation practices as an additional operational activity on the farm. Maintaining and managing elements provides the farmer with a stable income during a fixed period of time, but may also increase the farms potential by producing new types of commodities. These contain a mix of ordinary farming practices or different farm activities that were already taking place on the farm. The non-productive dairy cattle of the first case study farm for example, function as extensive grassland grazers and the richer vegetation present in hedges, ditches or grassland attracts game for leisure hunting. Similar elements can however also create totally new kind of farm activities as a farmer explores the different kinds of possibilities within the limits of his business. The second farm, a business that already contained a diverse sets of agricultural related activities and is a perfect example of what is defined as a multifunctional farming (Kierkels et al.). Managers, families or tourist can do different sets of activities like cow cuddling, milk clinics, stable high-tea or have a farmers lunch and a special camping site is set up during a popular 4 day hiking event in the area. Clients are also invited to arrange their own program during which the farmer often welcomes them with a small talk about the environment and the conservation practices on his farm, while his website displays the presence of storks and geese that are allowed to feed on his grasslands. The presence of landscape elements is further used by the farmer with providing a 'nature experience' as part of a day program on the farm by which clients receive a local map and are guided along several landscape elements on the also subsidized footpaths. In this way the footpath actively opens up the landscape elements to not only farmer clients, but also visitors who feel attracted by a new kind of interaction between hiking, nature and farming. Walking next to agricultural fields, behind stables and under rows of fruit trees thus creates a new experience that is addressed by the farmer as well with plans to create a little tea house on his land where he wants to place a instant coffee machine serving tea, coffee or hot chocolate with a view on the landscape.

6.5 Nature conservation as part of a multifunctional countryside

Biodiversity or ecological processes in the Ooijpolder are no longer the sole determinants of the planning of nature conservation activities. As areas and elements are designated multiple functions, nature conservation becomes part of the holistic approach of landscape development. An approach that aims to encompass the totality of developments in the project area through which elements can receive different functions. Most of the elements present on the case study examples are labeled as landscape elements in both the municipal development plan and the national landscape index and also farmers clearly state they are 'producing a landscape'. To 'see' its functionality however, the landscape elements have to be analyzed on a regional scale or seen from an aerial perspective. In the Ooijpolder, the dominance of line like characters portrays a landscape that envisions a process of 'innovation and broadening' (Gemeente Groesbeek), that allow areas to (re)connect and multiple functions to establish. This vision contains a specific approach on rural development, a strategy that might be defined as guiding the expression of a rural landscape, that differs from intensive land consolidation and food production or a clear separation between different land uses as have been present before (lop). Instead it links multiple functions with each other and aims to give private landowners an asset by actively incorporating them with new development plans. A hedge is thus not just a line in a landscape, it is an element that crosses several boundaries, hosts biodiversity, is an ecological corridor, a division between different plots, a 'guiding element in the landscape' or a potential a storage of CO₂. A hedge is not just appreciated for being a hedge, is it appreciated for the diversity in services it can provide. A characteristic that stresses the dynamic appropriation of natural resources by humans, as hedges have been valued as sources of wood, property boundaries or cattle fences in the past (Gemeente Groesbeek, Bullinga and Offermans, 1993).

Saving biodiversity, adapting to climate change or providing space for recreational activities are however not just an initiative from farmers themselves. Intertwining with European subsidy systems that were once developed to compensate farmers income and assure the continuation of food production in Europe, European policy is now appropriating rural Europe in multiple directions. Green and blue services for a sustainable countryside, incorporation of environmental and nature conservation practices and targets to improve the competitiveness of the countryside while maintaining an high quality of life is devolved from the European union to every member state to implement on a national scale. Together with an implementation of the European Leader+ program that should stimulate 'new partnerships', 'bottom up' initiatives' and decentralize governance to a regional scale, European rural development is being redefined with a sustainable, but also more liberal character (Europees Landbouwfonds voor Plattelandsontwikkeling: Europa investeert in zijn platteland). As nature conservation is (re)linked to society again, nature is also expected to pay, deliver or provide something back for society. That nature should take care of people as well is firmly stated in the 'natuur voor mensen, mensen voor natuur' (LNV 2000) nature policy title in 2000. Green and blue services in the Ooijpolder are a perfect example as it is similar to ecosystem services that should develop a new kind of economy. They also portray however, the expansion of the market system into natural resources such meadows, ditches, pools and hedges that are advertised, commercialized and com-modified to fit into a regional economy. Constructed to deal with issues on biodiversity loss, carbon storage or water drainage, nature is appropriated to take care of environmental problems.

Reading such policies and proposals, it seems that life on the countryside is changing and taking power in its own hands as concepts such as innovation, locality and sustainable initiatives dominate the rural development targets. From a different perspective however, it can be argued that the countryside has to deal with environmental problems partly caused somewhere else (climate change in the city) or demanded by somebody else (food and recreation by urban citizens). Local initiatives and innovation in these cases, is only allowed on how to implement these goals, as targets and even management is now being fixed in national government policies. Although a farmer is provided the space to and discuss and decide which, where and how many elements he wants to incorporate in his business plan, ideas to free income subsidies from production, systems of cross-compliance and the heading towards a market based agriculture, should stimulate farmers to be more independent or earn their subsidies based on what they can provide for society (Veerman). This not only defines ecosystem services as an agricultural activity, but, by cutting on export subsidies and direct income support a

opening production quotas, creates windows for a neo-liberal perception of the economy to incorporate agriculture production, nature conservation and life on the countryside at the same time. Process of globalization that strive a more liberal market around the world is thus slowly reaching European agriculture, that forces farmers to “take responsibility” and “create a vision and choice for the future” (Veerman). Forcing farmers to choose to enlarge, specialize, cooperate or broaden their activities.

6.6 Historical context

Although the creation of many new landscape elements in the Ooijpolder can be interpreted as new type of landscape, it is clearly based on older elements that have been present in the polder until very recently. As the inner dike Ooijpolder was subjected to land consolidation practices relatively late, the last removal of hedges, trees or bushes dates from not more than two decades ago. As in other parts of the Netherlands however, many, although not all, farmers in the polder felt an urge to remove these elements to increase productivity. At the same time the creation of nature in the outer dike areas started attracting a new kind of visitors to the area that also shifted local economic activities on the farm. Multifunctional farm activities like recreation, nature conservation or the selling of local products in the Ooijpolder municipality of Ubbergen in 2003 show a much higher percentage of 26% compared to the Dutch average of 14,7% of farm businesses that broaden their economical scopes (Luttik et al., 2006) and have received an important function in the two case study examples. With the enactment of projects from the landscape development plan and the arrival of well-established conservation organizations such as WNF and VNC, more diverse landscape elements have been incorporated and changed incentives and opportunities for farmers. Set up with a rationality of connecting and aligning elements and functions through a system of lines and long term relationships, landscape elements are no longer placed where they function best from a per-industrial farming perspective, but how they can fit practically within an intensive and modern farming system while at the same time keeping ecological, recreational and aesthetic functions in mind.

Compared to a conservation policy that was dominated by a distinction between nature and agriculture in the 1990s, conservation has been turning towards new financial constructions, different actors and involved different practices often in combination with the lower level of government. Although often labeled as “new” or “innovative”, nature conservation once started of as a practice very similar to contemporary developments. The first awareness on environmental degradation was given shape by private, not even academic, individuals that started off without the help of any government interference. At the same time, the first concrete conservation action with the buying of the Naardermeer by Natuurmonumenten, was financed by a loan from a bank, by which the interest rate was repaid with an income derived from reed harvesting within the reserve. Regional accounts or landscapefunds are thus no totally new constructions to finance nature conservation and neither is clay mining activity in the outer dike areas. A loan has now turned into a 'green fund' from which farmers salaries can be paid and money is not given to remove products from the area, but to introduce or even produce them within the landscape. With the arrival of multiple actors however, the dynamics of money have become more complex as well. A landscape auction involves private individuals that 'buy' a tree because they care about its management into the future and companies are making big investments to sponsor the maintenance of hedges or meadows to contribute to “the quality of the landscape” (Veilingskrant, 2007). Such investments are attractive as charity and an opportunity to show society you are involved with conservation practices. In a similar way, accounts are attracting companies to stock their money from which a percentage of the money gained from the interest rate is used to pay a bonus to farmers. In this way, the private sector is given the opportunity to 'give money, without giving money' and be involved with conservation practices. Conservation can thus be regarded as an investment, through which more money and hence more conservation targets can be achieved. In fact, a VNC staff member argued that “the government could be better provide interest free loans, than subsidies”, so the money can be used to make more money.

Strictly separated, but complementing each other in providing an attractive incentive for farmers, private and public money active in what is considered a unique combination and success in the Ooijpolder. Following the sources of these flows of money throughout history, may also tell us something more about who is feeling or is considered responsible and with what motivation. At the turn of the 19th century, elite individuals conjugated to save those types of landscape they felt were typical for the Dutch environment and hence had to be preserved. Like conservationist initiatives elsewhere in the western world, conservation of the land had a direct link with a feeling of national identity and was hence a cultural expression. The first and most famous nature reserve in the US was classified as a national park and conservation practices in the Netherlands were at first administered as a cultural activity under the departments of education, art and science and from 1965 by the department of culture, recreation and social work (van Koppen, 2002). As types and management of nature reserves changed however with the knowledge that certain types of nature required an active and intensive intervention by man to remain intact, cost to finance conservation practices increased. Together with a loss of potential income from wood or reed harvesting that lost its economic value, the government slowly started taking a dominant position as its policies on nature conservation contained direct subsidies to conservation organizations, but also incentives for landowners to manage their land in an environmentally friendly way. It is interesting to see that these former initiatives are already present in acts on nature conservation from the 'natuurschoon' wet in 1928, the three 'green acts' from 1975 and continue into the present day examples. What has to be taken into account as well however is the national and international awareness of the public that increasingly demanded social attention and action on environmental issues since the 1970s. It is in this context that nature conservation received a more prominent position in spatial planning policies, during national stock-taking reports and a prominent position in the department of agriculture, fisheries and nature in 1982.

Recently, nature conservation policies, as well as issues on agriculture and food security, have been administered under the ministry of economic affairs and innovation, that under the new government has recently been renamed as the ministry of economic affairs. These developments on the one hand indicate that conservation practices should be approached from an economical perspective and should be governed with such an approach as well. The liberalization and com-modification of both agriculture and nature that is taking place at the moment seem to be a result of these new policies. At the same time however, one could say that conservation issues have lost a bit of its prominent position or at least should be tackled in a different, less centralized way. During the last two decades however, change in public interaction and relationship with both nature and agriculture have changed. These relationships seem more intense than recreational and leisure activities on the countryside that a broader elite started developing around the same time as nature conservation started taking shape. Nowadays, environmental awareness has received a very prominent position within education centers, schools and leisure activities. Farmers and urban citizens seem to have reestablished direct contact with each other through the development of multifunctional farm activities instead of an anonymous production of supermarket food. By investing private money, the private sector has also created a direct stake of what is happening on the countryside, caring and making sure they are involved. The dominance of a sustainable environment in European and national policies and the importance it has for our health and personal well-being, could make one wonder if its administration should maybe fall under a ministry such as that of public health, well-being and sport.

7 Comparing cases

7.1 Strategies in conservation and farming

The various actors involved with nature conservation in the two cases, legitimize their practices as ‘doing conservation’. Defined as such, the various examples of nature conservation described in this thesis can be considered different strategies to conserve nature. In South Africa, game farmers and hunters see themselves ‘as conservationist’, supporting their argument that wildlife should be used commercially and be legally regulated in statistics of growing numbers of game in South Africa (Swan, 2000, Carruthers, 2008). In the Ooijpolder, farmers are stimulated to contribute to ‘the improvement of the quality’ of the landscape and argue to be involved with ‘landscape development’ (Gemeente Groesbeek). Eco-tourism is advocating itself as effectively combining non-consumptive use of wildlife with nature conservation (Wood, 2002). Private nature and national parks advertise that they are taking responsibility towards socio-economic development and the conservation of their biodiversity very seriously (PumbaPrivateGameReserve, 2012). At the same time, para-statal legislation on conservancies promote landowners to ‘set aside land for conservation’ or “manage land in an environmentally friendly way” (Steyn). Outer dike areas in the Ooijpolder have been explicitly separated from any human interference as natural processes are allowed to take over landscape formation. ‘Hunting conservation’ however, cannot be applied in a national park and introducing new animal species in a private game reserve does not match with management regulations of a stewardship program. In a similar way, new wilderness areas in the outer dike areas are categorized as ‘process nature’, that should be managed differently than the static nature on the glacial moraine or the agricultural, semi-natural nature on private land.

Contemporary nature conservation thus remains a diverse activity as practices and discourses are enacted by actors in various ways. It can however, also be a confusing concept as various actors use the same term, but have a different understanding of it in practice. EC parks stewardship programs aim to “maintain a natural character” (Steyn). This includes the eradication of alien species as well as a promotion of indigenous biodiversity and the opportunity for natural processes to ‘be supported’, a target that is shared by the ‘natural processes’ aimed by State forest management in the outer dike areas in the Ooijpolder (Staatsbosbeheer, 2008). Game farms and wildlife breeders however would define conservation in relation to the successful increasing amount of game numbers, especially those of game and see the scientific concepts of non-indigenous and indignity of species as a limitation for their activities which are necessary to remain economically viable. On the game farm, the managing of predator numbers are said to increase numbers of game on and outside the game farm. Neglecting some species, while promoting others, ‘hunting conservation’ can thus be interpreted as a selective process where animals are conserved by increasing their numbers to make sure they can be hunted in the future as well. A situation that is made more complex when trophy animals are considered rare (blue duiker, oribi), economically valuable (sable or nyala) and predators are classified as vermin and considered abundant but ‘ineradicable’. When meanings and values change, or turn into a paradox, for example with the arrival of international clients wanting to hunt jackal or lynx, new conservation practices might follow. It would be interesting how the game farmer would react if intensive lynx hunting were proven to be declining their numbers, while the demand for their trophies would increase. Conservation strategies can however also be based on a historical and cultural knowledge. On agricultural land in the Ooijpolder, landscape elements are based on a particular function and connection with the past. Similar to the heathland or forest landscape on the moraine, hedges, channels or pools contain a more static character compared to dynamic river banks and irregular grazing patterns that are favoured in the outer dike areas. What is considered static and dynamic or natural and cultural is mixing and remains blurry as new, wilder, landscape types are designed such as ‘groenstroken’ that should function as permanent hiding places for migrating species and inner dike areas are connected with the river again via a system of channels, pools, swamps and fishing stairs.

The examples from the case study regions are however not just methods to search for new strategies to ‘do conservation’. In fact, landowners are developing new interactions with their natural environment

that is redefining their continuous relation with it. Taking place on private, often agricultural land, nature conservation becomes an activity that is taken up as an essential element in a landowners strategy to make a living. Developing and using a kind of capital that is having an ecological nature, nature conservation is not only a sustainable or socially demanded activity, but also a rational operation that allows farmers to continue farming. Searching for strategies out of the 'squeeze of conventional agriculture', the narrowing gap between product value and costs (Ploeg van der et al., 2002), Eastern Cape farmers cut down on labour cost and management, producing an exclusive space for trophy hunting and game breeding while farmers in the Ooijpolder invite visitors to 'come and enjoy' the landscape they are producing. Such diversification of farm activities were already present and conceptualised as multifunctional farming in the Netherlands (Kierkels et al.). These changing farm activities, or rural development, have been analysed by Ploeg van der et al. (2002) to explain changing strategies to ensure rural survival. What is important herein, is that nature conservation, or cow cuddling, milking clinics or picnic's, is not just a side activity, irrelevant to farmers existence, but is providing landowners a chance to develop new assets to continue farming on their land. This development is interpreted as a reaction and alternative to modern agriculture and a potential answer to its environmental and economic crisis (van der Ploeg, 2010, Ploeg van der et al., 2002). Disconnected from its local natural resources and heavily dependent on external factors, modern farming is making farmers less autonomous and more dependent on an external supply and demand steered by market forces. Interpreted as such, agriculture in the 21st century can be categorized into those intensifying and enlarging an agricultural enterprise or those "opting" for more self-provision and self-control way of production that is making use of "ecological capital" (van der Ploeg, 2010). Landscape development by farmers in the Ooijpolder can be identified as such a strategy as farmers are (again) engaging in long term interactive processes with natural resources on their land. Such interactions can be considered beneficial on the scale of the total farming business as previously ignored elements are generating money, but also actively produced, as non-productive cows are used as natural grazers and landscape elements are attracting visitors stimulating the rural economy (Luttik et al., 2006). Farming in such a way is using resources that are 'growing on the farm', saving management and input costs that is producing a new commodity that is being consumed on the farm at the same time. Connecting urban visitors with rural landowners on the countryside is thus not just relating different spaces of social interaction, but expressing a different client-product relationship that gives a farmer more control over his production. A character that by implementing nature conservation on their land is also observed during negotiations on element location, management possibilities or skills that are needed to for example develop a website to advertise a 'natural experience' on your farm.

Implementing nature conservation on private land is not only ensuring economic survival by broadening a farmer's scope. 'Natuur voor mensen, mensen voor natuur' policy clearly indicates that society itself should take responsibility to conserve nature that is demanding new strategies and action coming from the private sector. At the same time, changing European agricultural policies are moving away from income supporting subsidies and 'diversifying' is mentioned as one of the directions farmers have to choose to remain viable (Veerman, Verburg, 2008). Organizations such as VNC are lobbying for a subsidy system that combines subsidies with environmentally friendly management within the common agricultural policy that is in line with the Dutch vision of greening the European subsidy system (VNC, 2012). Doing conservation in the Ooijpolder is thus not only turning ecological capital into financial capital. Answering to a demand from society, it is increasing a farmers social capital. Ensuring social survival by legitimizing the presence of farmers on the Dutch countryside. In the Eastern Cape, such an analogy is more difficult to make, as the social and historical context is substantially different. Wildlife and nature reserves have been identified to increase legitimacy and autonomy in a context of on-going land reformation and restitutions in for example Zimbabwe. Here, creating nature reserves (Wolmer, 2005) or water management infrastructure (Hughes, 2006) is using land that would otherwise be out of production and vulnerable for state acquisition. Turned into game farms or nature reserves, landowners are not only giving new meaning to the area, but strengthen the legitimating to remain viable and existing. Although a context of active land restitutions claims seems to be absent in the game farm area, the enclosed territory of the game farm as well as conservancy and ECparks partnerships are 'using' property that previously has been neglected is reconnecting landowners with natural resources directly present on their land again. Game farming however, could

also be considered another type of entrepreneurial farming as commoditized game species have to be introduced from somewhere else and trophy hunters and tourist are an unpredictable type of customer that depend on market fluctuations. Additionally, although maybe better adapted to the local situation, the intensive keeping of sabres and buffaloes is in essence not very different from ordinary cattle breeding. Investment in game farming however, is only expensive during the first phase of adequate enclosure and the introduction of game. Once established, game farming requires far less intensive management in the form of external input, labour and wages as for example pineapple farming. Next to this, game farms are also producing excess game numbers that cannot be sold as a trophy. Far from being redundant, this excess amount of game can be turned into financial capital on game auctions or sold as game meat to the local butcher. Other trophy animals are not introduced or managed at all, as lynx and blue duiker are species already present around the game farm, but turned into a potential source of income with the arrival of trophy hunters. Not dependent on external resources that have to be bought, the game farmer is using a resource that is already there, maybe even more profitable than an introduced animal inside the game farm. In a similar way a landowner and cattle farmer on the other side of Port Alfred allowed visiting trophy hunters and their outfitters to hunt busbuck or oribi on his land that he is allowing to graze next to his cattle and are said to increase in numbers when a specialized 'lynx hunter' is keeping predators away. Game as ecological capital is however also used to increase a landowners social capital, inviting neighbouring farmers to hunt for their leisure and take home part of the animal to process into homemade biltong. During my stay on the game farm, the fridge was full with biltong from recreational hunting and the nearby conservancy was mainly established to keep game for hunting. Initiatives that resemble the early subsistence farming of settlers as they used game an essential part of their livelihood. Being partly self-provisioning again, game farming seems to entail a mix of entrepreneurial and new peasant farming as autonomy is both gained and lost when farming wildlife.

7.2 Commoditization of nature

The incorporation of nature conservation into financial systems and economical markets is a recurrent topic that turn environmental elements into assets that can be used, traded and owned. Both in South Africa and the Netherlands, farmers are deriving an income from the elements they once labeled as vermin and non-relevant or were limiting farm profits in the past. Introducing a nyala or buffalo herd on your farm or designing a footpath along several landscape elements can now be considered as an investment that repays itself along various and multiple routes in the future. New elements are being accumulated into capitalistic ideas around investment, economic growth and the increase of capital are used to conserve elements that once suffered under the expansion of capitalism. Being commoditized, nature conservation practices on private land further display some key neoliberal characteristics as it involves private property and the financialisation of natural elements that is often stimulated by governmental policies and legitimized as an answer to environmental problems, or as Fairhead et al. (2012) is using Harvey's categorization, "the management and manipulation of crises" (Fairhead et al., 2012, 243). Theorized by Harvey as process of 'accumulation by dispossession' as an extension of Marxist 'primitive accumulation', implementing nature conservation on private land does not necessarily disposes primary landowners from their land, but is incorporating other natural elements that have not always been private property or influence ownership by regulations and obligations (Harvey, 2003, Harvey, 2005a, Harvey, 2006). In South Africa, the privatization of wildlife has given landowners and external investors with sufficient capital a chance to enclose 'their wildlife' and start accumulating more and different capital by managing it as a farm activity. Putting up a large fence around it and limiting other land use practices, not only excludes people from access to land, but also disposes them from potential jobs or making use of wildlife resources as they consider to be appropriate (Luck and Vena, 2003). Not everybody is thus legally, economically and socially included in game farming or trophy hunting.

In relation to the development of the wildlife industry in the Eastern Cape, the commodification of wildlife can be interpreted as a reaction to wider globalization of images, experiences and stories of Africa and its wildlife. A process that has been linking the southern African wilderness with European populations since the stories and narratives of adventurous during colonization of the continent.

Writers like Harris, Selous, Baldwin or Cumming were themselves the first recreational visitors to the area and exported their experiences to the broader public unfamiliar with these exotic animals and landscapes (Carruthers, 2005). A recent study on visitors' perceptions of Addo national park, indicated that both tourist and South Africans' main reason to visit was to see animals (Boshoff et al., 2006). Another visiting farmer on the case study game farm told me that "the Americans coming here think we have lions walking in our cities". The thrill of spotting wildlife or shooting your own trophy are thus still alive and can be considered as legacies of those first colonial experiences (Carruthers, 2005). Modern African tourists continue to distribute their experiences and documentaries, traveling magazines or even Disney movie the Lion King continue to create pictures of an exotic landscape full of wildlife (Adams and Mulligan, 2003). The wildlife industry addresses this demand and develops techniques, skills and knowledge to produce a true African hunting or wilderness experience. In the game hunting industry around the case study game farm, the introduction of non-indigenous nyala or impala are a response to the clients' demand and a way to attract hunters to their area, remaining competitive with other regions or game farms (Cousins et al., 2010). An intensive wildlife breeding supplies this demand, by breeding color variants, trophy shapes and species diversity. At the same time, both private game reserves and provincial or national parks introduce 'typical' African species such as giraffe, elephant or lion, keeping the idea of an African wilderness alive. What is thus commoditized, are not only Africa's wild animals (Snijders, 2012), but also Africa's wild experiences. During the production of this experience, an important element is historical absence of human presence in narratives and images wilderness experiences. Game farms, private game reserve but also National or provincial parks and even stewardship programs with private landowners are created to resemble an old African image that was found when the first colonizers entered an empty land, not dominated by humans yet (Adams and Mulligan, 2003). Such examples are also found in the outer dike nature reserves in the Netherlands, where visitors can see the 'new wildernesses' of the Netherlands. These nature reserves contain areas that are off limit for ordinary visitors, wilderness meat can be eaten and special "wilderness safaris" are organized to experience them. The idea of wilderness with a lack of human presence is thus also present in the Netherlands, but in South Africa this is built on a negligence and discrimination of the place that indigenous people took and are taking in the landscape (Anderson and Grove, 1987b). As European modernity today and its colonizing practices in Africa in the past, are influenced by a type of dualism and opposition between everything that was civilized, understood and controlled by humans and that or those that were not. An active distancing that dislocated human culture from nature on the basis of rationality and scientific knowledge that had been developing in Europe since the enlightens thinking in the 17th century. With the arrival of Europeans in Africa, this ideology created everything that was not European to be irrational and wild, making it subject to the rational will of the colonizer (Adams and Mulligan, 2003). In essence, ideas about African wilderness are thus the result of imperialism and its resulting colonization as it created an idea of wilderness that resembled those places that had not been discovered, documented and mapped yet. With the advancements of industrialization and processes of urbanization, the concept of wilderness gained further meaning as those places that had not been touched by civilization.. A process that transformed wilderness from an undiscovered, both attractive, but also potentially dangerous place with natives and wild animals, into a romantic, harmonious idea where nature itself still decides about life and death (Adams and Mulligan, 2003). Presented as such, one can easily forget the less paradise like characters of wilderness that may threaten humans in practice. Not framed within the paradise image of wilderness, they remain present behind rangers carrying rifles, signs to stay in your car and trails preventing people from getting lost. Practices and images that, when analyzed as a process of co-production, may conceptualize wilderness better as a landscape produced by (western) human interest or need and maybe better understood as a cultural landscape.

Selling wilderness as an economic commodity is however not just limited to the game farm owner. The network of professional hunters and outfitters creates a chain of several actors that are involved in the hunting industry and is creating new market niches. Relating the game farmer with external social actors influencing his management. New actors thus emerge on the farm that link farmers with potential clients, but also take a share of the profit. Safaris, excursions, photographic workshops, television shows and books further commercialize nature as something that can be treated like a

business. Even conservation practices, like the introduction of grazing cattle and horses in the outer dike areas, is picked up by a special foundation that provide knowledge and expertise to connect large herbivores with nature reserves or other companies specialize in wildlife capturing, transportation or vaccination (Free, 2013). Such new actors are found even more explicit when private ownership in both South Africa and the Netherlands is being marginalized during partnership agreements. In these situations, management regulations and decisions are set as long term environmental targets, while landowners and 'their land' are at the same time recognized as key stakeholders in conservation initiatives. Partnerships with conservation agencies thus help private landowners to identify and subsequently commoditize natural elements that already were, or could be present on their land and present management subsidies, landscape auctions, tax incentives or potential eco-tourism opportunities as new farming incomes. Backed up with discourses on environmental crisis's, they incorporate private landowners into a the economy of repair that is typical for green grabbing cases and may thus take many forms, as ownership can also be devolved to multiple parties instead of the physical 'grabbing of land'. In the Ooijpolder, the elements managed on individual farms are further part of an all-encompassing development plan for the regional landscape. This involves old, new or even specially invented actors as local municipalities, landscape architects, consultancy agencies, new local landscape funds, agrarian organizations and non-governmental conservation organizations. Designing a landscape has thus become a project, finding willing farmers a task for intermediates and developing constructions to finance it to 'ecological consultant agencies' that can later claim rights and patent an idea such as the landscape auction in the VVN project. A landscape is thus no longer a total independent and public good, but something that has been partly privatized and been incorporated in a new rural economy.

In both South Africa and the Netherlands, these partnerships are using the biodiversity crises to legitimize conservation practices on private land by offering farmers an income to 'farm' elements that foster biodiversity and hence help producing it. Land use practices should thus change and offering farmers a financial incentive will stimulate these changes. Such changes are not always directly linked to reality on the ground as GIS maps in the Eastern Cape, have divided the province into different vegetation zones that steer management strategies to (re)create the indigenous landscape while the LOP divides the Ooijpolder into different landscape types based on (a potential) presence of cultural landscape elements. Such processes of mapping can sometimes lead to dysfunctional appropriations and a mismatch with practices on the ground when not adequately matched with reality. Ecological corridors drawn between two already existing nature reserves or 'view lines' in the Ooijpolder landscape are easily drawn in project designs and development plans, but have to be matched and adapted to fit with the practical reality on the farm.

Hunting game farms use similar legitimations, as rare species are vulnerable to extinction, but can be saved with a "healthy and sustainable and commercially driven wildlife industry". In the Netherlands, the environmental crises is strengthened with a cultural or historic crises, as the loss of hedges, channels, swamps and pools "will be a loss to the Dutch countryside" that can not only be stopped, but also reversed by framing landscape elements. Environmental crisis's are however often combined with the sense of an economic crises that indirectly forces farmers to change practice. The expansion of the game farming industry can be interpreted not only as a reaction to potential profits and financial incentives during the 1990s and 2000s, but also due to the rising costs of and issues with labour on the farm, losses or agricultural subsidies, agricultural deregulation or the lack of import taxes for meat in South Africa. Although not directly stimulated by external organizations, such agricultural diversifications are now partly legitimized as conservationist practices by the game farmers themselves. Although sometimes criticized by nature conservationist, searching for ecotourism opportunities for private landowners that manage their land in an environmentally friendly way are in essence very similar. In the Netherlands, the parallel use of environmental and economic crises is stated even more explicitly as WNF sees its 'One Europe more nature' project as a win-win situation for both biodiversity and the rural economy. Dutch agricultural and rural policies encourage the combination of nature conservation and the private sector, as they develop conservation policies that should search for private finances and depends on responsibility from society itself to conserve its

nature. Opting that nature should provide services for society as well, it produces policy that creates a market for ecosystem services that should take shape via a more liberal and market driven countryside.

7.3 Networks and interactions

Human needs and interest influencing process of co-production are translated into actions through continuous negotiations between different social actors. Conceptualized in a social network, who is consciously or unconsciously influencing the expression of co-production involve both internal and external social actors active during such negotiations. These influences are related through processes of labor that enacts dominant needs and interest from society into specific characteristics and hence constantly reconstruct values and meanings attached to natural resources. Nature is thus relative throughout time as elements receive not only different meaning but are also being transformed into different shape. Expressing itself specific in place and time, nature conservation on private land is sharing an interesting set of characteristics that link processes of co-production on a regional and global level. In both case study regions, the farmers or rangers working on the land, are not the only actors present on the farm. Different kinds of partnerships, policies and institutions link practices of nature conservation with a diverse set of old and new stakeholders that create a network of different actors. These networks are patterns of social interactions that are subject to a continuous change of composition via negotiations that bring or receive agency from (new) actor to actor. Such negotiations for example, have taken place during farmer-ecologist discussion on how to combine biological knowledge with farm practices that have produced an outcome in a 'bedrijfslandschapsplan' (business landscape plan) or the fencing qualifications and permits on a game farm. In the Ooijpolder, a 'bedrijfslandschapsplan' is however not fixed or definite, as ecological monitoring groups such as the 'Flora and Fauna werkgroep Gelderse Poort' evaluate ecological processes in these 'new' areas and develop reports and ecological advice on management. In the VVN project, negotiation takes a central position in the project by doing management of 'trial and error', an "experimental" way that seeks the best consensus between farming and conserving nature. During such negotiations, biologists preferred an extensive an irregular grassland management to create dynamic meadows. For a farmer, it is essential that it fits into his agricultural operations, stretches of grassland for example, have to be the proper size to fit the length of the mowing machine and there has to remain space for cattle and agriculture. Intensive mowing however, did not result in a rich and varied meadow, but created a thick layer of grass dominated by a limited species of grass. In order to create more biodiversity, biologist and farmer found a way to combine both interest as a small group of pregnant or young cows were introduced to the meadow plots create to resemble a natural grazing process like in the outer dike nature reserves. Such consensus however, seems to be constantly in motion as biologist would favor to see "an old brand of cattle" that is owned cooperatively by several farmers and can graze throughout the year while the farmer sometimes still decides to mow the narrow stretches of grassland with his machine.

Partnerships

Nature conservation on private land is thus understood as an activity that involves the negotiation between different stakeholders living on and outside the respective area that is to be conserved. Outcomes of co-production are hence relative to their associated negotiations and consequentially related to the internal and external actors involved. Both in the Eastern Cape as in the Ooijpolder, such relations are expressing themselves via various partnerships between private landowners and a combination of government or non-governmental organizations. In many examples, these partnerships involve the concept of biodiversity, a recurrent topic in both policy documents, conservation agencies brochures and as legitimating argument during conservation practices in the field that stresses the loss of biodiversity as we move into the 21st century. Backed up by international agreements and conventions, it is a concept picked up by a diverse set of organizations that develop strategies to implement nature conservation on private lands. In South Africa this is further devolving through national TOPS regulations, while Holland's new landscape and nature index is achieving European N2000 and associated biodiversity goals via subsidies and management guidelines. Directly linked to this discourse, are the concepts of non-indigenous and indigenous species and activities like species

(re)-introduction or alien eradications. In relation to this second discourse, landscapes can be defined to be home to a specific and limited type of elements or species that characterize a region based on an ecological, historical or cultural knowledge. These concepts are taking a central position in the motivation and argumentation of various partnerships in both case study regions. In the Eastern Cape, EC parks is inviting farmers to manage their land according to different sets of environmental criteria that represent a different level of conservation, offering them “a chance to contribute to the protection of biodiversity”. At the same time, the cooperation’s of landowners managing their land in an environmentally friendly way in conservancies, can be interpreted as private public partnership between the landowners and the eastern cape province in which management regulations are exchanged with financial or hunting incentives. Similarly, Dutch farmers involved with the VNC project were invited to “improve the quality and diversity of the landscape” (Gemeente Groesbeek) that will benefit “plants, animals and humans” and the VVN farmer experimented “in partnership” with nature conservation organizations to develop new ways to protect nature.

Partnerships with private landowners thus extend the scope of conservation agencies to protect biodiversity or landscape elements on new territory. Dependent on the type of partnership however, there may be room for multiple stakeholders. In the Ooijpolder, external stakeholders become directly involved as the private money provided by the local fund is made available by various companies and banks, whereas the partnership between WWF and Stichting ARK with a local farmer in the VVN project, has been expanded and diversified with the financial incorporation of various ‘buyers’ during the landscape auction. A network between internal and external actors can thus be drawn that makes these conservation activities possible. Attached or concerned about the local environment as they were, landscape auctions, regional funds and accounts can be interpreted as institutions that not only provide a new pattern how to enable nature conservation practices, but also an opportunity for urban citizens, companies or other external stakeholders to decide on conservationist issues and relate themselves to a property that is not their own. Such partnerships differ from the stakeholder partnerships between ECparks and private landowner or a conservancy cooperation with the provincial government that does not create more space to incorporate external stakeholders and does not seek after broad civil engagement.

Partnerships however, do not always have to be formed between private landowners and formal conservation institutions. The game farm in the Eastern Cape for example, sees an collaboration between neighboring farmers and professional hunters and hunting outfitters that exchange resources and possibilities that strengthens and diversifies peoples assets. The network of hunting outfitter, regional professional hunter and local game hunter for example eventually link overseas hunting tourist with their trophies on a small game farm in the Eastern cape that turn game into a commodity. Dependent on what is available on a game farm, or desired by a client, informal ‘partnerships’ between game farmers and hunting outfitters are taking shape. At the same time the hunting and wildlife industry seem to use a different interpretation and operationalization of nature conservation that is not always accepted in well-established nature conservation organizations, ecological sciences and public debate. Biased towards those animals that are commercially attractive to protect, is an often heard critique on game farming especially when it is managed in an unsustainable way. When managed sustainably however, it contains an operationalization of conservation that allows natural elements, to be commoditized and directly used by humans instead of a protection from direct human intervention. A type of nature conservation very common during the first decade of nature conservation in the Netherlands as well as wood harvesting or fishing practices continued once an area was defined as a nature reserve and guaranteed its survival. It is interesting that hunting was practices until 60 years ago on Natuurmonumenten nature reserves, but has become socially unacceptable and hence considered an illegitimate or immoral way of using nature during contemporary practices (van Koppen, 2002). An atmosphere that limits Dutch farmers for example to develop sport hunting facilities for visitors on their land, an opportunity that could be a small scale solution (or opportunity) to deal with the excess of geese on many farmers grasslands.

Access and participation

Although using similar environmental legitimations for the conservation practices on their land and developing strategies that incorporate natural elements into the financial system of a farm, ideas about access and participation with local stakeholders can be interpreted and expressed in an almost opposite way. The two case study examples in the Ooiypolder display several signs and information shields that guide any passer-by, tourist or local, inviting and informing him or her to and about the local area. Also during the landscape auction, landscape elements were offered to small and big financial capitals allowing both private individuals and big companies to participate and footpaths along these elements are open to any type of visitor. Although dogs are still prohibited to enter these and many other types of nature conservation areas, and access before sunrise and after sunset is not allowed, the Ooiypolder has a very open character as both locals and visitors are welcomed to enjoy the landscape. On the contrary, private game reserves, hunting game farms, but also national parks in the Eastern Cape are enclosed with fences carrying shields that signal 'danger' to prevent unwanted visitors to enter the area where they turn into trespassers or poachers when found without any authorization. Such signs can also be found in the outer dike nature reserves, although they state that entrance is prohibited because of the 'fragile state' of nature in this area. On the other side of many private and national nature reserves want visitors to enter the area and enjoy their stay, after having paid an entrance fee or aiming to shoot a trophy bull with their hunting rifles or safari cameras. Farmland that has received a new function as it has been turned into game area is now literally closed from any spontaneous human presence as gates and entrance fees select the type of visitor that enters. This spatial design on the Eastern Cape's countryside make the boundary of what is owned by the landowner and what land and resources are available to others more concrete and less blurry compared to the Ooiypolder, where private and public access and use becomes more intertwined. In order to keep people out, a game fence in the Eastern cape is not only an adequate enclosure for animals, but also to keep people outside a wilderness area. These ideas might form the emotional and idealistic reasons behind the need to put up a fence apart from practical issues of ownership and protection. People, and especially native Africans, do not fit into the wild landscape that we identify ourselves with. In these settings, some people sometimes have to make space for wildlife and are even granted fewer rights and possibilities when elephants are allowed to cross borders in transnational peace parks but people are not (Draper et al., 2004). The presence of man in these wilderness is however debatable. Prehistoric cave paintings around the Matopos Hills in Zimbabwe are recognized and preserved by colonial occupation, but indigenous land use practices by local residents were ignored to make place for a wilderness area (Adams and Mulligan, 2003). In another example, the 'loss of a wilderness' and massive killings of elephants and other wildlife in the Save conservancy in Zimbabwe show that ideas about nature and wilderness are not universal or link with some form of local, indigenous identity (Wolmer, 2005). Indigenous people interfering on game farms or national parks are seen as poachers and their practices as destructive as was also found in Kwazulu Natal by Brooks et al. (2011). Ignoring native Africans in a similar way as the first colonial settlers as people hunting with snares are seen as poachers and people with guns as trophy hunters. It is important however to recognize and value pre-colonial land use and environmental history to better address the modern environmental problems we are dealing with.

Such a process demands a de-romanticizing of ideas about wilderness and the absence of human impact. Incorporating this knowledge and deconstructing assumed discourses were conducted by Fairhead and Leach (1998) whose research in Guinees forest-savanna mosaic landscape gave us a new interpretation of forest degradation and landscape formation (Leach and Mearns, 1996, Fairhead and Leach, 1998). Taking this view instead as an 'Eden on earth', wild Africa has to be analyzed in the context where local people already inhabited an area with economies, trade and pastoralism, but also droughts, cattle diseases and resulting social and organizational change, influencing the landscape outside the impact of colonialism (Adams and Mulligan, 2003). Closer to the case study area, the idea of a wilderness excludes native amaXhosa land uses and land meanings in the Eastern Cape. Cocks et al (2010) describe the religious and sacred relevance of forest, which are not only used as resources for hunting or fuel wood, but also contain places where young boys go for initiation schools or are platform for ritual activities. Biodiversity and natural resources are however not only limited to communities or traditional lifestyles, as 'amayeza yesiXhosa' (Xhosa medicines) are still used and

given meaning in urban settings as well and wild plants are still being used for cultural purposes in urban settings (Cocks et al., 2006, Cocks and Dold, 2006, Cocks and Dold, 2004). Contrary to colonial culture of opposition to nature and wild places, pre-colonial and contemporary native African societies interpret places outside their settlements not as places without humans (Murombedzi, 2003). Instead, it are places of persistent human interaction, either as a place to be engaged by social process of settlement or to be worshiped for the presence of religious forces or as a place for personal development or well-being (Cocks et al., 2012). These societies attached their own meanings to the environment and developed institutions how to interact with it creating not only patterns of harvesting, but also regulations on where to harvest and what to conserve (Murombedzi, 2003). Such regulations differed throughout Africa, depending on the main livelihood strategy of the tribe that required different strategies to live in the environment. An Eastern Africa example of the Massai who are pastoralists, will only hunt those animals that do damage to their cattle. This protective hunting, is distinct however from their cultural hunting of (only) male, adult lions for young boys to prove their manhood. Ikoma people in the Serengeti on the other had to hunt to obtain food, as a direct source of subsistence, hunting herbivores instead of damage causing animals such as elephants or rhinos (Meguro). Hunting in pre-colonial Kenya was however closely regulated by community laws as taboos existed on certain species as their killing was perceived to be a bad omen (Akama, 2008). Other animals served as community totems and were thus ascribed a special meaning as they were features and characterizes were passed down from generation to generation, learning about the different animals in their environment. Pre-colonial Africans actively resulted and influenced their environment as a necessity to co-existing within it. This should not only question the contemporary exclusion of native Africans from conservation discourse, but also our understanding of the naturalness of a landscape and the future of its conservation.

From a more practical perspective, the different spatial landscape between the two case study areas reveals a difference in local history that influences the appropriation of certain environmental properties. In the Eastern Cape, private landowners own the wildlife on their farm, making it a valuable yet vulnerable asset that has to be secured and protected. Subsequently commoditizing it as a product, service or experience that can be sold to others, the private property of wildlife is a central element in the financial system of the contemporary game farm industry. Translated directly into practice with game fences and the exchange of animals, the concept of property as it is defined in a market based economy, influences the spatial design of the local landscape. This ownership can be interpreted as a result of many decades of lobbies and conservation practices by sports hunters. It is specific for South African nature conservation that the first South African reserves were game-reserves, set aside for the purpose of game hunting by sportsmen (Brown, 2002, van Sittert, 2005). Conservation has thus always had an animal focussed attention compared to the more inclusive, scenery or landscape conservation typical for the rise of national parks in the United States or the one that is advocated in ECParks partnerships or in the Ooijsolder. This could be partly explained by the abundance and diversity of especially big game species during the arrival of the first colonist (Murombedzi, 2003) as well as the romantic narratives of the first encounters with these animals (Brown, 2002, Carruthers, 2005). Subsequent game laws around the turn of the 20th century and a realisation that wildlife numbers were declining, led to animal classifications such as 'royal game' which received additional protection, and fees on animal product traded and hunting licences were increased (Brown, 2002), similar to the CITES permits, transport fees and trade regulations on wildlife products that South Africa joined in 1975 today (Bodasing and Mulliken, 1996). The contemporary permits and hunting regulations around wildlife utilisation is however blocking an equal use of this natural resource by all South Africans. Especially native Africans have been neglected in the discussions around wildlife conservation and their interpretation and meaning of the concept as biodiversity has remained absent from debates until today (Adams and Mulligan, 2003, Brown, 2002). Although it has been recognised and a shift has been made to include social, cultural and economic systems during the conservation of biodiversity to include traditional and indigenous knowledge during the 1992 international convention on biodiversity (Mascia et al., 2003), these approaches remain vague and do not include Africans now living in communities or urban settings (Cocks and Dold, 2006). Nature conservation and the development of trade and hunting regulations could thus

also be interpreted as measurements which limit native African participation, as rich trophy hunters will be able to pay these fees and hunting is only allowed inside the game farm..

Conservation in the Eastern Cape thus partly neglects the agency of local people. However, local people are indeed owning a degree of agency that they use to turn game into a source of bush meat or oppose to conservation agencies as Eastern Cape Parks to turn their land into a wilderness area (Hough and Prozesky, 2011). Such cases in which people have to make room for nature assume a state of naturalness of landscapes and eco-system processes and despite the recent efforts to engage native people with its practices in Community Based Natural Resource Management, are still grounded on romantic images of wilderness and harmonious indigenous people living with it (Leach et al., 1999, Adams and Mulligan, 2003, Agrawal, 2003). Nature conservation however, is and has always been, a diverse practice that can be seen as an expression of co-production between humans and their environment. The African examples described in this thesis, all seem to relate to a specific idealistic picture which keeps humans and wildlife separated. Containing a picture that argues for the restoration of times before colonial arrival and agricultural expansion. A discourse that is used to legitimize current nature conservation in Shamwari, a famous and prestigious private game reserve receiving numerous prizes for their conservation work, that advocates 'reclaiming land' for wildlife richness of the past, legitimising their establishment in 1992 (Shamwari, 2012). In the Netherlands however, individual animals are not owned by the farmer and neither are they the most important asset of their new agricultural activity. Instead of being dependent on a mobile natural resource, the Dutch case study farmers make money by converting agricultural land into landscape elements. Contrary to South Africa, nature conservation initiatives started off by looking for environments that were typical for the Dutch landscape. An activity that continued to facilitate a holistic experience as visitors are attracted to the total landscape that extends single farm boundaries. Income is also not dependent on irregular tourist revenues or game sales, but is guaranteed with 10 and 30 years contracts with various public and non-governmental organizations that are willing to pay for the conservation of a holistic landscape. As both cases can thus be considered examples of how natural elements are being commoditized and incorporated into the financial system of a farm, the different institutional pattern around it forces eastern cape game farmers to better control their resources that could be considered more 'wild' than the semi cultural elements in the Ooijpolder, much more intensive.

8 Conclusion

8.1 Relational spaces

The basic proposition of co-production, the theoretical explanation how landscapes are being produced, humanized, and how they function, is the continuous interaction between human labor and the characteristics of biophysical properties. As social negotiations steer actions that change the shape of biophysical properties, new properties are also inducing movement in other parts of both society and biophysical elements. Co-production is thus not just an endless process of creating new platforms for continuous interactions into the future. It entails an expanding kind of momentum that is triggering new interactions into other processes of co-production. Interpreted as such, spaces such as the game farm, nature reserves or ecological corridors are not independent spaces of interaction inside the landscape, but relational flows of interaction that influence and hence depend on each other. Changing the characteristics of societies and environments. In summary: outcomes of co-production are not geographically fixed or dependent but will induce change and development in different places while being influenced by processes of co-production from somewhere else. Some relations are clear cut, as game auctions are exchanging wildlife species between national parks, game farms and private nature reserves and plants or trees are being planted to create landscape elements. Other relations are less obvious when trophy animals introduced because of their trophies interact with other species on a game farm. Influencing their expression in vegetation growth or animal behavior or when introduced beavers or sown seeds in the outer dike areas are establishing themselves on farmland. Outcomes of co-production such as the enclosure of game on a game farm, are subsequently creating new demands and technologies and knowledge such as regular introduction of new genetic material, limiting group numbers and checking for illnesses. At the same time it is creating 'unintended' interactions in society with befriended farmers who are allowed to shoot a female kudu, a source of food for staff members and their families who use the meat of the trophy or 'poachers' who see the increase of game as a new source of bush meat. Having a game farm, thus not only changes physical spaces of the landscape, but is also reshaping social spaces as trophy hunters are interacting with local farmers, creating different social interactions between neighboring hunters, farmers local people or, in the case of many private game reserves, international students or volunteers that can do projects and programs. Multiple interactions between humans and biophysical properties, but also between humans and other human or non-humans and the biophysical properties around them, are thus changing and influencing each other at the same time.

However, interacting with biophysical properties on your land as a result of nature conservation, may also provide opportunities. As ecological capital allows farmers to develop new kinds of commodities, new products are emerging. As the VNC project farmer expands 'his' landscape elements as 'nature experience' farm activity during a hike around his farm, landscape elements and footpaths are turned into a leisure activity taking place on the farm, while also receiving a subsidy and bonus for its initial implementation. As VNC (2007) argues in their plan as well, the strength of landscape development is that a "when well-coordinated, investment in the landscape is also an attractive investment in the local, rural, economy" that is depending on the combination of landscape elements on several properties. Nature conservation on private land is thus just a moral act done on the behalf of society, it is taking a crucial position within the operational system and autonomy of a farm. Used as a resource to separate property, collect wood or store drinking water before the 20th century, ignored or lost during land consolidation and intensive agriculture, hedges, meadows, pools and ditches into the 21st century are reemerging as capital that is starting to get used by farmers again to make a living on their land.

8.2 Interactive spaces

Co-production is not just about producing the visual outlines of a landscape. Cutting hedges, sowing seeds, introducing animals or influencing their behavior is ‘producing’ plants and animals that as a whole are making up and producing our landscapes while social relationships that are changing as a consequence are reshaping abstract spaces of interaction in society. During co-production, such spaces are (re)-interacting as humans and biophysical properties continue to meet and influence and hence change each other. Space I consequentially argue, becomes constructed as both relative and relational outcomes of co-production during nature conservation on private land are evolving; influencing or producing new spaces through time. Conceptualized as such, interactions between humans and biophysical properties are not taking place within the environment, defining it as an all-encompassing, singular space. Instead, the practices enacted during such interactions of co-production are what is creating specific spaces. The interaction between biophysical characteristics and social negotiations are thus in essence producing spaces that are often defined as ‘nature’ or ‘the environment’ in contexts of nature conservation. As such, spaces are flexible realities that are being produced during individual or collective action as processes of labour. While ‘working with’ biophysical properties that are producing a human history in spaces. In other words, spaces are no universal entities out there, but actively enacted via our practices in interaction with other biophysical elements. In the different cases, such enactments are manifold and hence explain why certain initiatives of nature conservation on private land, but also outside it, express themselves as they do. On the game farm, the interest of hunters to shoot a ‘wild’ trophy animal motivates farmers to switch into game farming and own their own game. An interaction between an international demand and a local product that have found their balance on the local space on the game farm. Game however, is a mobile resource, a property that makes it difficult to control and legally unable to own when not adequately kept in captivity. While the need for trophy animals introduces certain animal species on the land, the need to control, protect and own it forces game farmers to enclose their properties with fences, changing the spatial layout and social relations on the countryside. Fences are similarly constructed around national parks or private game reserves, keeping animals in and unwanted people out, or even intersect single properties when lions are not allowed to feed valuable buffalo, hunting practices should not be seen by eco-tourist or buffaloes and sables are kept in a smaller area to keep a better eye on them. Such interactions are also taking place in the Netherlands. Where galloway cattle and konik horses are valued for their irregular grazing that answer to the need of certain biologist to create a mosaic vegetation pattern, a type of space is produced that is characterized by certain natural processes and the prevention human interference. On agricultural land, hedges evolved into their elongated shape as property demarcations or dry ditches. Providing shelter that allows species to migrate between the outer dikes and the moraine answering to the need of more biodiversity and ecological corridors, but also fulfill a “guiding function” in the landscape to design footpath and represent a cultural landscape elements. Contrary to the game farm however, functions, meanings and values are only just changing interpretation from both local and external actors. Involved in various partnerships, subsidy systems and visitors, local spaces are still in an ‘experimental phase’ being produced in combination with external stakeholders whose values and opinions are increasingly considered relevant or gain strength to make a claim on land management.

Recognizing nature as a relative and relational space of interaction, I further argue that what we interpret to be natural, contains a dominant social and historical dimension. An interpretation that explains why biophysical properties are expressing themselves different in time. Speaking of a ‘natural landscape’ or ‘natural processes’, thus remains very relative as what is natural for some, turns out different to others. At the same time such visions often legitimize their vision on a historic baseline from ‘before the presence of man 10.000 years ago’ or ‘before the start of colonization’. An assumption that intrinsically decouples human influence and practices from the landscape and relates nature to the pre-human or pre-modern periods. Many of such ‘natural’ examples are however using paradoxical practices such as the introduction of animal species, alien eradications, digging and mining, dividing areas with fences or have been depended on human activity in the first place. These practices are often legitimized as restoring a disturbed balance or giving natural processes a chance, but again, these ideas contain a very humanized idea of nature as it is favored by certain assumptions and criteria on how nature should be. The diversity of nature that can be found within a small area

such as the Ooiypolder and the different assumptions on the African wilderness, should make us wonder if a natural environment, landscape or process is existing at all. Referring to an analogy that Derrida is making with the claim for an “ideal body”, “the human body”, like the landscape, ecosystems and plants and animals around us have never had an “organic and original naturalness” (Deutscher, 2006, 2), but have always been exposed or have incorporated ‘unnatural’ items. Claiming to restore a natural balance or a natural landscape, a true African wilderness or the historical Dutch agricultural landscape, is thus containing ideas of purity that immediately label other ideas as threatening. A process that depoliticizes debates on nature as it divides reality into natural and unnatural elements and creates a sense of crises that separates good practices from bad practices. In the Eastern Cape, private game reserves exclude human presence by enclosing nature with fences and controlling access through gates, hunting game farms attract sport hunters, but dismiss subsistence hunters as poachers while conservation agencies limit hunting at all and forbid landowners to introduce non indigenous species and stimulate alien eradications. Similar differences of nature are present in the Ooiypolder as some types of nature dismiss any type of agriculture, while the other depends on its existence. Geese are exceeding in numbers because hunting or killing them is unaccepted by society and visitors are welcomed to enjoy nature, but only in a limited and designated area and usually without picking flowers or bringing home mushrooms. Catching a bushbuck with a snare is thus unethical, hunting geese as a leisure activity is labeled as inhumane and walking your dog or visiting a nature reserve after sunset is disturbing nature. Nature conservation, or the management of nature which are basically similar when we treat our relationship to nature as processes of co-production, is thus very normative and hence often defined as morals or conceptualized as ethics. As what can be concluded from Franklin’s (2008) introduction in “Tourism and the consumption of wildlife”, the conservation of nature is not based on universal principles, but is about deciding “how” and “how not to behave” in nature (Franklin, 31). In line with Derrida’s philosophy, claiming or legitimizing nature conservation practices because it restores a natural state of the environment thus contain a “false alibi” as the question should not be if we allow our environment to be “contaminated, but which’ (natural) contaminants we will embrace in it” (Deutscher, 2006, 3). Analyzing nature as processes of co-production, thus reveals that nature is always incoherent and what is considered natural, differs per type of co-production. An approach that allows us to define nature as a space of social and biophysical interactions instead.

8.3 Constructing spaces

That what is defined as nature are spaces of social and biophysical interaction. Human labour and biophysical properties are constructing spaces during nature conservation on private land in the Eastern Cape and Ooiypolder. This is defining spaces as enactments of interaction. As a reciprocal and relational processes relative in time. Constantly changing the functions, meanings and values of natural resources and the social networks they are related to. As such space are flexible when perceived as the outcome of co-production. With interactions as a key element, spaces can be conceptualized as that what we are doing, not as something that is already and has always been out there. So, spaces are not containing clear cut boundaries. Even when it might seem like when fences and shields demarcate properties. Analyzed as co-production, spaces are relational, influencing and being influenced interactions taking place somewhere else and/or some other time. Understanding spaces as flexible products, instead of a single static entity, humans are receiving an important productive role in the various spaces that are surrounding us, or better; that we are taking part in.

The two cases illustrate how farmers in interaction with their environment continuously construct spaces during processes of co-production. Searching for different strategies to escape the ‘squeeze of conventional agriculture’, nature conservation is incorporated as an agricultural activity to produce commodities with lower costs and higher values. Identified as processes of co-production, nature conservation on private land expresses itself differently in place and time. Different processes of co-production thus lead to different constructions of space. In the Eastern Cape, dealing with labour issues and high management costs, the commoditization of wildlife can be interpreted as an agricultural strategy that encloses private property to produce a lucrative, yet exclusive product. Summarized in Figure 16, processes of co-production during game farming express themselves as

exclusive and restricted spaces. Changing biophysical properties as farmers introduce and enclose game and changing social interactions by requiring new types of management and developing new types of commodities for an international trophy market. In the Ooijpolder, answers to rising costs and shrinking values have resulted in farmers doing landscape development. Here, processes of co-production construct an open space by inviting people on their lands. Biophysical properties change as farmers develop an ecological capital by, again, incorporating landscape elements with a function and value on their land. More so than on the game farm, ecological capital is independent from high primary investment or resource introductions. However, changes in social relationships are more recent compared to game farming, constructing a space that is yet to find its balance between society and biophysical elements. Comparing two cases on different sides of the world, both farmers are active agents in constructing spaces throughout time and face similar challenges to remain viable on their lands.



Figure 16: Different spaces around nature conservation on private land plotted according to the market orientation of their products and the degree of open participation.

This thesis places humans on equal foot with other biophysical elements that are in interaction constituting and 'producing nature'. Interpreted as such, nature conservation on private land can be perceived as progressive, de-romanticizing the non-utilitarian and protective assumption of nature conservation that decouples humans from nature by preserving it as a beautiful, but fragile paradise on earth. Decentralizing and turning it into an economic activity and agricultural practice has further shifted nature conservation from an elitist or expert activity into a broader social opportunity. This is reconnecting people with the opportunities and potential of their local resources. Negatively introduced as 'green *grabbing*', privatizing nature, as acknowledging and creating the possibility for humans to work again with nature, is thus in essence not necessarily negative. In fact, it is reconnecting farmers with the 'living nature' in their direct environment during a co-productive process that is integrating farm activities within their local environment. Turning nature conservation into a rational, economic decision to make a living from the land. After a century of disconnection and dependence on external markets, resources and consumers, game farming and landscape development is taken up by farmers to develop a way of living that is changing the characters of rural spaces in the Eastern Cape and Ooiypolder.

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