“We owe it to the Cow”

An Actor Network study of the Telemark Cattle

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Spring 2017
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2017

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Abstract

The Telemark Cattle is famous for its beauty and is admired by many local farmers and people in the agricultural community. This breed has brown and white marks all over her body, often referred to as roses. The Telemark Cattle is nowadays replaced with a more efficient, healthier, scientific and modern breed, Norsk Rødt Fe (NRF). This multifunctional cow, NRF, is a result of scientific methods that fits into a growing and demanding market. How does the older, traditional breed fit in to a modern multifunctional farming policy and culture?

My case study of the Telemark Cattle examines the results from qualitative methods. My empirical findings are analyzed using Actor-Network Theory (ANT) as an approach within science and technology studies (STS), to understand how and why the valued actors around the Telemark Cattle are important. As it occurs in tradition, policies, texts, technologies and cultural methods, I study the interactions that evolve between different actors. This kind of translation consists in a society through schemes and policies, on a local, regional, national and international basis. These methods, ANT together with translation, are used to understand the valuation in the agricultural mountain region.

The conclusion and main findings in this thesis show how the Telemark Cattle confers, in certain areas, the identity of natural belonging despite her lack of productive qualities. She is a cultural, traditional and symbolic creature with values that influence the political progress and cultural priorities in the mountain region.
Acknowledgments

This thesis is a result from my two years at Technology, Innovation and Knowledge at University of Oslo. I could not have written this without the resourceful people I met on my way through the last year of study. The motivation for my thesis was to study the values of the agricultural life in the mountain region and I met some of the people that were the whole reason for its existence.

First of all, I would like to thank my supervisor, Susanne, who guided me through this last year at TIK. Thank you for always finding the time to give me the feedback I needed, and for strengthening my thesis with your broad knowledge in science and technology studies. Your positive attitude and patience helped me stay calm at times I did not see how I was going to manage it. I could not have done it without your encouragement.

I grew up on a goat farm in Telemark and the values that I grew up with at this farm are a huge motivation for me to contribute to more research and literature in this field. I hope it will be possible for future families in the mountain region and rural areas in Norway to build their own farm, in their own way, and that more kids will grow up like this in the future.

A special thanks to Bob, Ellen, Anne and Astrid at the County Governor, who gave their limited time on hands in order to help me out and understand some of their invaluable processes and projects. A big thanks to all of my informants, Anne-Sofie, Aslak, Thor, Kjell and Ingebjørg who all explained the agricultural life on different levels so well. Thank you, Mari, Gunn Kristin, Solveig and Per Ingvar at Telemarksforskning for taking the time introducing me to some of your broad and valuable research material. I am very grateful that I got the chance to join Fjellnettverket to Grüne Woche, thank you.

I am also grateful to Ingrid and Magnus, for proofreading the thesis. Along with my grandparents and parents who has answered all kinds of political and agricultural questions by texts and phone calls. For putting up with me these last couple of months, a big thanks to family, friends and my Magnus. I owe you all at least three hours complaining about life.
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<thead>
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<th>Abbreviation</th>
<th>Norwegian Translation</th>
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<tr>
<td>ANT</td>
<td>Actor-Network Theory</td>
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<tr>
<td>EEA</td>
<td>European Economic Area</td>
</tr>
<tr>
<td>EFTA</td>
<td>European Free Trade Association</td>
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<tr>
<td>EU</td>
<td>European Union</td>
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<tr>
<td>KBBE</td>
<td>Knowledge-Based Bio Economy</td>
</tr>
<tr>
<td>NIBIO</td>
<td>Norsk Institutt for Bioforskning</td>
</tr>
<tr>
<td>NRF</td>
<td>Norsk Rødt Fe</td>
</tr>
<tr>
<td>OECD</td>
<td>Organization for Economic Co-operation and Development</td>
</tr>
<tr>
<td>R&amp;D</td>
<td>Research and Development</td>
</tr>
<tr>
<td>STS</td>
<td>Science and Technology Studies</td>
</tr>
<tr>
<td>VRI</td>
<td>Virkemidler for regional FoU (R&amp;D) og innovasjon</td>
</tr>
<tr>
<td>WTO</td>
<td>World Trade Organization</td>
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Agricultural Adjustment – Innstillinger til Stortinget

Agricultural Agreement – Jordbruksavtale

Agricultural Settlement – Jordbruksoppgjør

Food and Safety Authority – Mattilsynet

Norwegian Red – Norsk Rødt Fe

Telemark Cattle – Telemarksku

White Paper – Melding til Stortinget
1 Introduction

Over 150 years ago, the breed Telemark Cattle was bred to thrive in the steep and rugged landscape in the mountain region of southern Norway. She was valued as a good milking cow and a robust animal that tolerated the Norwegian harsh weather well. Now, the Telemark Cattle is nearly threatened with extinction because the multifunctional breed Norsk Rødt Fe (NRF), and other effective production cows are more attractive as industrial breeds. The Telemark Cattle is smaller than an average cow used in milk production and has a slightly more compact build. Her horns are huge and usually equipped with a brass bullet to protect humans or other animals, in case she wants to pick a fight.

Illustration 1. To the left, Liljeros, Rosa in the middle and Veslemøy on the right. Photo: Turid Oppsund Mæland
A project with the Norwegian government and agricultural scientists, after World War II, developed a modern cow-breed in order to be more efficient while being as healthy as possible. The NRF-cow is one of the successful agricultural science stories. It is a healthy and sustainable cow breed in Norway, outperforming the older breeds when it was developed. NRF is still the most common milk and meat productive cow in Norway up to this day. The NRF is one of the politically and scientifically superior breed in our post-war period of time (Risan, 2003). If this NRF cow is such a healthy, sustainable and productive cow, why do agricultural and political actors still try to save the older version, the Telemark Cattle, through different projects, subsidies and technologies initiated by several key actors, the last couple of decades? Telemark Cattle is not just a symbol for agriculture, but for the identity of people’s connection to a place, – it is a symbol of a new development in the society (personal communication, Haukeland, 2016).

Farmers in Buskerud and Telemark in the mountain region have a two-sided relationship to the Telemark Cattle, where they praise her beauty but lament the lack of milk and meat in big quantities. The Telemark Cattle is a so-called Urfe¹ with the qualities that were desired at the time she was bred: at that time she was “good enough”. Market demands have changed over time, where efficient productivity in agriculture has increased leading to more scientific breeding of production animals. The last several years, different niche products have been given a place in the market. Some key actors claim that there is a chance for this kind of breed to survive. A breed where values of tradition and feelings are prioritized above productivity (personal communication, Haukeland & Svardal, 2017). But, as indirectly said by one of my key informants: We owe it to her, the Telemark Cattle, she has been here for us all this time. Now it is our turn.

What values and invaluable abilities does the Telemark Cattle hold as a breed, since it is so well protected by farmers, researchers and local politicians in the mountain region? Is it possible that a cow can transcend its value as a production animal, and be ascribed new values? People's descriptions and stories of the Telemark Cattle are full of positive adjectives about her beauty and willful temperament, as a Cow. Concerns about Norway's cultural landscape have been raised, and one solution to the pastureland-issue is to use the Telemark

¹ Older Norwegian Cattle-breeds throughout Norway is defined under the name, Urfe. Urfe AS, is a company that distribute meat from older breeds like the Telemark Cattle. As I wrote my thesis, Urfe AS was declared bankrupt 11.11.2016 (Sunde 2016).
Cattle to walk in the mountains. This kind of breed was once bred to be a good climber, and perhaps she is a more practical cow in the mountain region. Public grants are given to those farmers who choose Telemark Cattle in their stock, but many farmers discuss her benefits and do not agree that it is profitable, even though farmers get some more money per cow. This case study of the Telemark Cattle will use valuation studies in order to define the relevant initiatives regarding the cattle. Values found from governmental papers, innovative projects and plans for the future of the cow which are seen as value agents throughout this thesis (Dussauge, Helgesson, Lee, & Asdal, 2015).

Scientific developments related to increasing domestic animals' life has never been free or independent from culture, nature, or social impact. The Telemark Cattle is an animal that is bred with the abilities desired at the time developed. And like science, she is still under improvement and adjustment today. The Norwegian Red is a proof of how scientific methods customize their technique and continuously change regarding society's needs and demands. Science is an ontological2 structure, making space for new reality and facts for the society to believe in and understand (Brenna, Moser, Asdal, & Røssaak, 2001). By casting a light on improvements and possibilities, the science-based methods influence society by showing unknown needs and demands. Science and society are dependent on each other to improve and develop. Society and technology are a part of science, as much as the science is a part of society and technology (Risan, 2003, p. 50).

In order to understand and see the story of the Telemark Cattle’s existence, Science and Technology Studies (STS), are helpful as a broad interdisciplinary field which examines how technology and society are co-existing and embedded in each other at the time it is developed. Technology and scientific diversities are as political and social, as society itself. “STS scholars more broadly have traced the histories through which certain binary divisions emerged as foundational to modern science, including divisions of subject and object, human and nonhuman, nature and culture” (Suchman, 2005, p. 2). Furthermore STS describes how one disciplinary field is dependent on the other, and how science and technology are an ongoing social process (Asdal, Brenna, and Moser, 2007). As the Telemark Cattle are a non-human animal actor existing by social demands in her natural habitat, STS is helpful in order to see the social and natural connections.

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2 Ontological – a social-cultural view of looking at reality.
The view that science produce and develop new realities rather than exclusively discovering and uncovering it, brought me to a tradition from the STS-scholar, Actor-Network Theory (ANT). The ANT approach maps out all relevant objects and actors concerning a case study, either those actors relates to nature, social or culture. Those mapped out actors consists as human, non-human animals, or structures of society (organizations, artefacts, agencies), in order to see how they exists and influence each other (Latour, 2005). Actors like human and non-human animals, with their cultural and natural affiliation around the Telemark Cattle, are helpful to get an overview of, in order to see the connection between the case study and its relevant impacts.

Through two expert group interviews and ten individual, in-depth interviews, I will discuss some of the values, translations, and abilities that exists around the Telemark Cattle. The empirical findings in my case study of the Telemark Cattle are geographically based in the mountain region of Telemark and Buskerud. In this thesis an Actor-network mapping, will guide me through valuation and translation studies, that appear as a motivational background for policies and different projects initiated because of tradition, economy, and a sustainable cultural landscape.

1.1 Background and Motivation of the Thesis

Valuation theory where different individual and social values supersede the economic ones, becomes visible in this case study of the Telemark Cattle’s belonging. This study contributes on agricultural values in the mountain region of Telemark and Buskerud, because it is more difficult to efficiently farm in this area. In other words, how do the farmers survive in a society with expanding market demands, needs, and efficiency?

During my studies at Creativity, Innovation and Business development, interest in “Green Tourism” arose and I wanted to look at the value in this type of tourism. It was natural to look into Telemark since that is where I grew up and where some of the existing network is. Phone calls and e-mails with key actors in Telemark, led me to Telemarksforskning and the County Governor. After a few meetings and e-mails, their theory called “bred verdiskaping” appeared, which was used to map out the values in the mountain region in a number of research papers. This bred verdiskapings theory was relatable to the studies at Technology,

3 Statement from my own background and knowledge.
Innovation and Knowledge along with the specialization on Science and Technology Studies (STS) last spring.

The interest in the agricultural life in the mountain region increased during my trips back home, and indirectly affected the theoretical priorities. My background and affiliation to this theory of valuation laid the foundation for this thesis. By using an ANT, with an extended translational method, it was possible to look into different processes, policies and actors. This issue and choice of methods will hopefully contribute to the familiar STS-theory: Valuation Studies.

1.2 Topic and Research Questions

An Actor Network study on the Telemark Cattle, is my main topic throughout this thesis. I write my thesis with a theoretical background in science and technology studies (STS) which looks at science from a social and cultural point of view (Brenna et al., 2001). Everywhere I turned during my trips to the mountain region of Telemark and Buskerud, the cow, Telemark Cattle, showed up. My interest in agricultural values and policies is naturally approached through an Actor Network Theory with the underlying theories of Translation and Valuation using the cow as a reference point throughout my research. How is it that her existing values go beyond the economic ones, and are protected by local key actors deeply indebted to her?

- Which intangible qualities does Telemark Cattle as a cow hold, and how do these valuations translate into policies?

I understood the importance of the Telemark Cattle as a cultural actor and figure in the mountain region. To document the importance of the Telemark Cattle, I needed to map out the cows’ qualities and traits. One particular value that was linked with the Telemark Cattle was the cultural landscape. This is how the research questions were formed, and my main approach as a participant-observer using ANT, maps out the important actors and possibilities.

1.3 The Case

The mountain region is divided differently in the different agencies like the County Governor, the Food and Agriculture Agency, and the Counties themselves. The County Governor has
divided the mountain region in a program called, *Fjellandbruket*, with grants given to mountain related municipalities\(^4\) (Landbruks-og matdepartementet, 2014).

Illustration 2. *The Fjellandbruket of Telemark and Buskerud (map, the Telemark County Governor, 2014)*

Place is a physical geographic area and the fundamental starting point for my thesis. The mountain region is divided into meters above sea level and the Municipalities that are connected. Place is important for the farmers searching for funding for projects in the mountain region or, for example, joining the team and travelling to Grüne Woche. Regions, Municipalities and Counties are all working together to shape the framework for farmers and entrepreneurs in the corresponding areas (personal communication, the County Governor, 2016-2017). The Telemark Cattle is connected to places because it is the places’ identity is defined by the Telemark Cattle. The cattle are on different websites and brands connected with events and tourism in Telemark.

In addition to *Fjellandbruket*, there is *Fjellnettverket* which is a network for mountain farmers and key actors (food networks and tourist offices) in rural areas throughout south- and middle of Norway. *Fjellnettverket* determines their region by including municipalities with 50 percent of their area over 700 meters above sea level in the southern part and over 600 meters above sea level in middle part of Norway\(^5\) (Fjellnettverket, 2017). The nature and landscape appears regularly in my case study. At all of the places that were visited during the empirical research, I was told about the importance of the cultural landscape. The nature in the mountain region affects the agricultural possibilities and methods. It is not possible to

\(^4\) *Fjellandbruket in Buskerud and Telemark: Hemsedal, Ål, Hol, Gol, Nes, Nore og Uvdal, Flå, Rollag (Buskerud) Vinje, Tinn, Hjartdal, Seljord, Tokke og Fyresdal (Telemark)*

\(^5\) See Appendix i
have highly efficient agriculture at the same level in the mountains, as in the “lowlands”. It is steep and more difficult to drive a tractor around in the area. The pasture possibilities are limited by the short summers and dense forests in the region (personal communication, informant, 1-9, 2016). Most of the grants and substitutes that really matter are regulated by the amount of milk and meat produced. Which makes agriculture in the mountain region less economically attractive. On the other hand, there are subsidies given to those who maintain the cultural landscape, called SMIL (*Spesielle miljøtiltak i landbruket*). SMIL was initiated by the Norwegian Agriculture Agency, which is an agency under the Norwegian Ministry of Agriculture and Food. In 2017, 95 million NOK will be given to projects that serve and maintain sustainable and valuable agriculture throughout the Country (Landbruksdirektoratet, 2017). The projects also give funds to maintaining cultural landscape, and traditional cultural buildings in the landscape. The Telemark Cattle is supposed to be a good climber in the mountain area. In order to save the cultural landscape, the Telemark Cattle is suggested for use in the grazing lands throughout the mountain regions of Norway (personal communication, the County Governor, 2016).

Key actors like The Norwegian Parliament with its relevant White Paper, government bodies and agencies—mostly Food and Agricultural, Innovation Norway, the County as in Telemark and Buskerud, the County Governor also Telemark and Buskerud, and the municipalities that cooperate together on the mountain and agricultural work. The actors work on projects regarding the Telemark Cattle, and the cultural landscape with all its strategies and projects. Underneath is a figure showing the actors around the Telemark Cattle to explain and present an overview of the context the study looks at.

Figure 1 describes how the Telemark Cattle are influenced by all the actors presented in the mountain region. All these actors influence the processes in the agricultural community with their own resources, time on hand, and individual diversity. As seen in Figure 1, the actors' practices move from the agencies to the farmer through a hierarchical chain. The farmer and/or the entrepreneur with their Telemark Cattle, communicates with the Municipality, but also sometimes, directly with the County on certain projects. Actors in circles around the chain are engaged in some projects where they are initiated, or start up their own issues of interest.
The case study seeks to understand these political processes. Their relevance, possibilities, and limitations for saving the Telemark Cattle as a breed. The County Governor and Telemarksforskning work to explain how these processes and projects are initiated. Farmers who exists in the mountain region contribute to this thesis on how the processes and projects initiated by the public agencies are enacted and translate to possibilities for continuing this line of work in the future.

The combination of interviews, participant observation, and trips to the mountain region are in addition to text and reports. On the other hand, “How might a simple text respect complexity? Where do you read it? How many people have looked through the text, editing it? What happens to complexity when we simplify it? What does it leave out or not leave out in the same area of interest?” (Mol and Law 2002, p. 6). When studying the Telemark Cattle, there is an underlying complexity in what is included and left out of the context and texts. In every case study it is important to be aware of the role as a researcher and how powerful the choice of theories and further distribution of knowledge is. Scientific knowledge is seen as any other “culture of knowledge”, where the researcher behind the new knowledge has a personal interest in the findings and presents it the way he or she wants to. In every finding as a researcher, it is possible to analyze and understand with my own capability, social surroundings, and personal interests (Law, 1986).
1.3 Chapter Overview

Chapter one, introduces the background, motivation, and research questions. This part is to show how the theoretical and methodological choices are best suited for this case study from a STS-perspective. The context, with its complexity and a literature review on the existing choice of research and theory, explain the choices of approaches. The introduction chapter analyzes my subjective role as a researcher to this thesis, and, as a social scientific dissertation, how the case study emerged.

Chapter two, *Qualities*, explains and analyzes how the Telemark Cattle came to her level of extinction. The qualities that first were her strengths are now replaced by the qualities of the Norwegian Red. Valuation theory is embedded through my introduction on the Telemark Cattle to look at her qualities throughout her history and today. This is followed by chapter three, *Translation*, where methodological choices and framework, Actor-network theory (ANT) explains how the thesis answers the research questions. The methodological presentation explains how information is collected through interviews with individuals and expert-group informants, and participant-observer methods. These methods analyze the processes and how key actors work and choose new projects. The empirical methods are introduced this early on in the thesis because ANT is such a fundamental methodological part and tool that needs its place in my dissertation.

Further on through chapter four and five, ANT is used to map out the different actors connected to the Telemark Cattle. Valuation studies is embedded in these chapters to understand the different values of each actor regarding the Telemark Cattle. Chapter four and five, *Politics* and *Localities*, focus both on the STS-related theory, valuation studies, and the theory developed by *Telemarksforskning, bred verdiskaping*, which are influenced by the two expert group-interviews.

Chapter four, *Politics*, present and explains the several political actors, systems and grants regarding the efforts to save the Telemark Cattle. Followed up by Chapter five, *Localities*, which seeks to explain the local knowledge and importance of the cultural landscape in the mountain region.

Valuation studies is followed up by chapter six and seven, that includes my findings of the value regarding the Telemark Cattle, and the cultural landscape as this turned out to be an important factor and motivation for different policies and grants in the mountain region.
These last couple of chapters explains how the methodological analytical tool, translation, explains how policies translate into physical projects, and with whom.

1.4 Literature

My choice of literature derives from existing STS – studies and publications about the Telemark Cattle as a breed and in history. This chapter is presented in order to explain what knowledge the dissertation conceivably can create/illuminate (Krumsvik, 2014).

The Telemark Cattle of the mountain region as a case study, makes this thesis geographically limited, but the effects from different events, national and international, expand the valuation research. The Telemark Cattle’s values are much greater than its geographic limitations. The thesis seeks to study the different key actors and policies who effect the processes in agriculture. The way to understand why the Telemark Cattle needs to be saved as a breed is by how different actors and processes value these cattle and want to keep them alive.

We, humanists and social scientists alike, often explain our findings by referring to an outside context or we understand and interpret the actors we study and their way of acting with reference to their embeddedness in a specific and wider context (…) However, on the other hand, the topic comes with little else but trouble: What is context and what role do contexts actually play in our efforts at working out what is at stake in texts that come to us from the past? What is the relation between text and context? (Asdal 2012, p. 381)

In every social science study there are empirical and theoretical priorities that need to be taken into account. Context produces new texts, and in that way is a part of making new situations and realities. The Telemark Cattle and its place in culture and nature, contains values, which is affecting the agriculture in the mountain region of Norway, - which is the context. Some of the researchers at Telemarksforsking in Bø, have developed a theory they called bred verdiskaping, which is to some extent similar to valuation studies from Science and Technology Studies (Haukeland & Brandtzæg, 2009), (Haukeland, 2010) and from TIK: (Dussauge, Helgesson, Lee, & Asdal, Kristin, 2015), as well as theories from the STS-literature, and relevant technoscientific feminism (Asdal et al., 2007; Brenna et al., 2001; Druglitrø, 2012), - this is the represented text.
There is not that much research on the physical traits of the Telemark Cattle as a breed, but a qualitative study about how four different farmers value her abilities as a breed, is written as a report for Telemarksforskning and is called “Telemarkskua som beiterydder” (Hartwiksen, 2005). This report is based on interviews from Telemark Cattle farmers, and their work with this breed. The report clearly recommends this kind of breed in a mountain area because she is good climber and a rustic cow bred to survive.

There exists theory drawn from the STS discipline on the relationship between human and non-human animals on several levels. Humans’ have precarious attitudes and gratitude’s directed to animals in production, pets back home, or in a laboratory (Druglitrø, 2006, 2012; Druglitrø & Kirk, 2014; John Law, 2010). Domestic animals in food production are connected with economic valuation and related theory from the STS-studies discusses price tags, profit versus animal health, and economic science development (Bauer, & Blacker, & Güttler, 2013), (Asdal 2010), (Dussauge et al., 2015; Fourcade, 2011). Economic values have a high impact on the human and non-human life, this case study on the Telemark Cattle goes beyond the economic valuation to understand the other existing intangible qualities.

This dissertation contributes to valuation studies by using translational tools, through an Actor-network theory approach. The ANT-approach examines values existing in the mountain region through politics, tradition, culture, tourism, and identity. Actor-network theory maps the unequal influence from things, people, places, time and feelings to give an overview of the complexity and make it understandable. In other word, it puts together everything in the social and natural world, so it is comprehensible as the complexity it is. Law argues that ANT must be understood through several case studies, and cannot be understood as just one theory but different in all cases and places, a variant of several methodological frameworks (Law, 2009). ANT is used to find other important actors and implications that exist in this mountain region where time, place, resources, and agricultural interest and knowledge exist. STS-theorists like Bruno Latour, Michel Callon, John Law, Susanne Bauer, Tone Druglitrø, Kristin Asdal, David Murakami Wood and Stephen Graham helped the study in order to understand how to use the methodological theory. The mentioned originators above on STS and ANT, all use case-studies to describe their social-scientific understanding.

As an extension to ANT, I use translational methods to understand how the processes between the different actors are affected by each other (Callon, 1986). Together with my interviews and observation of the County Governor and Telemarksforskning, I use White
2 Qualities

The Telemark Cattle has been presented as a less productive cow than others, her specific individual qualities are therefore important to map out and explain. While STS is a scientific understanding of history, STS-scholars ironically use Actor-network theory which is a way to understand the ongoing science at the moment (Asdal, 2012). To understand the processes and policies affecting the mountain region and Telemark Cattle, it was important to understand the valuation from a farmers’ point of view to Parliamentary and governmental policies and legislations. The thesis explains the Telemark Cattle’s history, but then it goes further on and up to today, to explain how she exists and because of whom.

The Telemark Cattle’s qualities have changed over time, so let us go back to when she was registered as a breed, in 1856. From around 1850 to 1950 the Telemark Cattle was the dominant existing cow breed in the Norwegian national agricultural area (Kjær, 2006). The cows’ beautiful aesthetic is the most common first point people make when describing her. But, back when she was the most common production cow, her abilities to climb the mountains and produce milk were her appreciated qualities.

Now, she is defined as majestic in the mountains of Norway, a symbol for Telemark and the agricultural mountain life. A domestic production animal’s aesthetics is something most would agree is an atypical main factor when choosing between breeds. Choosing animals for their appearance is quite common when it comes to pets, horses or in further breeding, but as a domestic animal that puts food on the table it is rare, if not unique. Is this all to it though? I went deeper into the history of the Cow to take a look at her qualities.

*Kom Telemarkskyri mi fine*  
*Rausida, rosut med ryggkvit line*  
*Breie horn og rett i nakken*  
*Stø på klaavi i beitebakken*  
*Fylde du plassen i hundre år*  
*I kongefjøs og i husmannskår*  

*A poem by Halvor J. Sandsdalen (Kjær 2006, p. 125).*

During the period of time when the Telemark Cattle was the most common breed throughout the country, her ability to climb in the steep and harsh environment was essential. Because of
her compact build and short legs, she was valued as a steady cow in the mountain region. She was considered a reliable and productive milking cow when she was commercialized (Kjær, 2006).

After World War II, agricultural measures were introduced in order to increase the food production and strengthening the economy. This post-war period is the beginning of the end of the Telemark Cattle (Kjær, 2006).

![Figure 2. A timeline of the Telemark Cattle](image)

As seen in the figure above there was a shift where NRF started to dominate the market in Norway around 1970-1980, until now. The last couple of decades, several projects to save the Cattle of Telemark have been initiated.

Due to large industrial and technological improvements, the farms in the mountain region became more efficient. These projects were primarily initiated by the government. Farmers started producing more food than their household needed and became a part of the commercialized food industry. The technology of insemination was an involved reason for the decreasing amount of Telemark Cattle’s left. Insemination brought the possibility to choose abilities and traits that the farmers wanted in their stock. This insemination technology grew at the same time as they developed the Norwegian Red (NRF), and it became easier to get a hold of and choose the more productive version, NRF (Kjær, 2006).

The Telemark Cattle’s, or maybe even all dual-purpose Cattle’s biggest competitor, is the Norwegian Red (Norsk Rødt Fe – NRF), which was registered as an official breed already in 1935. In addition to insemination and development of the NRF, the period from the 1960’s to the 1990’s focused on initiating standardization of breeds through regulations and collaborative processes. The post-war policy supported increasing agricultural production, and the NRF were more efficiently developed as a result. In the 1960's the breed as we know it today was established on a national level (Risan, 2003). The Norwegian Red was embedded
in scientific methods when she was developed as a breed, as there were thousands of farmers collaborating with scientists, vets, and the national milk-production agency, Tine, in developing her. This collaboration was to develop a dual-purpose breed that had the capacity to produce enough milk and meat. NRF produced more milk and meat than any other cow-breed in Norway when introduced, and she was accountable to national and international market demands and standards. The public intentions when developing NRF as a breed, was to justify the amount of fodder and work hours’ farmers spent every day with the cows. The Norwegian price and demands were growing and the quantity of milk and meat produced, also needed to be accountable to the market demands (Risan, 2003).

More attention was given to health and welfare issues regarding farming production and work with domestic animals. Only the best cows were given prizes, and just the best bulls were used in further breeding. The qualities present in each cow were rated on forms, and these forms decided whether or not the cow was good enough for further breeding. In Telemark and the mountain region of southern Norway, there was an increasing focus on the well-being of domestic animals that improved through the exhibition of the best domestic animals once a year at the trade show, Dyrsku’n (Kjær, 2006) (Om Oss - Dyrskun, n.d.).

Cows' traits and abilities in general were discussed and compared to the Telemark Cattle's, and her possibilities and threats were further evaluated (Kjær, 2006). One argument was raised concerning the Telemark Cattle's horns - whether or not she ought to keep them. The horns on the Telemark Cattle are huge and in some circumstances damaging for others around her. Stories of injured cows are many, but as argued by key actors at the time when the issue was raised, her horns belong to her as a breed, and were valued as standard characteristic when competing for prizes. Lack of statistics and proof of injured cows as a consequence from horns and fighting, ended the discussion (Kjær, 2006). Because of the Telemark Cattle’s horns some farmers believe that it is necessary to have each cow to themselves inside a barn with many stalls. From 2022, this kind of farming where cattle stand still throughout the year will be illegal. Building the stall is expensive and, as the Telemark Cattle produces less milk and meat, more cows are needed than it would be with more modern cows. More cows mean more space, and more space means more expenses (personal communication, informant 1, 6 & 7, 2016).

The Telemark Cattle is simply seen as a less healthy breed because of the modernization done in order to increase cattle’s profitability and effective production levels.
As a result, the number of Telemark Cattle dropped. When a stock of animals is small, the healthy genes are difficult to find due to high-risks on inbreeding, and the long distances between the different stocks (personal communication, informant 1, 2016). When the Norwegian Red was developed as a breed, the number of older breeds like the Telemark Cattle decreased. When comparing the Telemark Cattle to the more successful modern cow, Norwegian Red, it is clearly the NRF version, that is superior regarding milk and meat production. NRF is the most common cow-breed in Norway, which heightens the possibility for healthier genes with low-risks of inbreeding.

The Telemark Cattle’s qualities are based on her history, and the mountain region’s tradition and existing culture. Her survival is important because of her Norwegian existence in the mountain region (personal communication, the County Governor, 2016). These are qualities which exist because of the human relation to the cow and her connections to the past. Her qualities are given value by the actors surrounding her. In order to see the values, and how they translate on to policies and projects, an Actor-network theory is helpful to analyze the human and non-human connections embedded to the social order that exists (Suchman, 2005). The thesis tries to explain how the actors contribute to the society and the different functions of grants and projects which again influence the Telemark Cattle.

2.1 Science

Life science methods to increase and improve human and non-human animal lives are continuously evolving. The science used to increase lives can be seen as applied to qualities and preferred genetic abilities. Human and non-human animals have coexisted for as long as we know, and human needs and demands are the significant reasons for several non-human animals’ existences. An essential reason for new breeds and animal-versions, stems from human demands regarding performance and social relationships to non-human animals. We breed animals to fit our expectations and needs, whether it is in food-production, social company, or laboratory testing (Birke, Bryld, & Lykke, 2004). The terms human and non-human animals are used because of the complexity and diversity in the animal world, which cannot fall under the common header animal.

The separation of ‘animals’ from humans, on which we focus on here, has a long cultural history, sitting uneasily alongside our reluctant acknowledgment that humans
also belong in the larger category ‘animal’. But in the practices and discourses of science, that tendency toward separation is at times re-enacted and reinforced, gaining authority and power, whether by objectifying language or the creation of living apparatus. Ironically, separation is happening in the very branch of science whose centerpoint theory, evolution, would emphasize our similarity to, and continuity with, other animals. (Birke et al., 2004, p. 173)

This choice of vocabulary, human and non-human, is motivated from a feminist science studies approach, which in this case study, the several practices and abilities which exists between technology and human actors, are payed attention to. Using feminism literature in science and technology studies addresses the way science and technology are developed and used further on through new practices. The relations between humans and non-human animals are given meaning and perhaps even care through technologies, science and politics. “The strategy involves choosing a standpoint and giving a voice to the lives and experiences of the weak and oppressed” (K. Asdal, Brenna, and Moser 2007, p. 18). By giving a voice to the oppressed or weak, the methods used are essential. Where scientific methods are used in order to increase and develop a breed, an underlying attention to the care-practices and the breeds’ health is necessary.

On the contrary of the Telemark Cattle, with her abilities, there is the superior NRF-cow, which has become the leading cattle-breeding association in Norway, through public, scientific, laboratory, and genetic work. Farmers and interest organizations were engaged in this project which consisted of scientific, technological, social, and natural actors (Risan, 2003). Today, 95 percent of the milking-cows in Norway are Norwegian Red (Waterhouse and Solberg, 2009). In 2007, the United Nations, Food and Agriculture Organization (FAO), acknowledged the NRF as the most sustainable and healthiest cow-breed in the whole world (Food and Agriculture Agency, 2016). Norwegian Red (NRF) have reliable production of both milk and meat. “Meat production traits are important and have been included in the breeding goal since 1962. Breeding values for the traits slaughter weight, slaughter class, and fat group are calculated based on information from slaughter bulls (…)” (Kirsanova, 2016, p. abstract)

The Norwegian Reds’ breeding traits have been studied by Geno, a Norwegian research agency who function as a breed-bank for the NRF-cow. Geno exports and control the quality of the NRF-sperm. The Norwegian Red has a leading set of possible meat traits,
according to Geno who studied the genes with a single-step genomic evaluation method\textsuperscript{6}. NRF have a genetic foundation to reach the traits and goals as a world-leading superior cow (Kirsanova, 2016). Geno, exports the NRF-sperm and this sperm is usually used in crossbreeding the existing cattle in order to strengthen the cows’ traits and genes, with the preferable abilities from the NRF-version. Crossbreeding is in other words initiated when another breed can contribute healthy genes to an already existing breed. This crossbreeding technology is suggested for use with the Telemark Cattle as well, in order to implement some NRF-genetic abilities and traits (Waterhouse and Solberg, 2009).

The milk and meat productive dual-purpose cow co-exist with humans and their lives are defined based on the needs of human beings. Our need for food production is the only reason for a lot of lives to exists. In other words, there is no variety of cows without human demands. New science and technology give human and non-human animals life improving possibilities. Humans use the scientific and local knowledge to increase a breed for the better. Older breeds fall behind and become extinct. In some cases, the human race's knowledge improves animal health as well, using technology to strengthening the animals' genes for the better. This is how nature and culture collide and exist together in a symmetric approach that does not separate nature and culture analytically through evolution (Haraway, 2003).

For a long period of time, science has been the only existing possible knowledge in an industrial developing society and has not been challenged by other forms of knowledge’s. In this sense, this type of studies, search for the logical and illogical findings and sees them with the same open-minded and position towards the science (Risan, 2003). The Telemark Cattle has no proven superior traits and abilities, but she is said to be a good climber in the Norwegian mountain areas. The Dexter cattle from Ireland are also known to be good climbers (personal communication, informant 2-3, 2016). In other words, it is important to pay attention to the successful solutions and the less successful ones. The so-called “failed” experiments can be studied to uncover the variety in scientific methods and social values. This social scientific approach might be essential for life and death questions, and with that in mind, important to discuss from an ethical point of view (Risan, 2003).

It is a shared assumption of researchers within the fields of STS and feminist technoscience studies that ‘pure’, ‘basic’ science is entangled in societal interests, and

\textsuperscript{6} The name of the method used by Geno according to Elena Kirsanovas’ paper 2016.
can be held politically and ethically accountable, as the technological practices and interventions to which it may give rise. The compound word ‘technoscience’ was coined to emphasize this unavoidable link. (Aasberg & Lykke, 2010, p. 299)

I extend this knowledge to the issue of valuation study of the breed, Telemark Cattle, and her less economic- and health related values as a cow. The Telemark Cattle is an existing actor by herself but also in relation to others. Her existence is equal as any other living beings, where the embedded actors around her are valued and seen in correlation with each other. Natural science has made the NRF-version a natural winner, and the Telemark Cattle a looser compared with their reason for existing; producing milk and meat for society. Deciding winners and losers in a living world of species, is arguably subjective and not necessarily a blue-print from a social-scientific point of view. Who are we as human beings to decide whether or not to use scientific, technological methods in order to extend or end non-human animals' lives?

*Farms consisting of Telemark Cattle as a domestic production animal are highly driven by ideology, and not sustainable as a farming activity. She is not as good as the other modern breeds when it comes to milk-production, meat-quality or pasture abilities. On the contrary her short legs with large udder makes her able to walk in the steep and harsh environment more so than other cow-breeds. (personal communication, informant 1 & 2, 2016)*

In addition to technologies as we know it, the animals' welfare is also regulated through laws (policy technologies). This kind of technology creates projects and processes initiated by public interests and animal rights. A caring legislation that takes care of the animals' health and well-being is found in the statutory eight weeks spent outside on the pasture field for all domestic animals in Norway. The legislation is seen to have an effect on the animals' health and well-being, since they are jumping around on the fields and their product becomes richer and more nutritious (personal communication, the County Governor & informant 1-12, 2016). The processes and paperwork regarding technological reasons and motivation does not necessarily translate non-human animals into objective actors, rather, they are subjective and “taken-care of” by the human holding the power of the technology. New legislation and technology can also create a lot of additional and unaffordable work for the farmer. In some cases, it could even inhibit the farmers' time available to take proper care of their animals (Singleton, 2012a).
The “caring part” between the cattle and humans is useful to see the existing values regarding the agricultural mountain region. A relationship between human and domestic animals through a caring perspective is different from the traditional “parent-child” definition. Caring for domestic animals in production is regulated through Departments, Counties, political technologies such as animal-welfare-laws, regulation, forms and papers. All this is helpful to farmers and caretakers, who care about each one of their animals through different daily processes. “Independent from human demands and needs, all animal has their own right of good, and the best care, against any danger, stresses or protection towards unnecessary strain” (Food and Agriculture Parliamentary adjustment, 2016). Farmers' daily processes can be highly influenced by care technologies, both mechanical ones, and in paper form. Technology and robotizing is often looked at as a cold technology where the human warmth and physical contact disappear. But work on domestic animals seems to be the quite opposite, where the farmer or caretaker, has the possibility and time on their hand to properly and thoroughly perform caring practices with help from new technology (Pols & Moser, 2009).

As science tries to increase and improve lives, life science along with technology is an on-going process searching for life improving methods. Without the one, there is no other. The farmer is dependent on good scientific work and good technology that works and improves the cattle. The farmer’s choice of cattle is highly affected by the feeling of responsibility toward their resources and future work. The choice is based on the breeds well-known health related abilities and issues. Care related and economic related values are decisive for the farmers in the mountain region. The Telemark Cattle have higher risks of inbreeding and, because of possibility of inbreeding, more diseases (personal communication, informant 1, 2 & 3, 2016).

2.2 Valuation

Sustainable growth is every department's priority, but when they are not collaborating and talking to each other, the policies become too fragmented, too divided (personal communication, Haukeland, 2016). The “total valuation” is important in order to preserve our tradition, environment and culture, but the political systems are too self-absorbed to make that happen. The Norwegian Ministry of Culture funds projects with respect for the environment, as do the Norwegian Ministry of Environment and the Ministry of Agriculture. Together the
departments would be stronger and with more funding to meet the needs for sustainability (Haukeland & Brandtzæg, 2009).

Our world and nature are beyond the point where the landscape is not touched by human hands, and even though we are not physically placed in a nature preserved area, we still pollute the nature on local and global level, which in turn affects the nature. The theory, bred verdiskaping, is an agricultural overview of valuation and is divided into four different areas, shown in the table under (Haukeland & Brandtzæg, 2009, p. 37).

Table 1. Values in Natural and Cultural landscape (Haukeland & Brandtzæg, 2009, p. 37)

<table>
<thead>
<tr>
<th>Environmental values</th>
<th>Cultural values</th>
<th>Social values</th>
<th>Economical values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biodiversity</td>
<td>Historical values</td>
<td>Cooperation</td>
<td>Employment</td>
</tr>
<tr>
<td>Cultural landscape</td>
<td>Symbolical values</td>
<td>Affiliation</td>
<td>Innovation</td>
</tr>
<tr>
<td>Sustainable values</td>
<td>Identity</td>
<td>Engagement</td>
<td>Revenue</td>
</tr>
<tr>
<td>Dissemination values</td>
<td>Knowledge</td>
<td>Network</td>
<td>Experience</td>
</tr>
</tbody>
</table>

The different values presented in the table above are reactions and results from the agricultural sector. Agricultural activities affect more areas than just food and forestry. When buying a litre of milk, we are not only paying the cow and farmer with the technology. We pay for and with public funds (since the agriculture is subsidized by the government), the cultural landscape, tourism in rural areas, networks, sustainable technology and employment, and a social belonging.

By addressing and publishing this type of knowledge concerning bred verdiskaping, the production of academic knowledge leads to “Knowledge valorization”, where knowledge has added value other than the commercial-economic one (Baycan & Stough, 2012). The Telemark Cattle is not a superior valued breed when it comes to the agricultural economic value. But, she has the possibility to influence the profits of the society by her appearance in the mountain region, from a tourist, cultural and social point of view (personal communication, Haukeland, 2016).

A fourth factor beyond the traditional triple helix theory is added as an important actor. The “quadruple helix theory” embeds volunteers in the value of innovation. An unpaid person

7 Triple helix theory is about research and innovation cooperation between academic work, industry, and the government to build or improve existing technology and services. (Etzkowitz & Leydesdorff, 2000).
who is interested in a field influences this field on several levels (Haukeland & Brandtzæg, 2009) (Levidow, Birch, & Papaioannou, 2013). People in general become committed to their work and how they are able to do their job. At several occasions during my field work, I met farmers volunteering at agricultural meetings and workshops that they were not paid to attend. Their agricultural knowledge and insight into local traditions where highly present during these meetings. The entrepreneurial farmer’s ideas were based on what their local area could offer on products and tourist experiences. A mountain farmer calculated her hourly wage at 17, - NOK through a year of regular farming, together with summer farming open for tourists three months each summer. This can be argued as nearly on the same level as volunteer activity. The mountain region farmers' interest and commitment is the whole reason there is traditional, multifunctional farming left in this area (personal communication, informant 8, 2016).

Farmers ought to be entrepreneurs with multifunctional farming activities in the mountain region in order turn a profit (personal communication, informant 1, & 4 – 10 & Telemarksforskning, 2016). Traditional and cultural knowledge is possible to combine with new technology to develop the farm to be attractive and modern in the mountain region (personal communication, Telemarksforskning, 2016). Increasing knowledge and understanding between scientists and local indigenous people could be a way for the local people to gain greater acceptance in society. Local knowledge and the way it is transferred and used builds upon an understanding of societal values with huge cultural differences, where this knowledge contributes to equalizing the unbalanced power-relations. Awareness of the differences between scientists and local indigenous people, where the scientist is superior to the indigenous people compared in social power, social status, and knowledge-based trust from the society, is important in order to strengthen the diversity of knowledge (Verran, 2002). Local knowledge and traditions are acknowledged in the mountain region and the respect for local entrepreneurs has increased over the last 15 years (personal communication, Telemarksforskning & the County Governor, 2016). These days, it has become accepted for local farmers to start their own production of some kind or the other. Earlier, about ten years ago it was quite tough for some local producers to start up their own business in a humility-based community were no-one was supposed to stand out and do their own thing (personal communication, Dagsrud, 2016).
Several domestic animals in Norway are at a level of extinction. These are animals that might be helpful to our cultural landscape and bio-diversity and should therefore be kept alive (Food and Agriculture Agency, 2016). All 18 different breeds are endangered according to the United Nations' Food and Agriculture Organization (FAO). Their abilities are valued through a better meat nutritional content, which might fill upcoming market diversity where demands on smaller and local products exists. Older autochthonous breeds, developed over time to fit in the natural habitat, might be grazing the outland fields and make use of the natural nutrition that exists in this area better than the more modern cow-breeds (Food and Agriculture Agency, 2016).

The Telemark Cattle’s values and qualities are obvious and existing for most of the actors around her. There are instances as grants for marketing, yearly meetings, and projects initiated by farmers, technologies, tourism, and the public in order to sustain her as a breed in the mountain region. Her beautiful appearance and her climbing abilities are the qualities associated with her, and her negative qualities are low production of milk and meat compared to others. Her horns are one factor which is challenging, either in order to keep her appearance, or to prevent other animals pain from a possible conflict.
3 Translation

Nature is developed over time with its distinctive abilities and possibilities together with other natural phenomena, culture and society with its human and non-human actors. When telling stories they become performative when the text is chosen by the author in order to communicate a subject of matter and importance (Law, 2000, p. 2). Studying science and technology from a social science point of view can be troubling since nature and its abilities are so easily translated, in contradiction to the story of society.

Since Nature by itself is not in a position to establish a consensus between experts, then sociologists and philosophers require something which is more constraining and less equivocal, to explain the emergence, development, and eventual closure of controversies (…) Others turn to existing social forces such as classes, organizations or professions. When the society described by sociologists confronts nature (…) society always has the last word. If the norms are removed, the sciences collapses. If the existence of social classes and their interests is denied or if the battle waged against scientists to increase their personal capital of credibility disappears, then science and technology comes to a halt, deprived of any outlet. (Callon, 1986, p. 2)

In order to do valid social-scientific research, Michel Callon made a list of methodological disciplines accountable in the process of these studies. Representing all actors as equal and avoiding censoring or pre-analyzing any of the actors or their stories, is important to visualize the research area and field. Either the findings are from stories of science, nature, and findings, or stories which belongs to the actors and their social belonging and opinions toward society (Callon, 1986).

The Telemark Cattle are surrounded by actors to save her as a breed. As an extension of these actors, their opinions, social classes, interests, technologies, and stories, can all be explained with translation with an ANT-approach. The society is an unsecure reality that should be up for discussion on the same level as nature. As a social-science observer, using translation as a method leads to how to avoid ignoring or overlooking the stories presented, by studying and explaining the embedded actors.

The choice of repertoire when presenting the findings should be as similar as possible throughout the stories diversity, both of social and natural actors. By applying an identical
linguistic structure to the stories, these words are valid tools in order to re-tell stories as they are. Additionally, it is important to present these findings using similar language to explain the controversies that exist between actors and their stories, without personal definitions and assumptions. Explaining and telling all stories through the actors' own definitions and descriptions of how they are connected, and with whom, give a trustworthy story of the controversy between science, technology, and the society (Callon, 1986).

“(…) if we do it right then it turns out that the “personal” is not really personal any longer. Instead, it is an analytical and political tool for interfering and making a difference, one among many,” (Law, 2000, p. 2). All knowledge and visions come from “somewhere”, and it is not possible to stay objective and at a distance from the studied area. There are no objective scientific studies, as all studies are always viewed from one or another standpoint or personal history (Haraway, 1988). To be free of association is important to study something as it is, and not immediately draw assumptions about other subjects or analyze the findings. Let the actors explain for themselves, what they are, where they come from, and how they exist/work (Callon, 1986).

3.1 Methodology

To answer the research question, it was important to use a method that did so in a trustworthy way (Krumsvik, 2014). The choice of method happens when we use a specific tool to figure out something that is defined earlier as a topic or question. It is possible to use different kinds of methods to figure out something and, at times, several methods can produce the same answer on several levels (Hay, 2010) Every research project requires critical thinking, and as a student I needed to change my way of thinking from normative to analytical, personal to intellectual, and from a specific to a universal way of looking at things (Krumsvik, 2014).

3.2 Why Qualitative Method

Because value is subjective, I needed to understand valuation. In order to understand something subjectively, I needed to study it qualitatively. “The two fundamental questions tackled by qualitative researchers are concerned either with social structures or with individual experiences” (Hay, 2010). With semi-structured in-depth interviews, it was
possible to study the concept of value. The research goes beyond the economic valuation theory and studies the individual, existing subjective knowledge.

It is important to stay aware of the subjectivity in every inquiry as it cannot be defeated completely. Studying something from a social-scientific approach gives an opportunity to see the world from different perspectives, and others researchers to go more in-depth on different issues that might occur in the same field of study. The reader should in all cases have a critical mind and be aware that they might have found a different answer if they did the same research again one more time (Saldaña, 2015). To use and understand qualitative method in a good and responsible way, it is important to understand it compared to quantitative methods (Krumsvik, 2014, p. 15).

On the contrary, the importance of quantitative methods can give a general and overall picture of a topic. Quantitative methods point you in a direction where more research is needed to uncover the studied issue, and figure out whether it is true or not. Throughout our childhood and adult life, we use numbers as an objective truth and a universal language. From the moment we learn how many years of age we have become, or in which grade we are, we understand how numbers is a universal truth. (Saldaña, 2015).

(...) numbers exemplify a realistic perspective. The proposed objectivity of a statistic, assuming the behaviour or phenomenon it represents has been reliably and validly measured, asserts that it is an evidence-based fact. But our interpretations of those facts are laden with judgements. (Saldaña, 2015, p. 55)

Statistical findings may be misunderstood or incomplete in search for individual answers. Some questions are difficult to answer in a questionnaire, and do not give enough answer-options to describe the individual factors (Krumsvik, 2014). This thesis, where the goal was to map out personal values and individual opinions, had complex research questions making it difficult to evaluate in scales and schemes.

3.3 A Case Study

Case study is used to understand a complex and social context, often in studying small group behaviour, organizational, and managerial processes (Yin, 2014, 4). Based on this definition, the research in this thesis is defined as a multiple-case study, where the Telemark Cattle is one case and the actors around her another. “The more that your questions seek to explain
some present circumstance (e.g., ‘how’ or ‘why’ some social phenomenon works), the more that case study research will be relevant” (Yin, 2014, p. 4).

Multiple case studies allow the researcher to look at several cases in the same field. Since, the research has been on, “how” and “why”, projects and processes have effected this case study, the Telemark Cattle case contributes to the mountain region case and vice versa. Furthermore, multiple case study is done using a logical underlying theory, where similar processes and projects around these minor cases in the case study, are studied using an open-minded approach by mapping out the actors and cases, one by one (Yin, 2014). It is possible to use several research designs and methods in each of the multiple case studies. In this case, interviews (both individual and in group), participant observation is used because the topics demanded findings with a dynamic approach and flexible research, and document analysis is used in order to see the processes (Yin, 2014). Studying human valuation and translation, in processes and projects, makes this multiple case study, qualitative and dynamic in its approaches.

During the case study, the original assumptions and research design, after talking with Telemarksforskning and the County Governor changed. This “open minded” method gave me the possibility to rearrange and learn on the road to give good answers to the research questions (Yin, 2014, p. 136).

3.4 ANT as Methods

Non-human animals along with technologies and science, are all a consequence of human influence. But, ANT is helpful in order to study the human and non-human with a mutual relationship (Druglitrø, 2012; Potts, 2008). I needed to approach my thesis by mapping out all actors through an ANT approach, and figure out how technology, politics, science, and culture influenced the Telemark Cattle and the agricultural culture in the mountain region. Later on, after the mapping of actors it is easier to go deeper into the main findings and analyze them regarding their importance to the case study. When at Telemarksforskning, the County Governor or on the several trips during my fieldwork, the use of ANT-approach helped me search for the processes, the work descriptions, the networks around them, and the observations found to be of importance. By studying through an ANT point of view it is important to treat all the actors at the same level in the beginning, with as equal importance to
each other. “Latour deliberately wanted to shake-up sociology theories by proposing the radical notion that agency is equally distributed amongst people and technology” (Potts, 2008, p. 2). Liza Potts (2008), uses ANT as a method to map out the traditional software designs in her paper, where I use ANT to map out all the actors concerning Telemark Cattle and, by extension, the agriculture in the mountain region.

3.5 Informants and Key Actors

The web and literature were searched for green tourism, agriculture in Telemark, and additionally valuation programs in the field of tourism and agriculture in the Telemark area. After a while, and in collaboration with my seminar-group, I decided Telemark was a good place to start with my background and network. I was introduced to the subject on the Telemark Cattle and how the County Governor along with Telemarksforsking had tried out different programs, and projects during the last couple of decades in order to save this breed from extinction.

As a result of meetings with Telemarksforsking and the County Governor, several new topics were introduced possible to include in the thesis. Together with my supervisor, who probably had the STS studies in mind, the choice landed on the Telemark Cattle. Together with Telemarksforsking and the County Governor there was two expert interviews and ten individual semi-structured depth interviews. Nine of my individual in-depth interviews were with local farms in the mountain region who raise different domestic animals. The last in-depth interview was with Anne-Sofie Strømme who is a biologist from the University in Ås. She contributes on the values regarding the cultural landscape, and the importance of bio-diversity. Some of the individual in-depth interviews are contributed with two of the people working at the farm, all together 12 individual farmers have contributed to this thesis. In addition, a farmer in Vinje who are starting with cattle this year, were called to check some quick agricultural questions with, this is informant number 13. The two expert group interviews were done semi-structurally and in an informal environment. One group interview was at the County Governor's office and one at Telemarksforsking including scientists, politicians, farmers and contributors around my case study, Telemark Cattle and related projects. In the next sections I will describe the methods I used in these interviews.
3.5.1 Semi-Structured In-depth Interviews

As an interview method, semi-structured questions\(^8\) were used during the in-depth interviews. Interviewing in general, is usually used when there is a knowledge gap that other methods, such as observation or texts, cannot cover alone, or when studying a complex area where individual factors are important. A semi-structured interview guide is a list of key topics which together will answer the research question. Interviewing can uncover a new truth and if the researcher is on the wrong track the informants have the possibility to say so and correct the data (Hay, 2010).

Each individual interview gave me different views on values and information to work on, and many of the pre-made questions were left out or added along the way. Individual informants were selected with a variety of age, gender, place, background and political office. The semi-structured interview guide was written in an excel spreadsheet where the research- and topic questions was on the left, follow-up questions on the right and several main-questions in the middle. Having full-sentenced questions in front of me it was easier to have something to hold on to in case the topic “wandered off”, and needed help getting back to the research topic. This flexibility and method helped the informants to be free to speak more about what mattered to them. A list of what is important to remember during an interview is presented below (Hay, 2006, p. 105).

- Use easily understood language.
- Use non-offensive language.
- Use words with common and uniformly accepted meanings.
- Avoid ambiguity.
- Phrase each question carefully.
- Avoid leading questions as much as possible.

Typical and elementary follow-up questions are easy to forget when reading straight from the interview guide (Hay, 2010). This type of flexibility is also an important reason why this semi-structured interview formula was chosen. It made it possible to exclude some of the questions, and go deeper into some of the subjects that the informant presented (Hay, 2010). This helped during the interviews where I did not ask directly in the same order as outlined on

\(^8\) See Appendix ii
the form, but used it when needed to refresh my memory about why we were there in the first place.

**Interview Design**

The individual interviews started out with *descriptive* questions. The first couple of questions were about the farm, how long there had been animals on the farm, how long they had been working and living there, and other easily answered background questions. The beginning of these interviews quickly transformed to a *storytelling* way of speaking. At this point, I asked questions such as: Can you tell me more about the values in farming and using pasture fields? The informants had a lot of information on what he or she felt was important, and of value. In this part, where my informants gave me a lot of information through a kind of storytelling, I had some follow-up questions which were *partly structured*. Direct and specific questions are used as follow-up questions. These questions varied from time to time, but examples could be: what the informant thought had been important in their work? Why they used different types of technology? The values in summer farming and through their network - both political and in business (Hay 2010, p. 118)?

Later on in the interviews, *opinion* related questions were asked. Examples of opinion related questions could be: what the informant thought of the future as a farmer in the mountain region, - what they valued as key factors for a farmer in order to survive financially. In this opinion related section, I also used some *contrast* questions on what they thought was the biggest difference between a farm in the mountains with the need for extra grazing lands, contra the “low-land” where it is bigger and easier to do efficient farming with huge herds and stay at the same place throughout the whole year (Hay 2010, p. 118).

At the end of the interviews, structural and descriptive questions was used in order to make the atmosphere as easy-going and harmless as possible. Typical questions at the end of the interview were: how much time he or she used to work on the farm daily, when they had their vacation, and when they let their cattle out to the summer farms each year (Hay, 2010, p 106). In the end of each interview I asked if there was something I had forgotten or they thought was important for the research field to know about. Usually during these *clearinghouse questions*, some more information and advice on who to contact and talk to next came up (Hay 2010, p. 118).
3.5.2 Semi-Structured Expert Group-Interviews

Focus-groups are usually groups with six to eight people discussing a subject of matter together (Hay, 2010). I asked *Telemarksforskning* and the County Governor about the possibility to have a group interview about my research during fall, 2016. Both *Telemarksforskning* and the County Governor were interested to contribute, even though their time was limited and days fully packed. Since the selection of participants is important for the dynamics in the group, and to get valuable and reliable findings during the interview (Hay 2010, p. 157), I chose to do two group-interviews instead of one to allow it to fit into everyone’s schedule. As a methodological approach to the interviews, “Expert Group Interview” was preferred, because of the possibility to take part in the discussion and not just observe the subjects up for discussion.

An expert group interview with four people from the County Governor (Anne Aasmundsen, Ellen Dagsrud, Astrid Aas and Bob Gottschal) was arranged, and for almost two and a half hours we discussed the agricultural topic with its values, possibilities and threats, at the County Governor in Telemark.

A couple of weeks later another group-interview with two people from *Telemarksforskning* (Solveig Svardal and Per Ingvar Haukeland), one person from the Agricultural Office in the Municipality of Vinje, Thor Christiansen, and one person from *Bonde- og småbrukarlaget*, Aslak Snarteland took place at *Telemarksforskning*. All four met for two and a half hours, where I gathered a lot of new information to work on in the following weeks. The location and setting of the room on both places was informal as we all sat down and watched my Power Point presentation⁹, which was filled with pictures and general topics related to the thesis and agricultural subjects.

The best kind of focus group is the informal ones, where the room and serving is quite neutral (Hay, 2010). During both of the group interviews I brought cookies, coffee, and Twist to the meeting room. My position in the room was sitting down by the same table and being part of the conversation while I recorded the audio. The audio-recorder was on the middle of the table and the participants signed that I could refer to them by name in my thesis (Hay,

⁹ See Appendix iii
Sometimes during the conversation, the group was led onto the next subject up for discussion.

3.5.3 Participant Observation – Observant Participation

When conducting observational studies as a researcher it is not possible to have the power to control the action the way preferred, but to use it as a way to look at a phenomenon from the outside – in (Rosenbaum, 1995). Still, in participating the observational study, by just being in the same area, I was affecting the observation and findings somehow. “Postmodernism as method calls into question the possibility that any of us can know an ‘out there’, a real object of investigation existing apart from the systems of signification through which the world is described and understood” (Smith 1992, p. 498). This sentence about postmodernism describes how something has to be investigated in an original and natural context as part of something else. Uncontrolled observation is the most common type of observation, where the researcher does not control the setting or how the study goes, but has some thoughts and assumptions that he or she wants to investigate more closely (Hay, 2010).

Since I am an insider in the field my observational studies are focused on, this work can be considered as an observant participation method. By contributing to the field of study and using observational methods at the same time, I had an extra amount of research-responsibility and additional ethical concerns common in this type of method (Mosse, 2013). “However, these advantages are not absolute and the insider must be aware of ethical and methodological dilemmas associated with entering the field - positioning and disclosure, shared relationships, and disengagement” (Labaree, 2002, p. 97). By doing research as an observant participant, some extra “baggage” and information as a researcher is added to the field of study. It gives an advantage to go in to the depths of the thesis, but it also gives an extra responsibility to explain the findings and translate them as correct as possible. In this thesis I discuss general findings and observation from the study. I do not go into particular happenings and events regarding key actors and projects involved, but I use my observations to understand the processes and to build the material later on.
A Week at Telemarksforskning

The week at Telemarksforskning was used to talk with the researchers in the lunch-breaks, asking them what they were working on and what their background was. This week at Telemarksforskning was primarily used to determine and focus the topic of the thesis and knock on some doors to ask the researchers what thoughts they had on the Telemark Cattle and green tourism. Plenty of good advice and suggestions on how to reach the goals for the thesis were given (Hay, 2010). This week was the first time bred verdiskaping and Per Ingvar Haukeland with his background on Bruno Latour and ANT was introduced to the study.

A few days at the County Governor

Late in October 2016, I spent a few days at the County Governor's to talk with some key actors regarding the mountain region and the Fjellandbruket. I was given a tour of the department and met some of the people who worked on different areas on the agricultural level. During the stay I had a meeting with three of the agricultural advisors at the County Governor, where we found a common interest on issues regarding pasture, cultural landscape, tradition, and the Telemark Cattle. We agreed that I would write a report on the economic values in summer farming for them. In return, I got a list of information about farmers in the mountain region and access to names and types of agriculture, plus their valuable time and knowledge. During the stay, their work processes were presented as they occurred on a daily basis. I gained insight about how broad their projects were and how they worked on different projects at the same time, often in a three-year time period.

Grüne Woche

Grüne Woche is a huge world-known food market in Berlin that is held in January every year. Different countries display their traditional courses and sell some of the products that the country is known for. This year I had the opportunity to join for some seminar days together with Fjellnettverket in Berlin at the same time as the event. The first day started with a workshop together with different key actors in the regions and municipalities that are members of Fjellnettverket. The agenda was to introduce ourselves and to be informed of the two-days program in Berlin. Early the next day five people from Fjellnettverket got the opportunity to visit the Norwegian Embassy in Berlin, where innovation and entrepreneurial
work was the topic. Innovation Norway presented their report on tourism in Norway published in 2015, and the Minister of Agriculture and Food Department, Jon Georg Dale, was speaking about the departments genuine interest in Norwegian qualities and specialties. During the stay in Berlin I participated much more actively than I first thought I would be, which led to participant observation where I contributed with some of my own findings about values in the Norwegian agriculture. Because of this and my origins, this study was a bit different from the earlier ones, where I was used to be able to ask questions or stay on the sidelines looking in.

Workshop with Fjellnettverket

March 8th 2017, there was a workshop in Oslo arranged by Fjellnettverket as a result and ongoing process from the earlier study-trip to Grüne Woche. The Agricultural Agency had decided that the mountain region was going to be at the trade show next year. This workshop was arranged so they could figure out what type of products, theme, and name they were going to use at Grüne Woche. I was able to take part as a participant in the groups with the rest of the people represented there, and talked with some of the key actors in the mountain region. This workshop was first-hand access to different processes, and is an example of how complex the network in agriculture is, just at one event.

During all participating observations no audio-recordings was made as there were a lot of people and a noises around the events. Another important factor is that I needed to put myself in the observational study, as natural and neutral as possible. The most important tools in participating observation are the attitude and behaviours of the researcher in the observation (Hay, 2010). During the different stays and trips, notes were written along the way and questions asked where it was possible. Italics are used when the cited Norwegian findings, are translated to English. This is done in order to be honest about how translation can change meanings, and that the words written in italics are not the original.

3.6 Tools on Analysing Data

After the individual in-depth interviews and expert group interviews, the findings were written down the most important empirical findings instead. The findings were marked in different colours. Purple was the Telemark Cattle topic, green was networks, processes, and
actors, blue was valuation (agricultural, traditional, and cultural landscape), pink was economic (for the report back to the County Governor, only an overview and generalized presentation is here), and orange was other important findings. After colouring my findings, I put all of them together in a table with different topics\textsuperscript{10}. In the thesis it is explained, using descriptive and narrative analyzes, how the findings fit together or not: some of the findings were empirical. In addition to this I sat down after my expert group-interview and wrote a synopsis of how the meeting went according to me and my experience. The methods used in analysing my empirical data, helped me to see the connection to the research questions and to the thesis topic (Yin 2014, pp. 134–136).

3.7 Ethics and Limitations in Methods

When using other people's time and resources I have an unwritten obligation as a researcher. Their time is valuable and a huge help when collecting the data. (Hay, 2010). Before interviewing, I applied Norsk Senter for Forskningsdata\textsuperscript{11} (NSD), for the type of methods and questions used in this case study. I explained to the informants that sensitive and economic information were anonymized, and deleted after analysing the information. Before each interview, both individual and group interviews, a consent form was sent which shortly presented the thesis and how I was going to use the audio-recording during the interview. The County Governor had written a one-page letter about how they collaborated with me, and that they encourage the informants to answer the questions.

For the group-interviews, I used the same forms as the individual informants had received, but added an extra signature line were they confirmed the right to use their names on quotations and valuable information agreed upon.

As explained in my introduction there are always some weaknesses for further study in all fields, from science and research papers. In addition to qualitative methods, quantitative methods probably would have strengthened the thesis with numbers and more information around the economical values in the agricultural area. “Telemarksfeet som beiterydder” is a report published about four different farmers who have a stock of Telemark Cattle. I argue there is a weakness in the qualitative methods derived from using the information in this

\textsuperscript{10} See Appendix iv & v
\textsuperscript{11} See Appendix vi & vii
report and its qualitative depth interviews on the different farms, because it only represents four farmers who already have the Telemark Cattle, and does not include farmers that chose not to use this breed (Hartwiksen, 2005).

Some questions were vague and leading in my interviews, and when this happen I did not take them in as a fact, but as a leading thread. Because of my few leading questions I lost the answers that could have been neutral empirical findings. Another weakness in qualitative interviews, is when informants give the answer he or she thinks is what the interviewer wants on information and feedback. In participant observation there is a known weakness where the case or informants under observation might be acting differently because they know they are being observed. Observation is highly subjective since I, as a researcher, see the happening as one person and not in a team up for discussion later on after the events.
4 Politics

Documents and political processes are seen as tools motivated by social values towards an ambition or change. “Valuation is a particular form of practice” (Dussauge et al., 2015, p. 170). Systematic political changes go through certain actors before they reach the agricultural sector in different ways. As seen in Figure 1, actors related to the Telemark Cattle are shown in a process-chain. The actors in circles outside of the chain are connected to different projects at different times. How they get involved does not follow a standard routine or recipe, but somehow affects each other via common interests.

One of the actors in Figure 1 is Telemarksforskning. This agency is in a circle because it is not necessarily directly affected by the Department on Food and Agriculture but is connected with the Norwegian Research Council. Telemarksforskning mostly conducts research based on a request from actors, usually public ones, like Counties, Municipalities, and regions. Fully 90 percent of research is produced on contract with these public actors, and the remaining 10 percent on assignment from the Research Council and Departments. Some of the research topics are strictly defined and not open for interpretation. Other projects, mostly from the Research Council, are vaguer and give Telemarksforskning the possibility to do more open-minded research. They divide the work according to who in-house is interested in the topic, and has time and knowledge to work on it. Some people in the house enjoy statistics and numbers, while others do more social or qualitative research out in the field. In other words, they do not have strict models for collecting materials and values.

The County Governor and the Telemarksforskning are relevant in order to arrange projects to save the Telemark Cattle. These are two examples of public institutions, one administrative one, and one research and knowledge-based agency. To understand the complexity around policies related to the Telemark Cattle and the Mountain Region, an overview of actors and networks was necessary. This allowed me to see the chain of value throughout my thesis.
Figure 3 is an ANT model on the actors in mountain region, which can also be divided in human, non-human, and inanimate sections. The human actors are The Departments, Fjellnettverket, Fjellandbruket, The County Governor, The County, Innovation Norway, Municipalities, and individual entrepreneur and farmers. They all contribute on different levels and together with non-human actors. The non-human actors are Telemark Cattle, Domestic animals, and cultural landscape values. Human and non-human actors are under influence of inanimate tools and technology, such as funds, new agricultural technology, research-papers, and White Papers.

As shown above in Figure 3, there are several elements and actors influencing values at the end of the chain. Rural places in Norway, which is completely different from the rest of the world, are influenced by reforms made by the national and international legislation (personal communication, the County Governor, 2016). As seen in Figure 3, the mountain region is influenced by relations between different types of actors - human, non-human (animals and natural actors), and inanimate (time, place, money and non-living actors). To map out the different valuable actors concerning the Telemark Cattle in the mountain region, I draw on the theory of valuation. *Valuation theory* is a relatively new direction in STS where natural, cultural, or/and emotional values are present beyond the economic commercialisation or profit. “Value can be defined as the degree of usefulness or desirability of something, especially in comparison with other things, and is by definition subjective” (Andriessen, 2005, p. 1). Knowledge is described as something you have or had. That makes knowledge a physical *thing* that exists. If knowledge is a thing it has to be ascribed a value like any other
thing. So, if value is subjective then it is also important to be aware of who has determined the value, and on what premises, and in what circumstances is it determined?

4.1 Actors

Values are socially constructed, and as the act of constructing something value is actively done by someone (Andriessen, 2005) (Dussauge et al., 2015). Each one of us ascribes a value to something after we have experienced it and communicates this value to others. Later in this chapter, I map out the actors that are important to the mountain region and their valuable abilities and influence. All the different actors in this case study are explained one by one as they occurred, each actor answers for themselves, how they are able to influence this case study, and one another.

Time and knowledge about the agricultural values had changed the last couple of decades. Farmers value the traditional ways of doing agriculture, and more self-made products have come to the market. Substitutes and grants are perhaps a part of it, initiated by the state, but the entrepreneurial risks and ideas comes from the people themselves (personal communication, Telemarksforskning, 2016). Time is also affected by the focus on sustainability and environmental changes. With respect to the Telemark Cattle, time is both against her and favouring her. The last decades, human demands and knowledge have changed to develop agricultural practices. And now, more than 70 years after the Norwegian Red was properly commercialized, projects to save the Telemark Cattle have started up. Time gives space for knowledge and experience, and the space people need in order to reflect upon what is important to sustain and take care of.

Telemark Cattle

Telemark Cattle is the focus of my case study, but also an actor because she is a physical non-human animal. The Cow is thoroughly described in my thesis in different chapters. It is important to value the cattle as a living being, which exists in only country in the world, Norway. The most updated number of the cattle registered is down to 339, of the valued breeding stock. Her abilities and advantages are discussed by different actors around in the mountain region. All actors agree upon her value as a tourist attraction and appearance in the mountain region (Landslaget for Telemarkfe, 2016).
Market Demands

The market and knowledge around agricultural products and methods have changed. People want sustainable products with a history. They care where and how the product is made, and what qualitative it provides. More information about and focus on food products has been a boon for local farmers across the country. Subsidies from actors like the County Governor and Innovation Norway are important factors for realizing entrepreneurial plans concerning self-made products. In Telemark there is a farm that produces ice-cream with milk from the Telemark Cattle, and the ice-cream is called Telemarkis.

Tourism

Tourism and agriculture has a lot in common and should talk to each other (personal communication, Haukeland, 2016). Agricultural and tourism interests are dependent on each other, and should be on the same team. Tourism in the mountain region is dependent on people living there, and a vibrant cultural and traditional life in different places (personal communication, Haukeland, 2016). During my stay in Berlin at the trade show Grüne Woche, several tourism agencies were there to see and learn about the products of Norwegian farmers and entrepreneurs. The day at the Embassy, Innovation Norway showed us their report on tourism and attitude towards Norway as a destination. The Telemark Cattle in the cultural landscape is a tourist attraction and a part of the cultural and traditional identity of the place.

Farmers and Entrepreneurs

As actors in the agricultural arena, farmers need different systems and technologies to value their work. Guidelines, policies, rights, interests, the opportunity to influence their days and economic benefits are all necessary factors that needs to be present. How each of them prioritizes and values these factors are different from person to person, which make the agricultural work multifunctional and different all over the Country. The farmer needs to be an entrepreneur as well as an agronomist. It is time to go back to the traditional and multifunctional agriculture. How each farmer chose to do their activities depended on their knowledge and interest in different fields (personal communication, Telemarksforskning, 2016).
“Farmers for nature” was a project initiated by the European Union (EU) to collaborate on agricultural knowledge and experience across Countries and regions. During this period of time the County Governor was on a couple of trips to introduce the Telemark Cattle and to understand how agricultural policies were made in other countries. Of all the projects concerning the Telemark Cattle, Farmers for Nature was probably the least efficient one.

A study on how money is spent on scientific agricultural methods in the EU, argues that some scientific findings becomes new paradigms. Research and Development (R&D) programs are huge in agricultural settings in EU, and the technological and scientific area receives half of the budget. The study argues, from a social science point of view, that some of the findings in R&D become new policies in EU (Levidow et al., 2013). The EU would like to become world leading on Knowledge-Based Bio Economy (KBBE) and uses quite a lot of grants for R&D to make that happen. The motivational background for this is to make agriculture in Europe sustainable and not so dependent on oil-resources in the future (Levidow et al., 2013). EU has different areas of interest, the same do Norwegian agriculture with different Parliament Reports and policies. Regjeringen vil fremme en politikk som sikrer at mangfoldet av kulturminner og kulturmiljøer gir grunnlag for kunnskap, opplevelse og verdiskaping (Miljøverndepartementet 2006, p. 15). Based on this Report, No, Norwegian Governmental interests include sustaining knowledge in cultural and traditional values.

EEA (Safety and rules)

Norway is not a part of the European Union (EU), still the food and animal health regulation enacted by EU, through the European Free Trade Association (EFTA), applies in Norway. EFTA made an agreement with European Economic Area (EEA). EFTA is not a part of EU, but works on parallel with them, to negotiate agreements together. Switzerland, Liechtenstein, Iceland and Norway are all members in EFTA. Because of this agreement the EU has some influence over countries outside of the EU. After 1950’s EU wanted to cooperate to produce more agricultural products and food to strengthen the countries in Europe. During this time Norway was on the same level where the agricultural sector tried to be more efficient and stronger. In the early 1980’s EU saw an overproduction of food and agricultural products and they needed regulations on production. Norway is not directly affected by the regulations of
agricultural production from EEA, but their regulations on safety around food production and animal health are affecting us. Every other year Norway negotiates with EEA through EFTA and together with EU, on customs regulations and Norway’s part on trading. The tolls are made to protect Norwegian producers and farmers as it is a high-cost Country and would not stand a chance compared to other countries with low-costs goods (Regjeringen, 2016).

WTO (Safety and rules)

World Trade Organization (WTO) is the singular trade organization that covers the whole world on regulations. Norway has been a member from the beginning, in 1947, when it was called General Agreement on Tariffs and Trade (GATT). WTO replaced GATT in 1995, and their main task is to contribute to safety and regulations cross international borders. All member countries have the same responsibility to contribute and follow regulations that are agreed upon (Utenriksdepartementet, 2006). Agriculture in Norway is dependent on membership in WTO, because Norway is a high-cost country that would not survive with a free-trade policy. Norwegian agriculture is dependent on nation political regulations and grants because Norway has a much more inconvenient landscape than other countries. On the other hand, the fishing industry is dependent on other countries interest and willingness to trade to have possibilities for growth (Norsk landbruksamvirke, 2014).

OECD (Overview and research)

Organization for Economic Co-operation and Development (OECD) is established to reveal and promote good policies to strengthen the economic and well-being around the world. OECD does research on countries and with their different political institutions and technologies. The research is given back in reports to help countries to understand and improve their policies (OECD, n.d.).

Innovation Norway

Ministry of Trade, Industry and Fishery together with the different County Councils’ own Innovation Norway with 51 and 49 percent. Innovation Norway is established to help new business developing and strengthening the industries that is. They work on a sustainable basis and have a huge role in the agricultural area where farmers need help to start or develop their
farm. Innovation Norway offer business counselling and money grants (Innovation Norway, n.d.).

Food and Safety Authority

The Norwegian Food and Safety Authority controls the rules and guidelines concerning food production, fishing, drinking water, and animals’ well-being. They cover all of Norway and work to protect and preserve humans, animals, fish, and the environment in the best possible way using agricultural technologies (Mattilsynet, 2017). The Food and Safety Authority visits each farm usually once a year to control that everything is done by their standards. They have guidelines and regulations for large-scale production and homemade production of goods, for example a cheese-factory or meat-distribution. One of my informants told me how they used to make cheese at the summer farm and sell it to visitors. After the regulations from Food and Safety Authority were enacted they chose to stop production since rebuilding and following their standards would have cost them around 100 000 NOK, which they did not see the economic benefit of at the time.

Norsk Bonde- og Småbrukarlag

This is an association of 7000 members from the agricultural area in Norway, both small and large actors of farmers and special interests. Norsk bonde- og småbrukarlag is politically independent, but they function as a political counterpart when the Parliament negotiates agricultural funding and areas of interest. In different areas of interest, the association puts pressure on cases with economic and social relevance (Norsk Bonde- og Småbrukarlag, n.d.).

Norges Bondelag

_Norges Bondelag_ is a union for all farmers throughout the Country. The main task for _Norges Bondelag_ is to negotiate the yearly agricultural settlement together with _Norges bonde- og småbrukarlag_, and to represent the Norwegian farmers in the best possible ways. When _Norges Bondelag_ and _Norges bonde- og småbrukarlag_ have reached an agreement they deliver this to the Food and Agriculture Agency, which answers them within a week, initiating negotiations on how to spend the money the following year. The governmental settlement guides the rest of the agreements at each department during the following year. If
Norges Bondelag and Norges bonde- og småbrukarlag do not find a solution together with the government, it is postponed until some parts have changed their positions (Stortinget, 2016).

NIBIO

Norsk institutt for bioforskning (NIBIO) was established in 2015 to contribute to food-safety, new innovation around agricultural methods, and sustainability and accountability research related to food and agriculture. NIBIO is a coalition created by Norwegian Bio-Research, Norwegian Institute on Agricultural Research, and Norwegian Institution on Forestry and Landscape (NIBIO, 2017). NIBIO publishes reports which is useful for actors like the County Governor, Tine, Nortura, Municipalities and others of interest.

Telemarksforskning (R&D)

Telemarksforskning normally does research ordered by someone with an interest in a topic, and competes with other actors through a tender, 90 percent of the time. The remaining 10 percent is ordered by the Research Council. Most of the time, Telemarksforskning finds interest in projects together with Municipalities (VRI – projects (VRI Telemark 2014-2016, n.d.)), the County, or networks such as Fjellnettverket and Fjellandbruket. In this case study Telemarksforskning has been essential with their competence and earlier research in the area. Their bred verdiskaping theory, Quadruple Helix model and large information bank on the Telemark Cattle and policy history has had an effect on this study and many earlier projects. Different people with different interests and qualities collaborate at Telemarksforskning and make their field of expertise broad and resourceful.

Fjellandbruket

The agricultural negotiations in the Norwegian Parliament decided in 2013 to give six million NOK a year, for three years, to the mountain agricultural area. The project started in 2014 and ends now in 2017. Its focus has been on sustainable projects in traditional agriculture in six different Counties. The Counties involved were Nord-Trøndelag, Sør-Trøndelag, Oppland, Hedmark, Telemark, and Buskerud. Telemark and Buskerud were given two million a year for the last three years on projects in their mountain regions. The goal was establishing and
supporting a collaboration with the Municipalities, other Counties, and Innovation Norway (Fjellandbruket, n.d.).

**Fjellnettverket**

Fjellnettverket is a political network with participants from the counties in southern and central Norway. The Board of Directors contains one representative from each County and all decisions are made by this board in collaboration with the members. County Councils’ have two representatives each, and member Municipalities have one representative in the Fjellnettverket each. This network is established to increase the value of the mountain regions and be active in political debates concerning multi-functional agriculture. A good infrastructure, workplaces, and possibilities need to be in place in rural areas like the mountain region. In addition to this, the mountain region needs to have certain general conditions to make that happen. To be an attractive place to live and work, is one of the goals of the Fjellnettverket (Fjellnettverket, n.d.) (Øvreseth, 2017). They initiated Fjellandbruket, whose purpose was to increase activities and information regarding agricultural life in rural areas. This has been evaluated by the Norwegian Parliamentary Committee. They agree that it has had a strengthening contribution on local workplaces, common social identity, and knowledge of local production and branding. The committee recommended extending the initiative for relevant agricultural projects in the mountain region using the political tools available. This line of work is suggested in order to enhance geographical diversity with regard to Norwegian agricultural resources. (Innstillingsfra næringskomiteen, 2017, p. 32).

**Landslaget for Telemarksfe**

*Landslaget for Telemarksfe* started together with some key actors at the County Governor on the project: *Telemarkskua – Et krafttak for å redde verdas vakraste ku.* This is an ongoing project to strengthen the Telemark Cattle’s population and products. *Landslaget for Telemarksfe* was initiated to coordinate the remaining Telemark Cattle’s population and different ongoing projects to save this breed (Gjerstad Løvaas, 2016). *Landslaget for Telemarksfe* is an Association for members interested in the Telemark Cattle in different ways.
Tine

Tine SA is a cooperative society with milk-producers as owners. Tine SA is a member of the organization “Norsk landbrukssamvirke”. Norsk landbrukssamvirke is an organization that serves the agricultural interests in Norway (Norsk landbrukssamvirke, n.d.). All 9000 farms in Norway deliver milk to Tine SA, which has a daughter industrial company, Tine (TINE, n.d.). Tine is an organization with different teams that work to develop their brand, communicate with farmers, and produce good guidelines and forms for the farmer to follow. Additionally, they have their own research team keeping them always as up to date as possible of new animal and production research. A set of rules has to be followed to be allowed to deliver milk to them. The type of production you can work with is regulated depending on the region you belong to. The state, together with Tine, have a quota for each type of milk-production, regarding goat or cow milk. This quota can be bought and sold, from farm to farm. The quota is a tool, intended to regulate the amount of milk throughout the Country (Landbruks- og matdepartementet, 2011). Each region has their own price per quota, and the prices are regulated to balance the region and the production in each area. Policy systems regulate this, and one of my informants told me about a rumour some years ago when the Minister of Food and Agriculture, Sylvi Listhaug, said she would equalize the price of each quota the following year. This never happened. But, because of the rumour some farmers bought a lot of “cheap” quotas in one region, more than they needed, to sell it off the following year when the prices went up. Still, today some farmers have more quotas than they are able to sell, or produce themselves. This leads to an unbalance, my informant told me, where someone else could have had those quotas (personal communication, informant 5, 2016).

Nortura

Nortura SA is a cooperative association with 18 800 egg- and meatproducers throughout the country as owners. Nortura SA is the mother-company to an industrial company as a result from a fusion between Gilde AS and Prior AS. Nortura offers counselling the same way Tine does. When starting with meat production or rebuilding the production, Nortura can be a guiding actor for the farmer. The formal regulations, that both Nortura and Tine has to commit to, are their tasks as a cooperative agency owned by the farmers. Nortura and Tine have formal roles as market regulators and suggesting and initiating regulations to comply with legislation. Market regulation is achieved through their delivering and collecting duty,
and their counselling and information service. One of my informants told me how important information regarding choice of breed was when they started farming. They listened to Nortura's suggestions on Hereford as an attractive breed in meat production and to their access to grazing lands. Nortura has the overall insight on the meat-market in Norway; they have the experience and their team is working on relevant topics to enact good market regulation and counselling daily (Nortura, n.d., personal communication, 2016-2017).

Geno

The breeding organization, Geno, focuses on production and export of the cattle, Norwegian Red. Geno is a co-operative system including farmer-members to influence and contribute to the breeding program (Geno, n.d.).

The actors presented here are some out of many actors of interest, the relevant actors change all the time. When studying the actors and networks around the Telemark Cattle, a lot of different interests, organizations, and idealists appear. There is a huge variety of grants, policies, knowledge, and projects with focus on saving this domestic animal (Skog og landskap, n.d.).

![Telemark Cattle diagram](image)

*Figure 4. An ANT-approach on the Telemark Cattle*

Telemarksforskning and the County Governor explained some of the earlier projects, and projects they were planning to do in the future. The employees at the County Governor work on several projects at a time and one projects often lasts for three years. The amount of money
invested in a project is usually only a start, and almost a symbolic amount to get things going. The County Governor said that this amount was usually just a reminder to show the value of projects and people. Most of the time and money is funded by other agencies, like Innovation Norway, or by the entrepreneur themselves. When selecting new projects or giving guidelines and funds to a new project the County Governor uses White Paper as guidelines and legal basis.

When there is a new political change or change of Minister, the County Governors’ projects change too. When the County Governor gets a new White Paper to work with, they are also dependent on the public funds covering their projects. When new projects are established and new areas of focus are in place, the different Municipalities are contacted. Usually the Municipality is the connection between the farmer and the County, but in some cases the County Governor reaches out to farmers and key actors they think are valuable for projects. The County Governor is not able to decide their own projects independently, but has the ability to interpret the White Paper - how it fits with the environment and possibilities in the County.

The individual farmers interviewed, concerning their network and processes are a bit different since they are individual actors physically contributing to the agricultural system in the mountain region. Because of this my informants are bound to a set of specific industry regulations towards farming and managing risks that occur working with animals. In addition to the imposed network, many of the farmers are politically active or employed in different offices (Tine, “Bonde- og småbrukarlaget”, Agricultural Counsellor, Nortura and others). The former local network initiated by farmers in each village concerning agricultural issues, is not that present anymore. The absence of network is mostly due to the restricted time available to each farmer, but also because there are so few farmers left in each place to build up a local network. Most of my informants had their family as their most important support on the farm. Tine and Nortura, was also mentioned as a good advisor to have, together with the local Agricultural Counsellor of the Municipality.

Actors work together on certain projects which affect them on a resource- and knowledge-based level. The County Governor met with Tine to discuss a new possible cheese made with milk from Telemark Cattle. Innovation Norway (Telemark), Tine, Nortura, restaurants, The County Governor, Head of Agriculture in the Municipalities with different
tourist-agents travelled together with specialized farmers to the international trade show, Grüne Woche.

4.2 Changing Politics

Power and domination is a part of our human race and within the human race there is diversity between social classes and roles. Social classes with the power to interfere, are actively used by humans as inhabitants of the earth. Whether it is deliberate or not, our intentions and demands are the basis for our actions (Haraway, 1991).

Efficient, more reliable, and easier ways to do farming have been present for the last several decades, and the need for food are greater than before. Due to this period of modernization, the agriculture is characterized by highly efficient animals and methods. The politics influence the County Governors’ projects directly. WTO affect the Norwegian regulations. Some regulations that come from WTO are good, while other regulations do not fit the Norwegian climate and landscape. Good conditions and a solid political framework have to be in place and available for the entrepreneurial farmer. In places where private and public owned areas are connected to each other, it is difficult to find an agreement on the pasture fields and its boundaries.

As the agricultural sector had focused on more efficient and mechanical technologies after the world war-two. A lot of farmers quit at this time when modernization and public needs grew, while other farmers got together and collaborated and became bigger collective farms. WTO did not want to support small, local inefficient farming-culture, and tried for many years to change the way of looking at productivity. Telemark Cattle was a breed in danger at this time as many farmers swapped her out with the new and more productive cow – Norwegian Red (Christie, 2002). Because of the small stock of Telemark Cattle it started to be known as a breed with poor health and bad genes (personal communication, Svardal, Gottschal, Dagsrud and Haukeland, 2016).

The Agricultural Agencies, with its policies, directly influences the County Governor when new reforms and White Papers are presented. When Lars Sponheim was the Norwegian Food and Agricultural Minister from 2001 to 2005 there was an agricultural policy change - Norway was not going to produce more food than the country was able to consume. At the same time the Valuation Program for Food Production (Verdiskapingsprogram for
matproduksjon), started to strengthen the small local farms with their own production and processing of food and other goods. It took more than 15 years before they saw this trend happen. With this political history it is arguable to say that the Department started the focus on small local products and preservation of culture. In 2011, the White Paper 9, “Velkommen til bords”, was introduced and moved focus back to increasing the production of agricultural goods (personal communication, the County Governor, 2016).

Power relations through mobility and technology happens by combining sociology and technology. ANT can be used as a translational tool between social science and methodology in order to understand the events. This tool tries to understand the paradigm of new knowledge accepted by the societal structure (Wood & Graham, 2005). Extending the Actor-network theory of Michel Foucault and Michel Serres, ANT wants to solve another issue, how power relations can happen at a distance. Every human or non-human value is affecting each other and changing society all the time, which makes ANT not a long lasting blueprint of something, but actively looking for change in society – for new knowledge and information through human and non-human relationships (Wood & Graham, 2005). This is a phenomenon we see in agricultural policy too, where different needs and interests in the landscape change from year to year. Technology is accepted and used in different ways throughout society. This can be compared to the bicycle which started out as a clever, high-valued and expensive vehicle. After a while cars and other types of transport replaced with the bicycle as more comfortable and reflecting a “higher social class”. In another context, after a long period of time and in another part of society, the bicycle is taken back by highly educated people who use it to travel back and forth to work. This is a great example of the hybrid collective in ANT, always changing and always influencing each other. (Wood & Graham, 2005).

WTO is criticized because they did not prioritize science and risk assessment before trade and market. WTO, now, has a lot of schemes and demands on how to make agriculture as safe as possible internationally and it has a huge role in agricultural safety and success. The main goal with agricultural negotiation in WTO is to reduce grants to farming. “A western cow get more subsidies than a whole annual income for an Indian farming-family” (Christie, 2002). This sentence is taken out of context, and, of course, since industrial countries are high-cost countries, agriculture in these industrial countries would not survive on a free-trade level without subsidies from WTO, EU, OECD or governments. On different levels WTO, EU and OECD affects Norway, and what possibilities are available to farming when it comes
to import and export of agricultural products. Agreements on a global level are important when it comes to elements concerning the agriculture (personal communication, Gottschal, 2016).

When the economic funds for production in agriculture were cut by WTO, the Norwegian departments granted the remaining with different market functions as direct support to farmers or by value-added tax (VAT) (Brunstad & Gaasland, n.d.). A short introduction of the political decisions in agriculture is necessary to understand the huge effect policies have on small, local farms in the mountain region in Norway. Decades of agricultural overproduction led to regulations and policy changes. The politics led to fewer farms, with higher production levels, more animals, and greater harvesting area.

European Union (EU) and World Trade Organization (WTO) have enormous influence, complexity, and power across borders with respect to trade and customs. Industrial farming and large scale agricultural trading are responsible for most of history's food-scandals. As a result of big herds of animals and large scale farming, it can be difficult to expose and treat sick animals or bad fodder. Diseases spread more easily in this environment and the reduction of herds becomes more drastic and vulnerable than before with several smaller farms (Christie, 2002). The Norwegian Parliamentary Committee supported the ongoing collaboration with the WTO-agreement in the future. The committee addresses how important the agricultural import restrictions are for Norwegian production of agricultural goods (Innstilling fra næringskomiteen, 2017). A change happened with White Paper 19 (1999-2000), Om Norsk landbruk og jordproduksjon, when the focus on local multifunctional farms returned to the political agenda (Svardal and Haukeland 2010, p. 109–110). Farmers are dependent on public funds in their agricultural activities.

4.3 Grants

The actors around the Telemark Cattle do what is in their power in order to save her as a breed through different projects. As an economic value toward her survival, grants are given to several projects and individual farmers. Social demands and the existing market contributes on deciding the economic values towards preferred initiatives. The County Governor is guided by the current White Paper, the Parliamentary Adjustments, and the Agricultural Agreement when they are deciding on new projects or approving grant applications on
projects. The Parliamentary Adjustments work as an answer and correction to the guiding White Paper, and the Agricultural Agreement shows where the money and resources go. I will guide you through a thought scenario inspired by my expert-group interview at the County Governor, and an extra phone call on the 22nd of May, to see if I were on the right track. The pictures below are addressing the issue “Bevaringsverdige raser”, which the Telemark Cattle is a part of through its history and level of extinction.


White Paper 11, in chapter 5.3.8, stresses the issue around national older breeds of domestic animals in Norway, which are at an extinction level. The White Paper, uses words as, *might have beneficial meat qualities, and can be useful in the cultural landscape*. The White Paper, is on the other hand clear on existing research that proves how some of these endangered
animals have beneficial qualities compared to more modern, productive breeds, like exploiting the nutritional value of plants growing in uncultivated.

After the White Paper, has been written and decided, it is sent to the Parliament to be checked and approved on an ongoing legal basis. This process does not change the White Paper, itself, but it sends an extra file with adjustment and corrections when the County Governor uses it for deciding new projects and processes.

Illustration 4. Example from Parliamentary Adjustments to the White Paper, 11, 2016

The committee who decides whether or not it adjustments are needed throughout the White Paper, are people representing the affected area of discipline on each subject. Together they find guidance and corrections to the existing White Paper. The adjustments presented here is clearly agreeing with the corresponding White Paper, but stress that there must be an economic value for the farmers who choose this type of domestic animals. In addition to funds and grants given to those who chose this kind of breeds, the adjustment paper recommends a thorough plan of action to secure this line of work.

Even though this is not a linear progress where the White Paper alone sets the legal basis before the rest of the processes occur, I chose to present it this way, to make it understandable as a process. The Parliamentary Adjustments are based on earlier Agricultural Agreements and a White Paper apply for several years at a time, requiring adjustments along the way. Every time there is a new government, the newly arrived politicians try to publish a new White Paper and regulations, but sometimes this can take a while. If there is no new White Paper, the processes in the agricultural field keeps on going with what they have.
### 7.5 Tilskudd for bevaringsverdige husdyrassar

**Tabell 7.5 Foreløpige satser kroner per dyr per år**

<table>
<thead>
<tr>
<th>Dyreslag</th>
<th>Søknadsfrist</th>
<th>Sats i kr/dyr/år</th>
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<tr>
<td>Størle 2)</td>
<td>20. januar 2017</td>
<td>2 900</td>
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<tr>
<td>Sau 3)</td>
<td>20. januar 2017</td>
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<tr>
<td>Ammegeit 4)</td>
<td>20. januar 2017</td>
<td>500</td>
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<tr>
<td>Hest 5)</td>
<td>20. januar 2017</td>
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</tr>
</tbody>
</table>

1) Registreringsdato for søknadsfrist 20. januar er 1. januar.
2) - Ku (melkeku eller ammeku som har kalvet i løpet av de siste 18 måneder og okse (12 måneder eller eldre på registreringsdato. Tilskudd gis for inntil 2 okser av samme rase per foretak).
- Minst 7/8 av en av rasene sidet tronder- og nordlandsf., østlandske rødkolle, dølafe, vestlandsk raudkolle, vestlandsk fjordfe eller telemarkfe
3) - Sau over 1 år på registreringsdato
- Av rasene blæset, dala, fuglestadbrogete, gammelnorsk spæl, grå tronder, rygja og steigar
4) - Geit som har kjøet og som ikke er melkegeit
- Av rasen kystgeit.
5) - Unghest under 3 år
- Av rasene dølahest, fjordhest, nordlandshest/lyngshest

7.5.1 Telledato og søknadsfrister for tilskudd for bevaringsverdige husdyrassar til utbetalning i 2018


*Illustration 5. Example from the Agricultural Agreement 2016-2017*

The Agricultural Agreement is a concrete result from the agreements concerning the White Paper and the affected actors who collaborated on the Parliamentary Adjustment. This is where the money and allocation of resources is presented. *The Agricultural Agreement shows us how much the issue presented in the White Paper is valued in actual resources* (personal communication, the County Governor, 2016-2017). Here the amount of money given to each Telemark Cattle is presented as a result from the earlier public processes. As long as the grants are applied for within the application deadline, each Telemark Cattle is funded with additional production grants. Projects regarding the Telemark Cattle can be applied to through different agencies and grant programs, dependent on how the project is planned to have a societal, environmental, cultural or economic result.

I chose to draw upon an example of a project to save the Telemark Cattle, presented in the following section. The project is funded by public grants with a broad agreement on its importance.
Telemark Cattle – A concerted effort to save the world’s most beautiful Cow.

The next project under the auspices of the County Governor would be a summer farm collaboration with different Telemark Cattle farmers. This summer farm is planned to strengthen the tourist interest in the culture of Telemark, and, as a result, the breed itself. This program is called, “Telemarkskyri – Eit kraftak for å redde verdas vakraste kyr”.

This is the title of the ongoing project initiated by Landslaget for Telemarksfe and the County Governor. The project had planned to create a summer farm with the Telemark Cattle as an attraction for tourists travelling to Telemark. The cattle were planned to arrive from different farms. One issue regarding the project was how administrators of the project needed a plan for what to do with the milk production at the summer farm. When I was at the County Governor they talked about this project on an idea-level where they looked for who, when, and how to implement this project. The project initiated several events in order to increase and strengthen the population of the Telemark Cattle. More focus on qualitative breeding of the stock was initiated and, during the last year of the project, the number on Telemark Cattle increased from 298 to 339. This project also created a special brand for the products made from meat and milk from the Telemark Cattle. In 2016 the project funded an exhibition with information about the Cattle, and sold some products made of milk and meat from the cattle at the trade show, Dyrsku’n.

4.4 Technologies

When I hear the word technology, I understand it as something mechanic or/and electric. I see technology as things. Even though, technology can appear as useable tools too. Technologies can be political papers, regulations or people in a certain position with the power to change something – make things happen. In other words, technology can be defined on many levels (Dussauge et al., 2015; John Law, 2000; Singleton, 2012b).

Large amounts of paperwork pushed on the farmers toward new and improved agricultural technology exists. The farmer receives subsidies and grants from different levels, but has the responsibility to follow it up with a lot of forms and formalities. It is tiring and hard for each farmer to be up to date on everything that exists and they are afraid of missing

12 See Appendix viii
out on something or getting sanctioned if the correct legislated formalities are not fulfilled (Singleton, 2012a).

In cases of sickness and decrease in living stocks and herds of domestic animals on farms, it is important to have a thorough system that separates “good” from “bad” farming methods (Singleton, 2012a). The farmers discuss how much paperwork is required, further on how the accountability in farming, the conscientious view of livestock's wellbeing, is important to acknowledge. Farmers have a lot of knowledge through education, training, and experience, and, together with new technology it has huge possibilities for implementing new life-changing improvements. Sometimes, the legislation and forms can take away the farmers motivation and time available to do good agricultural work. The agricultural sector is provided with new technology and it challenges the economy and resources on each farm. The responsibility of farming is strong with the farmers who work together with legislation, technology, knowledge, and systems. As an example, technology for tracking cows were presented (Singleton, 2012c). With this technology the farmers could be certain of where the cows were at all time. This technology was created as a result from the earlier outbreak on Foot and Mouth Disease to prevent eventual diseases from spreading and keep the cow safe from getting lost or wandering into another farmer's area. Still, things happened that made the technology unpredictable, as is the case in all technological areas. But responsible caretakers find solutions to the different issues that arise.

(...) He makes notes about the individual animals including about their temperament, where they calf, if they have been unwell and any medication. He writes in pencil so that he can correct any mistakes. He keeps the book next to the table in the kitchen so it is easily accessible and so that he can sit down while writing it. Some farmers keep their register in their cattle housing. (Singleton, 2012a)

Already well-made systems kept on this farmer's stock and in his own way have worked for so long and is way of caring for the stock initiated by the farmer. No technology, just his own intuition, knowledge, and competence about the cows’ health. From my own interviews the number of papers and forms is vast and tiring. Still, almost all of my informants agreed upon the safety and feeling of control when they used the forms in different situations.

Processes and communication between different actors concerning the Telemark Cattle is different on each project. When I spoke to the County Governor they told me they
did projects independently and together in team. They used different White Papers as a legal basis and tool for their funding and support on new projects. Projects usually last for three years at a time, but could be extended in some cases. Time and money available to each project is small compared to what usually the projects need, but the County Governor can be the tip of the iceberg for some of the entrepreneurs. Innovation Norway can follow up later, together with the Municipality or other funding actors. The County Governor form the projects together with actors whom they saw as important to the project, or were interested and made contact themselves. In some rare cases they contacted key actors they thought could be important to the project, asked them and made contracts and achievable goals on the way. Most of the times the different Municipalities were the connection between them and the individual entrepreneurs or farmers applying for funds. The network around the person and project was one of the key factors for succeeding as an entrepreneur in the agricultural sector.

NIBIO has the main responsibility for preserving the breed in their sperm-bank. This kind of technology can save the breed from diseases and decrease the possibility of inbreeding. As inbreeding has led to a lot of diseases and poorly performing breeds, the informants I talked to were worried about this kind of problem in the future regarding the Telemark Cattle. With only 339 cows’ left, the possibility of diseases is much higher and a greater risk. In addition to this low number, at Telemarksforskning, I was introduced to the uncertain future and complications regarding Aslak Snartelands’ amount of Telemark Cattle. He has the biggest stock of the breed, and if something happens with his cows’, the whole Telemark Cattle as a registered breed is at risk. He did not see a problem with using some NRF-bulls to mix some healthy new genes in to the population. The cow would still have the remarkable roses and horns. The contribution plan for funds as it is today, does not strengthen the mountain region agriculture. The contribution plan for funds given to agriculture is based on the number of litres produced or how many cattle each farm consist. This does not help the mountain region which is not able to efficiently farm compared to the lowlands. As Telemarksforskning pointed out, it is time to change the fragmented funding policies and their technologies to strengthen the mountain region and its agriculture.

Nortura and Tine initiate market regulations through their systems of knowledge and technologies on the agricultural area. The Board of Directors is elected by the members and their task is to represent the farmers needs and interests. At the same time, they are affected by the initiatives from the government, which has led to different regulations throughout time.
One of my findings from the County Governor is a meeting between representatives from Tine and a group from the County Governor to create a new kind of cheese to strengthen the Telemark Cattle. A cheese designed to give focus to this kind of breed. As Tine is owned by farmers and members throughout the country, their commercial interests are not as high as a privately owned actor.

Farmers and entrepreneurs in the agricultural landscape use different kinds of technologies in their everyday life, but also in their specific areas of interest. Public papers and forms from “Husdyrkontrollen13”, “Kartleggingsverktøy for helse, miljø og sikkerhet” (KSL), and Food Safety Authority in Norway (Mattilsynet), are all helpful technologies to stay aware of the animals health and environment. If something happens to their animals, there is a proper system that collects information and helps to prevent diseases in the future. A proper form- and scheme system is a security measure to prevent diseases that can spread from farm to farm before being caught (KSL, n.d.).

Every research team or administrative team has an organization with sets of rules and guidelines behind it. The organization of Telemarksforskning and the County Governor are important to map out, like a laboratory study, to understand their priorities and the importance around each project. This helps answer the questions - what will they focus on, what is their area of competence, and what is their potential to accomplish regarding grants, time and resources. Now there are certain forms, rules and guidelines on how to conduct different types of research in the best possible way with the best criteria to reach the scientific goal and truth (Druglitrø, 2012). The technologies I found during my stay at the County Governor were how they fund different projects and put cases in an agenda. They all work on different projects at the same time as they do counselling. The project Fjellandbruk is one of the three-year-old projects together with the County Governor in Buskerud. It can be seen as a technology initiated by the state, but used by the County Governors in order to strengthen the Mountain Region.

The County Governor told me that three years on each project was not enough. The first year is hard to reach out to everyone who might be interested. The connections and time on hand are not enough to use the funds they get the first year, usually. The second year there are often too many applicants, and most of them are good, so it is a shame to turn someone

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13 Husdyrkontrollen – a tool made by Tine to keep up the control on health and environmental issues at the farm, document in case of deceases or other deviations.
down because there are not enough resources. The third year they are usually finally doing something specific and see that they could have done it so much more thoroughly, but have to shut some of their projects down because there is not enough time remaining. Some of the specific subsidies are given to each Telemark Cattle born, but as a one-time amount.

As a summary to this chapter of *Politics*, the different technologies are used and reused over time and throughout places. When these technologies are moved and defined by new actors, a translational event occurs. This translation is how the actor sees the possibilities and uses the given technology. Technologies exists as grants to specific purposes, new areas of marketing or new projects like starting a summer farm happens through a set of technologies. These technologies are defined and used with individual motivations and capacities, through time, place, society and nature.
5 Localities

The individual informants I spoke with agreed upon that the Telemark Cattle is not economically valuable or efficient, but, as one informant of mine described so well: “It is probably personal emotions connected.” My informant had understood peoples’ affection and feelings for the Cow and how important it was to them as individuals, not the Cows’ abilities or characteristics. The processes in the mountain region with its capabilities and network, together with the valuable cultural landscape and its policies, are crucial for the survival of the Telemark Cattle.

(...) the reduction of so many nonhuman lives to what we can call the merest of living conditions, to life at the biological threshold, is a painful reminder of the consequences of human triumphalism and exceptionalism. This mere life, we need not remind ourselves, takes a number of forms: the extremes of human-induced species extinction, where wild populations are diminished to a barely reproducible number, sit alongside the inflation of domestic livestock populations (...) (Asdal, Druglitrø and Hinchliffe, 2016. p. 1)

This thesis barely touches the subject of animal wellbeing, or the ethics in meat- or milk-production regarding domestic animals, but these subjects are an important factor to remember regarding the power relations on human and non-human animal lives. Humans, as a species, have developed different breeds throughout history to fit our purposes and demands at that time. We create contexts where the animals are supposed to fit in, and choose their future whether it be production, appearance, or as company. It is in a context of technologies, science, human interests and affection toward animals (through caretaking technologies), that has developed new regulations and knowledge.

_When my Grandmother was in the barn feeding the cows, she used to give the Telemark cattle in the barn plenty of feed concentrate, but when she came to the newly arrived NRF-cow she skipped her and pretended she was not there. No modern multifunctional cow was going to replace her valued Telemark Cattle._ (personal communication, informant 11 & 12, 2016)
5.1 Local Knowledge

Every place has its own unique tradition, culture, and agricultural products (personal communication, Dagsrud, 2016). These products often come from the natural advantages in this particular place. Taking advantage of local knowledge and natural traits preserves the area in the best possible way, and leads to tourism and a growing economy (personal communication, Fjellnetverket workshop, 2017). Translation occurs through local knowledge on different levels, and is a circle of life, from Departments, to White Papers, to the County Governor, to the Municipalities and then, to the farmer or local entrepreneur and back again (see Figure 1). A model called “Pride in Place” was presented as a method to use all the advantages that exist in one area. The model is shaped like a spiral, showing us how to build up the autochthonous specialties as sustainably as possible14 (personal communication, Dagsrud, 2016).

Regarding local knowledge, Telemarksforskning uses traditional knowledge as an important factor in building a multifunctional farm. Multifunctional farming means that the farmer sees new possibilities and business models to develop their farm, in addition to the regular conventional one. Telemarksforskning advises farmers to go back to the traditional farming culture. The farmer needs to be an entrepreneur and the farmer is the most important resource in the agricultural mountain region (personal communication, Telemarksforskning, 2016). Going back in time to the traditional farming culture happens through production of own products, combining farming with tourism, and or regulating the forests around the farm using the best economic and sustainable methods. Aslak Snarteland's awareness regarding the Cow along with his local knowledge, pointed to different possibilities regarding the Telemark Cattle which were up for a discussion. One of those was how each individual farmer should be able to customize their own farming, methods, and work descriptions. Snarteland had some sheep at the farm so he could be a member in the local network concerning sheep. He valued the network in his daily work. The local network for sheep owners has a great deal of competence relating to agriculture in the area where he has his farm. Farmers and entrepreneurs are dependent on access to knowledge, funding agencies, and resources to produce their own local goods. Together with the research knowledge and the administrative knowledge systems, the farmers are able to do multifunctional farming in their own way (personal communication, informant 1-9, 2016). An important factor concerning the

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development of local knowledge is that different agencies are dependent on knowing what is going on in the agriculture. Agricultural possibilities and traits need to be defined and exploited, if the development in the mountain region and conservation of domestic animals is going to work. Three of the informants set focus on the importance of the farmers' open-minded approach toward the multifunctional way of farming. To succeed you need to be a handyman and see new possibilities in every corner. A background in agronomical studies is highly valued too, but most important of all is the persons’ attitude towards doing things in a new way. Embedded local knowledge is, a hardworking farmer who is humble and willing to learn from old traditions and ways of doing things in a new way (personal communication, informant 1-9, Telemarksforskning & the County Governor, 2016).

In addition to traditional and local knowledge, the farmer has to be up to date on new technologies. Furthermore, the farmer needs to combine the traditional tools, local knowledge, and new technology in order to survive. Combining new technology with earlier traditions is the advice from Telemarksforskning for the agricultural life in the mountain region to succeed. The local entrepreneurs are dependent on the politicians to make things happen. But the departments and the funding agencies are often too fragmented to make this happen. If the Department of Culture were collaborating with the Department of Food and Agriculture they could put together some of their common interests and competence like cultural landscape and tourism in the rural areas (personal communication, Telemarksforskning, 2016).

As a promoter of local knowledge, Grüne Woche contributes to the translation of local and national goods on a whole new level. Ever since 1926, Berlin's trade show has been showing garden and agricultural products from countries all over the world. In 2017 it lasted for approximately ten days, and representatives from Norway were divided in three sections with 77 exhibitors (Matdepartementet, 2017). When small-scale producers travel together to Berlin and stay together for a week or more, they exchange experiences and success stories of how they worked their way into the market. At Grüne Woche, actors get connect with restaurants, tourist agencies, administrators, and wholesalers in Norway.
5.2 Cultural Landscape

Every year when the cows are let out on the field for the first time (*kuslepp*\(^{15}\)), plenty of tourists and farmers travel to see them dance their way out on the field. Their happiness is clearly visible through this behaviour and the peoples’ affection to it clearly shows how they care for the cattle’s wellbeing and interests. With help from funds and policies the cultural landscape is regulated using a range of instruments. The landscape in the mountain region in Telemark and Buskerud is regulated by the public, farmers, and local foresters. Norwegian governmental departments support private and public actors in order to keep the hay meadows and pastures developing in the right direction (Naturforvaltning, 2009). There is broad agreement in the Norwegian Parliament about how important it is for smaller, local agricultural farmers to maintain their production to keep the landscape and cultural variety in place (Haukeland et al. 2010, p. 110).

In addition to funding agencies, support comes from an increasing demand for local and smaller products. The market demands different agricultural values in each product. The types of funding in the agricultural sector are of economic value, and counselling on agricultural activities which leads to more local employment. Grants vary in size between municipalities and districts, what these actors choose to focus on, and the agricultural challenges and possibilities they have (Haukeland et al. 2010). In an area like the mountain region of Telemark and Buskerud, grants are given to maintain well established local and small agricultural activities. In this way, public funds contribute to the traditional cultural landscape in regions where mountains and natural obstacles make it difficult. These different systems of funding exist to prevent a reduction in agricultural activities, but we still see a reduction in agricultural farming in the mountain region. Each year the number of farms in the mountain region is reduced.

In addition to the funding given to farms that have the Telemark Cattle in their stock, a smaller amount of funding is given to small local businesses and farms to increase and support the autochthonous qualities. Funding is awarded to local production, social services for youth or people through difficult periods in life, or as tourist activities at the farm relevant to agriculture. This is perhaps a reaction to the earlier farming-cooperation called “*samvirke*” where several local farmers got together and collected their livestock and alternated work.

\(^{15}\) Norwegian word for letting their cows’ outside for the first time that year.
days milking and/or feeding to be more efficient (personal communication, informant 4, 2016). In 2004, SMIL (Spesielle miljøtiltak i landbruket) - environmental initiatives in agriculture - was established as a grant program. SMIL is a collaboration between the county and different municipalities that funds areas that contribute to positive environmental effects through agricultural work. Evaluation of this program shows how interest in this line of work has increased and gotten better. Environmental knowledge has increased though grants, like SMIL and others, which shows that the local interest and knowledge of local and global pollution is present (Haukeland et. al. 2010, pp. 120-121).

The summer mountain pasture is usually uncultivated ground. Manure outperforms the several fragile plants in an area, which could have increased the area and grazing land with a lot of natural nurture diversity. Where the field is naturally grazed by domestic animals, the bio-diversity of plants, insects, and animals are at its best for summer pasture. For high-scale farming and collect of fodder for the rest of the year, manure is essential to use. But, manure leads to one type of grass which groves quickly, and not increasing the land with natural nurture.

The pasture is important for this diversity in a local environment where fragile plants and insect need the space to grow. Domestic and wild animals have different kinds of capabilities and interests in the fields making the fields varied and diverse. The best way to keep the bio-diversity in an area is to use different domestic animals over a period of time, a so-called alternative grazing. In the beginning of the summer the plants' nutritional value is at its best, because plants need a lot of energy to germinate in the beginning and therefore contain a lot of minerals. These nutrients can benefit a large number of domestic animals, as long as they have enough space around them so that they can use some of the energy and not get sick by it (Strømme 2017).

One argument to adjust the agricultural influence to the cultural landscape is: why don’t we just use domestic animals that do not need to be milked twice a day, like sheep and meat productive animals? This maintains the cultural landscape without the extra work milk production requires. The argument comes up because of all the extra equipment, road maintenance, hours spent milking, and costs tying the farmer to this place.

From a bio-diversity point of view, milk production keeps the meadow open. The cultural landscape is dependent on summer farms with the surrounding grazing fields. The
outland grazing areas revert quickly to forest and can be seen as a “lost case”. But the areas around the summer farms, those meadows can still be saved and kept open to welcome biodiversity (personal communication, Kristiansen, 2016). The domestic animals need to come back to the summer farm twice a day because of their productive milking while grazing around the summer farm. In this way they preserve some of the last open pastures left in the mountain area (personal communication, Strømme; 2017, Kristiansen; 2016).

The cultural landscape of outlying grazing fields is already overgrown and lost from a bio-diversity point of view unless some radical changes happen. Fencing in grazing land place by place, could be a solution, but it is costly and time-consuming and difficult to implement in reality. The meadows around the summer farms in the mountain region are still visible, and important to fence in, as it would be quickly overgrown. The treeline is this high because of the radical reduction of domestic animals, and not just environmental changes as people often believes (personal communication, Strømme 2017).

“Norges Jeger- og Fiskeforbund16” should be engaged in the cultural landscape, as the summer farms are actively contributing to the wildlife bio-diversity in the area by pasturing the land. This was a common point of contention between farmers and huntsmen, as they have to pay attention to each other’s interests, when walking in the mountains during summer farming, and through different periods of hunting (personal communication, Haukeland, 2016). Many farms in the mountain region are dependent on summer farming to have enough food for the whole year. As most of the farms I visited had not enough space around the barn to feed the herd during the mandatory eight weeks, and the following year to come.

All domestic animals are imposed to be outside eight weeks each year. Three of my individual informants said that the value in keeping the cultural landscape open, and full of bio-diversity typical in this type of landscape, was important to them. Animal welfare from exercise and fresh air was a common value all of my informants talked about. Animal welfare including the possibility to clean the barn at the farm while the animals where gone on pasture was also an important factor. Many farmers choose to spend some weeks while the animals are gone to have their yearly vacation. In this case they use funding for replacement workers, which is given each year so they can take their yearly holiday. Other farmers spend the

16 Norges Jeger og Fiskeforbund – National agency for hunts- and fishermen.
summer on their summer farms with their family and kids, without fewer regular daily distractions and technology as back home. Two informants mentioned the value of preserving the old tradition and culture as a huge reason for summer farming.

The importance of the cultural landscape has been a subject throughout my year writing on this thesis. Everywhere I turned, and talked to people the mountain region was defined through cultural landscaping, and that it was a huge reason to why it is so important to continue with agricultural work in this area. The individual informants who talked about the Telemark Cattle referred to her beauty and history. It was quickly obvious how important this cow was for the individual human beings located in the area. Telemarksforskning and the County Governor agreed on how the Cattle’s presence in the mountain region was important for the tourist industry.

5.2.1 Tourism

The diversity of an area is defined in the place it is situated in, and is important for maintaining the knowledge of culture, tradition, and conservation of the existing natural ingredients in the area. There is no evidence that the Telemark Cattle is a better climber or has more natural minerals and nourishment in her milk or meat than other breeds. But her important role in the landscape considering the value for tourism was present (personal communication, the County Governor, 2016). By doing what the Italians do, presenting specialities in the exact place that they are from, farmers can and will contribute to more tourism (personal communication, Dagsrud, 2016). The suggested imitation of the Italians here is meant to show how the rural areas in Norway could find their traditional specialities and modernize them. Use the Telemark Cattle as an exotic animal existing only in the mountain region.

Social values regarding summer farming work are important to maintain and are strengthening the landscape and tourism in this area. Networks with other farmers and tourists visiting the place are important for maintaining the specialties and diversity from place to place. Knowledge of culture and traditions and the way this is translated is an important factor for communicating opportunities. One of the greatest values is bio-diversity and saving threatened species. On the other hand, it can be difficult to document the values in cultural landscape because there, no-one “owns” it. The landscape is out there, but no individual is directly affected by its appearance, leading again to fragmented projects and policies. The
interest in working at summer farms is high, and some people are almost willing to pay for the opportunity to work at a summer farm (Haukeland 2016). A lot of people look at the time on summer farms as a free period – a vacation. People drive far just in order to see Telemark Cattle crossing the road. The cars waited gladly until all cows had safely crossed (personal communication, Snarteland, 2016).

5.2.2 Processes

When a new entrepreneurial farmer in the mountain region wants to start with cattle production of any kind, the farmer needs some information regarding the choice of cattle. Farmers get cattle advice from the meat distributor, Nortura, and the milk distributor, Tine. One of the informants was recommended Hereford cattle as a breed, which would fit well in the landscape surrounding the farm according to Norturas’ counselling team. The meat production and price was good compared to other breeds, and the cows’ personality was friendly, according to Nortura. Friends and family of the farmer recommended the same breed, so they chose to start with Hereford at this time (personal communication, informant 13, 2017). Both Tine and Nortura understand the market demands and, with that knowledge, they are able to provide counselling on the preferred domestic animal.

An important factor in choice of domestic animal is the time you have available. With a full-time job it would be difficult to have milk production, since this is a time consuming activity and must be done twice a day. As Tine and Nortura are partially funded by public grants, they are to a certain extent obliged to collect slaughtered animals, for meat-production, and milk from farms all over the mountain region. Farms in and around the mountain region are spread throughout a large area, and the distances are long between each place. Transportation costs are covered in order to preserve the mountain farming community.

The farm itself has some limitations when deciding on type of domestic animal to have in production. The age of the buildings and production methods available need to be taken into consideration when deciding on a breed. In other words, if a farmer buys an older farm that used to have sheep, but the farmer wants to start with cattle, he or she needs to rebuild the barn in order to fit with the regulations for cattle production. Or, the farmer can buy the breed, Dexter Cattle, which is smaller in size and fits in smaller barns. Either way, the farmer needs some counselling and knowledge on the topic up front (personal communication, informant 8, 2016; informant 13, 2017).
In addition to interest, place, resources, and time available to the farmers, it is important that there is a market for the kind of production they choose. That is why quotas exist for milk-production. The quotas can be applied for or bought from other farmers who want to quit or decrease their production. Tine has an overall picture of milk-production and provides counselling on what is needed (personal communication, Telemarksforskning, 2016).

### 5.3 Possibilities and Technologies

The agricultural possibilities go beyond individual, economical, technological, natural, political, and cultural ways. The timing and all actors have to be taken into consideration and be evaluated at the same level of understanding (Callon, 1986). I discovered in the interviews that Norway’s agricultural policies have a lot to learn from other mountain regions in countries like Switzerland and Austria. By following their example, the mountain region can be at its best (personal communication, informant 11 & 12, 2016).

“No Fence” technology which is a physical collar placed on the animals’ throats, gives them electric shocks if they are trespassing their given area, - an invisible fence. This technology has been debated and is not yet allowed in Norway since there is not enough documented effect. The technology is to ease the hours of work and money spent on setting fences in the mountain area. With a GPS-tracker on the collar, the signal will know when the animal hits the invisible areas, and give the animal an electric shock if it crosses the line (Scharer, 2011). Many farmers choose to let the animals walk in a larger mountain area during the summer. This is because of the high costs and time related to putting up a fence and then moving it when the animal needs new pasture. With this new technology it would be possible to use a smaller area at a time. If pasture fields were in smaller areas, the cultural landscape would be easier to maintain. Because of the huge fields of pasture, there is not enough pressure from grazing animals to maintain the area. As two of my informants told me the war on the cultural landscape in the uncultivated mountain area was already lost, now it was only the area around the summer farms left to save (personal communication, informant 4, 2016).

“Milking robots” are stalls placed nearby the domestic animals, with the ability to milk cows or goats three times a day. Robots have been tested on the summer farms, too. The
problem with having the milking robots at the summer farms for many farmers is a lack of electricity. Most of the farmers use a generator during the summer which needs fuel, which again is expensive for a long period of time. The milking robots also needs to stay in one place which make the space around it muddy and the animals do not use the pasture area in the most efficient and environmental way. Different solutions are on the way and many of my informants saw this kind of milking as the future of summer farming (personal communication, informant 2-3, 4 & 9, 2016).

“Find my Sheep” is a GPS-tracking system that helps you find the animals if they are lost in the mountains during the summer. When having a herd of many animals it is enough to put the GPS-tracker on the collar on one or two of the “leading” animals. Usually in a herd of goats there is a leader who wears this at all times (personal communication, informant 10, 2016).

Two of my informants described how the program: “Friskere Geiter” regulated all farmers to change their stock of goats in order to breed newer healthier goats throughout the Country. It was done either by buying a whole new herd, or by catching the new born goats before they hit the floor, placing them away from the rest of the goats and then scrubbing down the barn and changing the floors. Farmers in their mid-fifties and sixties saw this as a multiple year long process and was a factor in why so many farmers quit during this period of time. One of my informants described this as a political tool for decreasing production of goat-milk, since it was too high at this period of time (personal communication, informant 4 & 10, 2016).

Local knowledge is highly valued in the mountain region according to Telemarksforskning and the County Governor. A multifunctional farming community is a key factor to increase the value of mountain agriculture and life. Seeing opportunities, taking risks, seeing the natural advantages, and using all of this along with agronomic knowledge is the key to succeed. Combining the traditional entrepreneurial idealist with new technology and scientific knowledge available is how the farmer increases the valuable local and social knowledge.
6 Discussion

Studying this field has taught me how close-by-life can be more complex and diverse than we first think. The ANT-approach helped me to get an overview of the contributing actors around the Telemark Cattle, and how they all are influencing each other. I also learned how the policies worked in order to keep her safe. The STS-literature reminded me to study her history and existence towards science and technology in society in order to understand her importance. What we owe her. Social science is complex when studying nature, but it is possible to evaluate from a translational point of view (Callon 1986). Sociologist and scientists are in a paradoxical situation when they are translating and studying science, nature, and human relations because they are an actor themselves and not objective in any way. With this in mind, it is important to show through scientific findings and reports where I as an intermediary of knowledge, stand.

Is it a matter of simple privilege which sociologists grant themselves through a corporatist reflex when they remove their own knowledge from public discussion? The answer is not quite that simple. This asymmetry plays a crucial role in the explanation of science and technology. Since Nature by itself is not in a position to establish a consensus between experts, then sociologists and philosophers require something which is more constraining and less equivocal, to explain the emergence, development, and eventual closure of controversies. (Callon 1986, p. 197)

The ambition for this thesis is to identify some of the intangible abilities associated with the Telemark Cattle and what these Cattle can contribute regarding the mountain region. As a way of studying and understanding, all the actors and technologies concerning the Telemark Cattle that occurred during the case study, were mapped out to see the different processes and projects initiated to save her as a breed. Several times the Telemark Cattle has been brought up as an important actor in the mountain area and visibility in the cultural landscape. There is no evidence as far as I can see through my empirical materials, that this cow is more profitable in any production. But her appearance and people’s attachment to her is highly present.
6.1 The Fragmented Politics

During the fieldwork it was addressed how politics make it unpredictable to start with innovating processes as a farmer. Several of the informants used the terms, "reckless" and "crazy," to describe their work and choices when building and maintaining their farm in the mountain region. Although my individual informants addressed the uncertain future, they clearly valued how being a farmer is a way of life. A life they chose and would not be without. Farmers explained how dependent they were on public grants and regulations. Even though they felt uncertain about the political future in general, they appreciated how the system works. The County Governor, The County and the Municipality were referred to as helpful and important in order to continue with agricultural activities. Additionally, most of the informants were satisfied with Tine and Nortura as co-operative producers and counsellors.

Haukeland, who is knowledgeable about ANT, described the importance of the identity people have connected to a specific place and how this reflects the indigenous landscape as well as tourism. He addresses all actors that give value through tradition, knowledge, culture, and local jobs leading to national economic growth. Svardal explains how this is the time for niche products and traditional multifunctional agriculture. She looks back to when the different Departments and White Paper tried to change the agricultural trends and strengthen the small local farms in late 90s, and early 2000, but the society was not yet ready. Now, more than 15 years later the market demands are changing. The knowledge about and interest in local and sustainable goods, in addition to a better economy in each household, increase the market demands for these products and services. The group agrees that the Telemark Cattle might not be a particularly productive cow, with more minerals in milk or meat, but that she is clearly valuable as an individual domestic animal.

Throughout this thesis, I have presented some of my findings by stating that translation is everywhere where texts and stories meet people or new texts and stories. Translation in my thesis has been through observation and interviews, where the focus has been on the interest in peoples’ work-process and analyzing those. To see how translation is a process, I have read through projects and research done by the County Governor and Telemarksforskn ing and saw how it was initiated through Agencies and White Papers. My influence and presentation of my empirical findings and observational participation, are translated and written down in this thesis. As translation occurs from different papers,
personal knowledge, traditions, and culture through linguistics, time, and place on to a second source. My method of translation is used to understand relevant papers through time and place that are used by several actors to work with projects on the cattle. Translation through change of priorities and funding the projects, with the actors’ work descriptions. The agricultural business is uncertain, perhaps because of the fragmented politics. All, six out of eleven informants are politically active in some way and they were engaged and concerned about the future. The translational methods explained how the several technologies in order to save her as a breed were used, and performative as tools.

As an analytical tool, I found the triple helix theory helpful, where different interests and resources meet to collaborate in the same field of innovating processes. I have met several different farmers and people during my fieldwork. As one of my finding is where farmers collaborate on meetings, trips, and workshops in order to increase the agricultural value. This is a finding I connect to the quadruple helix theory, where there is a fourth important actor, - the volunteers who are ideologists and interest in the field. As all actors are seen under the same level through the ANT-approach, quadruple helix is a good analytical tool to arrange the actors and their motivation, whether it is industry, university, public, or volunteers who influences the study.

There is an attitude in the World Trade Organization (WTO), that Norway does not need the agricultural work because of its wealthy economics. This is of course an accusation and not necessarily true, but interesting either way to keep in mind when reading “Makt over maten: Hvordan virker WTO?” by Christie (2002). There are not necessarily negative legislations from the WTO that appear from my empirical methods. As the County Governor explains, WTO makes secure and good regulations, too. The County Governor addresses how, the first guidelines that seem so unnecessary after a while make sense and turn out to be important to have in an area. The importance of international politics and regulation are addressed in White Papers, Parliamentary Adjustments, and in my empirical findings. There are both limitations and possibilities in different agreements and legislation through EEA, WTO and the UN. Norway is a long, narrow country with challenging agricultural possibilities, and if we want to continue with those activities, we are dependent on the political framework initiated. The agreement between WTO and Norway is important considering import restrictions, since our costs of production and prices are so much higher than other countries.
During the interviews and observations, the agricultural network of politicians, producers, farmers, restaurants, tourist agencies, Innovation Norway, and researchers met several times, across their fields of interest. Projects actors from different industries and agencies were involved and initiated across regions, Municipalities and industry. The agricultural community is obviously a place that includes the actors who are interested and want to contribute. I argue that the fragmented politics perhaps still exists at a national level, where Departments, Agencies and different political technologies still focus on their own area. But, the Counties’ and Municipalities are embedded with local researchers, Innovation Norway, and actors of interest to expand the agricultural communities.

### 6.2 Cultural Landscaping

On the grazing land in the mountains there is a lot of nutrition when the plants germinate during the summer. In this period of time it is not necessary with soya-based concentrate feed, which is damaging for the environment in Brazil and global climate. Soy based imports like animal feed concentrates, are being used in milk and meat production and could be decreased by exploiting the available grazing lands. On the other hand, a method used in Møsstrond, an isolated mountain village, the farmers harvest the grass late in the summer period. This hay is so green and full of minerals (you can almost see how much nutrition is in it just by looking at it) and the animals love it, according to local stories. Long used methods in Møsstrond meets newer industrial ones, and they are both important to acknowledge in order to give best possible foddering.

Public grants are given to those farmers who have their animals out in pasture, and use the summer farms for milk-production or tourist activities at least four weeks a year. The experts and scientists explains how the mineral and nutrition levels in plants are high during different stages of growing. These two instances are examples of how local knowledge confirm governmental and scientific knowledge. Knowledge adapts to new, more effective technologies, but the methods that have been used for a long time are often there for a reason and many farmers have probably inherited this knowledge. When a work routine is used again and again, it becomes a method of working that continues into the next generation.

One of my informants was inspired by how Switzerland and Austria did their agriculture. It is huge and industrialized in those two countries. The mountains which my
informant saw were a result of what cultural landscaping by farming can do to a place. The landscape is similar to ours, and why the informant meant Norway had a lot to learn from these countries with regard to industrialization. I did not study a comparison between Norwegian mountain agriculture and other countries, but I found interesting values about how important it was to pay attention the mountain region’s diversities, traditions, cultures, and natural traits. By industrializing the agricultural sector, the smaller local farms with their specialties get undermined. The combination of local knowledge with scientific and governmental knowledge is important for good agricultural work and development.

6.3 In Control of Extinction

Specialization in scientific breeding of domestic animals has perhaps produced the world’s best cow – NRF. Still, concerns about the survival of the Telemark Cattle are shown in people’s fixation on her beauty, environmental activists and/or researchers who looks into her grazing abilities, and through public accountability for conserving bio-diversity by not letting her die out as a breed. I am fascinated and impressed by the public regulations and the individuals’ determination to save the Telemark Cattle. I argue that domestic animals are no longer in our society to only produce food on our tables. The subjective reference to the Telemark Cattle as the world’s most beautiful cow, can indeed compete with the objectively accepted, world’s best dual-purpose cow, NRF. With this statement, the Telemark Cattle stands alone as a breed with her unique values which can change in the future. In addition to this, she cannot be compared with another breed and, because of this, only answers to herself.

The existing actors around the Telemark Cattle in the mountain region are essential and many which makes the processes a bit bewildering and vast in the beginning. There is no blueprint for whether, when, or how the “circle-actors”, as presented in Figure 1, get engaged. I understand at this point how the hierarchy in the chain of actors is not as I presented it in the beginning of my thesis in Figure 1. It is an on-going function initiated by farmers, entrepreneurs, idealist, realists, politicians, and researchers - not in a valuation chain, but always in the loop, and affecting each other on several levels.

Scientific methods, with support from the public and governmental interests, are the reason for new breeds and technologies existing in a society. But they do not use their research methods deeply enough to enlighten the possible qualities in older breeds like the
Telemark Cattle. The different actors of interest enact and move the debate of care-taking and survival of animals to a higher level of knowledge. If it had not been for the individual farmers with care-taking qualities, and the actors of interest in the administration, the Telemark Cattle would not still be alive as a breed.

The Telemark Cattle’s beauty has been emphasized in contexts and texts throughout my study, and it is people’s affection to her beauty that contributes to some of her branding. Some processes in saving this breed are focused on keeping her as a nurturing cow for meat producing calves. It is relatively a new method to keep her as a nurturing cow for calves during the summer, but can be one of the ways to save the breed from extinction and maintain her connection to the mountain region. With this purpose, she is visible in the mountain region and contributing to the efficient agricultural life.

It was discussed whether or not it was a problem for other farmers to choose Telemark Cattle without horns, but as suggested, she was beautiful as a breed either way. Another finding, brought up the horns as the biggest issue leading onto not using the Telemark Cattle in their production. Mixing some Telemark Cattle with horns into their stock of NRF-cows would lead to wounded animals, and the Norwegian Red would not be able to fight back. What is the Telemark Cattle without her horns? That is her whole identity. Combining different views such as scientific and local on the issue regarding Telemark Cattle, with or without horns is an essential question if she is going to be mixed with other cows. I spoke to a couple of farmers about this, and I believe some of them were not even aware of the possibility of the Telemark Cattle without horns.

The Telemark Cattle's values might be subjective and difficult to measure, but the context and embedded actors around her are persistent in saving her, based on a feeling of indebtedness for the last 150 years of service in the mountain region. The world's most beautiful, versus, the world's most sustainable and healthy cow, does not need to be a comparing. It is two different types of cattle, individuals and lives. Why some animals are used in production, some for laboratory research, and some as pets? Pets have been chosen by their aesthetic appearance throughout history: wild animals like lions, bears, and elephants are taken care of because of their appearance and peoples’ fascination by them. Domestic animals on the other hand, are chosen by their productivity, and later on health and temperament considerations. The Telemark Cattle is seen as belonging to the mountain region as something exotic and native. Her appearance is seen and translated into a tourists’ point of view.
7 Concluding Remarks

This thesis sought to understand the Telemark Cattle’s intangible values, and how they were translated into policies and projects in the mountain region of Buskerud and Telemark. The different values in the agricultural field come from a diversity of interests and actors, where the Telemark Cattle play a minor part in the discussions related to the Agricultural Agreement. The Telemark Cattle might be small compared to the public agenda in a larger picture, but she is one fight out of many. She is one actor of value who represents the mountain region’s agriculture. Her value is translated as the identity of the farmers in the mountain region, cultural and traditional values regarding tourism and a key value to several administrations and departments regarding the diversity of non-human animals.

Political processes in the mountain region are greatly influenced by governmental activity and legislation. Every year the County Governor adjusts their priorities as a result of White Papers, the Agricultural Adjustment and the Agricultural Agreement. Still, the region’s own political process is essential for the continuous work on cultural landscape and agricultural possibilities, but as an extended arm of the governments priorities. I conclude that the commitment from the County Governor, Telemarksforskninng and individual actors influence the governments priorities with their reports, engagement and volunteerism prior to the Agreement every year. It is a spiral of valuation and translation, where all actors are equally dependent on each other.

The Telemark Cattle’s place in the mountain region is fully dependent on political processes in order to be an agricultural inhabitant. She has proven how her values go beyond the productive and economic, and is a domestic animal chosen for her history and appearance. The Telemark Cattle is a political tool, where she presents a visual value to the mountain region’s culture, tradition and aesthetic beauty through grants and legislations. This view of value is, as in all social-scientific research, in continuous transformation and change in relation to other actors.

7.1 Concluding Reflections

During my fieldwork several possible case studies concerning agricultural values presented themselves to me and it has been a difficult process choosing what to include and what to leave out of the empirical data. The Telemark Cattle had most of my attention; at least I tried
to stick with her most of the time during the case study. The ANT-approach helped me widen the assumptions I had on several topics, and made me look beyond the physical cow to see all the actors interacting with her on different levels.

As I am preparing to hand in my thesis, the Agricultural Agreement and settlement for the following year, 2017, are being negotiated. The farmers argue that they need more public funds than first offered, to sustain the on-going maintenance in the agricultural life. The settlement was interrupted and sent in for a new evaluation by the Parliament. The different issues that is raised, are now up for a new discussion with key actors in the agricultural community, and with the Food and Agriculture Agency. The fragmented politics have been discussed and analyzed to some extend in my thesis. It was presented to me early on in the process regarding the WTO agreement and how the international standards and legislation affected the agriculture in Norway. In addition to this, I was informed that the different Agencies and Departments were not collaborating and talking to each other in areas with common interests.

During my fieldwork, on my study-trip to Grüne Woche, some of us got the chance to visit the Norwegian Embassy for an innovation and entrepreneurial convention. Innovation Norway addressed the importance of tourism in Norway and all the unique places that were waiting to be introduce to tourists. The Telemark Cattle were one of the unique attractions in the mountain region according my empirical materials. Since tourism was an important value given agricultural possibilities and life, I found it challenging to study. Perhaps specific findings about how the presence of older breeds, like the Telemark Cattle in the mountain region, affected the tourism experience, would be an interesting topic. Reflecting on my own observations and participations it would have been valuable to ask more questions about the tourism industry.

This study answers the research question, which addressed the intangible qualities that the Telemark Cattle holds: Yes – she has intangible qualities that go beyond the production qualities she originally was defined by. Those intangible qualities exist because of the relationships between humans and the Telemark Cattle as a cow. I believe that on-going research on human and non-human animal relations is essential for ethical and good maintenance of the existing breeds on a world-level. Using social scientific theories and methods to uncover non-human animal needs and challenges improves the scientific life enhancement that exists.
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Astrid Aas, agricultural counsellor, Buskerud County Governor
Bob Gottschal, agricultural counsellor, Telemark County Governor
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Kjell Kristiansen, former counsellor on fodder, Felleskjøpet

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Per Ingvar Haukeland, lecturer, University College of South-eastern Norway
Solveig Svardal, researcher, Telemarksforskning
Thor Christiansen, politician, Agricultural Office in Vinje

Personal communication, 2017, April 13:
Anne-Sofie Strømme, biologist counsellor, Dokkadeltaet Nasjonale Våtmarksenter AS
Appendix

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Appendix ii  Interview Design
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Appendix vi  Form of Consent from NSD
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Appendix ix  “Pride in Place” spiral
Fjellområder og fjellkommuner i Sør-Norge

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## 36 Tilliggende fjellkommuner:

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<tr>
<td>Hvilke økonomiske verdier ligger i seterdrift og hva går i så fall tapt om driften ikke blir opprettholdt?</td>
<td>Videre til mer direkte temaspørsmål</td>
</tr>
<tr>
<td>---</td>
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<tr>
<td>- Hvilken forskjell på gårdsbruk med og uten seterdrift?</td>
<td>Er det flere av disse faktorene som har noe å si?</td>
</tr>
<tr>
<td>- Hvordan vil du beskrive nettverket rundt deg?</td>
<td>Andre faktorer som er viktig?</td>
</tr>
<tr>
<td>- Hvordan vil du beskrive nettverket rundt deg?</td>
<td>I så fall, hva er de største forskjellene?</td>
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<tr>
<td>- Hvordan vil du beskrive nettverket rundt deg?</td>
<td>Hvem er leverandør av produktene dine?</td>
</tr>
<tr>
<td>- Hvordan vil du beskrive nettverket rundt deg?</td>
<td>Er du medlem av en organisasjon?</td>
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<tr>
<td>- Hvordan vil du beskrive nettverket rundt deg?</td>
<td>Bygdenettverk, før i forhold til nå?</td>
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<tr>
<td>- Hvordan vil du beskrive nettverket rundt deg?</td>
<td>Medlem av husdyrkontrollen?</td>
</tr>
<tr>
<td>- Hvordan vil du beskrive nettverket rundt deg?</td>
<td>Er du politisk aktiv i forhold til landbruket?</td>
</tr>
<tr>
<td>- Hvordan vil du beskrive nettverket rundt deg?</td>
<td>Er du medlem i andre interesseorganisasjoner eller verv som har hatt noe å si for deg?</td>
</tr>
</tbody>
</table>

Se an om du skal spørre om dette?

- Hvilke utgifter har du på seterdrift?  
  I året og ved oppstart.

- Hvor mye tjener du på å ha seterdri om sommeren?  
  Eventuelt hvor mye taper du? Anonymt.

- Hvor lenge varer seterdriften hvert år?  
  På hvilken måte driver du seterdrift? Er det flere ansatte? Er det med annen næringsreiseliv eller produksjon?

- På hvilken måte er du med i denne seterdriften?  
  Hvordan?

- Hvor mye støtte får du til å drive seterdrift?  
  Av hvem?

- Har du mulighet til å påvirke denne driften slik du vil?  
  Blir dine ønsker rundt seterdrift tatt hensyn til?

- Får du hjelp til å legge opp seterdriften?  
  Er det båsfjøs? Har dette noe å si for valg av sitet?

- Hvilke utgifter har du på seterdrift?  
  I året og ved oppstart.

- Hvor mye tjener du på å ha seterdri om sommeren?  
  Eventuelt hvor mye taper du? Anonymt.

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  Hvordan?

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  Av hvem?

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  Blir dine ønsker rundt seterdrift tatt hensyn til?

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  Er det båsfjøs? Har dette noe å si for valg av sitet?

- Hvilke utgifter har du på seterdrift?  
  I året og ved oppstart.

- Hvor mye tjener du på å ha seterdri om sommeren?  
  Eventuelt hvor mye taper du? Anonymt.
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<tr>
<td>- Investeringer underveis</td>
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<tr>
<td>- Var det mye arbeid med å bygge om?</td>
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<td>- Med tanke på maskiner</td>
<td>Diesel til aggregat</td>
<td>Strøm</td>
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<tr>
<td>- Hvor mye ekstrautsyr er nødvendig med tanke på å ha &quot;to fjøs&quot;?</td>
<td>Ekstra sett med melkeorgan og annet utstyr til daglig drift.</td>
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<tr>
<td>- Med tanke på kalving</td>
<td>Når på året er det kalving?</td>
<td>Har seterdriften påvirket når dette er?</td>
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<tr>
<td>- Utgifter til landbruksvikar?</td>
<td>Med tanke på tankbil eller annen bil som skal ha tilgang.</td>
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<td>- Utgifter til vei og gjerde?</td>
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<td>- Utgifter til bosted og vann?</td>
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<td>- Sparer du på at dyrene beiter med tanke på mindre behov for kraftfor?</td>
<td>I så fall, hvor mye?</td>
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<td>- Dekningsbidrag, skattbar inntekt</td>
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<td>- Netto skattbar inntekt</td>
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<td>- Tror du at lokalsamfunnet tjener på å ha seterdrift i området?</td>
<td>På hvilken måte?</td>
<td>På hvilken måte?</td>
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<td>- Hvis dere har valgt å ha Telemarkskudrift, hvorfor det?</td>
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<td>Har du annet yrke ved siden av gårdsdrift?</td>
<td>Er det andre på gården som har et annet yrke?</td>
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<td>Hvor lenge har du hatt to jobber?</td>
<td>Hvor lenge har du hatt to jobber?</td>
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<td>Har du hatt jobb ved siden av tidligere?</td>
<td>Har du hatt jobb ved siden av tidligere?</td>
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<td>Har du en omtrent prosentoversikt?</td>
<td>Har du en omtrent prosentoversikt?</td>
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<td>Markedsføres gårdsdriften og eventuelt seterdriften din på noen måte?</td>
<td>Hvilke aktører er relevante her?</td>
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<td>På hvilken måte formuleres produktet eller eventuelt opplevelsen din ut i et marked?</td>
<td>På hvilken måte formuleres produktet eller eventuelt opplevelsen din ut i et marked?</td>
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<td><strong>Hvordan ser fremtiden ut?</strong></td>
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<td>Er planen å fortsette med seterdrift? Hva er kriteriene for det?</td>
<td>Hva er det som eventuelt mangler?</td>
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<td>Hva må være til stede for å kunne fortsette?</td>
<td>Hva har fungert bra?</td>
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<tr>
<td>Hva har vært viktig for deg/dere?</td>
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<tr>
<td>Finnes det en natur-, miljø-, kulturell- eller opplevelsesverdi i seterdrift som kan settes en prislapp på og hvor mye er den da eventuelt verd?</td>
<td>Finnes det en natur-, miljø-, kulturell- eller opplevelsesverdi i seterdrift som kan settes en prislapp på og hvor mye er den da eventuelt verd?</td>
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<td>Har noe endret seg de siste årene som gjør at seterdrift er mulig og lønnsom?</td>
<td>Hva har vært viktig for deg/dere?</td>
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<td>Hva har vært viktig for deg/dere?</td>
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<td>- Hva tror du kommer til å skje med seterdrift i fjellandbruket i fremtiden?</td>
<td>Hva har vært viktig for deg/dere?</td>
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<td>- Hva tror du er de største forskjellene på fjellandbruk i forhold til landbruk med større areal dyrket mark og varmere klima?</td>
<td>Har dette hatt noe å si for valget rundt seterdrift?</td>
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<td>Har dette hatt noe å si for valget rundt den dyrerasen du har valgt?</td>
<td>Har dette hatt noe å si for valget rundt den dyrerasen du har valgt?</td>
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<td>På hvilken måte har utenforstående aktører påvirket deg og dine metoder i landbruket?</td>
<td>Tine/Nortura? Andre private leverandører?</td>
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<td>- Tror du antall seterdrift i fjellandbruket vil øke eller synke?</td>
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<td>- Tror du at tidligere tradisjoner har noe å si for fremtidens seterdrift?</td>
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<td>- Tror du bevaring av den lokale kulturen gjennom seterdrift vil være viktig for fremtiden?</td>
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<td>Har du selv brukt noen metoder og tradisjoner i din drift som er fra gammelt av?</td>
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<td>Kan dette være lønnsomt?</td>
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<td>- Hvor lang tid tar gårdsdriften din per dag?</td>
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<td>- Hva motiverer deg i hverdagen?</td>
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<td>- Hvilke kvalifikasjoner og funksjoner må et dagens gårdsbruk bestå av?</td>
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<td>- Er det noe du ønsker å legge til som ikke er blitt nevnt?</td>
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<td>- Er det aktuelt med Telemarksku?</td>
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<td>- Hvordan motiverer du andre?</td>
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<td>- Hvem motiverer deg?</td>
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<td>- Hvor mye varierer det i forhold til sesong og tid på året?</td>
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<td>- hva er viktige faktorer som må ligge til rette for seterdrift?</td>
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<td>- Hvordan blir disse faktorene lagt til rette?</td>
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<td>- Hvorfor er det, eller ikke er det det?</td>
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Hvordan verdier blir oversatt fra politiske institusjoner til bondens valg i landbruket

Hvordan det skjer en overførbarhet fra noe gammelt til noe nytt, eller noe nytenkende ved noe gammelt

Hvordan innhenter vi tidligere kjente kunnskap i tradisjoner og kultur til nye markedskanaler
Nettverk og aktører for dere

- Forskningsrådet
- Fylkesmannen
- Fylkeskommunen
- Kommuner og fylker
- Departement og direktorater
- Riksantikvaren
- Høyskoler og universitet
- Offentlig og privat sektor, næringsliv og gårdsbruk
- FOKUS og FFA
Telemarkskua, verdas vakraste ku

• Telemarkskyri meieri AS
• Farmers for Nature
• Telemarksfe for gjengroing
• Urfe AS
• Telemarksis
• Norsk genressurssenter
Bevaring av gamle tradisjoner

Foto: Sigurd Rage
Landskapsverdier gjennom reformer og politiske retningslinjer

Miljø
Mangfold og varisjoner
Estetikk
<table>
<thead>
<tr>
<th>Informanter</th>
<th>Kulturlandskapet. Naturverdier knyttet til dette fra intervjuene.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Informant 1.</td>
<td>Avhengig av landskapet for å drive seter med tanke på at det er flattere der seteren er. Linjebeite. Ikke nok beite hjemme på gården. For denne informanten er ikke det å bevare landskapet og mangfoldet viktig med tanke på seterdrift, det er rett og slett det å ha beite til dyrene.</td>
</tr>
<tr>
<td>Informant 4.</td>
<td>Området rundt gården er bratt og mye rasfare, noe som kanskje hadde ført til at jorda kun tåler 40 år før det hadde blitt ødelagt. Tror at kulturlandskapet har mye å si for turisme.</td>
</tr>
<tr>
<td>Informant 5.</td>
<td>Lite beite hjemme som gjør at seterdrift er nødvendig. Det er bratt og et tungvint landbruks ettersom så mange tomter ble fordelt på så mange fra gammelt av. Vanskelig å gjerne inn område på fellesbeite som en ikke har egne beiterettområder.</td>
</tr>
<tr>
<td>Informant 9.</td>
<td>Har verdier som er praktiske fremfor andre. Ser at det er idyllisk for hytteieierer å ha dyr i nærheten om sommeren.</td>
</tr>
</tbody>
</table>
gode rammevilkår for å kunne bevare kulturlandskapet, reiseliv og mangfold. Det må være i en skala som er i stil med fjellandbruket.


Informanter

**Informant 1.**

**Informant 2 og 3.** (To forskjellige gårder) De ser på det å ha Telemarksku som en ideologi og ikke lønnsomt. Telemarksku er ikke bedre enn andre kuer når det kommer til melkekvalitet, kjøttkvalitet eller beite egenskaper. Tvert imot mener de at Telemarksku er lite praktisk anlagt med for store jur til å kunne gå i bratt terreng. De har flere sykdommer og produserer mindre melk. De mener også at lynnnet til kua er mer aggressiv og mindre forutsigbar. Det er både lite lønnsomt og de som driver med det ser kun den grunnstøtten de får fra statlige midler som er mer enn NRF.

**Informant 5.** Hadde Telemarkskyr for lenge siden og synes det er fint med forskjellige raser. Mener at det er helt avhengig av tilskudd. Synes at Telemarksku er snill men melker for lite.

**Informant 6 og 7.** Urfe er avhengige av gode tilskuddsordninger og kan fungere som merkevare men produserer for lite kjøtt til å bli brukt til det. Kan fungere med tanke på restaurantmat og nisjeprodukt. Det at det er noe mer omega eller andre mineraler i kjøttet blir ein gimmick og kan fungere til mindre marked. Kua tar samme plassen i fjøset og er derfor avhengig av en bedre pris.


**Informant 10.** Det må være politikk til å drive med gårdsdrift i fremtiden, gode rammevilkår må ligge til grunn. Det må finnes tilskudd med tanke på bevaring av mangfoldet.

**Informant 11 og 12.** Hadde Telemarkskyr før og synes NRF er kjedelig i forhold. Trur at dei passar bedre i eit brattare terreng med korte bein. Tror ikke tilskuddet blir borte og mener at det kan være lønnsomt med urfe i fremtiden.
Informanter | Aktører og nettverk. Hvordan er prosessene og hvordan overføres kunnskapen.
--- | ---

**Informant.** | Begge er medlem i KSL, Husdyrkontrollen og Mattilsynet med sine skjemaer og oppfølginger. En av de er leder av Landbruksavdelingen i Vinje og medlem i Vest-Telemark produsentlag. Tine - de leverer til Tine og er positivt innstilt til denne typen drift.


**Informant.** | Leverer melk til Tine. Er ellers ikke aktiv i verv eller lignende. Ser viktigheten i støtte fra IN, kommunen og setertilskudsordningen. Men mener det er alltfor lite i Buskerud i forhold til andre fylker.

**Informant.** | Nettverket er gjennom sine egne yrker i Landbrukskontoret og som fagkonsulent hos Felleskjøpet i 10 år. Leverer til Tine. De mener at nettverket var større før men at det fortsatt nå er noe nettverk gjennom Tine. Det merker man bare på når alle møtene starter på kvelden. Før tok møtene hensyn til at folk var i fjøset.

**Informant.** | Når personen var på Tine-møte så ønskte de personen inn i styret noe som var litt unaturlig for denne personen som
nettopp hadde overtatt gården og som derfor ikke følte seg helt klar. Mener at dette har noe å si med at de trenger noen. Ville sette seg inn i litt forskjellig først. Hadde fått mest utbytte av en Tine-rådgiver av det nettverket som var blitt presentert.

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<tbody>
<tr>
<td>Informant.</td>
<td>Sitter som vara i Tine, ellers ikke noe gårdsnettverk. Foreldrene er en del av gårdsdriften. Mener at Tine ikke gjør nok for å selge produktene de mener er overprodusert, at de er dårlige på markedsføring.</td>
</tr>
</tbody>
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<thead>
<tr>
<th>Informant</th>
<th>Økonomi og overlevelse</th>
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</thead>
<tbody>
<tr>
<td>Informant 1.</td>
<td>Avhengig av støylstilskuddet, men og av fellesseteren.</td>
</tr>
<tr>
<td>Informant 2 og 3.</td>
<td>Avhengig av støylstilskuddet, men og av fellesseteren.</td>
</tr>
<tr>
<td>Informant 4.</td>
<td>Ser etter ekstrainntekter ved gårdsdriften, drive med ting i tillegg til dyr, men på gården.</td>
</tr>
<tr>
<td>Informant 5.</td>
<td>Uten støylstilskudd hadde det ikke blitt støyla.</td>
</tr>
<tr>
<td>Informant 6 og 7.</td>
<td>Går i pluss etter seterdriften per sommer.</td>
</tr>
<tr>
<td>Informant 9.</td>
<td>Uten støylstilskudd trur han at han hadde droppa støylen, da hadde dei hatt det like bra heime.</td>
</tr>
<tr>
<td>Informant.</td>
<td>Teknologi</td>
</tr>
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</tr>
<tr>
<td>Informant 2 og 3.</td>
<td>Utstyret begynner å bli gammelt på fellesstøylene og må byttes om. En av informantene har et høyteknologisk fjøs hjemme med robotmelking.</td>
</tr>
<tr>
<td>Informant 6 og 7.</td>
<td>Nevner ikke mye om teknologien, men at naturlig beite er bedre enn slått beite.</td>
</tr>
<tr>
<td>Informant 8.</td>
<td>Nevner ikke stort om teknologien, men fjøset er løsdriftsfjøs og på sommeren satser de på tradisjonelt seterdrift for opplevelsen sin del.</td>
</tr>
<tr>
<td>Informant 9.</td>
<td>Hjelper å ha ny teknologi for å fortsette med gårdsdrift, tror at melkerobot går an å brukes på støylene. Forska på at det gjekk an å ha beite heile 800 meter fra roboten og kyrne kom likevel, problemet nå var at dei tråkka ned området rundt roboten.</td>
</tr>
<tr>
<td>Informant 10.</td>
<td>Radiobjeller for å se etter flokken. &quot;Findmysheep.no&quot;. Hvis man kan lage sin egen strøm oppe på stølen blir det raskt mye mer gunstig å drive, mener at det er mulig med et mini-vannkraftverk.</td>
</tr>
</tbody>
</table>
Andre funn.

Dyrevelferd (informant 1. mener at det er både positive og negative sider ved at kuene går ute hele sommeren. Er det dårlig vær er det større sjans for kløvproblem.)

Mange slutter. Informant 1. forteller om at folk slutter med produksjon og flytter inn til sentrale strøk og starter som produsentrådgivere og andre lignende stillinger.

Oljesekten. Informant 2. og 3. mener kanskje at oljesekten har hatt mye å si for landbruket i Telemark og grunnen til at det er så få som driver med seterdrift.

Informant 4. påpeker hvor stort innhogg saneringen hadde for driften av geitebruk hos de bøndene som var i 50-60 års alderen og ikke helt sikre på fremtiden. Politisk innhugg i landbruket.

Informant 4. forteller at hvis Norge vil ut i verden så må landet spille på de kulturelle og naturverdige forholdene som finnes i landet. Spille på det som gjør landet så unikt.

Informant 4. legger vekt på hvor viktig det er at bonden ikke bare er agronom men at han/hun også ser muligheter og nye utviklingspotensiale for å hele tiden innoveres og stå stødigere økonomisk. Styrke den landbruksmessige verdien.


Informant 5. Mener at man må være allsidig for å drive med gård. Mener også at det bør være forskjellige satser til de som driver med seter i 4 uker og de som driver fra 8 til 12 uker.

Informant 6 og 7. forteller at ved uteie av hyttene de eier er det et pluss for turistene at det er dyr der. Forteller at inngjerdet dyr blir kan bli plaga av at det er mange dyr utenfor gerdet. Det blir et problem når utmarksbeite og innmarksbeite blir blandet. Det er viktig mener de at dyrene beiter ned sitt eget område før de går i utmarka.

Informant 6 og 7. mener at så lenge dyrene er ute 8 til 12 uker så har de det like bra på seteren som hjemme. Det viktigste er at de får være ute. Forskjellen er at med støling så får man muligheten til å vaske ned fjøset, en forandring i hverdagen og det er verdifullt for ungene.

Informant 6 og 7. mener det viktigste for fremtiden med tanke på seterdrift er å drive med dyr. Samme hvilken type dyr bare det er noen dyr. Sau er det per i dag for mye av, men dyr som ammeku, ammegeit eller lignende er bra nok for å kunne drive med det. I følge Nortura skal økonomien i kviger og kalver være like bra som okseproduksjon.


Informant 8. Planer om å få inn en type kjøttferase etterhvert slik at de kan livnære seg på gårdsdriften helt.
Informant 8. Dyrevelferd. At dyrene er frie om sommeren og har en type sommerferie i tre måneder. De spiser masse urter og akkurat det de selv ønsker som gjør at de kanskje har det bedre og lager bedre produkter. Smøret de lager på seteren er helt gult.

Informant 8. Tradisjoner. Ivareta tradisjoner og kultur.

Informant 8. Så mye papirer at det tar piffen av personen noen ganger.


Informant 9. Dyrevelferd at dei er på støylen, og at dei et beite istaden for slåttemark.


Informant 10. Alle kan jo ikke drive med ysteri heller, ikke alle kan være gründere. Mener at landbruket burde vært bedre på markedsføring, men at det og er en annen type jobb i tillegg. Haukeli er lokalt, Tine er ganske lokalt.


Informant 11 og 12. Noe å gi videre til barna i fremtiden. Mener og at generasjonsskiftene er grunnen til at melkeproduksjonen blir lagt ned.


Informant 11 og 12. For å kunne drive gård i fremtida må en være altmuligmann. Ein praktisk utdannelse er lurt å ha i tillegg til agronom.
| LITTERATUR | Telemarksforskningspapirer om bred verdiskaping  
Kristin Asdal -  
<table>
<thead>
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<tbody>
<tr>
<td>HVEM</td>
<td>VALUATION</td>
</tr>
</tbody>
</table>
**LITTERATUR**

Dolly the sheep

Rapporter fra Telemarksforskning og Fylkesmannen (forretningsplanen til meieriet i Fyresdal)

Hva er ei ku? Lars Risan

<table>
<thead>
<tr>
<th>HVEM</th>
<th>TELEMARKSKUA</th>
</tr>
</thead>
</table>
| **Fylkesmannen** | - Fylkesmannen er ute etter å starte en fellesseter med Telemarkskuer. Tanken er at seteren skal være i Telemark men at kuene kan komme fra andre fylker om det er interesse for det. Foredling på seteren kan være problematisk og helt nødvendig.  
- “Farmers for nature” var kanskje det mest utydelige prosjektet i forhold til med Telemarkskua.  
- Det som hovedsakelig er spesielt med kua er tradisjonen, historien og det å bevare den norske rasen.  
- Har ikke noen bakgrunn for å si at kua produserer bedre melk eller kjøtt i forhold til andre kuer. Det kommer an på hva kuene spiser.  
- De har heller ikke noen konkrete bevis på at kua er bedre på utmarksbeite eller lynne i forhold til andre raser heller.  
- De er enstemmig enige om at det å bevare kua er viktig. |

| Telemarksforskning | - Telemarkskua er ikke bare et symbol for landbruket, men på menneskers identitet knyttet til et sted, det er et symbol på en utvikling i samfunnet.  
- Snarteland sitter med en sjettedel av rasen som er igjen. Veldig sårbart om noe skulle skje med hans besetning. |
<table>
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<tbody>
<tr>
<td>HVEM PROSESS OG NETTVERK</td>
<td></td>
</tr>
</tbody>
</table>
| Fylkesmannen        | - Flere prosjekter går samtidig og de jobber bredt med mange ulike oppgaver.  
|                     |  - Bruker Stortingsmeldinger som en hjemmel i prosjektene som blir søkt om støtte. Trigger nye prosjekter og kontakter de som kan være en pådriver i ett nytt prosjekt.  
|                     |  - Etter en ny Stortingsmelding er Fylkesmannen fortsatt avhengig av at det kommer penger i etterkant også for å faktisk kunne gjennomføre de tiltakene som er nevnt.  
|                     |  - ”Tilsagn” er midler og konkrete satsinger som er gitt til prosjekter. Til Fjellandbruket er det gitt 2 millioner hvert år til bønder i Buskerud og Telemark. Et treårig prosjekt som til sammen har fått 6 millioner.  
|                     |  - Ofte er kommunen bindeleddet mellom de og bøndene, ved at det finnes en god landbruksrådgiver i kommunen gjør at det gagner bøndene har Fylkesmannen sett.  
|                     |  - Det er ikke snakk om mye penger til hvert prosjekt men de ser at det er ofte bare den lille ekstra puffen som trengs for å få i gang prosjektet.  
|                     |  - Ikke alltid like enkelt å samarbeide med andre aktører.  
|                     |  - Kan ikke bestemme helt hva de ønsker å gjøre men har muligheten til å fremme og velge områder som passer fra Stortingsmeldingen.  
|                     |  - Det er kun som en oppstartsfasse i et prosjekt, ikke som IN som kan bidra til hele prosjektet.  
|                     |  - Tidsaspektet er ofte en utfordring.  
|                     |  - Finne den rette personen som kan drive med prosjektet kan også være en utfordring.  
|                     |  - Nok penger er en utfordring.  
|                     |  - Noen ganger et samarbeid med IN, Fylkeskommunen, Tine eller en forskningsinstans for å få til noe.  
|                     |  - Tre år for hvert prosjekt er for lite tid.  
|                     |  - Nettverk har de sett er viktig for å lykkes.  
| Telemarksforskning   | - Telemarksforskning jobber med prosjekter de får betalt og beskjed om å gjøre. 90% av temaene er i konkurranse med andre om å få lov til å ta (anbud).  
|                     |  - De siste prosentene får de fra Forskningsrådet og dep.  
|                     |  - 75% av all inntekt kommer fra offentligheten som kommuner, |
fylker, dep. og dir.
- Noen av forskningspørmålene er det klare linjer på hva som skal forskes på, spesielt fra de offentlige.
- Forskningsrådet har litt mer diffuse forskningspørmål slik at de kan forske litt på det de vil, eller vri spørmålene litt slik de vil.
- Noen i huset er glad i statistikk og tall mens andre fokuserer mer på aksjonsforskning.
- Må dokumentere de verdiene som finnes. Finnes ikke noen gode nok modeller for å dokumentere de verdiene som finnes.
| LITTERATUR | Hall, C. M. (1994) Tourism and politics: policy, power and place. Wiley: (238)
Stortingsmeldinger, observasjonsnotater, intervjuer og rapporter.
<table>
<thead>
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<tr>
<td>HVEM</td>
<td>POLITIKK</td>
</tr>
</tbody>
</table>
| Fylkesmannen | - Landbrukspolitikken preger direkte hvordan Fylkesmannen jobber med prosjekter.
- De forteller om et skifte når Sponheim var landbruksminister og mente at det ikke skulle produseres mer enn det ble spist opp.
- Det ble og sterkt initiert av småbrukarlaget og de var ganske skilt av fra bondelaget på den tiden, nå er de mer likestilt.
- Andre forskere som man jobber med, NIBIO. Hadde ikke sagt ifra om hva de forsket på før det var publisert, noe som NIBIO kanskje tapte tid på.
- Norge er ikke med i EU men blir påvirket av landbrukspolitikken likevel. Det er en holdning i WTO om at Norge er et såpass rikt land at de ikke trenger landbruket.
- Ikke bare ulemper med WTO, de har gode og trygge rammevilkår også (med tanke på vanndirektiv).
- De forteller at det er tendens til å ta nye retningslinjer som konkrete og unødvendige i begynnelsen, men som man ser kan være nyttig likevel.
- Hva skjer hvis tollen blir borte, hva skjer med landbruket da? |
| Telemarksforskning | Flere steder i intervjuet ved kodingen gikk verdi og politikken ofte |
Mener at bonden er helt avhengig av kommunen, IN og andre instanser som kan støtte opp om prosjekter.
- Mener at man må foredre eller gjøre noe ekstra ved siden av landbruket for at det skal være lønnsomt.
- Det må ligge politiske rammevilkår for bonden slik det går an å satse på egenforedling og i småskala.
- Problemet med virkemiddelapparatet er at det er for fragmentert. Lokalt, regionalt og nasjonalt.
- Dep. prater ikke sammen som de burde gjort.
- Mange sier at vi trenger den helheten, men det er vanskelig i praksis.
- Beiteområder, verna områder og vanskelig i praksis å finne en enighet.
- Pengene som skal gå til støtte må komme fra et sted, og hvilken pott skal det tas fra?
- Dagens tilskuddsordning er koplet opp mot antall dyr, areal i tillegg til per liter melk. Dette gagner ikke fjellandbruket.
- Mener at det må til en todelt modell hvor en samarbeider med aktører og dep.
- Tenke på nytt, bruke noe av kulturbudsjettet for eksempel.
<table>
<thead>
<tr>
<th>LITTERATUR</th>
<th>Shiho Satsuka</th>
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<th>HVEM</th>
<th>TRANSLATION</th>
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<td>Fylkesmannen</td>
<td></td>
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<tr>
<td>Telemarksforskning</td>
<td>Landbruks og reiseliv har mye til felles og bør snakke mer sammen, være på samme lag.</td>
</tr>
<tr>
<td>HVEM</td>
<td>ANDRE FUNN</td>
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<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| Fylkesmannen  | - Holdninger rettet mot Tine er bra nå og de har gjort mye for å styrke denne holdningen.  
- Tine er ingen pådriver for økologisk melk og har i mange år helt melka i samme tank som resten. Økologisk landbruk får mer pris for antall liter slik at de konvensjonelle bøndene har reagert på dette.  
- Stedegne spesialiteter som Italia og andre land bygger på med tanke på mat. Turisme, smak og lokale råvarer som kan styrke nærområdene. |
| Telemarksforskning | - En må jobbe ekstra hardt de første 4-5 årene for å få til et lønnsomt yrke med landbruk. Nesten umenneskelig. Trenger kanske ikke foredle selv men ha noen i nettverket som gjør det.  
- Hvis man skal få til lønnsomhet i landbruket må man drive mangesyssleri, man kan ikke bare fokusere på en ting.  
- Snu holdninger hvor en setter pris på at flere gjør det bra samtidig som en selv og kan gjøre det bra.  
- En kan ikke stoppe å være vert, det følger med å drive landbruk i et kulturlandskap.  
- Den viktigste ressursen på en gård er personen som driver det og han/hun sine gründer-evner. |
Forespørsel om deltakelse i forskningsprosjektet

«Seterdrift i fjellandbruket»

Bakgrunn og formål
Jeg kommer fra linjen «teknologi, innovasjon og kunnskap» ved Universitetet i Oslo hvor jeg skal skrive om landbruksbasert reiseliv.

Det jeg ønsker å finne ut med denne oppgaven er om seterdrift også kan være økonomisk lønnsomt for bonden, for nærmiljøet og eventuelt for samfunnet den dag i dag. Hvis det skulle vise seg å være lønnsomt, på hvilken måte og på grunn av hvilke faktorer er det i så fall lønnsomt? Har politisk satsing og subsidier hatt mye å si og for hvem har det vært en faktor for. Har det vært markedsstyrte krefter som har satt i gang seterdrift for noen, eller er det først og fremst interesse fra bonden sin side. Er det med tanke på dyrevelferd å seterdrift og beite i utmark er viktig, og kan dette i så fall måles i kroner med tanke på et bedre slutt-produkt? Vil også se på de natur- og miljøfaktorene hvor beiting i utmark kan ha mye å si for landkapet og kanskje minke behovet for dyrka mark. I tillegg ønsker jeg å se om reiselivet har vært/kan bli en faktor for å satse på landbruksseterdrift. Hvilke verdier vil man sitte igjen med etter en slik studie som kan si oss noe om verdisetting, også utenfor den økonomiske rammen. Dette er ett masterprosjekt på 60 studiepoeng. Noe av forskningen er i samarbeid med Fylkesmannen Telemark.

Utvalget som er gjort i forkant av intervjene har vært gjennom en liste jeg har fått fra Fylkesmannen i Telemark. Denne listen inneholder en oversikt over alle som drev med seterdrift i fjellandbruket hvor jeg plukket noen tilfeldige navn til å begynne med. Disse tilfeldige navnene har jeg ringt for å få et overblikk over hvilken type gårdsdrift det er og dyr som er på gården. Dette er for å få til et best mulig tilfeldig utvalg, samt for å få en variasjon i utvalget til videre dybdeintervju. I tillegg har jeg fått ulike relevante navn både fra Fylkesmannen i Telemark, Telemarksforskning og fra mitt private nettverk som jeg vil intervjue rundt dette temaet.

Hva innebærer deltakelse i studien?
Studien vil i hovedsak bestå av dybdeintervjuer og dokumentanalyser av tidligere prosjekter og rapporter rundt landbrukspolitikken i Telemark og Buskerud. Dybdeintervjuene vil bli tatt med lydopptak og senere transkribert for å få med mest mulig innhold. Spørsmålene vil omhandle ulik type av verdising i landbruket og seterdrift. I tillegg vil det være konkrete spørsmål om økonomien og lønnsomheten i landbruket med fokus på seterdrift. Intervjuet kan ta fra 30-60 minutter.

Hva skjer med informasjonen om deg?
Alle personopplysninger vil bli behandlet konfidentielt. Innsamlingen av opplysninger vil bli lagret på privat PC og ikke delt via e-post til andre før rapporten er ferdigskrevet og anonymisert. Etter at jeg har transkriert og anonymisert intervjene vil lydopptakene bli slettet.

Ved godkjenning fra informanten selv, og hvor det er nødvendig med tanke på oppgaven sin dybde, vil personen omtales ved navn og yrke og derfor gjenkjenkelig. Personlige økonomiske opplysninger skal ikke kunne gjenkjennes i masteroppgaven, men om det er en felles forståelse kan andre opplysninger som antall dyr, produksjonsmetode og område være gjenkjenkelig i ferdig rapport og videre gjennom oppgaven.

Frivillig deltakelse
Det er frivillig å delta i studien, og du kan når som helst trekke ditt samtykke uten å oppgi noen grunn. Dersom du trekker deg, vil alle opplysninger om deg bli anonymisert.

Dersom du ønsker å delta eller har spørsmål til studien, ta kontakt med Anne Guro Hommo, 413 24 162. Dersom du har andre spørsmål knyttet til studien eller metoden ta gjerne kontakt med TIK-senteret på skolen og veileder Susanne Bauer 22 84 16 16.

Studien er meldt til Personvernombudet for forskning, NSD - Norsk senter for forskningsdata AS.

☐ Kryss av om studien kan bruke sted, navn og yrkesinformasjon i rapport og masteroppgaven uten å trekke inn personlige data som inntekter og utgifter.

Samtykke til deltakelse i studien
Jeg har mottatt informasjon om studien, og er villig til å delta

________________________________________________________________________________________________________
(Signert av prosjektdeltaker, dato)
Oppfordring til deltakelse i forskningsprosjekt «Seterdrift i fjellandbruket»

Fylkesmennene i Telemark og Buskerud har i tre år på rad hatt en egen satsing på fjellandbruk. Med midler fra jordbruksoppgjøret 2013 er det bevilget nær 6 millioner kroner fordelt på 3 år i begge fylkene. I tillegg kan foretak i begge fylkene årlig søke støtte til seterdrift fra Regionale miljøprogram RMP.

I begge fylker er det et aktivt miljø med mange aktive setre. Fylkesmannen ønsker å vite mer om verdien av seterdrift for bonden, for nærmiljøet og i en reiselivssammenheng. Slik informasjon vil gi oss gode argumenter for videre satsing på fjellandbruket.

Studenten Anne Guro Homme fra Universitet i Oslo har kontaktet oss med tanke på et forskningsprosjekt rundt tema landbruksbasert reiseliv. Her har både hun og Fylkesmannen sammenfallende interesser og vi er interessert i et samarbeid med henne.

Fylkesmennene i begge fylkene har derfor gitt adresselister til Anne Guro Homme slik at hun kan gjennomføre forskningsprosjektet. Foretak og adresser er plukket ut fra søknader om støtte til setring (drift av enkelt og fellesseter) og fra landbruksregisteret. Vi har gitt henne tillatelse til å bruke navn- og adresselister, avgrenset til dette forskningsformålet.


Spørsmål knyttet til dette arbeid kan rettes til Bob Gottschal i Telemark (Tlf. 35 58 62 70/98635015) og Astrid Aass i Buskerud (Tlf. 32 26 67 01/97732840).

På forhånd takk for samarbeidet!

Med helsing

Bob Gottschal
senioringeniør
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<td>1</td>
<td>Delmål 1 – Avlsplanlegging</td>
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<tr>
<td>1.1.</td>
<td>Utvikle et system som gjør det lett å selge og kjøpe gårdsokser (oksebank) samt finne fram til egnede seminokser. Oksene skal godkjennes av laget i samarbeid med Norsk genressurscenter</td>
<td>Oppevne avlsutvalg på 3 pers på styremøte 5/5; Anna, Atle, Gunnar og Hilde</td>
<td>X</td>
<td>X</td>
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<tr>
<td>1.2.</td>
<td>Bruke Norsk genressurscenter mer aktivt ved utvalg av hunndyr til avl og avlsplanlegging (plan for bruk av okse i besetningen).</td>
<td>Med i avlsutvalget</td>
<td>X</td>
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<td>X</td>
<td>X</td>
<td>Beregner innavlskoeff. Alle seminokser og mange gårdsokser</td>
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<tr>
<td>1.3.</td>
<td>Vurdere om det kan være et aktuelt tiltak å opprette egne avlsbesetninger. Det vil si besetninger av en viss størrelse som får et ekstra tilskudd og ekstra oppfølging dersom de forplikter seg til å bli med på et program når det gjelder avl mm</td>
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<td>Ikke aktuelt pr i dag. Vurderes på nytt seinere i prosjektet</td>
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<td>2</td>
<td>Delmål 2 – Livdyrformidling</td>
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<td>3</td>
<td>Delmål 3 – Produktkvalitet</td>
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<tr>
<td>3.1.</td>
<td>Synliggjøre rasens fordeler når det gjelder kulturlandskapspleie gjennom å informere om gjennomførte forsøk og erfaringer.</td>
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<td>X</td>
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<td>Seminar i Seljord</td>
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<tr>
<td>3.2.</td>
<td>(Initiere ) og bli med på forskningsprosjekter om beiteegenskaper, kjøttkvalitet, mjølkekvalitet mm.</td>
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<td>Er med i mjølkeprosjektet NMBU</td>
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<td>4</td>
<td>Delmål 4 – Driftsformer og markedsspotensial</td>
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<tr>
<td>4.1</td>
<td>Finne gode eksempler på produsenter som får det til innenfor ordinære produksjoner (kjøtt, mjølk), samt videreføring, reiseliv, gøtønn omsorg osv</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Dele ut info på Dyrskun</td>
<td>X</td>
<td>X</td>
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<td>x</td>
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<tr>
<td>4.2</td>
<td>Lage kalkyler og modellregnestykker som synliggjør faktisk driftsresultat ved de ulike produksjoner</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Dele ut info på Dyrskun</td>
<td>X</td>
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<tr>
<td>4.3</td>
<td>Formidle kunnskapen videre til næringa, veiledningstjenesten og media.</td>
<td>Utarbeidet diverse info-materiell. Beitreplakater banner, rollups, postkort</td>
<td>Begynnt å se på muligheten for fellesseter i Øvre Telemark.</td>
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<tr>
<td>4.4</td>
<td>Vurdere egen emballasje/merking og egen merkevare av produkter fra Telemarkfe</td>
<td>Har laget egne klistermerker</td>
<td>Styret har vedtatt krav til bruk av merket</td>
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</table>

**5 Delmål 5 – Veiledningstjenesten**

| 5.1 | Delta på møter og samlinger der veiledningstjenesten, faglaga og andre fagmiljøer er samlet for å informere om telemarkskua og næringspotensialet. | X    |          |          |          |          | Livdyrkonsulanten har holdt foredrag på 2 møter i Buskerud. | X        |          |          |          |          |

**5.2 |** Utarbeide informasjonsmateriell som de kan bruke i sin veiledning overfor nye brukere | X    | X    | X    | X    | X    | Dele ut info på Dyrskun | X        |          |          |          |          |

**6 Delmål 6 – Rekruttering og produsentmiljø.**

| 6.1 | Arrangere seminar om rasen i Seljord | X    |          |          |          |          |          |          |          |          |          |          |

| 6.2 | Arrangere fagtur for medlemmer og andre interesserte | X    |          |          |          |          |          |          |          |          |          |          |

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<tbody>
<tr>
<td>6.4.</td>
<td>Arbeide for at de som ønsker å starte opp med telemarkfe får gratis mjølkekvote eller tilskott til kjøp av kvote.</td>
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<td>Ble lagt fram som et ønske på møte med LMD</td>
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<tr>
<td>6.6.</td>
<td>Få eksisterende mjølkebønder med andre raser til å ha noen telemarkskuer i tillegg.</td>
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<td>Seminar Seljord + info møter Buskerud</td>
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<tr>
<td>7</td>
<td>Delmål 7 – Merkevarebygging</td>
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<td>7.1</td>
<td>Få minst 5 bønder langs Telemarkskanalen til å ha beitende telemarkfe langs kanalen</td>
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<td>Søve ok X X X</td>
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<tr>
<td>7.3</td>
<td>Motivere relevante restauranter og spisesteder til å ha produkter fra telemarkskua på menyen. Øke tilgjengeligheten.</td>
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<td>Løpende samarbeid med Urfe Med på seminaret i Seljord</td>
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<tr>
<td>7.4</td>
<td>Synliggjøre produkter med råvarer fra telemarkfe.</td>
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<td>Tfr. Eget produktmerke Stand Dyrskun Møte m Tine Haukeli ang samarbeid 25/2-16</td>
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<tr>
<td>7.5</td>
<td>Oppmuntre til bruk av rasen på besøksgårder og besøkssetre, samt i diverse kulturlandskap. Også skoler</td>
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<td>Vært aktiv i arbeidet til Norsk Bufe Seminar Seljord</td>
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<td>8</td>
<td>Delmål 8 – Allians- og nettverksbygging</td>
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<tr>
<td>8.1</td>
<td>Identifisere aktuelle aktører innen fagmiljøer, markedsakseinger og forbrukerorganisasjoner, i inn- og utland, og legge en plan for dialog</td>
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<td>Møte m Tine Haukeli ang samarbeid 25/2-16 Har hatt kontakt med aktører innenfor verdensarvområdet</td>
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<td>8.2</td>
<td>På ulike vis gjennomføre møter og dialoger</td>
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<td>Har deltatt i møter med NB, NBS og</td>
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<td>LMD sammen m Bufe.</td>
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<td>8.3.</td>
<td>Evaluere aktualiteten og bygge videre på samarbeidsplattformen</td>
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<td>9</td>
<td>Delmål 9 – Videre framdrift</td>
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<tr>
<td>9.1.</td>
<td>Finne ut hvilke tiltak som bør videreføres og hva som kan avsluttes. Finne ut hvem som skal ha ansvar for de tiltakene som skal videreføres. Er det behov for et utvidet prosjekt eller kan tiltakene gå inn i ordinær drift?</td>
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Prosjekknavn | TELEMARKSKUA - Et krafttak for å redde verdens vakreste ku
---|---
Prosjektfase | Forstudie | Forprosjekt | Hovedprosjekt X (1.år)
Startdato | 15/4-2015 | Sluttdato | 1.år: 30/4-2016

1. Sammendrag

2. Gjennomføring i forhold til prosjektplan
Det er godt samsvar med prosjektplan.

3. Målrealisering

**Hovedmål avl:**
*Øke antall avlsdyr av Telemarksfe til 500 innen 31/12-2017.*
*Øke antall besetninger til 120 i samme tidsrom.*

Antall avlsdyr har økt fra 298 til 339 i prosjektets første år. Antall besetninger har økt fra 94 til 99.

**Hovedmål næring:**
*Økt salg og synliggjøring av produkter fra Telemarksfe*

Vi har fått laget et klistremerke som skal brukes på produkter med minst 50% råvare fra telemarkfe. Laget hadde egen stand i Matteltet under Dyrskun 2015 og solgte der ulike produkter: spekemat, ost, smør, is, burger. Dette var vellykket og vi kom i kontakt med mange mennesker og fikk snakket om kua.
Delmål:

1. **Avlsplanlegging:**
   
   *Bruke Norsk genressursenter for å unngå innavl, og til all avlsplanlegging.*

   Avlsarbeidet har blitt satt mer i system gjennom opprettelse av nytt avlsutvalg som reiser rundt og godkjenner seminokser, oksemødre og gårdsoxer. Vi har jevnlig kontakt med Genressursenteret når det gjelder beregning av innavlskoeffisienter og ved vurdering av seminokser og gårdsoxer.

2. **Livdyrformidlingen:**

   *Optimalisere formidlingen av livdyr slik at etterspørselen kan dekkes.*

   Livdyrformidlingen har blitt forbedret gjennom at vi har engasjert en person til i dette arbeidet. Arne Smøtebråten fra Hemsedal og Erik Fleischer fra Våler fungerer nå som livdyrformidlere.

3. **Produktkvalitet:**

   *Få fram opplysninger om kjøttkvalitet, mjølkekvalitet og beiteegenskaper.*

   Noen av våre medlemmer er med i mjølkekvalitetsprosjektet ved NMBU. Vi har samlet opplysninger som tidligere har kommet fra om de gamle rasenes fortrinn og prøver å formidle dette ut i ulike sammenhenger.

4. **Driftsformer og markedspotensial:**

   *Finne og synliggjøre hvilke driftsformer og produkter som kan gi god økonomi for disse rasene, samt øke omsetningen.*

   Vi har fått satt opp kalkyler for noen driftsformer. Noe av dette ble presentert påseminaret i Seljord 25.april.

5. **Veiledningstjenesten:**

   *Sørge for at veiledningstjenesten kjenner til de norske landrasene og har tilgang til informasjonsmateriell slik at de oftere vil anbefale disse rasene overfor nye bonder.*

   Det er laget et informasjonshefte som skal sendes til veiledningstjenesten. En av våre livdyrformidlere har holdt foredrag for alle kommuner i Buskerud og på et møte i Sigdal.

6. **Rekruttering og produksjonsmiljø:**

   *Skape møteplasser og et godt miljø for de som driver med eller ønsker å starte med telemarkskuer.*
7. Merkevarebygging

**Synliggjøre telemarkskuas verdi i et utvidet marked, både produkter og opplevelser.**

Det er laget et klistremerke for produkter med mer enn 50% råvare fra telemarkfe. Det er laget beite-skilt, banner, postkort og rollups.

8. Allianse- og nettverksbygging:

**Knytte kontakt med fagmiljøer, markedsaktører og forbrukerorganisasjoner, i inn- og utland, som kan bidra til realisering av hovedmålsetning.**

Vi har hatt møte med Haukeli Ysteri med tanke på samarbeid om et produkt av mjølk fra telemarkskua. Det har vært kontakt med personer som jobber med verdensarvområdet Rjukan/Notodden.

9. Videre framdrift:

**Utredes fortsettelse av arbeidet etter prosjektets slutt.**

Utredes siste år.

4. Organisering og ressursdisponering

Prosjektansvarlig: Ellen Dagsrud fra Telemark Landbruksselskap

Prosjektleder; Hilde Riis fra Landslaget for telemarkfe (LFT), i 50% stilling

Avlsutvalg: Anna Rehnberg fra Norsk genressursscenter, Atle Meås, avlsinteressert bonde fra Trøndelag, Gunnar Haugo, bonde og styremedlem i LFT.

Livdyransvarlige: Arne Smøtteråtten og Erik Fleischer

Styringsgruppe: Ellen Dagsrud, Bob Gotschal Fmla, Lise Wiik TFK, Gunnar Haugo, LFT og Anna Rehnberg NIBIO.

Vi har så langt hatt bra med midler i prosjektet selv om det har blitt litt forskyvninger mellom postene. Siden prosjektleder er aktiv bonde har hun noe begrenset kapasitet og det vil derfor være god ressursdisponering å knytte til seg flere prosjektmedarbeidere som kan jobbe med deler av prosjektet.
5. Økonomi

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<tr>
<th>Kostnader 1.år (Hovedposter)</th>
<th>Finansiering</th>
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<tbody>
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<td>Produktkvalitet og marked</td>
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<td>Landslaget for Telemarkfe+TL, egeninnings/utlegg</td>
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<td>Egenandel styringsgruppa</td>
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<td>Sum</td>
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Kommentarer: Vi fikk innvilget kr 250 000 over 2 år fra Telemark Fylkeskommune. Ikke noe av disse midlene er utbetalt ennå. Det betyr at Landslaget har forskottet et stort beløp og derfor er noen honorarer og deler av lønn til prosjektleder ikke betalt ennå pga likviditeten.

6. Viktige erfaringer


6. Anbefalinger videre

Anbefalingen er at prosjektet fortsetter som planlagt med noen justeringer av arbeidsplanen.

8. Vedlegg/dokumentasjon

Vedlegg 1: Utfyllende opplysninger til rapport fra første prosjektår
Vedlegg 2: Aktiviteter og milepæler.
Vedlegg 3: Regnskap pr 30042016 med budsjett.

Dato: 7/6-2016 (justert 15/8) Prosjektleder: Hilde Riis.................................
(Signatur)
Appendix ix

Pride in place – stolt av staden

BESST – Den Gode Spiral