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Of Sheep and Men

Analysis of the agri-environmental cross-compliance policies in the Icelandic sheep grazing regime

Jóhann Helgi Stefánsson

Dr. Jón Geir Pétursson og Þórunn Pétursdóttir
júní 2018

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Útdráttur

Sauðfjárrækt er ein af lykilstoðum íslensk landbúnaðar. Eitt helsta einkenni íslenskrar sauðfjárræktar er frjáls úthagabeit á afréttum og öðrum beitilöndum. Þetta skipulag sauðfjárbeitar, ásamt öðrum mannlegum athöfnum og óblíðum náttúruöflum, hefur í gegnum aldirnar leitt af sér mikla gróður- og jarðvegseyðingu. Nú á tímum eru því helstu umhverfisvandmál sauðfjárræktar, ofbeit sem og beit á viðkvæmum og rofnum svæðum. Þessi rannsókn fjallar um þær stofnanir er liggja að baki stjórnkerfis sauðfjárbeitar á Íslandi. Sérstök áhersla er á hin nýlegu samtengdu greiðsluskilyrði í umhverfisstefnumótun landbúnaðar, er kallast landnýtingarþáttur gæðastýringar í sauðfjárrækt. Viðhorfum hagsmunaaðilla var safnað með eigindlegum djúpviðtölum, en heimildum og gögnum varðandi stjórnkerfi beitarmála var safnað úr öðrum ólíkum áttum.

Niðurstöður rannsóknninar voru á þá leið að hin aldagamla stofnanauppbygging stjórnkerfis sauðfjárbeitar hefur djúpar rætur í íslenskri löggjöf og menningu. Stofnanauppbyggingin stjórnkerfis sauðfjárbeitar býður upp á töluverðan sveigjanleika í svæðisbundinni stjórnun. Það birtist m.a. í að reglur varðandi sauðfjárbeit á afréttum og beitilöndum eru mjög ólík eftir sveitarfélögum og fjallskilaumdæmum. Hagsmunaaðilar voru að mestu leyti sammála um að innleiðing gæðastýringarinar hafi verið jákvætt skref og halda ætti áfram á sömu braut. Hinsvegar, þá var bent á ýmsa misbresti í skipulagi og framkvæmd gæðastýringarinnar. Niðurstöðurnar benda m.a. á að valdaójafnvægi er ríkjandi í ákvarðanatökuferlinu og að landnýtingarþáttar gæðastýringarinnar hefur ekki verið nægilega áhrifaríkur í að koma í veg fyrir eða stöðva ósjálfbæra landnýtingu m.a. vegna skort á gögnum og fjármagni. Ákjósanleg næstu skref í þróun stjórnkerfis sauðfjárbeitar eru til að mynda, heildarendurskoðun og endurbætur á laga- og regluverki sauðfjárbeitar og beitilanda, auka þátttöku ólíkra hagsmunaaðilla í ákvarðanatökuferlinu, skýra og endurskoða markmið gæðastýringarinnar, og auka skilvirkni í eftirliti með landnýtingu þáttakenda í gæðastýringunni.

Abstract

Sheep farming is a key feature of Icelandic agriculture. Important characteristic of the Icelandic sheep farming is extensive grazing during summertime on common rangelands in the highland areas or other uninhabited mountainous landscapes. These grazing practices, in combination with other human activities and harsh natural forces, have historically resulted in a high vegetation degradation and soil erosion. As a result, the primary agri-environmental concern of Icelandic sheep farming relates to grazing intensity, sustainable grazing, and restoration of already degraded lands. This study explores the institutional settings behind the traditional Icelandic sheep grazing regime with a particular focus on the recent agri-environmental cross-compliance policy, Quality Management in Sheep farming (QMS). Data on stakeholder's opinions were collected through series of in-depth qualitative interviews, and secondary data on the Icelandic grazing regime was obtained from multiple relevant sources.

The study findings are that the old institutional structure of the Icelandic sheep grazing regime is deeply rooted in the modern Icelandic legislation and culture. The regime allows for considerable self-governance and collective-choose rules formation. In results, the rules regarding rangeland utilizations vary after municipalities. Stakeholders were mostly in agreement that introduction of the QMS had been a positive step towards sustainable land use practices and wanted the policy to continue. However, various drawbacks were identified in its formulation and implementation. The study claims among other things that inequality of powers of influence in the decision-making process and a shortage of resources, such as funding's and data, had resulted in QMS isn't effective in preventing and putting an end to unsustainable land use. Future steps should involve holistic revision and improvement of the sheep grazing regime formal institutions, increase the different stakeholder's inclusiveness, clarify objectives of the QMS, and increase the effectiveness of land use monitoring processes within the QMS.

Foreword

This a 60 credits thesis for a Master's of Arts degree in Environmental and Natural Resources at the University of Iceland. The thesis was written under the supervision of Dr. Jón Geir Pétursson at the School of Social Sciences, the Faculty of Social and Human Sciences, and Þórunn Pétursdóttir, a senior expert at the Soil Conservation Service.

I would like to express my most profound gratitude to my advisors, for all their good feedback, support, and assistance that they provided. I am especially grateful for the long and pleasant talks we had about institutional theory and the Icelandic agri-environmental affairs. I learned a lot from these discussions and gained a deep interest institutional theory and analysis, and environmental and natural resource management.

My heartfelt thanks to my friends and family for the support and understanding in this long and challenging process. Special thanks to my parents – Stefán Helgi Helgason and Sigríður Kristinsdóttir, my grandmother – Gunnhildur Sigurðurdóttir, Dr. Björn Dagbjartsson and my good friend Haukur Halldórsson. Also a big shout out to my fellow students at the ENR program, and the wonderful and inspiring Canadian friends I met while I was on my exchange at the University of Ottawa.

At last but in no way the least, I would like to express my gratitude and sincere thanks to all of my interviewees, and those that I reached out to with requests for data and questions regarding various matters. Without your participation and help, this thesis would not have been possible.

Table of Contents

Tables

Figures

1 Introduction

Humans have utilized the earth's natural resource for centuries, which has resulted in altering of natural landscapes to more human-dominated areas (Foley, 2005). Iceland constitutes a good example of human alteration of natural landscapes. It has been well documented that the vegetation stage and landscape has changed dramatically since the first settlers inhabited the island around 900s and brought grazing animals. Although the root of land degradation might not solely be due to human activities, on the harsh climate, volcanic island (A. Arnalds, 1987; Ó. Arnalds, Þórsson, & Þórarinsdóttir, 2003; Thorsteinsson, Olafsson, & Dyne, 1971).

In economic terms, goods such as natural resources are classified according to their excludability and whether or not they are rivalrous (Ostrom, 1990). Icelandic rangeland can be classified as a common-pool resource (CPR). Since the Icelandic rangelands tend are extensive, it is tough to exclude others from utilizing this resource. However, this resource is rivalrous as the grazing of one farmer's sheep herd limits the possibilities of other farmers' herds to graze.

Sheep farming in Iceland is primarily based upon natural resource utilization, hence its current characteristics of this usage is extensive free roaming of sheep in mountain rangeland parts of the year (Ó. Arnalds & Barkarson, 2003). The term Icelandic Sheep Grazing regime will be used as a term for this rangeland utilization system as rules are in place to govern the rangeland usage. In this thesis, the Icelandic sheep grazing regime will be observed through the institutionalist school of thought (e.g., Crawford & Ostrom, 1995; Ostrom, 1990; Vatn, 2005; Young, 2008). This follows the rationale of seeing resource regimes or governance systems with a particular institutional arrangement that can focus on the single issue or subject at hand (Young, 2008). This thesis understands institutions as socially constructed, including both formal institutions and informal dimensions. The formal institutions are laws, rights, rules, and constitutions, while the informal institutions represent the norms, costumes, traditions, and codes of conduct of the society in question, often both traditionally and culturally manifested (Scott, 1995; Vatn, 2005; Young, 2008).

There has been a growing awareness of environmental problems associated with agricultural practices, as well as growing interest in addressing them (e.g. Batáry, Dicks,

Kleijn, & Sutherland, 2015; German, Thompson, & Benton, 2017; Primdahl, Peco, Schramek, Andersen, & Oñate, 2003; van der Werf & Petit, 2002). In high-income countries in the west, there are institutional settings in place for subsidizing agriculture with the objective of maintaining a steady farm income (Bowers, Rasmussen, & Baker, 1984; van Tongeren, 2008). Thus, growing environmental awareness has lead agricultural policymakers to seek ways to promote or encourage sustainable land use and farming practices (Baylis, Peplow, Rausser, & Simon, 2008; Hodge, 2001; Meyer, Matzdorf, Müller, & Schleyer, 2014; Piorr, 2003). An important component of that are the cross compliance policies, which are public policy instruments that link payment to farmers, with compliance on the farmer's behalf of undertaking basic standard (Baldock & Mitchell, 1995). These standards touch upon various environmental, animal and on-farm related matters, such as the health of plants and animals, farm appearance, and maintaining the land in good environmental and agricultural condition (European Commission, 2017; van Tongeren, 2008).

In 2003, a voluntary cross compliance policy was introduced to the Icelandic sheep grazing regime under the name *Gæðastýrð sauðfjárframleiðsla* (en. Quality Management in Sheep farming), hereafter referenced as the QMS (Landbúnaðarráðuneytið, 2003). Part of it was a specific clause on land-use that aimed to increase the sustainability of the participants' land-use practices. Although agri-environmental schemes have been introduced, the sustainability of the Icelandic sheep farming policies and practice is still being questioned from various directions. The Organisation for Economic Co-operation and Development (OECD) has criticized the Icelandic government because the sheep farming subsidies are only partly tied to the cross compliance. Moreover, the organization points out that the structure of the subsidies had incentives to maintain large numbers which can result in negative environmental impact (OECD, 2014a). Moreover, criticism of the Icelandic Sheep grazing regime and the QMS has emerged in Icelandic media, such as in the form of opinion articles from experts and amateurs in the *Bændablaðið* (en. The Farmers Journal). Where they outline the flaws of the system and their dissatisfaction, these articles were often replayed from members of the agricultural sector (Arnalds, 2016c; Halldórsson, 2016; Pétursdóttir, 2016; Runólfsson, 2015). These opinion articles have even sometimes resulted in polemics (Arnalds, 2016a, 2016b; Jónmundsson & Dýrmundsson, 2016).

Although the QMS, seen as a cross-compliance tool, has been around since 2003, limited academic research or systematic analysis on its effectiveness and efficiency has been conducted. Some studies have looked at different components of the QMS policies and its land use clause, such as study on farmers experience (Þorláksdóttir, 2015), and governmental reports focusing more on land use in general (Barkarson, Kristjánsdóttir, Jónsson, Lund, & Sigurðsdóttir, 2015; Pétursson, Guðleifsson, & Valsdóttir, 2013). After this long period of implementation, it is time to gather opinions stakeholders' within the QMS. By doing so both the strengths and drawbacks of the QMS process can be identified, and measures can be taken to further increase the QMS effectiveness in promoting and encourage sustainable land use.

1.1 Research objectives and questions

The study has the overall objective to analyze the performance of the land use clause of the QMS policy instrument. The focus is on analyzing the perceptions of multiple stakeholders on various aspects of the land use component of the QMS. Following the analysis, the aim is to discuss the implication of the findings and provide recommendations for policy and practice in sheep grazing in Iceland. On the basis of this objective the following a four research questions where constructed.

- How can the Icelandic sheep grazing regime be understood as a social-ecological system, with the focus on institutional properties and governance and main actors?
- What was the rationale for the establishment of the QMS and, what were the institutional driving forces behind it, with a focus on its land-use component?
- What are the perceptions about effectiveness and operation of the land use clause in the QMS amongst the key stakeholders?
- What are the implications of these findings for policy and practice in the QMS scheme?

The structure of the thesis is as follows. Firstly, a brief introduction on the thesis topic is given, as well as what this study aims to contribute and the objectives of the thesis outlined and its research questions, as well as discussion on what this thesis aims to

contribute. Second, comes the theoretical basis for the study and the analytical frameworks applied. The third is a section the puts the Icelandic sheep grazing governance system into a historical-institutional context and outlines how it has been constituted and re-constituted towards its contemporary structure and challenges. Fourth is a section that explains the study design and methodology for data collection. Fifth is a section that brings combined results and discussion where the findings of the study are presented and analyzed. That section is based on two blocks, the former analyses of the Icelandic sheep grazing governance system and its interactions while the second gives the outcomes of the policy analysis of the QMS policy instrument and its performance. Lastly, the final section provides conclusions and some policy recommendations.

2 Theoretical background and analytical framework

The focus of this chapter will be on clarifying and discuss what theoretical background and school of thought that is the foundation of this research. The main components and development of the frameworks that will be used in the thesis will furthermore be discussed.

2.1 Institutional understanding

In this essay, institutions are viewed as a set of rules, both formal and informal, norms and conventions. Institutions are constructed by humans to guide their interactions to one another, as well as human-environment interactions (Pétursson, Vedeld, & Sassen, 2013; Vatn, 2005). Human and human-environmental interactions constitute and historically reconstitute the rules, norms and shared strategies (Crawford & Ostrom, 1995).

Three major approaches have been used to understand and explain what institutions are, which all have in common that they explain human behavior through observation of regular patterns. The difference of this approaches is that institutions are thought of as equilibria, as norms, or as rules, however, these different point of view are not mutually exclusive (Crawford & Ostrom, 1995). Institutions-as-equilibria is based on the assumption that rational individuals interact and accordingly change their response to actions until no improvement can be made regarding the expected outcome of an action (Crawford & Ostrom, 1995). That is individuals behave according to or in line with how all other individuals act in society. It is, therefore, the rules that shape how peoples behave, but rather the expected behavior of others (Greif & Kingston, 2011). If one wants to understand why regularized patterns of interaction exist, one needs to understand why all actors are willing to produce a particular equilibrium (Crawford & Ostrom, 1995). Institution-as-norms rests on the assumption that many patterns of interaction are based on a mutual perception of proper and improper behavior, often called social norm. Therefore, to understand the patterns of interaction it is necessary to thoroughly analyze the shared beliefs amongst a group of individuals (Crawford & Ostrom, 1995; Dequech, 2009). Finally, institutions-as-rules rests on that assumption that many patterns of interactions are based on common understanding (Crawford & Ostrom, 1995). The society constructs rules that govern the behavior of the individuals, rules of the game

(North, 1990). That is, if an actor behaves in a way that is inconsistent with those actions that are prescribed by society, those actors within the community that have the authority to impose punishments are likely to sanction the rule-breaking actor. Therefore, to understand patterns of interaction, it is necessary to analyze and interpret the actions and outcomes that are allowed, required or forbidden by the rules, as well as the mechanism used to enforce them (Hodgson, 2006). Although these meanings of institutions are different, the term institutional statement is used to encompass all three (Crawford & Ostrom, 1995). As a concept, institutional statements understand institutions as all those rules, norms and strategies (similar to equilibria) that humans use in ever-recurring circumstances (Ostrom, 2007).

Governance systems, like environmental and natural resources regimes, are dynamic in nature. Institutions tend to be sticky, as in they tend to stay in place although understanding of the mismatch between regimes and the biophysical and socio-economic interactions, has been around for quite some time. As times goes by, regimes become more vulnerable to rigidification, therefore becoming less resilience and less capable of responding to stresses. As institutions remain, they become more fragile and crisis-prone (Young, 2010).

When discussing governance and the usage of natural resources and property rights regimes, the terms *rights* and *rules* come up frequently. These terms are directly linked to the notion of property rights regimes and are often used alternately. However, when analyzing them, it is necessary to distinguish between them. Rules produce rights meaning that if an individual holds a specific property right, there are rules that authorize or require specific actions in exercising that right (Schlager & Ostrom, 1992). It is common that rules are nested in and function according to another set of higher-level rules. There are three different levels of rules that affect the actions and outcomes in the policy environment. At the first level, they are operational rules; at the second level, collective-choice rules; and at the third level, constitutional rules (Hardy & Koontz, 2009). Operational rules are those that affect participants in their everyday decision making in specific economic and political settings. These practical decisions are held out by those that have been allowed or authorized to do so by collective choice processes. Collective-choice rules are where the construction of institutions take place and where policy

decisions are made, of those that are allowed to do so by the constitutional rules. They determine who is allowed to participate at the operating level and how that level rules can be changed. Finally, it is the constitutional rules state who is entitled to make collective-choice rules as well as how they might be changed. They also revolve around how the collective-choice procedures are defined, including making the collective or operational choice processes legitimized and constituted (McGinnis & Ostrom, 2014). Thus, individuals behave and are engaged in both operational and collective-choice levels of action in the conduction and organization of their every-day activities (Schlager & Ostrom, 1992).

The terms *de facto* and *de jure* explain the sources of both collective-choice and operational rights. *De jure* are those rights that are given lawful recognition by formal legal instrumentalities. If a right-holder, such as an owner, is challenged by judicial or administrative settings, his or her right would most likely stand. On the contrary, if resource users work together in defining and enforcing rights, which is not recognized by governmental authorities, then it is called *de facto*. In other words, users act like they have *de jure* rights and if they are challenged in courts (which they often are) they might be recognized, but until then, the users are less secure on their rights than *de jure* ones (Schlager & Ostrom, 1992). What incentives individuals' face, what types of actions they take, and the outcomes they achieve, are influenced by the different bundles of property rights and whether they are de facto or de jure. In Economics the difference between those that have complete rights and those that don't are often discussed (Agrawal & Benson, 2011). In their highly influential conceptual analysis (Schlager & Ostrom, 1992) defines five types of property rights for common pool resources. At the operational level, these include the right to access and the right to withdrawal, and at the collective-choice level, management, exclusion, and alienation rights (Schlager & Ostrom, 1992). These different types of rights can be thought of as a bundle of rights, as an owner of property holds all the rights, while some might be users (operational-level) who only have the right of access and withdrawal.

2.2 Understanding resource governance as a Social-Ecological System

When ecological systems are affected by and linked to one or more social system, they bound together into what has been conceptualized as Social-Ecological Systems (SES)

(Anderies, Janssen, & Ostrom, 2004). Viewing natural resources as SES can be used to analyze and understand human-environmental interactions (Young, 2008). To analyze resource governance SESs where users access and or extracts environmental resources; multiple analytical frameworks have been proposed (Binder, Hinkel, Bots, & Pahl-Wostl, 2013).

One of them, the Social-Ecological System Framework (SESF) has been used and developed in the area of multiple natural resources (Basurto, Gelcich, & Ostrom, 2013; Hinkel, Cox, Schlüter, Binder, & Falk, 2015; Ostrom, 2007, 2009). The framework originated out of political science and built its theories on collective choices, common-pool resource, and natural resource management. It was originally designed for application on the domain of common-pool where the user of the resource extracts the resource units from the resource system (Ostrom, 2009). The SESF trace its origins to the Institutional Analysis and Development (IAD) framework (Figure 1) (McGinnis & Ostrom, 2014). The IAD framework is an extended elaboration of the policy processes and systems model. Therefore the IAD Framework foundations are in viewing policy processes dynamically as systems. When individuals make decisions, either on their own or as agents of larger organization or group, social, institutional and biophysical factors are inputs in that decision-making process. Patterns of interactions are made out of the individual decision, and when they are combined with external factors, generate observable outcomes. These outcomes are evaluated by the actors or other observers, this evaluation feedback into the contextual factors, thus making a continuous process (McGinnis & Ostrom, 2014; Ostrom, 2007). The IAD framework has widely be used to examine the performance of natural resource management governance (Benson, Jordan, Cook, & Smith, 2013; Nigussie et al., 2018; Whaley & Weatherhead, 2015). However, scholars working on resource governance (for example ecologist) have not found the term Biophysical conditions comprehensive enough to include all those variables that are in place. In the light of that drawback and others SES Framework was developed (Ostrom, 2011).

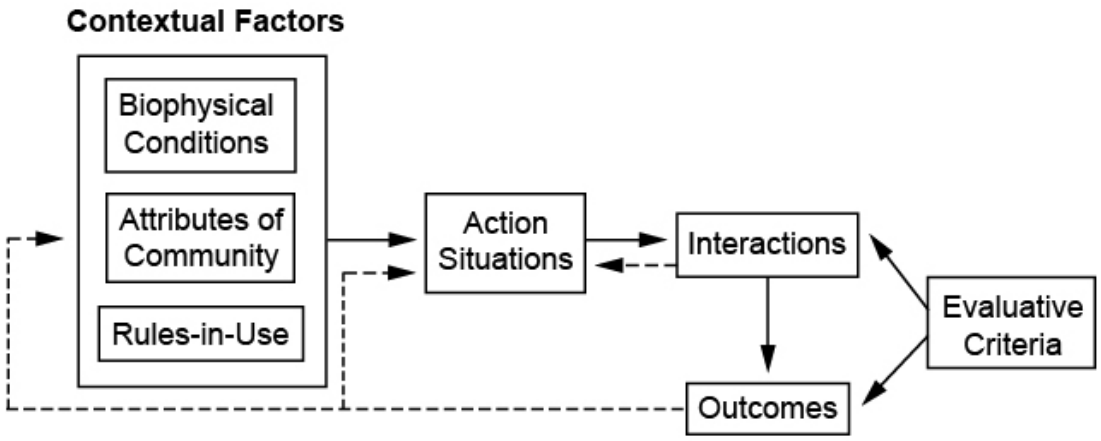


Figure 1. The Institutional Analysis and Development Framework (McGinnis & Ostrom, 2014).

The SESF analyses social-ecological systems by organizing relevant variables in a multilevel hierarchy. The term tier is used as a means to shed light on different logical categories (McGinnis & Ostrom, 2014). This framework starts by analyzing how first-tier interact with one another (see figure 2), which provides grounds for the observation on second-tier interactions. For example, how the resource usage of actors has an impact on the ecosystem function, as well as information sharing which is about how the actors assess the resource/ecosystem health (Binder et al., 2013). As necessary, this can be decomposed into more in-depth concepts and variables on the lower tiers (McGinnis & Ostrom, 2014; Ostrom, 2009). In appendix 1 the different first and second tier variables of SES are shown, that have been found relevant for the governance and analysis of social-ecological systems.

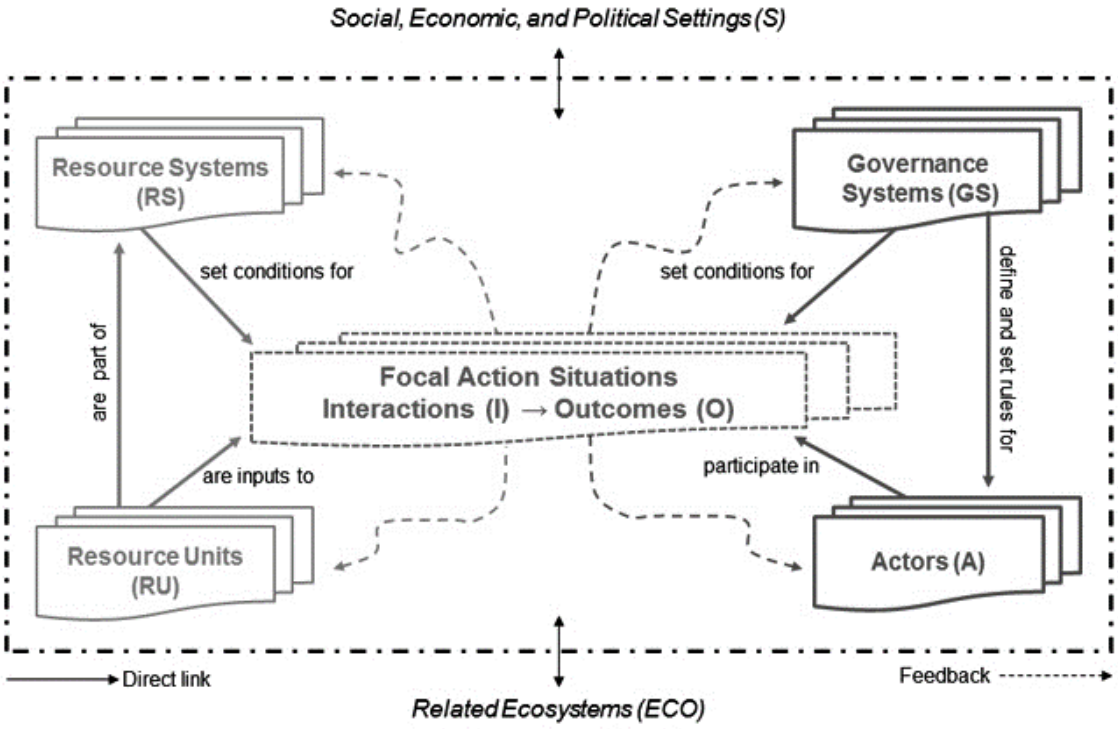


Figure 2. The Social-Ecological System Framework (McGinnis & Ostrom, 2014).

The Action Situation is a core both in the IAD and SESF; there, the structure and function of the institutional setting can be analyzed, as well as the outcomes that are generated (Ostrom, 2011). Within the action situation, the actors decide what actions they will make, which is determined by various of external and internal factors. That is, these activity decisions are influenced by the rules-in-use or the governance system, the characteristics of the resource system in questions (biophysical conditions), the information that the actors have on the potential action of others, and the cost and benefits of the potential outcomes (McGinnis & Ostrom, 2014). These interactions within the actions situation produce outcomes, which feedback to the contextual factors (McGinnis & Ostrom, 2014; Ostrom, 2011).

The concept of institutional fit or misfit has been growing in popularity in studies of sustainability of social-ecological systems. Therefore, its literature has been developing rapidly (e.g., Epstein et al., 2015; Guerrero, Bodin, McAllister, & Wilson, 2015; Young, 2008). Generally, the institutional fit is about how institutions match or harmonize with the issue at hand (Carlisle & Gruby, 2017; Young, 2008). Institutions operate in specific ecological and social domains, and how the social institutions function within that domains determines their effectiveness and robustness (Young, 2002, 2008; Young & Underdal, 1997). That is, for institutions to be able to achieve positive outcomes they

have to have a certain degree of fit with the social and the ecological systems (Cash et al., 2006; Haller, Fokou, Mbeyale, & Meroka, 2013). The concept of fit can be thought of in a context of the IAD and SES frameworks, where if there is a misfit in the interactions the outcomes might result in unsustainable utilization of natural resources. After summarising the institutional fit literature Epstein et al., (2015) conceptualize three types of fit, social fit which is the compatibility between the institutions and social systems attributes. Social Fit can be conceptualized of in the context of SESF as a fit between actors and the governance system. Ecological fit which is the compatibility between the institutions and ecological systems attributes. Ecological fit in the context of SESF would be the fit between resource systems and governance systems, and social-ecological fit which is about the social and ecological systems of the SES interaction with institutions that contribute to success (Epstein et al., 2015).

2.3 Policy Analysis in the agri-environmental context

Agri-environmental schemes (AESs) is a term used for schemes were special funding is entitled to those farmers that meet certain environmental standards (Burton & Paragahawewa, 2011). AESs are often on a voluntary basis such as cross-compliance, where the government agency and a farmer construct an agreement. In these agreements, the farmer provides environmental service and receives payments from the government in return. By this, the farmer is complied to follow a standard of good practices (pro-environmental) and not undertake those practices that are harmful to the environment (Hodge, 2001).

AESs and related policies can be conceptualized in a context of the natural resource and environmental management (Batáry et al., 2015). Governance of environment and natural resources is to achieve the goals set out in the policies, and by that resolving the conflicts that may arise, coordinate social activities and priorities (Paavola, 2007; Vatn, 2010). To contribute to advancement in the good governance of natural resource management (Lockwood, Davidson, Curtis, Stratford, & Griffith, 2010) constructed eight principles on that affair. These principles are as follows:

- Legitimacy: Organizations have validity to govern and in rule-making, from the democratic process or stakeholders acceptance, of the resource. As well as, delegating powers to the lowest governance level possible and exercise the authority with honesty (Lockwood et al., 2010).
- Transparency: All decision regarding natural resource governance should be visible to those that might be interested, including the motives of and information on the decision in hand(Lockwood et al., 2010).
- Accountability: Understanding on how parties have been able to live up to the responsibility they bear, and the acceptance of those parties that have the right of decision and actions (Lockwood et al., 2010).
- Inclusiveness: All stakeholder should have the opportunity to be involved in the decision-making processes and actions (Lockwood et al., 2010).
- Fairness: The decision-making process should be free from any personal bias, and the all stakeholder's views should be given attention and respect. Furthermore, the cost of benefits should be distributed in a fair manner (Lockwood et al., 2010).
- Integration: Due to interconnected nature of natural resources governance problems, connection and coordination should be obtained between and within different levels of governance (Lockwood et al., 2010).
- Capability: Those who govern natural resources should have all those skills, knowledge and other resources to effectively fulfill their responsibility (Lockwood et al., 2010).
- Adaptability: There should be a mechanism in place to integrate a new form of knowledge into the decision-making and implementation. Arrangements to respond to risks, threats, and new opportunities should be in place, and the performance of individuals, organizations and the system in whole should regularly be assessed ((Lockwood et al., 2010).

These principles are highly important for successful management of agri-environmental schemes. Furthermore, they can be used as a guide for policy development, monitoring,

and evaluation (Lockwood et al., 2010). That is, the principles can be a helpful tool in the analyses of the agri-environmental policy cycle.

Policy cycle is a common analytical tool for understating the policy-making process. It offers researcher a way to break down the policy-making process, into different stages which represent a different time in the valuation time of a policy (Kraft & Furlong, 2007). The main advantage of viewing policy process as a cycle or stages is that it conceptualizes the process, as well as dividing the policy process into stages gives a way to increase the understanding and analyze its formation and implementation (Hill, 2009). Different scholars define different stages when in their analysis of policies (Hill, 2009). In the context of agri-environmental schemes, Baker & Eckerberg, (2013) identified four stages for ecological restoration, figure 3.

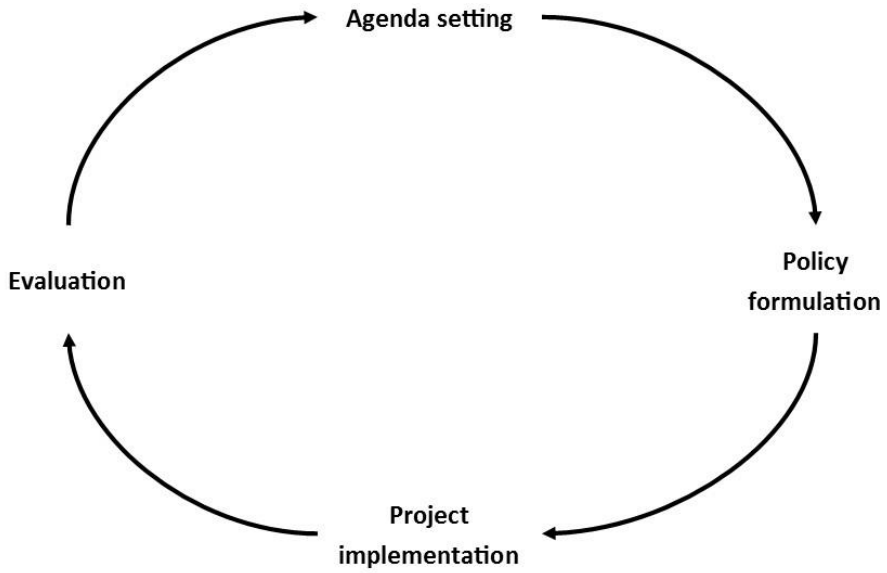


Figure 3.The four stages public policy cycle. Made by the author based on Baker & Eckerberg, (2013).

First is the agenda-setting where the attention is brought to a policy issue (van Tongeren, 2008). The scientific community often plays a key role in identifying these agri-environmental issues and provide guidance on methods (Baker & Eckerberg, 2013). However, other actors such as media, public and interest groups, can promote actions to be taken. In the case of European agriculture, interest groups can have a very high

influence on agenda setting and decision making without help from other actors (Jann & Wegrich, 2007).

Second, policy formulation is where the decision-makers design and construct programmatic legislative and regulatory strategy for the issue set out in the earlier stage (Baker & Eckerberg, 2013). Policies do not exist in a vacuum it is therefore necessary to analyze the current policies at hand which touch upon the matter. Resulting either in adjustments to the previous policy or it is destructed, and the new one is designed with or without some characteristics from the old one (van Tongeren, 2008). In this stages objectives are defined on what the policy should achieve, these objectives can be of various short such as improve current practices to cope with negative externalities of agricultural practice (Jann & Wegrich, 2007). How the policy is designed depends, among other things, on from the institutional context, it emerges. That is, who can contribute to the process and what are its contemporary rules, norms and other governance systems. In what time policy design takes place is also essential as dominate ideas on policies affairs tend to change over time (Sidney, 2007).

The third is the project implementation, where the focus is on the implementation of the new policy in hand. Composing and writing the parameters on pages of documents is one thing, how its application is in real life situations is a challenging process (van Tongeren, 2008). Inclusiveness of stakeholders is necessary for the implementation of a policy, that is where or not the top-down or bottom-up implementation processes are used, the needs of public agencies, interest groups, and the civil society to be taken into account (Pülzl & Treib, 2007). Furthermore, it is necessary to ensure that sufficient resources and expertise, such as funding and leadership, is provided to ensure that the policy implementation is effective (Baker & Eckerberg, 2013).

At last, there is policy evaluation where the objective is to generate knowledge of the policy operation. Understanding of the effects of existing policy in relation to various terms such as efficiency, effectiveness, and necessity is often on the primary purpose of doing a policy evaluation (Baker & Eckerberg, 2013). The motive of construction policy evaluation is often to improve the planning and implementation processes of public policies (Baker & Eckerberg, 2013). Systems that produce information on the policy should be drafted early on in the policy process, in order for decision makers to have a

reliable source of data of the whole policy cycle (van Tongeren, 2008). However, it is important to note that although policies have been condemned unfit to solve those problems at hand or when they are not relevant anymore, they sometimes stay in place. A network of actors that have benefits in existing policy can hinder their termination. Moreover, politicians have more incentives to introduce new policies than abolish old ones and acknowledge its failure (Jann & Wegrich, 2007).In his paper, White (2009) stated that evolution methods (on policies for example) should focus on the outcomes and processes which comes from the implementation. It is as vital to discover the underlying causes and mechanisms, as detecting the aggregated impacts. To be able to make a good evaluation, advantage should be taken on different research methods, which are both qualitative and quantitative. He says that "one should combine reduced-form quantitative studies, which are robust, comparable, and allow meta-analyses, with process-based, qualitative understanding of causal pathways and indirect effects." (White, 2009). A good example of this kind of evaluation is when the Cross-Compliance was evaluated in England. The methodology consisted of three main stages a) Secondary knowledge from various sources. B) Collection of qualitative and quantitative data. C) Evaluation of the Cross-Compliance effectiveness and cost and benefits analysis. These evaluations were all done separately but then brought together and put in a context to one and another in a final report (OECD, 2012).

Understanding how information, institutions, decisions and power shape policy agendas for interest groups in social networks, is essential when policy developed and evaluated. In policy research, stakeholder analysis is a way of generating information on the relevant actors to understand their behavior, interests, agendas, and influence on decision-making processes (Weible, 2007). Furthermore, in political science stakeholder research is used to work more effectively with stakeholders, increase the transparency of the implementation process, understand and assess the context of policies and the feasibility of future policies options (Brugha & Varvasovszky, 2000). Therefore, when discussing the environmental policies and agri-environmental schemes, it is necessary to consider stakeholders involvement (Reed, 2008). As the term indicates, stakeholders reference those individuals or organizations that might be effective by the policy or scheme, negatively or positively. The connection between decision-makers (most often the government) and stakeholders, as well as their relationship, can be somewhat

complicated. As different stakeholders have different power and resources to influence the decision-making process (Juntti, Russel, & Turnpenny, 2009; Prager & Freese, 2009; Riege & Lindsay, 2006). Those stakeholders that might have an interest or be affected are a diverse group, which includes actors such as national governmental organizations, local authorities, private companies, indigenous groups, non-governmental organizations (NGOs) and other community organizations (Riege & Lindsay, 2006). In the construction of agri-environmental schemes, decentralization and increment in cooperation have proven useful on many levels, for example, strengthening the institutions and less design cost (Taylor & Van Grieken, 2015).

3 The evolution of the Icelandic sheep grazing regime

The Icelandic society has relied on the utilization of its terrestrial natural resources throughout its history. That has resulted in the development of institutions on access to a limited resource such as the highland and lowland rangelands that are in focus of this study. In this chapter, the historical development of the Icelandic sheep grazing regime is explained to advance understanding its institutional aspect, origin, and context. As the governance of the rangeland is found in Icelandic legal system, it was necessary to translate the name of the acts into English, as well as the items it contains and are related to Icelandic sheep grazing regime. In appendix 2 a collection of those translations that were made the following sub-chapter can be found. Furthermore, a summary of main events in the history of the Icelandic sheep grazing regime is shown in appendix 3, and they are put in context with the numbers of sheep at that time.

3.1 The old institutional foundations: Jónsbók and Grágás

The Icelandic sheep grazing regime is manifested in the earliest legal documents in Iceland. The Viking settlers that came to Iceland around the year 900 brought various types of livestock including sheep and most likely knowledge about the need for, and design of institutions regarding land use (Eggertsson, 1992). Iceland was very suitable for sheep grazing as it had no significant predators, except for the small Arctic Fox (*Vulpes lagopus*), and was well vegetated (Eggertsson, 1992; McGovern et al., 2007; Ólafsdóttir, Schlyter, & Haraldsson, 2001).

Grágás was a comprehensive legal framework regarding the Commonwealth age of Iceland (930-1262). In *Grágás*, laws, and regulations regarding sheep grazing where outlined both regarding *afréttir* (en. Mountain commons) and *heimalönd* (en. Private rangelands). *Afréttur* (plural *afréttir*) is defined as the area which two individuals or more (generally many) own together and use jointly, usually defined to highland areas. Furthermore, it is also common that the county or municipality owns it (Karlsson, Sveinsson, & Árnason, 1992). *Heimalönd* (singular *heimaland*) is those rangelands that are in private ownership of a farmer, much closer to the farm than of *afréttir* and often surrounding the farm. *Heimalönd* can also be in mutual ownership (Eggertsson, 1992; Jónsson, 2004; Karlsson et al., 1992). *Heimalönd* were usually used during the winter

time, then the sheep were driven to the *afrétt* during the summer months, and collected again, rounded up and brought back to the farm in the fall (Eggertsson, 1992).

This division of different ownership, rights of usages and farming practices, is likely to have taken place very early on in settlement of Iceland, as one can see in the Saga's such as *Biskupasögur* and *Sturlungasaga* (Eggertsson, 1992). In *Grágás* there were strict and clear rules regarding the usage of *afréttir*. For example, the farmers had to drive their sheep to the middle of their a*fréttur*. If they would only drive them to the margin of it, then there would be a higher risk of sheep encroachment on the land of the farmers who lived next to it. Furthermore, it was prescribed in *Grágás* the length of the summer sheep grazing period, which was from the 8th week of summer (middle of June) until there were four weeks left (middle of September). If a farmer violated these laws, then the same had to pay a fine (Karlsson et al., 1992).

People in that time realized that vegetation was a limited resource and its access had to be controlled. They came up with a comprehensive set of institutions, which were outlined in *Grágás*. According to the *Grágás* laws, *ítala* was an indicator for the numbers of sheep each farmer could bring to the *afréttur*, a quota of some sort. However, one was not obligated to bring his sheep to the *afréttur*; ergo he could transfer his grazing rights temporally to another farmer. Another resource protection mechanism can also be found in the laws, for example, it was forbidden to gather hey for fodder in *afréttir* as well as establishing a shieling[1]. *Ítala* was also used as a measure to prevent overgrazing, as an indicator of it was that sheep would not get fatter although they would become fewer in numbers. If suspicion would arise of possible overgrazing, the relevant party could call for an inspection. The inspection should be carried out by assessors who would examine the *afrétt* and count the number of sheep that were there. The assessors should give, of their best knowledge, that amount of sheep that could be driven to the *afréttur* so that he would be fully occupied and, again, that sheep would not get fatter if there would be fewer individuals. To be able to identify which sheep belonged to who, they were marked by cutting a certain mark in the sheep ear. Which made it easier for farmers to identify

[1] Shieling (areas) were on the farms property, usually on the outskirt of it. Members of the household would drive milking livestock there during the summer to utilize the vegetation in the shieling area. There milking products would be make and driven back to the farm (Brown et al., 2012).

and separated their sheep from the herd and made it more difficult for others to steal them, something that was seen as a severe crime during that time (Eggertsson, 1992; Jónsson, 2004).

When Iceland was integrated into the Norwegian crown, new and additional sets of laws were introduced in Iceland and passed by *Alþingi*, the Icelandic parliament, in the year 1281 (Jónsson, 2004). This body of law got the name *Jónsbók*, but law-reform took place a few years later in 1294 on the *Jónsbók* laws. The reform was made by the king to clarify some rules regarding the land use of rangelands. One of the changes was that the local governmental bodies were given the power to decide when sheep would be driven to and be collected from afréttir. The reason for this was as *Jónsbók* says, that certain date for one district might or would not be suitable for other districts may be located on the opposite side of the country.[2] Similar, the district administrative officer was given the authority to adjust the single farmer's obligation regarding gathering the sheep from a*fréttur*, for example after the farmer's livestock numbers. Those that wouldn't oblige the *Jónsbók* laws had to pay a fine. Another, significant reform was that now farmers had to both herd and rounded up the sheep from their *heimaland* and *afrétt*, when the date had been decided (Jónsson, 2004). In *Grágás* it had already been taken into account that farmers had to participate in the roundup on *afréttur* as well as they had duties to clear their private mountain and grazing areas of sheep. If one would not undertake these duties, he had to pay a fine to all of those that had sheep there (Karlsson et al., 1992).

3.2 Modern times development

From the establishment of *Jónsbók*, no significant changes were made on the sheep grazing regime and governance for an extended period, although Iceland went under the Danish Crown in the late 1300s and lost most of its legislative powers and function it had. It was only in the late 19th and throughout the 20th century that the next evolution of major institutional changes concerning the sheep grazing regime occurred within the Icelandic society. In 1918, Iceland became a sovereign state with the Act on Unions (is: Sambandslögin), and in 1944 *Alþingi* declared full independence. With the adoption of a constitution, the Republic of Iceland had been founded (Harðarson, 2006).

[2] Icelandic direct quote: "því að það hæfir eigi öllum byggðarlögum einn veg til"

In 1874, the Icelandic nation received a constitution from the King of Denmark where *Alþingi* was given legislative and financial power over domestic matters. At the beginning of the 20th century, Icelanders were given a Home rule, which meant that Icelanders had authority in most domestic affairs (Harðarson, 2006). Two years earlier a direction on local governance in Iceland (is. Tilskipun um sveitarstjórn á Íslandi) was published, where the body of democratically elected *hreppsnefnd* (en. Rural District committee) was introduced. It had various roles and partly replaced the function of *hreppstjóri* (en. district administrative officer), among other things they were now accountable for the sheep grazing matters (e.g., *afréttir* and mountain herding). The major changes on sheep grazing regime where that now each *sýsla* (en. county) committee, where obligated to construct a regulation regarding *afrétti* and general sheep grazing matters in their region. Moreover, detailed ear-marks files to identify sheep from each farm should be printed every ten years in minimum. Then the *hreppsnefnd* would follow this regulation and plan the operation according to it. In other words, each county committee (is: sýslunefnd) set out the rules, and legislation on matters regard sheep grazing, then *hreppsnefnd* would put them in action and be accountable for the practical part of it (Hið íslenzka bókmenntafélag, 1875). In 1918, Iceland became a sovereign state with the Act on Unions (is. Sambandslögin). Finally, in 1944 *Alþingi* declared full independence and adopted a constitution, the Republic of Iceland had been founded (Harðarson, 2006).

Farmers experienced previously unknown prosperity in the late 19th century, as well paid markets opened for exports of alive sheep to Britain (Þórhallsdóttir, Júlíusson, & Ögmundsdóttir, 2013). The export of sheep from Iceland was however short-lived. The export and prosperity ended at the beginning of the 20th century which resulted, in combination with natural disasters and diseases, in economic crisis amongst the absolute majority of Icelandic farmers. The crisis engendered in a large-scale emigration of people from Iceland to North America. Furthermore, the urbanization of Icelandic society can somewhat be traced to this sheep farming crisis and simultaneously fisheries were gaining momentum as a viable industry. The urbanization increased by large during the Second World War period and afterward (Blöndal, 1982).

In the year 1959, a committee was formed by the Minister of Agriculture to construct a body of laws on rangelands and herding affairs. The main objective of this was to bring

the old formal and informal institutional settings into the national legal framework. That is, not transforming the system outlined in *Grásgás* and *Jónsbók*, and those collective-choice rules and norms used by the local governments. Ten years later, the Act on Highland rangeland matters, mountain herding, etc. No. 42/1969 was passed through *Alþingi* (Alþingi, 1969). A good indicator of this will to reforming these rules is that the local government authority of governing is acknowledged, their role is made more explicit and in some cases is their power increased. A good example of this is various paragraphs in the act, which contain provisions for the local government to stipulate further and in details, the implementation of the rules regarding mountain herding. The local government implements these rules by construction a bylaw for their municipality, or for few adjacent municipalities (Alþingi, 1969). Vegetation protection is quite prominent in Act on Highland rangeland matters, mountain herding, etc. No. 42/1969 as well as in the Act on Soil Reclamation no. 17/1965. *Ítala* is a critical figure about protection in both of these laws; the highland rangeland matters act no 42/1969 states that *ítala* should be determined from grazing capacity (is: beitarþol) of land. In the Soil Conservation Act no. 17/1965, the 17th paragraph state that land use should only be performed in such matters that quality of land would not be depleted or destroyed. The number that would come out of the *ítala* process should state the maximum number of sheep that could graze about the carrying capacity. The act says that rangelands should have the maximum number of sheep according to *ítala* process, and not fewer than that (Alþingi, 1965, 1969).

In 1986 new act on rangelands and mountain herding was passed by the parliament, The Act on Highland rangeland matters, mountain herding, etc. No. 6/1986. However, no significant changes were made regarding the governance and structure of mountain herding and *ítala* process (Alþingi, 1969). This act doesn't set limits on the stocking density of sheep on rangeland (*ítala*), commons nor privately own. However, it was implemented that if formal complaints or comments have been made about possible overgrazing or poor rangeland conditions, the *ítala* process can begin. The parties eligible to complain and demand the activation of the *ítala* process are following:

- Farmers and local government in the area in question, or nearby area if there is a significant sheep crossing between areas.

- The adjacent areas boards of mountain herding districts if there is a considerable sheep crossing between areas.
- Vegetation protection committee of the county or the neighboring county if there is a significant sheep crossing between the counties.
- The Soil Conservation Service of Iceland.

The *ítala* process is, in general, the following; a council is formed which consists of a chairperson appointed by the District Commissioner (is. Sýslumaður), and two members named by the Soil Conservation Service on the one hand and the Famers Association on another. The council shall determine the total amount of livestock allowed on the communal grazing land, so its carrying capacity is utilized entirely but not more than that. This number is found by obtaining propositions from experts in this field. The local government is responsible for ensuring that a correct amount of sheep are in the area in question. Article 29 of the act explicitly states that revaluation of the *ítala* shall be made four years after the first validation (Alþingi, 1986).

3.3 Agricultural policies and their impacts on sheep farming

For centuries, farming in Iceland was centered on sheep farming. For long, most Icelandic population were farmers or workers on a farm and practice subsistence farming. Short summers with limited and labor-intensive hay-making for fodder and harsh winter, grazing was a limiting factor for the size of sheep flock each farmer could have. It wasn't until the 19th and 20th-century industrial revolution in hey making methods and better housing; farmers had the possibility increase their livestock number significantly (Júlíusson & Jónsson, 2013). In that time simultaneously, the production focus shifted from sheep-milk and wool production to meat production (Þórhallsdóttir et al., 2013).

The foundation for the current subsidy system can be traced to the Act on Slaughtered Livestock (is: Afurðarsölulögin) from 1934. With this act, a course for public pricing of agricultural products was constructed and its production and sale, as well as it was acknowledged that farmers could form unions to protect their rights and interest, just as the labor unions (Alþingi, 1934). The Act on Production Council in Agriculture no. 94/1947 (is. Lög um framleiðsluráð landbúnaðarins, verðskráningu, verðmiðlun og sölu á landbúnaðarvörum o.fl.) came to force in 1947; the act explicitly stated that farmers

should receive comparable wage as similar professions in Iceland. Therefore, the state authority was made responsible for keeping farmers income at the socially acceptable level, as well it encourage them to develop and increase their production with public funding. In 1960 the production council act was changed, and with those amendments, the export subsidy was introduced who could be as high as 10% of the total production value. These changes were made because export of agricultural products (mainly lamb meat) was thought necessary for the farmer's welfare, and the government had to subsides it as they did towards the fisheries sector (Alþingi, 1947, 1960).

In result of these laws and policy interventions, the number of sheep increased significantly (Figure 4). Which also relates to the fact that the Icelandic economy in general significantly advanced from independence and end of the Second World War. These subsidies, however, resulted in the production of meat was beyond the national consumption, so much had to be exported. However, since the price on foreign markets was not high enough to sustain the cost of production, it was hard for farmers to get full price for their product. This situation of overproduction necessitated changes and actions from the government (Ó. Arnalds & Barkarson, 2003), to cope with the situation, amendments were made in 1979 on the Act on Production Council no. 101/1966, where the measure was introduced to limit the sheep production. The introduction of quota that was calculated from criteria called *búmark*, which was based on an average production of each farm between the years 1976 to 1978. However, this *búmark* was not a right to produce but instead used as a benchmark for reduction of governmental payments. That action, in a combination of higher tax (200%) on concentrate feeds resulted in a decrement of production (Alþingi, 1979; Ó. Arnalds & Barkarson, 2003).

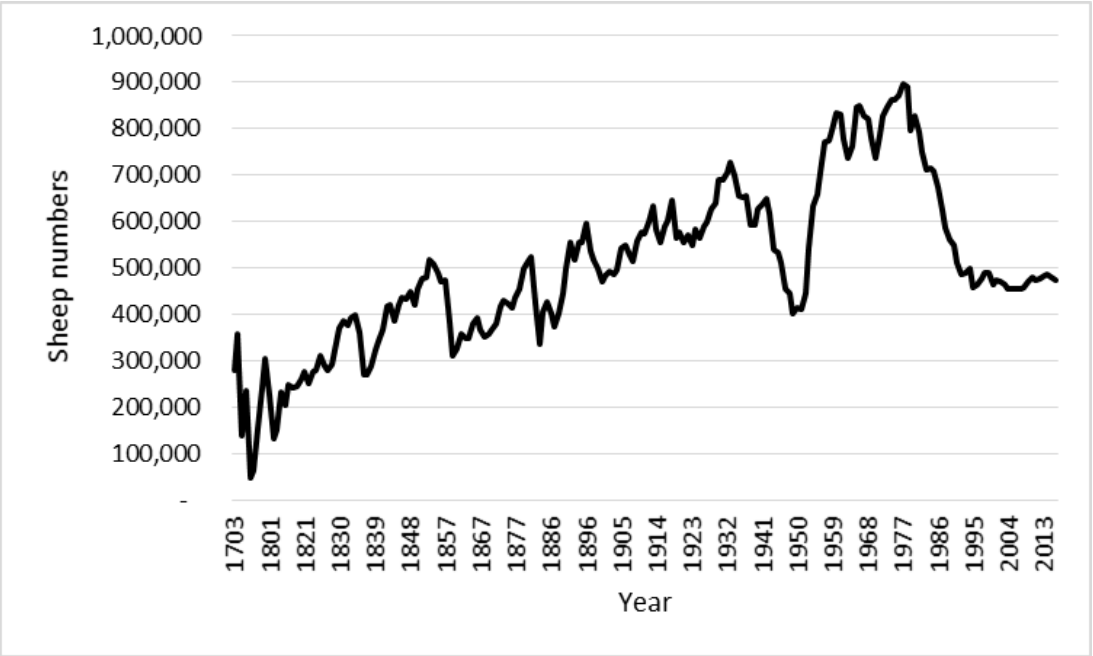


Figure 4. The development of the sheep population size in Iceland from 1703 to 2016, assessed by the number of winterfed eves (Datamarket, 2014; Hagstofa Íslands, 2017).

In 1985 Act on Agricultural Production, Pricing and Sale no. 46/1985 (is. Lög um framleiðslu, verðlagningu og sölu á búvörum) came into force, the main novelty in it was that now the shift of responsibly was made to the Minister of Agriculture. The act stated that now the government and farmers should make a contract, regarding the payments to farmers and their working conditions, for a specified period. This contract is usually referred as the Agricultural Products Contract (is: Búvörusamningur). It was the general acceptance that the production of agricultural goods still needed public control, and it had a clause that it was made possible to adapt payments to the local situation, for example regarding land-use and land quality, and tax on fodder was maintained (Alþingi, 1985). In 1993 new Act on Agricultural Production, Pricing and Sale no. 99/1993 came into force (Alþingi, 1993), which was the successor of the act no. 46/1985. The objective of both these bodies of laws was the same, and the framework regarding production control is similar. The new act no. 99/1993 was based on a modification that had to be done to cope with the clauses in the contracts mentioned above (Alþingi, 1993; G. Stefánsson, 1998). In the period between 1985 and 1993, three contracts were made, 1985, 1987 and 1991, the latter introduced the most substantial changes of those threes. The objective of the 1991 contract was to make sheep farming more efficient, to do it exports subside were abolished as well as public price insurance of production. Instead,

to move farmers closer to the direct market payments were introduced, based on the estimation of sheep production sold over the period of validity, which was four years (G. Stefánsson, 1998).

In 1995 new contract was made between farmers and the government which was quite different from the previous one. Interestingly no parties from the market were invited to participate in the negation process as before, such as labor unions (Landbúnaðarnefnd, 1995a, 1995b). The objective of the contract was somewhat similar to the previous ones, increasing the efficiency and make agriculture more profitable, as well as achieve a balance between production and sales. The last objective, which is of the most interest towards this study, was to promote environmentally sound sheep meat production. This kind of statement had not been set out, explicitly at least, before. The contract had no measures to reduce the protection explicitly, only to coordinate production and sale. The direct payments were now not linked to production, but a farmer had to have a certain number of winterfeed-sheep to receive payments. Furthermore, the contract made pricing of agriculture production free. The outcome of the contract was the production increased more than the sale, but according to the Auditor General of Iceland, the outcomes of the environmental objectives were positive as funding was provided on projects like *Farmers heal the land* (Ríkisendurskoðun, 2002). That project is of a restoration nature, where the government (Soil Conservation Service) supports farmers' reclamation activities. This support is generally in the form of payments for artificial fertilizers and seeds as well as knowledge support from the Soil Conservation Service staff (A. Arnalds, 2005).

The new contract was made in 2000 between the agricultural sector and government, for the years 2001 to 2007. Significant changes were made with the introduction of Quality Management of Sheep farming (QMS), where farmers receive extra payments for participating in that voluntary program (Ríkisendurskoðun, 2010). More in-depth discussion of the QMS will be provided in next sub-chapter. In 2007 new six-year contract came into force, its validity was however extended until 2015 due to the global financial crisis and its aftermath (Ríkisendurskoðun, 2010). This contract further increased payments towards the QMS, as well it had a clause of sustainable land use in its objectives which was a novelty. The direct payments were still based on the number of winterfed

sheep. However, if the rangeland condition was so bad, that the on-farm sheep numbers would possibly result in overgrazing and land degradation it was allowed to adjust the amount of livestock to acceptable number according to the Soil Conservation Service and other governmental bodies, but in the same time keep intact subsidies (Atvinnu- og nýsköpunarráðuneytið, 2007).

The current contract between sheep farmers and the government came into force in 2017 and is supposed to last until 2026. Direct payments in current form are supposed to decrease during its validity and for the final year not be provided. Instead, other means of payments will increase their share, for example, the QMS and other new forms of support are provided such as livestock payments (is. Gripagreiðslur) where a certain amount is paid for each farm animal (Atvinnuvega- og nýsköpunarráðuneytið, 2017b).

3.4 The Cross-Compliance Policies in Iceland

As above stated Cross-Compliance mechanism of the QMS was introduced in Icelandic legislation in the year 2003 and brought an attempt to introduce the cross-compliance mechanism to the sheep grazing policy framework.

First regulation on the QMS came into action in 2003; the second article defines sustainable land use as "productivity of land is sufficient and utilization within the limit that vegetation is in equilibrium or progress in The Soil Conservation Service evaluation." (Landbúnaðarráðuneytið, 2003). With this new program, there was an urgent need for constructing a holistic vegetation assessment of Icelandic rangeland (Ó. Arnalds & Barkarson, 2003). This assessment got the name *Nytjaland*; this project classified the land according to vegetation, as well as it collected information on farmland boundaries. Three different stakeholders worked in together in this project, the Soil Conservation Service, the Icelandic Agricultural Research Center, the Ministry of Agriculture and the Farmers Association. The usage of the data generated by this project has been used in assessing the land use of participants of the QMS. However, since 2008 no further development has occurred on the data or the monitoring of vegetation changes according to the Nytjaland's classification (Gísladóttir, Brink, & Arnalds, 2014).

Participation in the QMS is voluntary, but as above stated those that do receive additional subsidies, these payments are around 25% of total sheep farming subsidies (slight difference between contracts) (Atvinnuvega- og nýsköpunarráðuneytið, 2017b).

To participate in the QMS, one has to send an application which contains information on his farming operations. Such as information about his rangelands both private and common, the numbers of livestock, grazing period and a breakdown of numbers of livestock per type of land; *afréttur, upprekstarheimalönd* (en. Collective herding private rangelands)*, and heimaland*. According to article 13 of the first QMS regulation, the Soil Conservation Service was responsible for evaluating the participant land and land use, the evaluation should be based on Appendix 1 of the regulation. The regulation's appendix explicitly demonstrates on what grounds the benchmark for sustainable land use should be determined. According to article 14, if the land use does not meet the criteria of sustainable land use, participator has to make a land improvement plans that can have up to 10 years of validity (is. Landbótaáætlun) which the Soil Conservation Service have to accept. The factors that are used to determine land use sustainability are; soil erosion and vegetation condition. Two sets of thresholds were set out, one for *heimalönd* and *upprekstarheimalönd*, and one for *afréttir*. The 5 point rating scale was used in land estimation, **A** where there was none or limited erosion and full vegetation cover with good yield. **B** where there was limited or some erosion, vegetation cover pretty good and good grazing plants. **C** where some erosion existed, few good grazing plants and/or poor vegetation cover. **D** where there is significant erosion, overused land. **E** where there is a high or very high level of erosion. Not suitable for grazing as the process of land degradation is ongoing (Landbúnaðarráðuneytið, 2003).

In 2008 a new regulation on the QMS came into action. However those that already were participating in it didn't have to apply again, and that rule has remained in every new regulation implementation. At that time the Icelandic Food and Veterinary Authority had been established, and according to the second article, the organization was responsible for the execution of the QMS. However, the Minister of Agriculture was allowed to make a contract to an external (public or private) inspection body, on the subject of supervision and assessment of the land that is used for the QMS. The definition of sustainable land use was slightly modified, "Utilization which neither leads to inferior conditions of soil and vegetation nor prevents recovery of land in bad condition, considering soil and vegetation." The regulation, unlike its predecessor, defined land use as utilizing land for grazing. In the new regulation, a special chapter was dedicated for land use. However, no major changes were made on how participants should manage

their land use. Those novelties that can be found are *inter alia* in the 12th article. Which explicitly states that deserts and erosion areas should not be utilized for grazing unless the land improvements plan is made that contributes to actions to prevent grazing in those areas and they will be made suitable for grazing. The criteria of sustainable land use and land assessment are set out in Appendix 1 is identical to the one in the previous regulation. However, in Appendix 2 a prototype on how land improvement plans should be made and look is provided (Sjávarútvegs- og landbúnaðarráðuneytið, 2008).

In 2013, a new regulation was constructed in the Fisheries and Agricultural Ministry. The definition of land use was identical as well as the definition of sustainable land use reminiscent of the previous one, but the water was mentioned as a resource which had not been in the previous ones. A new clause came forth that obliged participants to only use the land that they specify in their application, a clause of this nature had not existed in previous regulations. Land use, like before, was addressed in the 4th chapter. In article 12, which discuss land use principles, the clause on that desert areas should not be utilized was not to be found in the new regulation. Nevertheless, land of participants had to meet those standards that were outlined in Appendix I which was thoroughly changed in the new regulation (Atvinnuvega- og nýsköpunarráðuneytið, 2013). Now the criteria for assessment of land condition and land use is based on a book by Sigþrúður Jónsdóttir published by the Soil Conservation Service. This book thoroughly demonstrated how land could be assessed, for example by providing a schema for evaluating it. This method categorizes land in the 6-point grading scale, from 0, excellent, to 5, unsuitable for grazing (Jónsdóttir, 2010). One of the main advantage is how easily it can be executed, and has in fact been used in projects which are not in direct relation to the QMS (Stefánsson, Hermannsdóttir, & Guðmundsson, 2017).

In the 2013 regulation appendix, the 6-point scale was used that categorizes and describes the characteristic features of different types of land. It is stipulated that land that is in category 5 should not be used for grazing, as the soil is unstable and eroding, minor productivity and withered grass and vegetation cover tattered. It is demanded that land improvement plans have to be constructed to make this land fit for grazing. Thus, the clause can be understood in a way that if this kind of land is found in an *afréttir* for example – either the farmers have to stop using the rangeland or protect these vulnerable

sites with fences or other measures. As in the previous regulation, relative values are given for land condition, they were however somewhat simplified and tightened (Table 1). A prototype of land improvement plans is, like before, set out in appendix two. It has however been significantly refined and made more accessible for the general participator to construct without external assistance (Atvinnuvega- og nýsköpunarráðuneytið, 2013).

Table 1. The criteria for the condition of soil and vegetation in the 2013 regulation on the QMS and onwards. It contains two sets of criteria, one for commons and another for private, and collective herding private rangelands

	Category 5 Erosion and vegetation condition	**Category 3+4+5 Erosion and vegetation condition**
Heimalönd and upprekstrarheimalönd		
Land improvement plan not necessary	<5% Maximum 5 ha	<33% Maximum 40 ha
Land improvement plan necessary	>5%	>33%
Afréttir		
Land improvement plan not necessary	<5%	<33%
Land improvement plan necessary	>5%	>33%

Source: Atvinnuvega- og nýsköpunarráðuneytið (2013).

Only two years after the new regulation came to force, amendments were made on the land use chapter (4th chapter) which contained important modifications on few articles. First, in the article 13 that covers the land use principles, the sentence was withdrawn which said that "Producer that don't fulfill the condition of land use according to 4th chapter, doesn't fulfill the criteria on quality management in sheep farming" (Atvinnuvega- og nýsköpunarráðuneytið, 2015b). Second, the content of articles 15 and 16 about land improvement plans on *heimalönd* and *upprekstarheimalönd*, and *afréttir* were combined under one paragraph, the 15th. In the 3rd paragraph of the new article 15, it is explicitly stated that the producers are allowed to seek assistance from Soil Conservation Service in the construction of land improvements plans. That kind of provision was not found in the original regulation (2013). Thirdly, paragraph 15 of the same article, provides permission to The Icelandic Food and Veterinary Authority to validate land improvement plans, although the plans will not lead to the attainment of

the criteria outlined in appendix 1. Lastly, in the 4th paragraph of Appendix 1 in the new regulation, a sentence was added to clarify that those that do not fulfill the criteria of sustainable land use have to construct and follow land improvement plans (Atvinnuvega- og nýsköpunarráðuneytið, 2015b).

At the end of the year 2017, a new regulation was again introduced on the QMS. However, no changes were made on the one from 2013 and its amendments (Atvinnuvega- og nýsköpunarráðuneytið, 2017a). The reason for the new regulation was only to integrate the regulation to the amendments that have been made between 2013 and 2017. That is no changes were made in the governance of the Quality Management (Legal Counsel of the Ministry of Industries and Innovation, e-mail January 16th, 2018).

Now after a brief overview of the development of the QMS, the focus is on its governance and organizational structure. In Figure 5 is the organization structure of the QMS, where the relationship of key actors to one another is shown, and their role explained. As discussed above the Ministry of Industries and Innovation is the responsible authority of the QMS. However, the ministry entrusts the Icelandic Food and Veterinary Authority to handle its governance. Due to professional knowledge embedded in the Soil Conservation Service, land use matters of the QMS is outsourced to that organization. However, the Soil Conservation Service does not have to power to make an administrative determination on land use matters. Thus, the Food and Veterinary Authority bears that responsibility (Atvinnuvega- og nýsköpunarráðuneytið, 2017a).

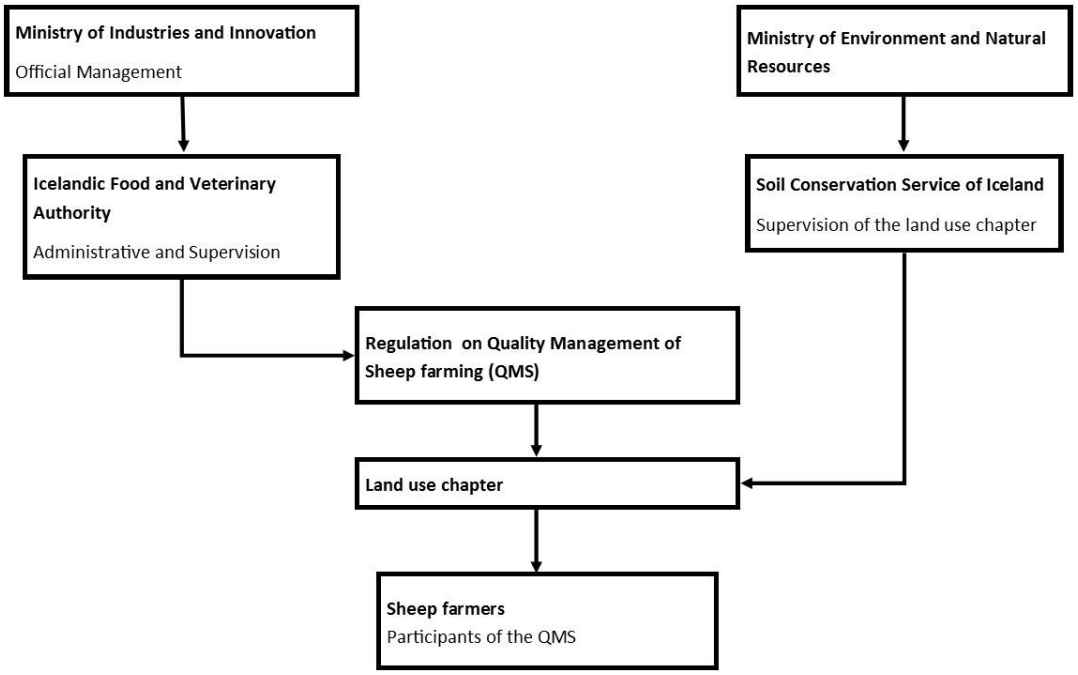


Figure 5. The organizational structure of the QMS with the focus on the land use chapter, based on the latest regulation of the QMS from 2017 (Atvinnuvega- og nýsköpunarráðuneytið, 2017a).

The application process has been somewhat similar throughout the lifespan of the QMS in Iceland. Figure 6 is a simple explanatory diagram of the QMS process with a focus on the land use chapter. In each of the regulation, there is a clause on that participators must attend to a preparation course, where they learn about the duties that they are obliged to undergo. When farmers apply for participation in the QMS program, their farming and land use practices are evaluated by above mention organization. If their land use is determined unstainable according to the regulation mentioned above appendix, the process of constructing a land improvement plans begins which is shown in Step 2.B in the diagram. However, although some participants have to go that process on, they are still active members (Step 2.A). Every year, 2% of the participants go through a supervision process (Step 3.A). Furthermore, those participants that have to undergo a land improvement plans are monitored separately within a five year since it was constructed (Step 3.B). Every land improvement plans should have ten years validity at a maximum when the validity period has ended the outcomes of the plans are evaluated (Step 4.B).

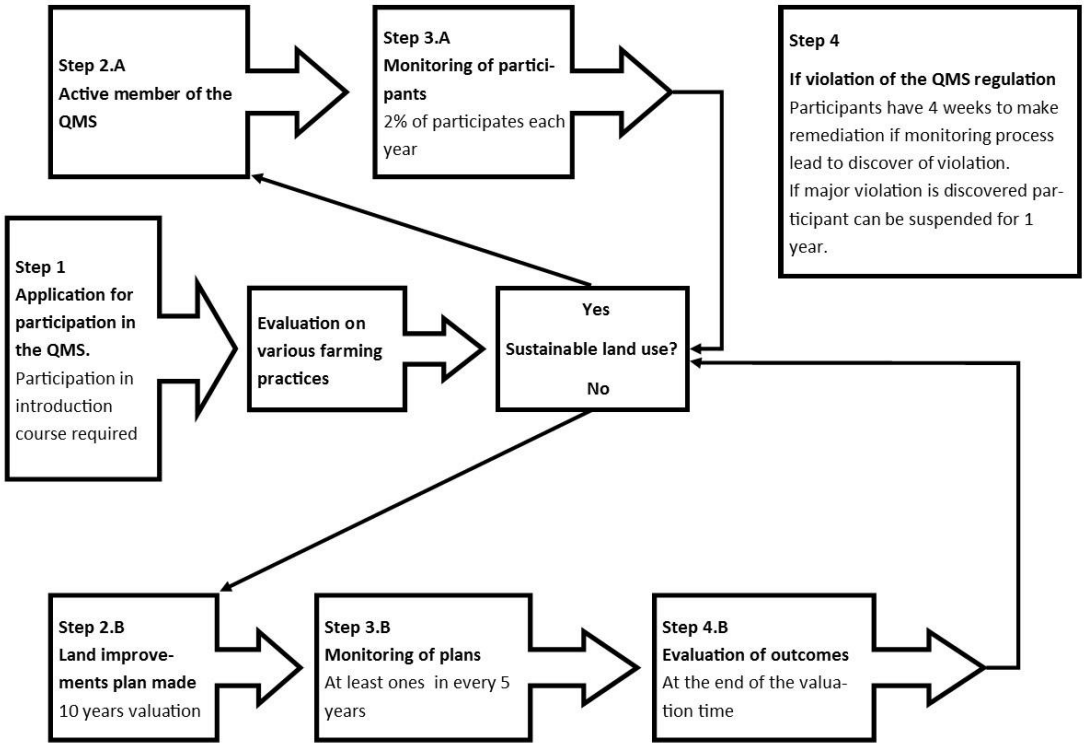


Figure 6. The QMS participation process with emphasis on the land-use chapter. The process of land improvement plans is shown in steps B. Participants still follow steps 2.A to 4.A although they have to make land improvement plans. Based on the 2017 QMS regulation (Atvinnuvega- og nýsköpunarráðuneytið, 2017a).

4 Methods and study design

The construction of research process was twofold. On the one hand gather secondary data that would be relevant for examining and analyses the Icelandic sheep grazing regime from an institutional and social-ecological systems perspective, and on the other hand to analyze the QMS from the key stakeholder's point of view.

4.1 Data Collection

In order analyze the Icelandic sheep grazing regime from an institutional and social-ecological systems perspective, secondary data was gathered. The gathering of data was focused on the four tiers of the SESF which are resource units, resource system, actors and governance systems. As reviewed in chapter 3, local governments have a key role in the governance of the Icelandic sheep grazing regime. Two municipalities were chosen as a means to analyze the local governmental bodies, the Skútustaðahreppur municipality, and Borgarbyggð municipality. The argument for this selection is that those municipalities are very different. This difference appears on various grounds such as the municipalities are located in different areas in Iceland, have different population dynamic and different employment opportunities. These municipalities were furthermore used when the selection of interviews was conducted, as will be discussed below. The secondary data that were collected were of various types, such as legal documents, statistical data, and reports.

In the policy analysis of the QMS, semi-structured in-depth interviews were used as a data collection method and selection of interviewees was made according to purposeful sampling method (Palinkas et al., 2015; Suri, 2011). Qualitative research methods were used because they offer an in-depth description of a complex phenomenon's. They do so by tracking unique or unexpected events; shed light on the experience and representation of events by different people with various stakes and roles, as well as giving a voice to those people who often have views that are ignored or at least not pronounced (Sofaer, 1999). The first step in the process of interviewee selection was to construct stakeholder groups. After stakeholder groups and subgroups had been constructed, then single stakeholders (individuals) were selected. Both stakeholder groups and single stakeholders were chosen on the basis of the research objectives as well as a list of submitted comments regarding changes to the act of agricultural products

no. 99/1993 made in 2016 in relation to the new agricultural production contract (Alþingi, 2016b). Furthermore, to gather opinions from local governmental officials, the two different municipalities, Skútustaðahreppur and Borgarbyggð, were again used. Regarding selection local government interviewees, both individuals from the council and agricultural- and environmental committees were selected. List of the stakeholder groups that interviewees belonged to is shown in table 2.

Table 2. List of stakeholders of the Icelandic sheep grazing regime and the QMS, constructed for the purpose of interview data collection.

Stakeholder group	Subgroup if appropriate	Stakeholder
Local Government	Borgarbyggð	Council
		Committees
	Skútustaðahreppur	Council
		Committees
National Government	Governmental Authorities	Ministry for the Environment and Natural Resources
		The Ministry of Industries and Innovation
	Governmental Organizations	Soil Conservation Service of Iceland
		Icelandic Forest Service
		The Icelandic Food and Veterinary Authority
University		University of Iceland
		The Agricultural University of Iceland
Agricultural Sector	Farming Interest Organizations	Farmers Association
		National Association of Sheep farmers
		Regional Agricultural Associations
	Agriculture Extension Service	The Icelandic Agricultural Advisory Centre
NGOs		Consumers Association of Iceland
		Landvernd

In total, 26 semi-structured interviews were conducted from June to September 2017, a special interview guide was made and followed which can be found in Appendix 4. The interviewees were reached out by e-mail where the purpose of the research was explained, and they were asked if they would like to participate in the research. The interviews were performed and located according to interviewees' wishes, most often in their workplace or home and ranging from 40 minutes to 2 hours in length.

4.2 Data Analysis

The analytical process of the resource governance Icelandic sheep grazing regime as a social-ecological system was based upon analyzing secondary data from the perspective of SESF fist- and second-tier variables in the, found in appendix 4 (McGinnis & Ostrom, 2014). The institutional analysis of the sheep grazing regime furthermore draws heavily from the IAD framework closely related to SESF. In the analytical process, particular focus was on the governance systems of the two municipalities and how the grazing governance on the rangelands differs.

When all interviews data had been collected for the QMS policy analysis, they were transcribed word for word and read carefully few times to analyze their main themes. The coding process is the backbone of analyzing qualitative data according to as it identifies the critical points in the raw data by systematical categories and codes words and phrases that are of importance or interest of the research (Strauss & Corbin, 1998). The coding process was based on open, axial and selective coding. This process generated four core categories, where a specific aspect of the phenomenon was explained. List of these categories is shown in table 3 (Moghaddam, 2006). To understand and utilize the codes and what they represent, the ideology of framework analysis was used. It has proven its usefulness in applied policy research (Spencer & Ritchie, 2002). The mapping and interpretation process, questions were constructed for each theme (Srivastava & Thomson, 2009). This questions aimed to provide an explanation of views of the interviewers and provide explanations on the opinions of the stakeholders on the key aspect of the QMS land use chapter (Spencer & Ritchie, 2002). In order to keep full confidentiality of views of the single interviewees, their name or the positions that they hold was relived. Only the stakeholder groups or subgroups are used in the analysis and discussion of the findings Direction quotations that were used in the results have been translated by the author from Icelandic to English.

Table 3. The analytical framework used to structure the stakeholder interview findings, for the policy analysis of the QMS.

No	Themes	Description	Key questions
1	Motives for change.	How new policies are suggested, established and introduced has a great impact on their effect and legitimacy.	• What was the motivation for change? • Who were the drivers (actors) behind the change? • How were the establishment and early implementation?
2	The QMS governance and monitoring.	How the governance structure is build up and functioning. Is the monitoring process effective and what is lacking. The core of the QMS is good governance structure and effective supervision of the participants.	• How is the governance performance? • Is the monitoring of participant sufficient? • Is the data collection sufficient? • Should there be more differentiation between property rights regimes? • What role has the Local Governments in the Quality Management? • Has the QMS increased awareness on the sustainable land use?
3	Laws connection and contrasts.	Various laws touch upon grazing management and vegetation protection. The connection between laws and the regulation is observed, as well as the wording of the regulation throughout time.	• How does the Quality Management interconnect with other laws/regulations? • What is the experience of the changes that have been made on the regulation? • Is the wording of regulation acceptable? • What are the views on sheep encroachment?
4	Stakeholder communication and cooperation.	How active communication and cooperation between different stakeholders are and their possibility to have a say and participate in the decision-making process.	• Which are the characteristics of conversations between stakeholders? • Are the voices of some stakeholders stronger than others in regards to decision-making process?

5 Results and Discussions

The results and discussion chapter is divided into two subchapters, responding to the objectives and research questions outlined. Firstly, an analysis of the Icelandic sheep grazing regime to understand it as a social-ecological system and seek to explains how it has been operating. Further, from analyzing its design at the national level, in-depth analysis is made of how the regime operates in practice, taking two locations in Iceland as cases in a comparative perspective to assess the main governance challenges and outcomes.

The following sub-chapter is on the policy analysis of the QMS land use clause and how it has been operating as a cross-compliance agri-environmental policy. With the aims of understanding the rationale for the establishment of it and what were the motivational and institutional driving forces behind it. The research objectives are assessed by analyzing the perceptions amongst the key stakeholders about effectiveness and operation of the land use clause in the QMS. The outcomes of the interviews will be used to discuss the implications of these findings for policy and practice in sheep grazing in Iceland and in particular for the QMS scheme and inform the last chapter that provided conclusions and recommendations from the study findings.

5.1 Analyzing the Icelandic sheep grazing regime and its performance as a social-ecological system

Starting at the national level, the social, economic and political settings for the sheep regime are rather similar on a national level. The economic development of sheep farming has been rather unfortunate in last decades, as revenues on sheep farms have not kept up with the modern standard of welfare. Few sheep farmers receive full income from sheep farming, and most have to work outside of the farm (Júlíusdóttir, Karlsdóttir, Benediktsson, Vésteinsdóttir, & Steingrímsson, 2009). The political landscape regarding sheep farming has been evolving but relatively stable in Iceland, as previous chapters have indicated. However, in recent years, the increment in political and public voices has occurred who want to make fundamental changes towards the agricultural system and grazing governance in Iceland. A good example of that is the parliamentary debates about the latest subsidy agreement between the agricultural sector and the government

(Alþingi, 2016a). This is in line with Europe's debates of the agricultural function and subsidies (Erjavec & Erjavec, 2009).

The governance system and institutions regarding the Icelandic sheep grazing regime, hence the constitutional rules regarding the governance of sheep grazing are uniform on a national level. The local government is bounded by the Act on Highland rangeland matters, mountain herding, etc. No. 6/1986 in establishing a mountain herding bylaw, which corresponds to the act (Alþingi, 1969). This translates into the local governmental actions whereas there are a high heterogeneity and different in capacity and context of the 74 local governments in Iceland.

When comparing the two municipalities, an important difference in the governance structure is that the municipality of Borgarbyggð was made up of by consolidation of other small municipalities, while Skútustaðahreppur has had the same administrative district for a long period. In mid-year of 1994 Borgarnesbær, Hraunhreppur, Norðurárdalshreppur, and Stafholtstungnahreppur consolidated under the name Borgarbyggð. In 1998, three other joined, Álftaneshreppur, Borgarhreppur, and Þverárhlíðarhreppur. In the same year, other nearby *hreppar* also formed a municipality of Borgarfjarðarsveit, the Andakílshreppur, Hálsahreppur, Reykholtsdalshreppur, and Lundareykjadalur. Finally, in 2005, Borgarbyggð, Borgarfjarðarsveit, Hvítársíðuhreppur and Kolbeinstaðarhreppur consolidated under the name Borgarbyggð (Samband íslenskra sveitarfélaga, 2013).

The mountain herding bylaws of these municipalities were published with five years apart, the one for Skútustaðahreppur in 2010 and the one for Borgarbyggð in 2015. Theses mountain herding bylaws both cover area larger than the municipality, but special department handles matters for each municipality. Furthermore, in Borgarbyggð each of the old municipalities has their special department that covers the old boundaries, the chairman of each department then form the grand department that focuses on the municipality as a whole (see figure 7). Due to no integration processes, the governance structure of mountain herding bylaw in Skútustaðahreppur is therefore somewhat more straightforward than in Borgarbyggð, as only one committee has a focus on these matters (see figure 8).

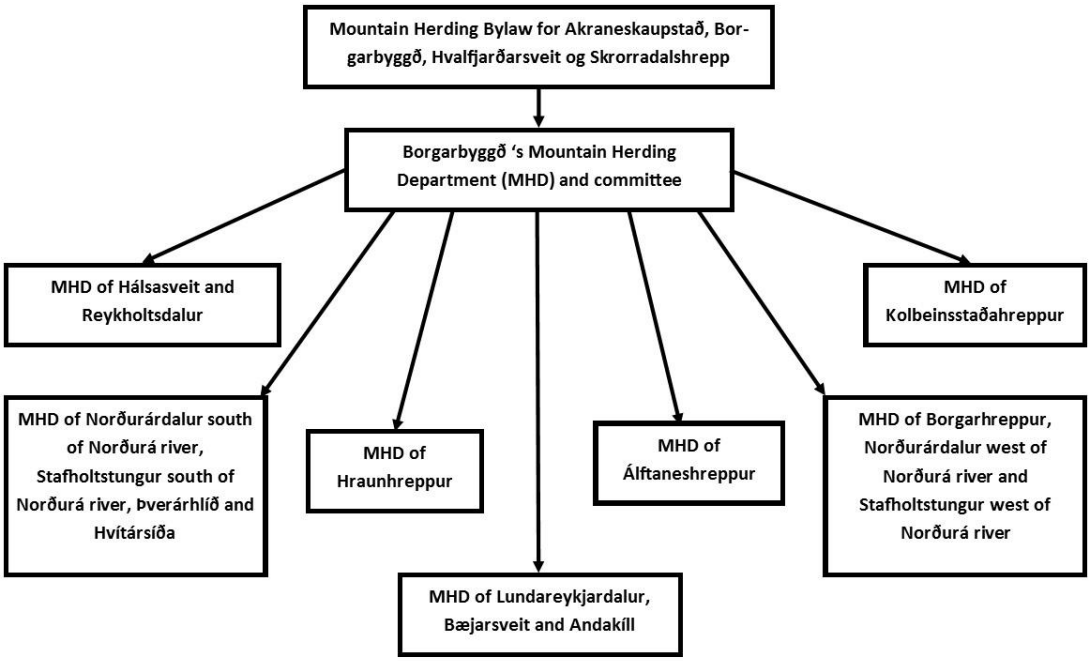


Figure 7. The governance structure of the Mountain Herding Bylaw in Borgarbyggð.

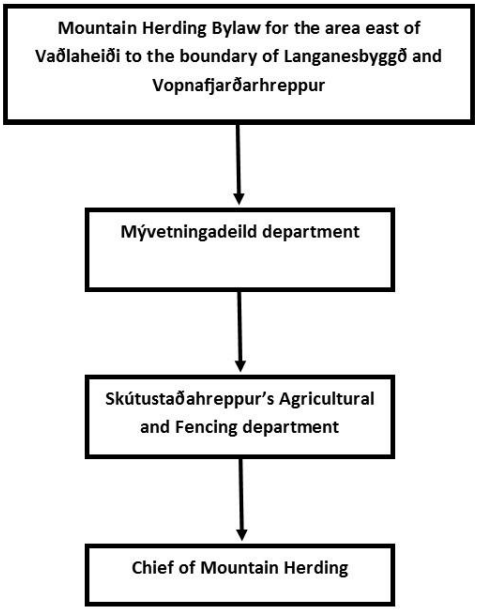


Figure 8. The governance structure of the Mountain Herding Bylaw in Skútustaðahreppur.

When comparing the two bylaws, it is clear that although the constitutional rules state quite clearly how mountain herding and rangeland protection should be executed (Alþingi, 1969). That is, local governments and farmers have considerable flexibility through collective choice rules and operation rules. Therefore the bylaws structure and governance vary between municipalities. In table 4 a comparison of the leading clauses

of each bylaw that are most relevant for the Icelandic sheep grazing regime is shown. These clauses are on vegetation protection, herding dates, and sheep encroachment. Other clauses that can be found in the bylaws are on matters such as sheep identification and folds (Atvinnuvega- og nýsköpunarráðuneytið, 2010, 2015a).

Table 4. Comparison of the main components of the mountain herding bylaw of Borgarbyggð and Skútustaðahreppur.

Borgarbyggð	**Skútustaðahreppur**
Dates of mountain herding	
Explicitly stated the difference between folds. Example of Brekkurétt fold: 1st herding shall be made on a Saturday that falls between 12th and 18th of September. 2nd herding shall be on a Saturday that falls on 27th of September to 3rd of October.	Explicitly says that 1st fold should be held no later than 25th of September. Mountain herding chief of each area determines the date of the 2nd fold. Clear of sheep should have taken place no later than 15th of October.
Driving of sheep to rangeland	
Not stated in the bylaw.	Agreement between Mountain herding chief and farmers on the driving of sheep to rangelands in the spring.
Vegetation Protection.	
2nd chapter of the bylaw covers *ítala*, reference to the clause of the Mountain herding act.	The mountain herding acting does not cover vegetation and soil protection.
Property-right regime	
Mixed between *afréttir* and heimalönd. Every landowner is obligated to clear his land, whether he as sheep or not.	Mixed between *afréttir* and heimalönd. Same rules for *afréttir and heimalönd* if more than just the owner uses them. *Heimalönd* should be cleared of sheep as often as necessary

Source: Atvinnuvega- og nýsköpunarráðuneytið, (2010, 2015a).

The comparison of the bylaws shows, the possibility for the local government to tailor the rules regarding rangeland utilization has existed within in the formal grazing institutions for a long time. This institutional arrangement allows the users to customize the rules to the local settings. It is highly possible that this characteristic of the sheep grazing regime is one of the main reason for it long endurance, as it is one of the core design principles for successful and longevity common-pool resource institutions (Ostrom, 1990).

The farmers are the actors within the Icelandic sheep grazing regime, as they utilize the rangelands by releasing sheep on to them. Farmer's numbers are hard to determine sufficiently, as limited data exists. However, farms numbers are a good indicator of the number of actors. In Iceland, 2,422 sheep farms were operating in 2016 thereof 30 in Skútustaðahreppur and 184 in Borgarbyggð (Hreinsson & Árnason, 2017). The national trend is that farms are located on their private property (Júlíusdóttir et al., 2009). The sheep farming profession is rather economical ungainful, the majority of farmers must, or choose, to seek after employment alongside the farming profession. In fact, a minority of farmers solely receive their income from the agriculture. Commonly it is the women's that gain income from outside of the farm while the male works to a more considerable extent on the farm (Júlíusdóttir et al., 2009). No reason is to deduct that this national trend does not apply to the two municipalities in question, at least to some extent.

Agriculture, industry, and tourism are the three most important industries in Skútustaðahreppur (Skútustaðahreppur & Teiknistofa arkitekta Gylfi Guðjónsson og félagar, 2013). The sheep farming in Skútustaðahreppur has witnessed the same evolution as elsewhere in the country when it comes to the sheep numbers. In 1981, 8,017 sheep were in Skútustaðahreppur, but there has been an almost steady reduction in number, resulting in 4,328 sheep in 2016 (Matvælastofnun, 2017). In Borgarbyggð agriculture is also a substantial part of the local economy, although the trend of previous years has been growing in other sectors such as the service industry. Furthermore, throughout the decade's strong educational institutions have been operating within the municipality, Bifröst, and Hvanneyri (Harðardóttir, Áskeilsdóttir, Pedersen, & Þórsson Stephensen, 2011). From the year 1981 numbers of sheep in the municipality have dropped substantially. In 1981, a number of sheep were 54,631 in Borgarbyggð, but now in the year 2016, the numbers had gone down to 34,464 (Matvælastofnun, 2017). Table 5 shows the division in a number of sheep after the size of a farm in the year 2016. It is safe to assume that in many cases those farms or individuals that have the lowest number of sheep keep them for recreational purposes only, not as a means of profession or income for the household (Hreinsson & Árnason, 2017).

Table 5. The sheep population and numbers of sheep farms in Borgarbyggð and Skútustaðahreppur in the year 2016. Farms are categorized according to their size; the smallest farms contain individuals that hold sheep for recreational purpose only.

	Borgarbyggð	**Skútustaðahreppur**
Number of sheep (resource units)	34.458	4.328
Number sheep farms in total	184	30
Sheep farms with		
>599 sheep (Average number on the farm)	6 (999 sheep)	-
400-599 sheep (Average number on the farm)	20 (489 sheep)	1 (545 sheep)
200-399 (Average number on the farm)	32 (292 sheep)	6 (293 sheep)
<200 (Average number on farm)	123 (76 sheep)	23 (87)

Source: Hreinsson & Árnason (2017).

Icelandic rangelands are the resource system which is utilized by the farmers. Single rangelands vary in size, and whether they are collectively or privately owned. However international organizations have classified that almost all agricultural land in Iceland can be classified as rangeland (Food and Agricultural Organization of the United Nations, 2017). The boundaries of rangelands are usually known and registered in national documents, often as old as from the 19th century, but often is uncertainty on the exact location of landholding boundaries. Furthermore, they have not been made on a publicly accessible form such as on GIS (Guðmundsson, 1981; Friðþór S. Sigmundsson, e-mail April 25th, 2018). Furthermore, since there is a free roaming of sheep policy in Iceland, clarity of rangelands boundaries can be rather blurred (Alþingi, 2013).

In relation to vegetation condition and soil erosion, the condition of Icelandic rangeland is bad at the national level. However, it does vary substantially after municipalities, a good example of this are Borgarbyggð and Skútustaðahreppur (Ó. Arnalds et al., 1997). Remote sensing studies have indicated that with lower grazing intensity since the 1980s, as well as warmer climate trends in Iceland, has resulted in an overall increment of vegetation cover in Iceland from 1980 to 2013 (Raynolds, Magnússon, Metúsalemsson, & Magnússon, 2015). To the local level, Skútustaðahreppur is larger in hectares than Borgarbyggð. However, the rangelands are similar at the size when looked into what areas are classified as a grazing resource system. That is, not the ones that are already protected from grazing and other areas such as glaciers and rocky mountains areas (Valdimarsdóttir, 2017b, 2017a). According to a recent estimate, the

condition of vegetation and therefore grazing areas is quite bad in Skútustaðahreppur (Figure 9), as often is the case with areas of the active volcanic zone (Ó. Arnalds et al., 1997). More than ¾ of all the area that can be classified as grazing areas are in bad condition, and there off 34% in states that are unsuitable for grazing. However, there is an active restoration work ongoing in the municipality as 17,640 ha are protected with fences, and further protection is planned within the area which is similar at the size (Valdimarsdóttir, 2017b). The state of vegetation and therefore grazing areas in Borgarbyggð is shown in Figure 10. The condition of rangeland is quite good in Borgarbyggð, as around 70% of land goes into first three categories of appendix 1 in the 2013 Regulation of QMS. Only 3% falls into the worst category which is the land that is unsuited for grazing (Valdimarsdóttir, 2017a).

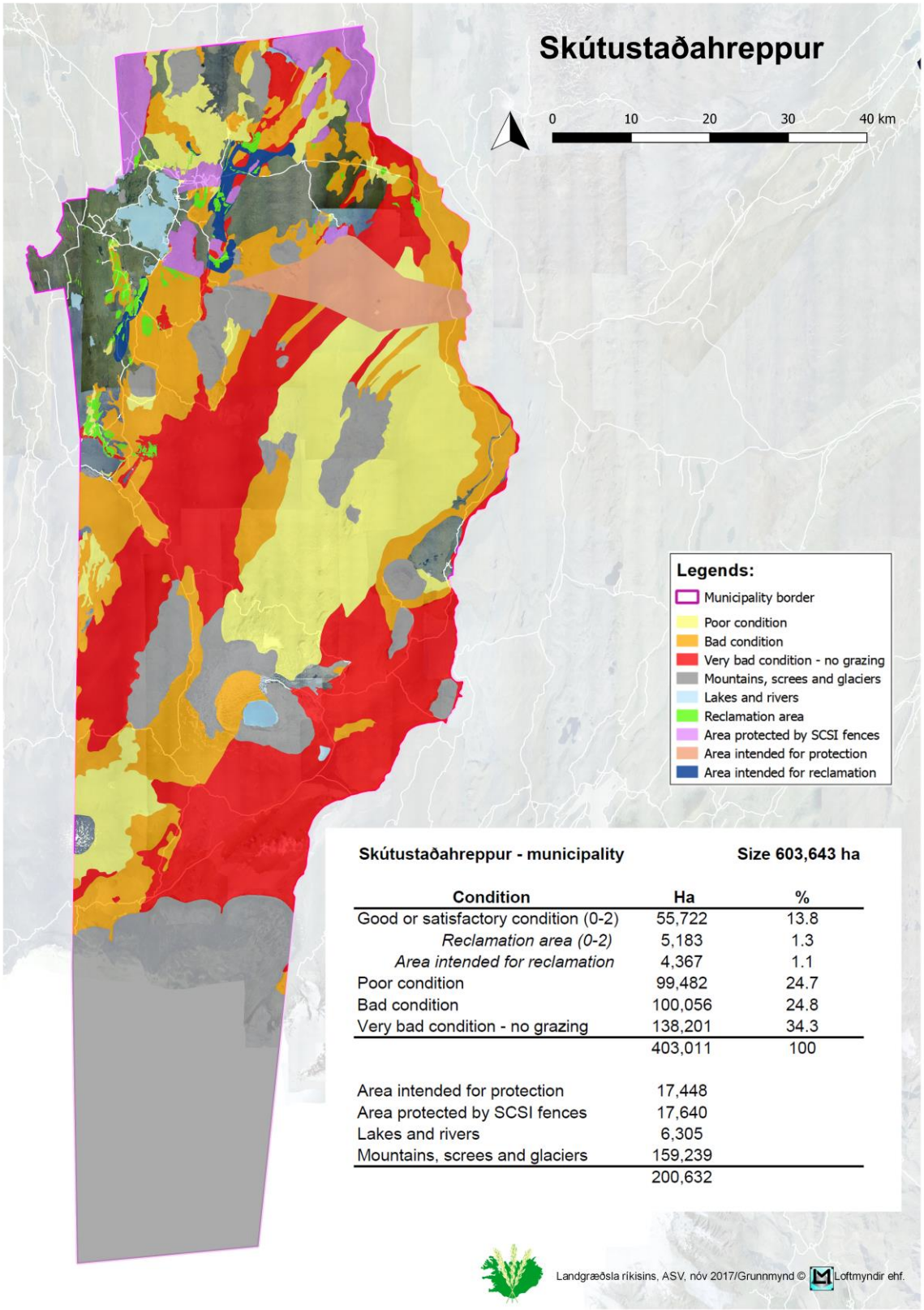
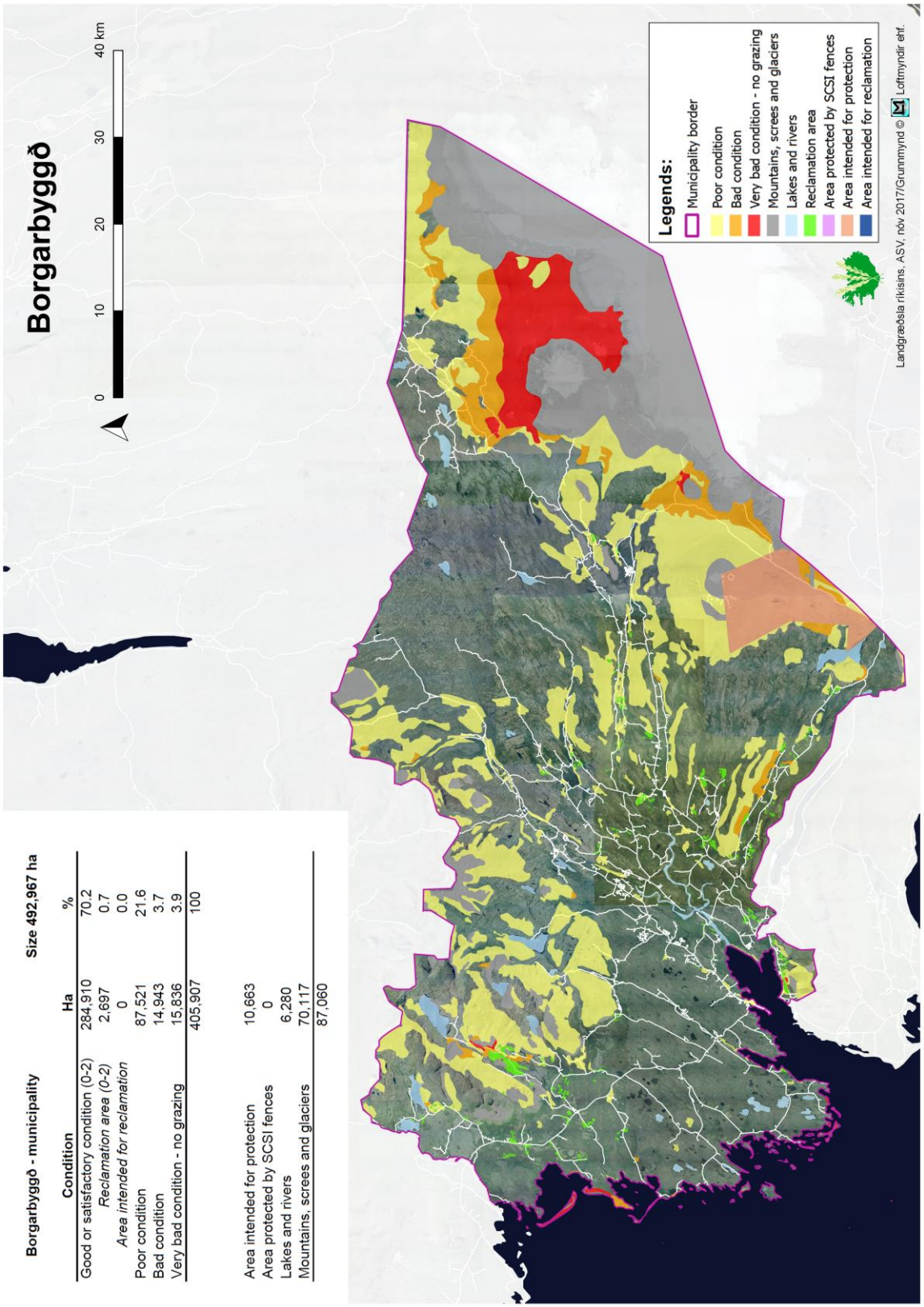


Figure 9. Vegetation and soil condition in the Skútustaðahreppur municipality (Valdimarsdóttir, 2017b).



Borgarbyggð - municipality **Size 492,967 ha**

Condition	Ha	%
Good or satisfactory condition (0-2)	284,910	70.2
Reclamation area (0-2)	2,697	0.7
Area intended for reclamation	0	0.0
Poor condition	87,521	21.6
Bad condition	14,943	3.7
Very bad condition - no grazing	15,836	3.9
	405,907	100

Area intended for protection	10,663
Area protected by SCSI fences	0
Lakes and rivers	6,280
Mountains, screes and glaciers	70,117
	87,060

Figure 10. Vegetation and soil condition in the Borgarbyggð municipality (Valdimarsdóttir, 2017a).

However, it is hard to adjudge how the development of the state of Skútustaðahreppur and Borgarbyggð rangelands has been as limited data exists. The data which is available is on such a large scale (1:100.000) that it is impossible to determine changes in the region as a whole (Head of Land Protection Department and the Soil Conservation Service of Iceland, e-mail November 28th , 2017).

To both sum up and discuss of interaction and outcomes, two figures are showed that summarise the difference in rangeland resource governance of Skútustaðahreppur (Figure 11) and Borgarbyggð (Figure 12). The action situation is not discussed in the picture as they will be discussed on a national level.

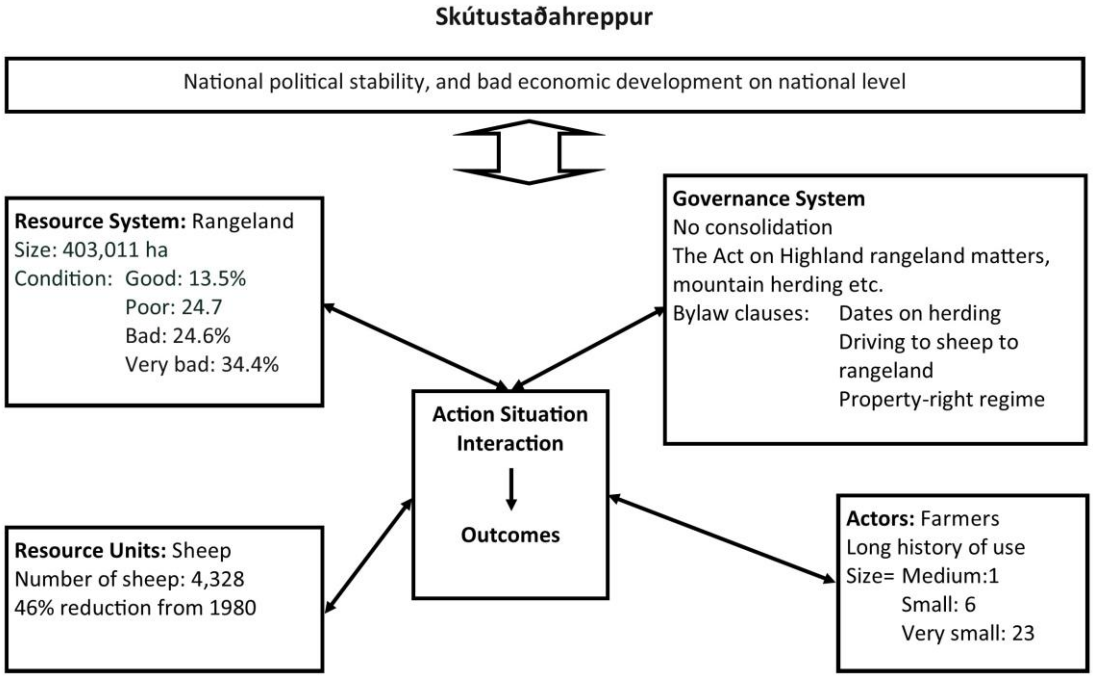


Figure 11. The structure of the rangeland governance in Skútustaðahreppur from the SESF perspective.

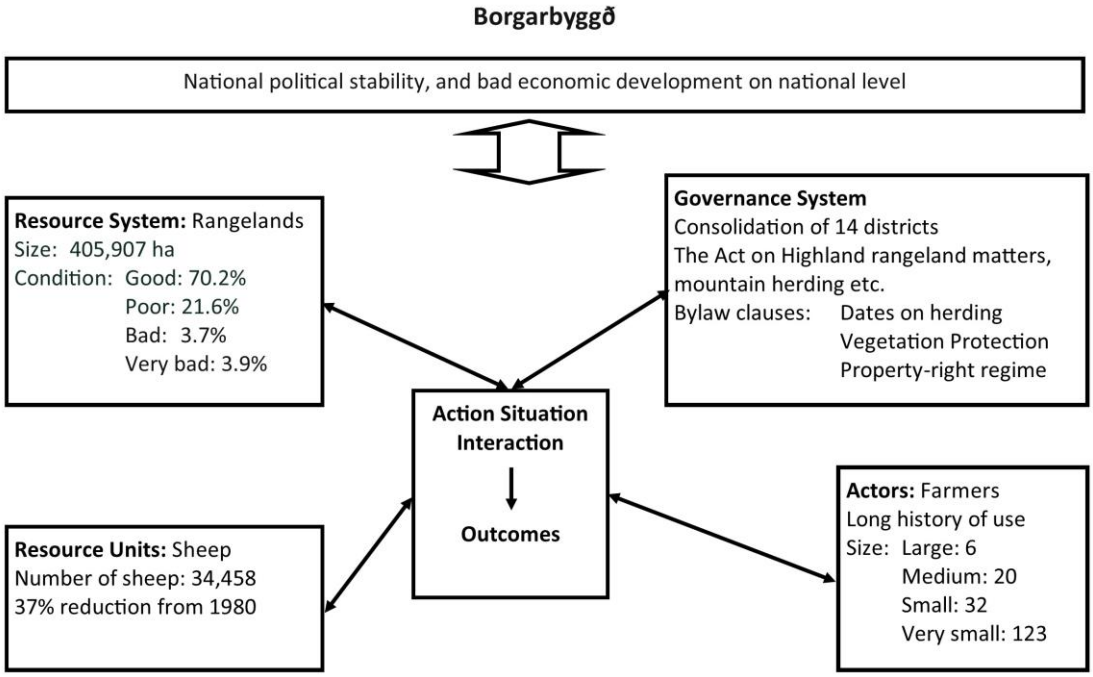


Figure 12. The structure of the rangeland governance in Borgarbyggð from the SESF perspective.

The comparison has shed light on the fact that the institutional settings of the Icelandic sheep regime allow for certain self-organizing or self-governing activities, where the society (decision makers and users) can tailor the formal institutions according to the local conditions and culture. This is considered highly important amongst scholar (Nederhand, Bekkers, & Voorberg, 2016; Ostrom, 1990), which could explain to some extent the institution's durability. The roots of the modern Icelandic sheep grazing regime is in the middle-age agricultural based society, where a large majority of the population were farmers or lived on a farm as workers. Therefore, the institutions crafted have the characteristics that every landowner had a benefit that all rangeland (*afréttir* and *heimalönd*) were cleared of sheep in the fall. The modern Icelandic sheep grazing regime is too large extent based upon them, which indicates, according to Vatn (2005), its effectiveness has been rather undisputed amongst its users. The fact that these institutions have been used throughout the country for ages, furthermore indicates that the users consider them useful (Vatn, 2005).

Second, with societal changes in recent decades, the number of sheep farmers has decreased as the numbers for the Borgarbyggð, and Skútustaðahreppur are a good representative for. Which means that there are more of landholders that do not own sheep and therefore do not necessarily have benefits of collective mountain herding. The

current sheep grazing methods are labor-intensive operation and with fewer farmers to participate it the efficiency of each herding decreases, even though the numbers of sheep decrease as well. The introduction of a motor vehicle has not fully counterbalance that development since the landscape is often too rough for them, meaning that it can only be covered on foot or horse. However, summer grazing in rangeland is a low-cost option for the farmer and even efficient, since they do not have to provide fodder or engage in other more costly grazing management operations (Ólafsdóttir & Júlíusson, 2000). Furthermore, the formal institutional setting in Iceland however still place the responsibility on landowners to clear their land of sheep or make sure that it is clear of sheep with other methods such as fences (Alþingi, 2013). With fewer farmers, the cost of per farm of mountain herding is expected to increases (R. Ólafsdóttir & Júlíusson, 2000). Therefore it might be wise for farmers to shift towards more lowland and planned grazing management operations. Informal institutions in Iceland, such as the culture and norms, have not contributed to that shift as the current way is deeply rooted in the Icelandic farming culture (Júlíusdóttir et al., 2009; Þorláksdóttir, 2015). This is in line with Young, (2010), who pointed out that institutions are often sticky as they tend to stay in place although the understanding of mismatch or misfit between the biophysical and socio-economic interactions. The dissatisfaction with this old institutional settings will be further discussed in chapter 5.2. This can furthermore be put in context with conflicts that have emerged due to sheep encroachment (e.g., Borgarbyggð, 2003; Pétursson et al., 2013), and other rangeland related conflicts such as landowners that don't sheep don't want to participate in mountain herding (e.g., Héraðsdómur Vesturlands, 2017).

Third, the condition of Icelandic vegetation and soil on rangelands are rather bad (Ó. Arnalds et al., 1997), which severely undermine the ecological sustainability of the Icelandic sheep grazing regime. However, as the comparison of the two municipalities shows the condition of land difference at large (Valdimarsdóttir, 2017a, 2017b). As the map of land condition in Skútustaðahreppur shows, action has been taking on vegetation restoration and protection, were actors and governmental organization have worked together (Pétursdóttir, Aradóttir, Baker, Halldórsson, & Sonneveld, 2017). Those political measures that were made to decrease the number of sheep for economic reasons, as well as, increased rangeland management with the introduction of the QMS (Arnalds & Barkarson, 2003), have shown to be effective, at least to some degree, in restoring the

vegetation and the productivity of the rangeland's ecosystems (Raynolds et al., 2015). However, it has been stated that the grazing practice and land use within the Icelandic sheep grazing regime were not unsustainable until the 19th century where the demand after sheep products, mainly meat and live sheep, increased. That is the increased sheep grazing pressure, more sheep that went further into the highlands and colder climate trends, resulted in catastrophic vegetation degradation and soil erosion (Þórhallsdóttir et al., 2013). From the institutional viewpoint, that this theory stated that there was an institutional fit between the social and ecological attributes, but external factors led to emerging of an institutional misfit (Haller et al., 2013).

5.2 Policy analysis of the QMS

As reviewed in chapter 3.3, the agricultural policies in Iceland have been developing from the beginning of the 20th century until today. The introduction of voluntary QMS in 2003 is a good example of that, the majority of Icelandic farmers partake in the QMS (more than 1,800 in 2018) as they have substantial financial incentives of participation (Ásbjörnsson, 2017).

5.2.1 Motives for change

The Icelandic Sheep grazing regime is built on age-old tradition as discussed in preceding sections and the core institutional framework has mainly been unchanged until this day. The introduction of the QMS program is one of the most substantial institutional change regarding the sheep grazing regime. The focus of this sub-chapter is on analyzing the agenda-setting for the introduction of the QMS, that is why these changes occurred and which were the driving forces and actors behind it.

The majority of interviewees, 17 of 26 interviewees, stated that the implementation QMS has roots in the revision of the agricultural subsidy system. It was often mentioned that the World Trade Organization (WTO) had put pressure on the Icelandic government to revise the subsidy contracts, as the current way was in contrasts with the WTO guidelines. Furthermore, they stated that the government wanted to move away from relying only on direct payments and towards more conditional payments or cross-compliance mechanism. By that, the government would be more ensured that the money they put into the agricultural sector would be used incensement the on-farm efficiency and professionalism, or as one interviewee formulated well when he said: "[the

government] wanted to know what they would get in return for their payments. […] [The money] would not just go somewhere, and nobody knew where."

According to interviewees from the National Government stakeholder group, sheep farmers had witnessed economic difficulties before the establishment of the QMS, and its implementation was seen as a means to increase their income. An interviewee from the Governmental Authorities sub-group said that the national government and to some extent the farming community realized and acknowledge to some extent at least, that it would not be wise to increase the numbers of sheep and the QMS was supposed to hinder a further increase in the number of sheep in Iceland. Furthermore, another interviewee from the same stakeholder group said the officials within the Agricultural Ministry knew that there was "a great need for land improvements" however "they didn't dare to admit that."

According to an interviewee from the Farming Interest Organization subgroup, prior to the QMS program, the agricultural sector and the government had been working on another set of quality management system called specific quality management (is. sértæk gæðastýring). The interviewee said that the object of this was to gain a quality singularity for both foreign and domestic markets. However, interviewees from the same stakeholder group and others noted that the Farmers Union (both general association and sheep specific) were not necessarily eager to implement a particular quality management system, just to increase professionalism in sheep farming. It was further pointed out by serval interviewees that in the decades before the introduction of the QMS regulation, and especially in the 1990s, a significant debate on land quality, soil and vegetation protection and sheep farming occurred. One of the cornerstones of that discourse was the publishing of the report on Soil Erosion in Iceland in 1997 (Ó. Arnalds et al., 1997). In that time groundwork was in progress between the government and farmers for the new sheep production contract. There was a consensus amongst interviewees that this publication of the report on soil erosion (Arnalds et al., 1997) had a significant influence on the discourse on the land use of sheep farmers. In the publication, arguments could be found that it was unacceptable to subside sheep grazing on land that was unsuitable for grazing due to high soil erosion and lack of vegetation cover. It was pointed out by interviewees from stakeholder groups such as University and

National Government that the farming community realized that they had responded to the dissension on rangeland and grazing matter, as it was damaging for their repetition. An interviewee from the Governmental Authorities said this about the advocates of the farming community: “of course they recognized the necessity of improving [land use] where it was needed.”

Other opinions arose regarding the establishment and early implementation of the QMS program. An interviewee from the University stakeholder group sees the negotiation process between the farmers and government as a highly pragmatic process. That is, “government actors have been looking for ways to financially support farmers in one way or another.” Other interviewees shared this idea as they saw the introduction of QMS as a way for the government to increase the payment of subsidies to sheep farmers. In their opinion, the primary objective of the QMS was to find ways to continue subsidizing Icelandic sheep farming and less driven by concerns about environmental impacts, animal welfare or the criteria that farmers had to oblige for protection of the environment. It seems therefore that in their mind, environmental sound production was not the key motivation of the introduction of the QMS. Furthermore, as an interviewee from University said that the environmental criteria conditional to the payments had to look like they were radical but at the same time not burdensome for the farmers. An interviewee from the Governmental Organization seconded this and pointed out that, “that the fundamental ideology was to continue governmental subsidies, but not how one could protect the land.” Other interviewees from stakeholder groups such as NGOs, National Government, and Universities, were in agreement and further pointed out that the QMS was constructed in a way that everyone would be able to participate and financially benefit. Another interviewee from a Governmental Organization said that “most [farmers] would find a way to [participate], receive payments without actually improve their land-use.” These stakeholders viewpoint has the characteristics of that they see the QMS as old wine in new bottles, almost like a greenwashing within the national support scheme to sheep farming. They justified their opinion by pointing out that this program has not led to necessary reforms and sufficient improvements in the land use of participants. Big areas on the Icelandic highlands are still utilized for grazing although the vegetation condition is not acceptable in the mind of those stakeholders. However, they acknowledge that many farmers have sustainable land-use and the environmental

problems are more regional (much defined to the volcanic belt in the highlands) than a national issue, the QMS is in their mind not effective and creates the notion that land use of every participant is sustainable. As adduce, one interviewer pointed out that the land use chapter didn't come into action until the last year of the validly of the contract, and the first QMS regulation:

> "It was clear that Farmers Association was going to arrange it in a way that nothing would actually be done except that more funding would be for land improvements on home rangelands and other areas of that sort."

In a comparative perspective, policies for the development of the Icelandic agricultural institutions and the QMS program has been similar to elsewhere in Europe, hence directed towards "environmental" contracting and more professionalism in the field (Meyer et al., 2014). Which means that the production process was steer into a certain way and the freedom of farmers to have those farming practices that they want was limited, in a sense that regulations were aiming at promoting what they called sound farming practices. This limitation of farmer's freedom is an important consideration as the farmers tend to value their sense of freedom highly (Þorláksdóttir, 2015). From the interviews that were collective, it is clear that the government wanted to shift the course of the agricultural policy and practice in Iceland. As although they managed to reduce numbers of sheep in Iceland, the economic wellbeing of farmers had no increased to the extent that they hoped for, as the profits of sheep farming decreased drastically in the 1990s (Hagþjónusta landbúnaðarins, 1997). It is therefore clear that decision makers saw the introduction of the QMS program as a possibility to increase both professionalisms within the field as well as attempt to improve the economic well-being of sheep farmers. However, this was still seen as subsidies to farmers, and therefore it was the wish of both the central government as well as farming advocators, that majority of farmers would participate in that process. As many interviewees discussed, the publication of the Soil Erosion Report by Arnalds et al. (1997) was in the years prior to the QMS program. The findings in the report proved how bad the status of the land was and large areas were classified as deserts. The publication won the Nordic Council Environment Prize. Prior and after this publication, significant public discussion and even heated debate had been going on about sheep grazing, land use and land condition in Iceland. The outcomes of

the interviews indicate that this report and related discussions that led to that the land use clause was integrated into the QMS program, in piecemeal though.

To sum up, on the findings on this aspect of the QMS policy, three key observation can be made. Firstly, the policy motives of changes towards QMS program were mainly twofold. On the one hand, to modestly reform the subsidy institutions for governmental support to agriculture as a measure to increase the economic well-being of farmers and professionalism within the industry. On the other hand, as a response to soil and vegetation degradation of past decades and centuries and making sheep production more ecologically sustainable. This is line with agricultural policies elsewhere in Europe, as when scientific evidence and experts findings become politicised as happened with the introduction of the soil erosion report then the window of opportunity emerged for new actions and policy development (Roederer-Rynning & Daugbjerg, 2010).

Secondly, it is not possible to identify single stakeholder who was a primus motor for these changes. Instead, there was a near-universal acceptance of many actors, the government, farmers and specialist in soil and vegetation sciences, that these changes had to be made as status quo was not an option. This was therefore not necessarily perceived as a top-down implementation, but more like a top-down/bottom-up hybrid where both government and farmers agreed upon the necessity for change (Pülzl & Treib, 2007).

Thirdly, it was pointed out by some respondents such as from the Universities and Governmental Organizations stakeholder groups, that the changes with an introduction of the QMS program were more in the nature of greenwashing or rebranding of business as usual. That is, the QMS introduction was used as a justification to be able to subside farmers like before, and they didn't have to undergo any significant changes.

These findings have important implications for policy and practice of the QMS. Although there were references made towards similar policy changes in other countries and regions, the Icelandic QMS program was comparably more relaxed on cross-compliance (e.g., European Commission, 2017; Meyer et al., 2014; OECD, 2012).The notion of this alleged pretext can be viewed in the context of both trust and legitimacy of the QMS, it is not optimal for a policy if some stakeholders have no trust In the program and don't feel that it is legitimate. In fact, the success of policy or institutions as QMS is

based upon how it is perceived by the stakeholders. What motives drive a policy formation can be seen as an indication of how it will be executed as it progresses (Lockwood et al., 2010; Young, 2008).

5.2.2 Quality management governance and monitoring

In this subchapter; the focus will be on rake up the opinions of stakeholders on the QMS governance structure as well as on how effective the supervision or monitoring of participants is.

The perception of interviewees towards the QMS governance structure was mainly twofold, hence those that thought it was acceptable slightly more, compared to those that found the governance or organizations structure is not effective. Since the introduction of the QMS the role of organizations have been evolving, and today, it is the Food and Veterinary Authority that has the administrative responsibility for the overall administration. The Soil Conservation Service has always had a role in the QMS but of quite different significance. When the administration of the QMS was discussed, one interviewee from Local Government expressed that in his mind the whole administration is complicated and very inefficient. Thus, it isn't clear to the participants (farmers) and local governmental actors, what organizations have the responsibility in various segments of the QMS process. Furthermore, the role of the Soil Conservation Service within the QMS was criticized by interviewees within both University stakeholder group as well as from the Agricultural Sector. These members criticize that the Soil Conservation is involved in near every part of the QMS. That is, the organization is responsible for research on soil, vegetation and restoration methods, being an advisory body to farmers regarding land use, as well as being a surveillance body on the land use of farmers. In the stakeholder's mind, it is necessary to revise the role of the organization in the QMS process. Another interviewee from the Agricultural Sector believes it would be better for the whole process that the Soil Conservation Service would become "pure surveillance body." In his mind, other actors such as the Universities and Agriculture Extension Service could take on the responsibility of research and guidance.

Interviewees from the National Government acknowledge that this arrangement of the Soil Conservation service roles was not in the spirit of good governance. However, they did not see it as a significant drawback. They justified this arrangement by pointing

out that it was often of a practical nature. According to the interviewee from the National Government, The Soil Conservation Service was forced to go into extensive research activities as there was a shortage of them and no other bodies were going to focus on the applied research that the Soil Conservation needed. Another interviewee from the same stakeholder group pointed out that participants were free to construct land improvement plans themselves and they didn't have to go to the organization for an assistant, although the tendency is that they do. Interviewees from the Governmental further discussed that they had interpreted the 2013 regulation in a way that the Soil Conservation Service was not allowed to be "on both side of the table anymore […] and said to participants that they had to do it themselves." With the QMS amendments in the year 2015, the Soil Conservation Service went back into being an advisory body. Strong emphasis was made by interviewees from the National Organization group that the Food and Veterinary Authority is the ruling organization within the QMS and therefore has the last word in any matters or conflicts that may arise. That means that Soil Conservation Service doesn't have as much power as it may seem. A good example of this is that although the organization thinks someone has an unsustainable land use, the final word is always on behalf of the Food and Veteran Authority. Although previous mention criticism was expressed in the interviews, in general, different stakeholders seem to trust the Soil Conservation and believe that they work in professional manners, something which is highly important for any organization's legitimacy (Deephouse & Suchman, 2008; Lockwood et al., 2010).

Those that thought the governance of the QMS was improving, mostly focused on the fact that responsibility was moved away from the Farmers Association and to an individual department within Food and Veterinary Authority organization. However, this was only expressed by few interviewees from the National Government, and they thought that this organization had executed it relatively well. On the contrary, interviewees from the University and Governmental Organization stakeholder groups felt that nothing had changed although the power was moved from the Farmers Association. It was pointed out that it was still located in the same building as the Association, the people were mainly all the same as the one that used to work for the Association. In the mind of an interviewee from the Universities, this results in that the people there still view themselves as: "in service of farmers, not to supervise them. […]. There is no change.

[…]. But this is very symbolic for all this development; nothing is really supposed to change." This can be put in the context of the Motives of change, where some stakeholder felt that the introduction of QMS was just a way to make status quo look like the improvement of the sheep grazing regime. In relation to this, it is safe to say that there is not a consensus of legitimacy towards the QMS, in regard that there seems not be an acceptance amongst all stakeholder of the organization's authority to govern (Lockwood et al.).

Majority of the interviewees discussed the lack of monitoring on the part of governmental bodies. This opinion was found in every stakeholder group and subgroup. An interviewee from the National Government said that the monitoring of the participants had been limited right from the start. The interviewee noted that the characteristics of whole Icelandic administrative system are that Icelanders "can be rather good in establishing rules, commands, and bans, but then the follow-up is rather limited." This point of view was shared amongst other stakeholders' groups such as Universities, whom all mention that number of people working as monitors were too few. That results in that the supervision bodies do not have the resources to thoroughly monitor the land improvement plans and the land use of participants of the QMS.

One of the main criticism of the QMS monitoring processes was that interviewees thought an insufficient focus has been on land use and even processes land degradation in those areas where the status of vegetation is estimated relatively good and no or limited soil erosion. An example of this opinion came forth in an interview with an individual from the Farming Interest Organization who formulated it as such:

> "The focus is always on certain areas where, of course, there is vegetation- and soil degradation and the condition is not good enough, and a lot of works takes place. What I think however needs to be better, is that there will be no new problems and there are examples of it now. […] One of my hopes for the quality management regarding the land use chapter, was that some control would be on how much increment of sheep numbers at certain areas and certain farms."

Many interviewees thus were concerned that the focus has been too much on those areas (mostly *afréttir*) that are in the worst condition. This has resulted in that insufficient focus has been on those farmers that might have good vegetation cover and in decent condition but have increased their numbers of sheep, thus the stress increases in the land. An

interviewer from Local Government expressed his frustration on the fact that participant can build a new sheep shed and increases their herd size in areas where there are high numbers of sheep are enough already. He further said that

> "If you have 500 sheep, then you need to have home rangeland for those 500 both in spring and fall. He cannot say, I need to get rid of them [on to afréttur]. The afréttur is in bad condition, but he still goes with them [to it], and then gets to stretch it [the time] in the fall. Or takes it to the home rangeland which is impossible because it is too small."

In summary, according to from various stakeholders, the QMS has not been effective in hindering overgrazing and stop land degradation in places that do not suffer from large-scale soil erosion. A good example of this came from an interviewee from the National Government who said insufficient monitoring has been on those that are increasing their number of sheep in relation to their *heimalönd* or *upprekstarheimalönd* vegetation status. This is in coherence with the findings of (Þorláksdóttir, 2015), where farmers thought supervision of the participants of the QMS were in the inadequate way (Þorláksdóttir, 2015).

Similar to those that said that there was a shortage of supervision, it was a rather good cross section in stakeholders groups amongst those that thought it was okay. Furthermore, many said that it was on the right track, as in that the surveillance was getting stronger and stronger. Interviewees from the Local Government especially stated that the supervision of land improvement plans where good. It was a common theme amongst interviewees from the Farming Interest Organization that they thought it was troublesome that different parties were in disagreement on what standard should be used. An interviewee said that: "Maybe is it a new embodiment of the old dispute on land use in sheep farming, people aren't in agreement if the land is progressing or declining."

Interviewees form the Governmental Organization said that the supervision organizations were firmly focused on having strong supervision of the land use and not show any codependency to those that bend or break the rules. An interviewee from this stakeholder group pointed out that The Soil Conservation Service is actually a contractor under The Icelandic Food and Veterinary Authority, ergo get paid a certain amount for the inspections. However, the organization has always done more than they were paid for due to the importance of this project. Interviewees from the National Governmental

stakeholder group admitted that a sample size of few percentages wasn't large, but that was the only rule of money, not something that the supervision bodies had solely decided. In fact, the supervision bodies would prefer that it the sample size would be increased as well as more time and energy could go into on-side land inspections in regards to land improvement plans.

When it comes to what solution the monitoring bodies have to respond unsustainable land use, an interviewee from Local Government said that they shouldn't be any harsher. In similar fashion, an interviewee from the National Government said that the sanctions were very strict, either a participator will qualify and hold on to the payments, but if they take a false step they don't receive the amounts which are similar to the wages of the farmers. In the mind of the interviewee this is too harsh and one of the significant drawbacks of the whole agricultural system – that there is a shortage of more merciful solutions. The interviewee from the National Government further said: "It means that the [authorities] faces the decision, are we going to close this farm or not. […] That's why I think it is better to have more tools and maybe, in fact, less weighty". He further pointed out that in those cases where on the one hand there is public interest and on the other specific interest, the tendency for the decision makers is to go with the specific ones. Especially, where the public interest is small, and the specific ones are large, for example in context to land use:

> "If the grazing continues for another year nothing big is going to happen, [the land] doesn't improve, but it may not get that worse off either. But on the other hand, there is particular and clear interest for the farmer who needs to close the farm."

This can be understood as one kind of codependency between the supervision body and those actors they are supposed to supervise. The view on codependency was further found within the local government, where majority mention that the supervision was lacking or it should be stricter. Furthermore, some indicated that they knew of some participants in the quality management that in their opinion should not be permitted to participate. One interviewer in Local government put it in this way: "I am not saying that it those who are doing things well should get rewards, but they should be punished who do it badly."

Interviews from both the National Government and Universities mention that number of people working as inspectors were too few. That results in that the supervision bodies do not have the resources to thoroughly monitor the land improvement plans and another part of the quality management programs. An interviewee from the Universities stakeholders group further criticized the education that many of these inspectors had, where the inspectors have limited education and knowledge of land use evaluation, ecology and similar. However, the interviewee emphasized that this person are good people and have excellent skills in human relations. Furthermore, it was pointed out that the inspectors are often highly involved in the farming community that they are supposed to monitor. This dilemma results in that they are often unfit to take a burdensome decision for farmers, according to the interviewee.

When discussing the drawbacks of the supervision of participants of the QMS, two main topics were brought up by the stakeholders, which were the lack of funding for the supervision part and lack of data on the QMS participants land use. In relation to the financing of supervision activities, the interviewees from the Governmental Organization said that in their mind the shortage of funding would hinder them from having a sufficient inspection on the participants. One interviewee summed up the views of many nicely when he said. "The atmosphere in Iceland has always been on a note that people want to put money out in the construction, but then just hope that everyone stands its duty."

A good example of the Governmental Organization viewpoint is the random sampling size of the QMS participants, one interviewee from Governmental Organizations said: "it is solely a matter of funding." Thus, the current public funding towards QMS monitoring process only allows for 2% sampling size. All interviewees from the National Government would like to have more funding to increase the random sampling size. However, there is ongoing work within The Food and Veterinary Authority that was frequently brought up. This work is about establishing a centralized information system which would bring together every information about the participant's activities. The means of this system is to collect data from a different organization which results in more effective supervision.

It is clear that interviewees from the National Government especially, are somewhat unhappy with the funding that is dedicated to the monitoring processes, especially when it is put in context with overall agriculture subsidies (Agriculture Products Contract). An

interviewer from the Governmental Authorities took the discourse about funding's, back to the early days of the quality management. In the early days of QMS, many land improvement plans where made which were based on support for reclamation but limited funding was put into that project.

> "Which is an important consideration in this.]…]. When the first land improvement plans were made, then I would have liked to see – where there was not much wrong but still, they would not meet the requirements. Okay, then you are going to do some reclamation. But where there was very much wrong, then it was needed to go through very extensive reclamation and burdensome, and change the land use. […]. [But] no money was available to do something like that, look, it would just have stopped the implementation. Maybe was that just the case, one should have said that bodies had to reclamation 100 ha per year and that's just your problem to find money for it. But that is not the path that was taken."

The other main drawback of the QMS supervision was a shortage of ecological data on rangeland and grazing practices. Useful data is necessary for successful monitoring of natural resource (e.g., Sergeant, Moynahan, & Johnson, 2012). Interviewees from the Agricultural Sector especially talked in lengths about the shortage and short comers of the data available. As one interviewee phrased it: "This is just a point measures, and only assesses the status and state of the land at a certain point in time based on a certain classification." The opinion of the shortage of monitoring and holistic vision had a harmony among other interviewees. The interviewee from the Governmental Authorities put this discourse in historical context. The interviewee stated that the money available for the implementation of the QMS was insufficient, which resulted inter alia in that the available datasets were on a large geographical scale and hadn't improved much during that time. The interviewee from the Governmental Authorities wondered if the Soil Conservation Service had failed in the beginning as they didn't have a sufficient on-site monitoring data prior to the QMS implementation, just a basic data of the status on a national level. In his mind, it would be most useful to go into detail on every farm which is participating the QMS where the land use and land condition would be assessed.

The interviewees from the National Government were somewhat in agreement with the Agricultural Sector as they are aiming at increasing the data available and improve the data management. In relation to the discussion of the shortage of data on land use and land condition, the new project on assessment of the vegetation resource named *GróLind* came up in the interviews. This project has a basis in the latest sheep farming

contract from 2017, where an agreement was made between the Ministry of Industries and Innovation, the Farmers Association, Soil Conservation Service and National Association of Sheep farmers on assessment and monitoring of vegetation- and soil resources of Iceland (Marteinsdóttir et al., 2017). The interviewees were overall positive regarding this project as they believe that it will generate extensively and up to date data on the condition of Icelandic rangeland. Furthermore, many interviewees saw it as an opportunity for cooperation and generation of common understanding and vision regarding sheep grazing and vegetation protection. Interviewees from Agricultural Sectors especially expressed that they hope that with this project a greater harmony will prevail on how land is assets and managed.

As discussed in chapters 3 and 5.1, local governments play an essential role in the national Icelandic sheep regime. However, their mission is not as notably in the QMS regulation. Interviewees from Local Government pointed out that it is often and increasingly the case, especially amongst those that have integrated, that members of the local government are no longer familiar with agricultural matters. Furthermore, another interviewee expressed that he was happy with how they have arranged the governance on these matters in Borgarbyggð. That one committee has jurisdiction over specific rangeland area, seven in total. The main government is then in charge of the whole system, and almost without exception, it approves the proposals from these committees. In his mind, this was very important, that the decision is made in proper consultation with the users. Similar opinions were found within this stakeholder groups; one said that the local government hands this responsibility to the Agricultural Committee of the municipality and isn't interfering in the governance of these matters although at the end it is their responsibility. The opinion of another interviewee from the Local Government was that he thought that it would be wise to have some partnership among those that use the rangelands. Then it would be their responsibility and no middleman in the process. That is, the farmers that utilize the rangelands take full responsibility, and the local government doesn't have to get involved. This idea was shared with interviewee from the Governmental Organization which pointed out that it would be better to have this partnership of users as a "contact body" to the governments – as they all have interest in these matters and more consistency of people. There was a

general notion that mountain herding's matters run its usual course and the QMS had a little influence on the local governance roles in the Icelandic sheep grazing regime.

As covered in chapter 3, Icelandic rangelands have different types of property rights, and that is expressed in the regulation with a different evaluation scale. When asked if it would be wise to divide after property rights further or even have a special program for each, it was a common theme amongst stakeholders that it would not be an improvement. As an interviewee from the Agriculture Extension Service said: "Not more distinction. I have followed and participated in another aspect of the quality management. My opinion is that less is more - the simpler, the better." Interviewees from National Government and Farming Interest Organization, for example, were in agreement. In relation to that one interviewee from the Governmental Authorities to point out that farmers on their private land have substantial limitations on their activities. He was ensured that the legislator could put in place general rules to limit grazing rights and usage of property if it is in a certain condition. A similar statement can also be found in the newest Act on Soil reclamation proposal where it is argued that sustainable land use is of public interest nature (Stjórnarráð Íslands, 2017). Therefore, it is not landowner's private matter or the land's possessor. As these restrictions would be in line with what is generally accepted in the Icelandic constitutional state (Stjórnarráð Íslands, 2017). The interviewee further pointed out that it was a misunderstanding amongst some farmers on that they have to use the afréttir, or else they would lose their grazing rights after some period of protection. The interviewee said that they were only increasing their opportunity to use it in the future, and further stated that the Prime Minister office could and was ready to issue a declaration that they would not lose their right of grazing.

Farmers are the cornerstone of the QMS, as an interviewee from the National Government emphasized on. That is if farmers were not active within the QMS, this project would collapse – the institutions are shaped in a way that farmers are driven towards sustainable land use practices. When interviewees were asked if they thought there had been an increment of awareness on sustainable land use amongst farmers, a majority of interviewees second that statement. However, those that believe that it hasn't been an increasement in awerness and change of practices, pointed out that some farmers only look at this as a duty to get the subsidies. This opinion was especially

prevailing amongst the Local Government. In mind of some stakeholders, farmers were not thinking about helping the afréttir, but instead only making sure that their sheep could graze there and come back in good shape. Other stakeholders agreed, for example, Universities and Agricultural Extension Service, or at least they thought that the increment in awareness had not been sufficient. But overall, awareness has increased, primarily amongst those farmers that have to construct and execute the land improvement plans. The ones that haven‘t need to work towards land improvement are somewhat less aware of this part of the QMS management. This is the opinion of many especially from the stakeholder from the National Government and Farming Interest Organization.

To sum the findings, firstly most of the interviewees had a strong and disagreeing opinions about the governance of the QMS and in fact of the arrangement of the whole land-use matters. It is a considerable drawback for any governance systems if there is disunity amongst actors amongst its merits, the QMS governance systems are made up by organizations which role is to put in practices those existing institutions which regulating human behavior (Hagedorn, 2013). Interviewees mostly focused on organizational arrangement within the QMS; many thought that they were going in the right direction especially when responsibilities were moved from the Farmers Association to the specific public organization. This can be seen as a significant step in the whole governance process, as the interview findings indicate that the legitimacy will increase as the other stakeholders are more likely to accept that an independent body handles these matters rather than association directly related to the users (Lockwood et al., 2010). Nevertheless, not all stakeholder were happy with this arrangement, as they thought it didn’t go all the way, as the new monitoring body is more or less with the same staff, in the same building and so on. Moreover, many thought that the Soil Conservation Service was “all around” in the governance, that is had too many roles, and in the eyes of many, that was unacceptable. They said that conflicts and other challenges would inevitably arise. The interviewees from the service and others acknowledged it but said that this arrangement worked because they would beware of that possibility and show the fullest fairness in all their activities. The reason for this arrangement of roles within the QMS, and the sheep regime, in general, is because the capability of other organizations or actors is insufficient (Lockwood et al., 2010).

Secondly, it is clear that stakeholders disagree when it comes to what they think about the monitoring processes of the QMS. In the natural resource governance literature, it has been found that effective and successful institutional arrangement has the characteristic of good monitoring processes, compliance and sanctioning of rule-brakes (Andersson, Benavides, & León, 2014). The interview findings showed that there is severe dissatisfaction exists amongst stakeholders on various matters related to the supervision and monitoring processes, especially on ensuring the compliance of all participant of the QMS. The findings of this study are furthermore in line with Þorláksdóttir, (2015) findings on the QMS where dissatisfaction amongst participants existed on the effectiveness of the QMS monitoring processes. The stakeholder's notions of insufficient funding towards the supervision process of the QMS seriously hinder the authorities from having effective or at least extensive supervision, according to the interviewees. This is in line with findings from the Australian natural resource management systems where the shortage of funding was seen as a serious constraint of the management strategies potentials (Lockwood, Davidson, Curtis, Stratford, & Griffith, 2009). Almost all stakeholders also saw the shortage of data on rangeland condition throughout the country as a very troubling for the QMS. In relation to the opinion of limitation of funding, data series exist on the evolution of the Icelandic rangelands are limited. Especially when looking at the small scale, for example, single farms. In that response, it is clear that many stakeholders look towards the new vegetation assessment project, GróLind, with optimistic eyes.

Thirdly, different property rights to land are within the Icelandic sheep grazing regime. The QMS acknowledge these differences with slightly different evaluation scale for *afrétti* on one hand and *upprekstarheimalönd* and *heimalönd* on another, for example of soil erosion (Atvinnuvega- og nýsköpunarráðuneytið, 2017a). The findings indicate that near all stakeholders do not want a further distinction between these property right regimes within the QMS. That would, in interviewees mind, only result in more complex and ineffective governance and monitoring. However, the problem of *upprekstarheimalönd* was discussed amongst some organization interviews. It has been very hard for the organization to coping with *upprekstarheimalönd* especially, in them and where they mix with *heimalönd*. This can be discussed in the context of Ostrom (1990), as her work indicate that if boundaries between resource system are blurred, it

can hinder effective governance of the resource. There is often severe sheep crossing and encroachment which results in conflicts. Furthermore, the study findings suggest that there is a need to discuss and observe the nature of the property rights of land, in regards to land care. The opinion many interviewees were that good vegetation, and soil level on all types of land is a common property of the Icelandic nation, which limits the right of landowner or user in their activities.

Fourth, the role of local government isn't explicitly stated in the QMS regulation although it as a substantial power in the Icelandic sheep grazing regime. However, members from the local government had, in general, the notion that nowadays local government boards have limited interest in these matters or that it should be on the hands of those that utilize the mountain rangelands. That is, the users should execute that land improvement under the supervision of the Soil Conservation Service. This development main not come as a surprise as it is the general trend for moving away from the mutual monitoring system towards third-party monitoring when group sizes get larger (Agrawal & Goyal, 2001).

Fifth, the introduction of QMS has been, according to the majority of interviewees, effective in promoting the importance of sustainable land use practices within the sheep farming community. Nevertheless, the notion of no awareness changes was found amongst some interviewees. This is line with Pétursdóttir et al. (2017) findings on the awareness of farmers on the necessity of rangeland restoration. Stakeholders discussed that incensement of consciousness had occurred amongst those participants that have to undergo land improvement measures (Aradóttir, Pétursdóttir, Halldórsson, Svavarsdóttir, & Arnalds, 2013; Þorláksdóttir, 2015). However, the literature suggests that Icelandic farmers are not eager to do any significant changes in their grazing practices on rangelands (Pétursdóttir et al., 2017), which could explain the opinion of some stakeholders that the awareness had not increased especially amongst those participants that haven't need to construct land improvement plans.

5.2.3 Laws connections and contrasts

Laws and regulation regarding the land use of sheep farmers are many and are based on old institutional settings, as covered in the third chapter. It was quite common that Interviewees didn't have an opinion on laws relating the sheep grazing regime, as they

haven‘t looked into it. The interviewees who had opinions regarding these bodies of law could be categorized into two opposing groups. On the one hand, those who thought the bodies of laws badly overlapped while on another hand, those who thought these laws were quite good.

Those who feel the formal institutions of the Icelandic sheep grazing regime unacceptable mentioned that the grazing related laws were outdated and overlapped. However, the informal institutional settings were also brought up by one of the interviewees from the National Government. „Icelanders have been in the service of sheep for a long time, not that the sheep is in our service. “ Those stakeholders that were unsatisfied with these laws felt like this resource and its management had somewhat be left behind by the federal administration. The Act on Soil Conservation no. 17/1965 was frequently brought up by interviewees where they stated that the act was very outdated. A similar story can be said about the Act on Highland rangeland matters, mountain herding, etc. No. 6/1986. These acts were further criticized due to the facts that they were constructed in time where the concept of sustainable land use didn’t exist and that some clauses and wording of these laws were outdated and not relevant even more due to changes in administration and other.

The dissatisfaction towards the *ítala* process of the Act on Highland rangeland matters, mountain herding, etc. No. 6/1986, was one of the core items of stakeholder criticism on the legal framework. Within that stakeholders, the consensus was that the process behind *ítala* was heavily flawed and it would not prevent and stop unsustainable grazing practices. It was brought up by interviewee from the Governmental Organizations that *ítala* was and still is not a genuine vegetation protection unit. Much rather tool to ensure that sheep return fat from *afréttir*, which they still do on the worst conditioned afréttir. The words from an interviewee from the Governmental Authorities nicely summed up the opinion of many regarding the *ítala* process: „The criteria is totally ludicrous, in context of current professional knowledge. Still grazing capacity is used as a baseline, nothing on the land condition or at least very limited. “

Disagreement towards this point of view could be found amongst interviewers from the Agricultural Sector and the Local Government. Within those stakeholder groups, the opinion existed that those laws regarding this matter were relatively clear, and there is

no need to go into some major reforms. A good example came from an interviewee from the Farming Interest Organization, which rejected that the Act on Highland rangeland matters, mountain herding, etc. No. 6/1986 and even the Act on Soil Reclamation no. 17/1965 were outdated. He pointed out that the formerly mentioned act on highland rangeland matters was very well-composed, as it reflects the old mountain herding system in Iceland nicely. As an example, the vegetation protection chapter was mentioned. In the mind of the stakeholder, it is sufficient, and that *ítala* is still relevant today as it is just an assessment of rangeland where every available data should be used to determine the sustainable use of the resource. It was stressed that if legislative bodies go into the process of revising the laws, they have to be very careful. As the laws describe an ancient institution, which in his mind is very remarkable and nothing better system exists.

Those that had not as strong opinions regarding the bodies of laws on sheep grazing and land use had not come across of great conflicts between different bodies of law. However, many mention that more holistic vision was needed regarding these matters. Interviewees from the Governmental Authorities had the opinion that more frequent revision of whole agricultural and grazing is necessary. Within that stakeholder group, the opinion was found that Icelanders could take the EU as an example in this matter. As one phrased it “I think that this part of it, the Policy Development part, we are not very good at it.” It was pointed out by one interviewee that in EU, the legislative body in cooperation with various stakeholders work in 7 years periods during that time whole support system and related laws are revised holistically.

When the focus is shifted from the grazing regime as a whole and towards the QMS, which has gone through some development as covered in chapter 3.4. The design of the rules regulations is highly important for the monitoring processes discussed in the previous chapter (OECD, 2014b). Many interviewees from different stakeholder groups, especially those on the more protection spectrum, discussed that they think QMS regulation and related laws have a very week wording. That is, the rules and standards were or still are unclear. The opinion was prevailing within the National Government stakeholder that the terms of the laws and regulation were not clear nor strict enough in regards to sustainable land use. An interviewee from the Governmental Organization

pointed out that the QMS's land use chapter has a foundation in only one paragraph in the Act on Agricultural Production no. 99/1993 (Alþingi, 1993), which states that land use should be sustainable and then more specifically defined in the regulation. Another interviewee from the Governmental Organizations stakeholder group expresses his point of view on the criteria that are used to determine land use (see review in chapter 3.3.2) were very mild and user-friendly.

> "This is not very dementing benchmarks that your 2/3 of your land has to be fairly good or better. People don't realize how bad land has to be, in order to fail. That said category 3, [land] has to be worse at 1/3 than or equally as bad as category 3. That it is a poor [land], there you are in the bad case already and a long time ago."

The opinion from the NOGs was in agreement, as it was stated that the fourth category also described a poor land just as category five and therefore should category four also be classified as land that isn't fit for grazing. In this context interviewees from other stakeholder groups, discussed that the resources that the Soil Conservation has according to the laws are insufficient. That is, the organization does not have the legal provision to hinder and stop the unsustainable and unacceptable use of land. In the eyes of the interviewees, the *ítala* process is a good example of this is as the scientific facts and arguments are ignored if they are in contrast to the interests of farmers.

Interviewees from both the Agricultural Sector and some from the Governmental Organization stakeholder groups, however, thought that the wording in the regulations was okay and the interviewee from the Farming Interest Organization pointed out that in last regulation amendments the terms were strengthened both in regulation as in the land improvement plans. As he said "because, of course, it is not trustworthy if people can go in the face of it over and over…then naturally it falls apart".

There is a consensus amongst many stakeholders that the development and amendments of the QMS regulation have been steps in the right direction and strengthened the process. The exception is the 2015 amendment to the QMS regulation, as dissatisfaction is prevailing amongst some interviewers from the Governmental Organizations, NGOs, and Universities. According to interviewees from the Governmental Organizations, it was stated that with the new regulation in 2013 that land improvement plans which would not at the end of their ten years validity fulfill the criteria set out in the appendix. As a result, this could not be classified as sustainable land use, and

therefore those that use that land would not meet the requirements and were unable to participate in the QMS. By this understanding, the Soil Conservation Service denied accepting land improvement plans for 8-10 areas, according to the interviewees. Then the 2015 amendment is made, which state that it is allowed to accept improvement plans although the land in question will not meet the criteria after ten years (time of validation). In regards to the 2015 amendments, an interviewee from the Governmental Organization stated this:

> "This means that the quality management is just crap, from a professional point of view. […]. There are at least the ten *afréttir* in the worst condition; there is no way of saying that they have a sustainable land use. "

The opinions of other stakeholders such as NGOs and Universities were in agreement. Moreover, an interviewee from Governmental Organization said that although these changes were made, there was still some disagreement between the organizations on what could be classified as sustainable land use. In mind of the Soil Conservation Service, article 13th of the 2015 regulation had the ground rule that land use should be sustainable on all the land which is specified as rangelands. However, The Food and Veterinary Authority was in disagreement with their interpretation and interpreted as such that the land use should be sustainable on the whole *afréttur* not in specific areas within it. Since The Food and Veterinary Authority are a higher administrative body within the QMS, their interpretation is ruling. This resulted in all the application, and land improvement plans were accepted, as an interviewee from the Governmental Organization said:

> "Then [the Soil Conservation Service] just examine if vegetation in the whole [afréttur], not on certain areas, even though it is declining in certain areas, even if the declining is due to sheep grazing in these certain areas."

Free roaming of sheep and sheep encroachment can cause severe conflicts in some areas, especially were farmers are densely distributed and where very different land use is within an area. Throughout the history, free roaming of sheep has been allowed in Iceland, which is one of the core institutional arrangement of the modern Icelandic sheep grazing regime. The act on livestock keeping no. 38/2013 (is. Lög um búfjárhald) allows the free roaming of sheep, regardless of property rights to land. However local governments are allowed to ban the free roaming within their jurisdiction in part or a

whole (Alþingi, 2013). When the interviewers were asked about this subject, two main opinions were revealed. On the one hand, stakeholders thought that the QMS did not address it at all, but it should do so, versus those stakeholders that thought the QMS wasn't the right platform for it and this subject should be addressed in other grounds. These different opinions are interesting especially regarding that the 13th article of the regulation explicitly regulate participant to use only the land they specify in the application. However, no statute defines what to do if sheep are gathered from an area which is not specified in the application or other similar statutes (Atvinnuvega- og nýsköpunarráðuneytið, 2013, 2017a).

It was a common theme amongst the NGOs, Governmental Organizations, and Universities that the QMS wasn't sufficiently handling the problem of sheep encroachment. It was mainly noticeable among interviewees from Governmental Organizations. An interviewee from that stakeholder group pointed out that this was a very complicated issue and of cultural nature. Although this had irritated him and others throughout the country, it doesn't seem to be a willingness amongst the farming profession, nor the whole political party's spectrum to change this principle in sheep handling. Serval interviewees from the NGOs and Governmental Organizations further mentioned that it would be hard or even impossible to have effective grazing management when sheep are released on to vast areas which have very different vegetation stages. They suggested two solutions to this, either increase grazing management mechanism which is needed as the free roaming of sheep is allowed, or simply abolish this clause from the legal body.

Those interviewees that thought the QMS was not the appropriate setting for dealing with sheep encroachment mentioned that this should be dealt with on other fronts. They pointed out that the clause that allows free roaming is set in another legal body than the QMS is based on. Moreover, a number of interviewees from the Local Government said that the municipalities should be responsible for this, as they should plan the land use and grazing areas within their jurisdiction. An interviewee from the Farming Interest Organizations also thought that this was a planning issue, in his mind, this has nothing to do with the QMS except that the usage of the resources has to be sustainable.

To sum up the findings on the laws connections and contrasts, stakeholders often focused more on the grazing regime in whole rather than just on the QMS directly. Firstly, when discussing the laws, it is clear that many stakeholders thought that the lack of revision and improvements of laws regarding vegetation protection and grazing were of substantial degree. Thus, it may be discussed as such that those stakeholders think that significant institutional misfit has occurred in these matters (DeCaro & Stokes, 2013; Epstein et al., 2015). For example, according to some interviewees' formal institution have not been developed along the one that is happened in rangeland management practices, science, and evolution. This is coherent to the discussion of Fannarsson, Barkarson, Pétursson, & Helgadóttir (2018) on the legal frame of soil conservation, where they point out that institutions on that matter have not kept up with the development of the society and development of international cooperation and conventions. A good example of this is the frustration amongst many with the *ítala* process, as it based on a calculation of the carrying capacity of rangeland. Stakeholders, such as from the Governmental Organizations and Universities, pointed out that this method is outdated and rangelands should be evaluated based on their vegetation condition and soil erosion. It is therefore clear that misfit is ongoing between rulemaking processes in the Icelandic sheep grazing regime and the needs and interest of some stakeholders (DeCaro & Stokes, 2013; Epstein et al., 2015).

Second, an as discussed in chapter 3.3 more frequent revision have been made on the regulation on QMS, as well as those new assessment methods on rangeland are utilized. The general agreement amongst stakeholders where that the amendments have been of good nature and improved the QMS. However, some stakeholders thought that 2015 amendments had not been necessary and even damaged for the QMS.

Thirdly, it is clear that many stakeholders other than from the Agricultural Sector think that the criteria set out are not strict enough. That is, the requirements outlined in the QMS regulation appendix is very mild and do not stop utilization on those *afréttir's* which are in the worst condition. Thus, the QMS regulation allows grazing on areas that are unsuitable for grazing in their mind, which can cause frustration amongst participants that without a doubt have sustainable grazing practices as studies show (Þorláksdóttir, 2015). This as well as the QMS regulation amendments discussion above can to some

extent been put in context with the agri-environmental scheme in Europe. It has been documented that although access environmental advocators their influence on the process is still limited (Alons, 2017). In regards to both the wording of the regulation as well as the 2015 amendments, is clear that some stakeholders think that there is an inequality of powers of influence on the decision making process. That is, the voices of the farming community are more dominating than others within the legislative body where the regulation is constructed. The notion of this lack of inclusiveness and even fairness (Lockwood et al., 2010), will be further discussed in next chapter on the Stakeholder communication and cooperation.

Forth, near every stakeholder acknowledge that sheep encroachment can be a serious problem in specific areas. However, no local governmental official said that this was the case in their jurisdiction. The disagreement was amongst stakeholder on whether or not the QMS should address this problem. Those that didn't think so pointed out that the free roaming of sheep has a legal reference in another body of laws than the QMS, which is the act on livestock keeping no. 38/2013. Furthermore, it was pointed out that local government has the ruling of planning matters within their jurisdiction, and therefore they should plan the land use practices, such as grazing and forestry, as they wished. Those who thought QMS should handle sheep encroachment matters pointed out that it would be hard to say that farming practices were of a high-quality standard if farmers would be grazing other people's properties against their wishes.

5.2.4 Stakeholders communication and cooperation

Inclusiveness of stakeholders is important to good governance principles. It states that to what extent different stakeholders have the opportunity to participate in and have an influence on the decision-making process. Meaning that the governance and institutional structure should focus on giving different voices a meaningful opportunity to express their opinions and have an impact (Lockwood et al., 2010). When the interviewers were asked what they thought about the communication and cooperation was between different stakeholders, two main ideas were discovered – that it is improving and that communication between stakeholders was not as common as it used to be in the time of implementation of the QMS and the years prior it.

In chapter 5.2.1, it was discussed that one of the motives for the implementation of the QMS was the conflicts between stakeholders on the grazing practices. One interviewee from the National Government described the 1990s as a "state of war" between the two largest stakeholders, Soil Conservation Service and the National Association of Sheep farmers. Majority of the interviewees thought that since the QMS was introduced, the cooperation and communication had been improving between stakeholders. An interviewee from the Governmental Organizations seconded this, and sated the especially in the last eight years communication has gotten better, and trust has arisen between these parties. Interviewees from the same stakeholder group pointed out that the main improvement is that actors have started to talk together, instead of only arguing. In their mind, no difficulties are with the communication of stakeholders. However, they acknowledge that some parties are very dissatisfied with this system. They would like that those who have that opinion go and work together with farmers and others to solve this. Especially, those that have superior professional knowledge in the field. Interviewees from the Farming Interest Organizations expressed their opinion on that sometimes individuals come forth with statements that are not in line with the reality and point out that within organizations and stakeholder group's different opinions or vision exists. As an interviewee from that stakeholder group expressed.

> "In my opinion…There is often something thrown out there about the QMS which is simply just not correct. That, this is just desolated document and something like that. Instead of trying to scrutinize what it is that has to be improved."

Those that thought the communication and cooperation had worsened mention that today some stakeholders have good communication, but on the downside, active stakeholders were not as many as before. That is that some stakeholders had been excluded from this process. This opinion was found within the Local and National Government, Governmental Organization, Universities and Agricultural Extension Service. An interviewee from Universities pointed out that there is not as broad consultation as was before. Moreover, the discussion and dialogue on social media are very harsh from both protection arm and the usage arm as a University interviewee worded. "Then this matters is just again on the starting point," that is the discourse and conflicts are at the same level as in the 90s. An interviewee from the Governmental Organization pointed out that those that speak out on those issues and in a way that

might be offensive to someone had been excluded from the conservation. He noted that those individuals that criticized farming community and administrative body harshly, as they had simply lost their patience for real and considerable action to be made. Member of the National Government had a similar option and said that:

> "My option has been that certain advocates from the environmentalist side have been rather narrow-minded and fanatic. But I also realize that there are certain extremes, denial and undiplomatic behavior among certain people on the other side as well. Then they provoke each other in a bad way. "

Public participation in environmental decision making generally leads to better decision-making, increased legitimacy and is an essential part of what constitutes good governance. By involving a more extensive and diverse group of stakeholders into the decision making progress, more knowledge, the point of views and wide range the changes increases that the best or most acceptable decision will be made. It doesn't matter how qualified the governmental officials are in their field; they can never fully know how the decision will affect the stakeholders unless they get response and feedback from them directly (Grisham, 1988). *Fairness* is a concept used to inter alia describe to what extent stakeholders views are shown respect and given attention (Lockwood et al., 2010). The notion of fairness could further be extended to the rights of everyone to communicate their opinions and participate in a discussion of the matter at hand (Pretty, 1995).

The notion of the strong influence of the farming advocators on the construction of QMS and its decision making was prominent amongst stakeholders from the Local and National Government, Universities and NGOs. An interviewee from the Governmental Authorities pointed out that that throughout time Ministers of Agriculture have been highly connected to the farming and rural communities, and in a result have a similar mindset. Although that the QMS had been tailored to the needs of farmers, the reason is not that the farmer's associations have "shown aggressive attitude" rather that people are more or less in agreement.

> "Ministry of Agriculture has the tendency to walk in step of farmers. […]. Therefore it is more likely that their system takes more into account their interests, rather than of academic organization or administrative organization under the Ministry of Environment. […] However, if the Ministry of Finance decided to take 2 billion from

> the Ministry of Industries and give to Ministry of the Environment […], then we would have a totally different game."

In relation to this interviewee from the Universities stated that special interest groups always prevent action to be made, all around the world. No matter if it's related to oil or other pollution if there is a connection to large interest nothing is done. This matter divides every political party due to the stance of different members. He pointed out that this has been like this for decades and referred to the parliamentary debate from the 1971 and said that it is rather absurd that same speech was made then as were made now about the sheep production contract between the state and the government.

Some of the Governmental Organizations interviewees were in line that the QMS was very much in favor of the needs of a sheep farmer. Other stakeholders are often not given the platform to have an influence; they only look at QMS from a distance. One interviewee from the National Government pointed out that if the interest of Farmers Association has not been a ruling factor, then the protection criteria would be stronger and those afréttir that are in the worst condition would not be in use. The 2015 amendments and the *Almenningar* case were brought up as an example of the power of the farming community over the decision making process. Many stakeholders from different groups, wondered if there are real public and even majority of farmer's interest in grazing the afréttir that are in the worst condition. As there is just minority of farmers that utilize them. The interviewee from the National Government wondered:

> "Why didn't just someone [within the government] slammed his fist on the table and said forget this…stop this bullshit. […] Someone could have said we don't release sheep to this afrétt, it is just in too bad condition."

Members from the Agricultural Sector and Local Government especially, thought that Soil Conservation Service and the Agricultural University have more influence over the decision-making process as well as good balance is prevailing in the stakeholder's inclusiveness over the decision making. However, they didn't see the involvement the Soil Conservation Service and the Agricultural University as negatively as the one discussed here above. It was common that they thought it was reasonable as these bodies were the experts on the land use matters. An interviewee from the Farming Interest Organization feels that the QMS governance had moved from top-down governance to more equally base. The agricultural sector interviewees often mentioned that although the QMS is

obligations or burdens on the shoulder of farmers, it is not unreasonable – as in not too harsh and not too soft. The general opinion of this group of stakeholders was that everybody should be quite satisfied with this system as now different stakeholders were working together. The QMS system thus treat every stakeholder's perspective fairly where nobody has any more substantial possibility of influence than another.

Although there are very different views on stakeholders possibility of influence on the decision-making process, one core opinion about the administrative system overlapped stakeholder groups. That is that Ministry of Agriculture is a very week ministry. An interviewee from the Governmental Authorities took it even further as he said that the Icelandic administrative system is in general week and its different layers of governance. In his mind Icelanders are often slow in adoption of new ideas and policy ideas – this is especially prominent in the agricultural system. Interestingly, there was a high consensus amongst stakeholders, who often have conflicted objective, on that the Ministry of Agriculture is too small and its human resources are unsatisfactory. Near every stakeholder pointed out that point out that there is a significant shortage of professionals in agricultural and land use matters within the Ministry of Industries and Innovation. They acknowledge that there were skilled lawyers that worked there but very few with an agricultural education of some sort.

To sum up the findings, the possibility for all stakeholders to have a say in the governance of natural resources and establishing of good communication between different interest groups is viable for effective and sustainable governance (Lockwood et al., 2010). Firstly, conflicts between stakeholders are common when natural resource usage and management is discussed (Adams, Brockington, Dyson, & Vira, 2003). It was clear that in the eyes of many these conflicts have been reduced in past years, and therefore the possibility of cooperation between different stakeholders increased. This was especially clear between two large stakeholders, National Government and Agricultural Sector, the new cooperation project, GróLind, is a good testimony of that. However, although the communication between some stakeholders has become better, the numbers of stakeholders involved in the decision-making of matters related to the QMS has been reduced according to some interviewees. The reason for that development might be that there is a participatory misfit within the QMS (DeCaro & Stokes, 2013),

where some stakeholders have no or limit possibility become involved in the process. This could also be thought of as a shortage of inclusiveness within the government system where the knowledge and opinions of different stakeholders are not fully utilized (Lockwood et al., 2010). The positive transformation cooperation and communication patterns between stakeholders have been found elsewhere in agri-environmental policy making (Prager & Freese, 2009). However, in the light of the feelings some stakeholders that active participants within the agriculture policymaking had been reduced. Wolf & Allen (1995) points out that it is known situation that when positive conflict resolution is achieved on the level, it gets worse on another level.

Secondly, the influence of stakeholders over the decision maker process came up frequently in the interviews. The main trend was that those who are on the user's side thought that good harmony was between the influence of different parties, in other words, that equality was on stakeholder's influence or that Soil Conservation Service had more of a say in regards of the land-use text of the regulation. In contrary, the notion that the regulation text was tailored to the needs of farmers was ruling both within the ministries as well as from other stakeholders unrelated to the farming profession. Those stakeholders were in general very unsatisfied with the influence of the Agricultural Sector, as they thought the utilization interest would always trump the protection interest. These opinions were indirectly in connection to the idea of weak ministry where the main stakeholder (Farming Association and National Association of Sheep farmers) have profound influences on the decision-making process and thus formal institutions of the QMS. This is in context, other studies have discovered that in Europe farming lobby group have a profound influence on agricultural policy-making both on the national and supranational level (Keeler, 1996). That is, although increasingly environmental protections group have means to participate and express their views (Alons, 2017), agricultural ministers tend to be more open to the lobbying interest of agricultural sector than the environmental lobbying groups (Greer & Hind, 2012).

6 Conclusions and policy recommendations

The objective of this thesis was to bring together and analyze the stakeholders' opinions on the effectiveness and operation processes of the land use chapter of the QMS. QMS is an example of cross-compliance policy within the agri-environmental schemes. In order achieve that objective in a satisfactory manner the Icelandic sheep grazing regime was examined from the historical institutional point of view, as well from institutional analysis and social-ecological systems framework perspective.

The introduction of the QMS into the Icelandic sheep grazing regime can be traced back into the conflicts on the utilization of Icelandic rangelands as many of them suffer from vegetation degradation and soil erosion. Findings of the study indicate that introduction of cross-compliance mechanism was seen as a way to bridge the gap between agricultural production and environmental protection interests. One of the primary motives of the QMS was to continue subsidies agriculture but with compliance with sound land use and grazing practices. However, these standards were not meant to be burdensome to farmers as the government wanted to include a large majority of farmers in the QMS. That is, it can be concluded that the environmental focus of the QMS was not as high as one might expect. The reason for that could be that those actors behind the implementation process have had the vision that it the standard would be set higher later on. In result of this, there is severe dissatisfaction amongst those stakeholders that could be classified as environmental advocators, who even see this process as a greenwashing. The governmental authority over the QMS should, in cooperation with other stakeholders, revisit the QMS mission statements to increase its sustainability on all fronts.

The most striking difference between the QMS and the general Icelandic sheep grazing regime is that the former is much more centralized while the latter places the primary responsibility on the local government. This thesis, as well as Þorláksdóttir (2015), shed a light on the fact that many see the institutional settings of the QMS very complicated, as the role of the different organization is unclear. The allocation of resources, such as funding and data, to the governance and monitoring process of the QMS has been limited from its implementation stages and onwards. This causes serious dissatisfaction amongst stakeholders from all over the spectrum. However, today two

projects are ongoing on that might increase knowledge on activities of participants and the outcomes of the QMS. It necessary for the central government to fosters the *GróLind* project and new e-government strategies of the Food and Veterinary authority. Many stakeholders that were interviewed have high hopes that these projects will increase the effectiveness and efficiency of the QMS monitoring processes. The study findings indicate that the national government hasn't been able to foster potential projects and ensure their constitution, a good example are the national Soil Erosion report and Nytjaland database. If authorities had focused on implementing and, employed this projects in the QMS, the frustration of stakeholders towards the governance, shortage of data and monitoring process of QMS might have been prevented or at least limited.

The historical institutional analysis findings were that formation of rules regarding the utilization of rangeland in the early days of the Icelandic society, and although they were manifested in the 12th century, their creation most likely began earlier. The main principles rangeland utilization of the legal framework of *Grágás* and *Jónsbók* can still be found in the Act on Highland rangeland matters, mountain herding, etc. no. 6/1986. The findings of this study indicate that there is a severe dissatisfaction amongst stakeholders on the legal framework of the Icelandic sheep grazing regime which spills over to the discussion on the QMS. A good example of that is the vegetation protection instrument of this act and the one on soil reclamation no. 17/1965, *ítala* as its evaluation methods haven't followed the scientific development of rangeland management science. However, the dissatisfaction on the formal institutions was least prominent in the agricultural sector. The current legal body of sheep farmers land use, as well as on vegetation and soil protection is rather old, and it would be wise for the legislative body to go into reform of the legal framework of sheep grazing and land use. Especially since there is evidence that these institutions are in misfit with the development of the Icelandic rural society, such as conflicts over sheep encroachment and difference in land use practice. The aim of the reform should aim to increase the acceptance of the legal framework and its legitimacy. Furthermore, the role of local governance needs to be revised in both QMS and the Icelandic sheep regime as a whole. Findings of the interviews indicate that the local government official has less interest in the sheep grazing affairs now than they used to back in the days. However, it is necessary to keep in mind that

studies on common-pool resources have shown that local government plays an important role in sustainable common-pool resource governance.

The criteria for sustainable land use of QMS participant, have reminded similar throughout its implementation. Although new evaluation methods were introduced in the 2013 regulation, the benchmarks on what would classify as sustainable land use were akin. It can be concluded that these criteria were negotiated in the policy implementation process. However, the criteria doesn't seem to have been much revised in the QMS regulation development. The study findings indicated that there is a need to revisit this criterion and analyze what effect stiffen of the criteria would have on the participants. The stiffening of the criteria can be put in context with the 2015 amendments; the interviews results indicate that there had been the political will to allow some participants keep their land use practices unchanged, which decreases the legitimacy of the QMS in the eyes those that advocate for vegetation and soil protection. The notion of the abnormal influence of the agricultural sector within the decision-making process indicates the need for action taken to increase the inclusiveness and fairness within the agricultural decision-making process.

The study findings are that there is a general acceptance amongst stakeholders that the QMS have improved the governance of sheep farming and the sheep grazing regime, and want to continue on this track. Although drawbacks have been indicated on the governance processes, they are manageable if those that held administrative power are willing to take the steps necessary to increase the sustainability of the Icelandic sheep grazing regime. The findings of the study further indicate that there is a willingness amongst stakeholders to improve further the cooperation and communication regarding grazing matters, where everyone is invited to the table.

In final, there is an acceptance among the majority of stakeholders that the QMS has improved the governance of sheep farming, and many want to continue on this track. On that basis, the author concludes that the introduction of the QMS into the Icelandic sheep grazing regime has been a positive step. The QMS should be further developed, and its weight should be increased within the Icelandic agriculture subsidies system. However, the objectives of the land use clause of the QMS remains unclear, as does whether or not these objectives have been achieved. It is therefore recommended that the governmental

authorities construct a clear vision and specific objectives for what is expected from the land use component of the QMS and develop a comprehensive set of indicators as a measurement tool. It is optimal that the QMS revision goes hand in hand with the holistic revision of the Icelandic sheep grazing regime, especially its formal institutions. There are many possibilities for future research on the thesis topic. For instance, it would be interesting to explore on a national level the views and opinions of participants of the QMS process, as they are the backbone of the QMS. Although this study examined the Icelandic sheep grazing regime from an institutional point of view, it only scraped the surface. More in-depth studies using the IAD and SES frameworks would be highly valuable, as well as those that use other institutional approaches.

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Appendix 1

First and second-tier variables of the Social-Ecological Systems Framework. The table taken directly from Source: McGinnis & Ostrom (2014).

First-tier variable	Second-tier variables
Social, economic, and political settings (S)	S1 – Economic development
	S2 – Demographic trends
	S3 – Political stability
	S4 – Other governance systems
	S5 – Markets
	S6 – Media organizations
	S7 – Technology
Resource systems (RS)	RS1 – Sector (e.g., water, forests, pasture, fish)
	RS2 – Clarity of system boundaries
	RS3 – Size of the resource system
	RS4 – Human-constructed facilities
	RS5 – Productivity of system
	RS6 – Equilibrium properties
	RS7 – Predictability of system dynamics
	RS8 – Storage characteristics
	RS9 – Location
Governance systems (GS)	GS1 – Government organizations
	GS2 – Nongovernment organizations
	GS3 – Network structure
	GS4 – Property-rights systems
	GS5 – Operational-choice rules
	GS6 – Collective-choice rules
	GS7 – Constitutional-choice rules
	GS8 – Monitoring and sanctioning rules
Resource units (RU)	RU1 – Resource unit mobility
	RU2 – Growth or replacement rate
	RU3 – Interaction among resource units
	RU4 – Economic value
	RU5 – Number of units
	RU6 – Distinctive characteristics
	RU7 – Spatial and temporal distribution
Actors (A)	A1 – Number of relevant actors
	A2 – Socioeconomic attributes
	A3 – History or past experiences
	A4 – Location
	A5 – Leadership/entrepreneurship
	A6 – Norms (trust-reciprocity)/social capital
	A7 – Knowledge of SES/mental models
	A8 – Importance of resource (dependence)

	A9 – Technologies available
Action situations: Interactions (I) → Outcomes (O)	I1 – Harvesting
	I2 – Information sharing
	I3 – Deliberation processes
	I4 – Conflicts
	I5 – Investment activities
	I6 – Lobbying activities
	I7 – Self-organizing activities
	I8 – Networking activities
	I9 – Monitoring activities
	I10 – Evaluative activities
	O1 – Social performance measures (e.g., efficiency, equity, accountability, sustainability)
	O2 – Ecological performance measures (e.g., overharvested, resilience, biodiversity, sustainability)
	O3 – Externalities to other SESs
Related ecosystems (ECO)	ECO1 – Climate patterns
	ECO2 – Pollution patterns
	ECO3 – Flows into and out of focal SES

Source: (McGinnis & Ostrom, 2014)

Appendix 2

Translation of Icelandic laws and terms that touch upon the Icelandic sheep grazing regime and QMS. The translation both contains ones from other sources like vocabularies and other publications, as well as composed by the author.

Icelandic terms	**English translations**
Afréttir	(Mountain) Commons
Afurðarsölulögin	The Act on Slaughtered Livestock
Ágangur búfjár	Sheep encroachment
Beitarþol	Grazing Capacity
Búvörusamningar	Agricultural production contract
Fjallskiladeild	Mountain Herding department
Fjallskilasamþykkt sveitarfélaga	Municipalities Mountain Herding bylaws
Fjallskilastjóri	Chief of Mountain Herding
Gæðastýrð sauðfjárframleiðsla	Quality Management in Sheep farming
Grein í lögum	Article
Gripagreisðlur	Livestock payments
Heimalönd	Private rangelands
Hreppsnefnd	Rural District committee
Hreppstjóri	District Administrative Officer
Íslensk beitarlönd	Icelandic rangelands
Jarðarmörk	Boundaries
Landbótaáætlun	Land Improvement plans
Landgræðsla ríkisins	The Soil Conservation Service
Lausaganga búfjár	Free roaming of sheep

Lög um afréttarmálefni, fjallskil og fleira	The Act on Highland rangeland matters, mountain herding etc.
Lög um búfjárhald	The Act on Livestock Keeping no. 38/2013 B44+B22
Lög um framleiðslu, verðlagningu og sölu á búvörum	Act on Agricultural Production and sale
Lög um framleiðslu, verðlagningu og sölu á búvörum	The Act on Agricultural Production no. 99/1993
Lög um framleiðsluráð landbúnaðarins, verðskráningu, verðmiðlun og sölu á landbúnaðarvörum o.fl.	The Act on Product Council
Lög um landgræðslu ríkisins	The Act on Soil Reclamation no. 17/1965
Málsgrein í lögum	Paragraph
Matvælastofnun	The Icelandic Food and Veterinary Authority
Sambandslögin	Act on Unions
Samgangur búfjár	Sheep crossing
Sértæk gæðastýring	Specific Quality Management
Sýsla	County
Sýslumaður	District Commissioner
Sýslunefnd	County Committee
Tilskipun um sveitarstjórn á Íslandi	A Direction on Local Governance in Iceland
Upprekstrarheimalönd	Collective herding private rangelands
Upprekstur	Driving of sheep to rangeland

Appendix 3

A timeline of several important events in the development of the Icelandic sheep grazing regime and the related annual number of sheep (winterfed eves).

Year	Event	Numbers of sheep
10th century	The first sheep brought to Iceland	
11th century	Grágás	No data available
1281	*Jónsbók* introduced	No data available
1284	Reforms on *Jónsbók*	No data available
1703	First, know numbers	278,994
1874	Direction on local governance in Iceland	428,713
1934	The act on Slaughtered Livestock	699,107
1965	The act on Soil Reclamation no. 17/1965	846,674
1969	First act on the Highland rangeland matters, mountain herding etc.	780,462
1977	Largest known number of sheep in the history of Iceland	896,192
1986	New act on the Highland rangeland matters, mountain herding etc.	675,515
1993	New act on Agricultural Products	488,787
2003	First regulation on the QMS	463,006

2008	Second regulation on the QMS	457,871
2013	Third regulation on the QMS	484,108
2017	Forth regulation on the QMS	473,144

Source: (Datamarket, 2014; Hagstofa Íslands, 2017)

Appendix 4

Interview guide in Icelandic

Bakgrunnur

- Staða(Atvinna)
- Menntun
- Aldur
- Búseta

Gæðastýringin

- Þekkir þú til landnýtingarþáttar gæðastýringar í sauðfjárrækt?
- Hver eru tengsl þín við gæðastýringuna?
- Að þínu mati, hvað leiddi til innleiðingar gæðastýringarnar?
- Hverjar voru vonir þínar við gæðastýringuna í upphafi?
- Hefur hún staðið undir þeim vonum?
    a. Ef ekki, af hverju ekki?
    b. Ef svo er, hvernig þá?
- Hver er þín skoðun á hinu stjórnsýslulega umhverfi gæðastýringarinnar?
    a. T.d. Hversu árangursríkt er almennt, eftirlit með landnýtingu þáttakenda; Finnst þér landnýtingarþátturinn vera hindrun í upphafi að menn fái gæðastýringuna; Er eftirlit eftir landbótáætlunum nógu gott; Hvað með þá sem ekki þurfa að vera með landbótaáætlun, er gengið úr skugga um að þeir séu ekki að ganga á landið?
- Nú tengjast fjölmörg lög landnýtingu sauðfjárbænda. Hvernig finnst þér þessum tengslum milli ólíkra laga háttað?
    a. T.d. Skarast ákvæðin eða eru í mótsögn? (Dæmi um lög: Lög um afréttarmál, fjallskil o.fl; gæðastýring; landgræðslulög; búvörulög; jarðarlög).

- Nú hefur umræðan um ágang sauðfjár verið mikil undanfarin, hvoru á tveggja milli sauðfjárbænda og einnig milli sauðfjárbænda og aðilla með annarskonar landnýtingu. Hvernig finnst þér gæðastýringin taka á þeim málefnum og finnst þér að hún ætti að gera það?
- Nú skiptir gæðastýringin landi eftir nýtingu, afréttir, upprekstarheimaland og heimaland. Svipað matskerfi gildir um þessi lönd. Finnst þér það rétt, finnst þér að ætti að vera meiri aðgreining og jafnvel sér kerfi utan um hverja tegund lands?
- Finnst þér gæðastýringin hafa aukið vitund (awareness) á sjálfbærri landnýtingu?

Samstarf hagsmunaaðilla

- Hvernig finnst þér samstarf/samtal milli ólíkra aðilla vera?
- Tekur gæðastýring nógu mikið tillit til allra hagsmunaaðilla? Er einhver aðilli sem gæðastýringin tekur meira tillit til?
- Hver var aðkoma ykkar í upphafi?
- Hver er aðkoma ykkar að núverandi stjórnkerfi?
- Finnst þér sjónarmið einhvers hagsmunaaðilla vera meira ráðandi en annar í mótun og framfylgd reglugerðarinnar?
- Hver er þín tilfinning á vitund og skoðunum neytenda á gæðastýringunni?

Að lokum

- Hefur þú hugmyndir um hvernig bæta mætti gæðastýringuna? Eða finnst þér að afleggja þetta kerfi og gera nýtt?

Interview guide in English

Background

- Profession
- Education
- Age
- Residency

The Quality Management of Sheep Farming

- Are you familiar with the land use clause of the QMS?
- What is your connection to the QMS?
- In your opinion, what were the motives behind the implementation of the QMS?
- In the beginning, what were your hopes towards the QMS
- Has it lived up to your hopes?
    a. If not, why not?
    b. If so, how?
- What is your opinion towards the governance of the QMS?
    a. For example, How effective is the supervision of participants land use; Do you think that the land use clause was a barrier for participants? Is the monitoring of land improvement plans sufficient? What about those that do not have to construct and oblige to land improvement plans?
- There are many laws regarding the land use of sheep farmers, how do they connect?
    a. For example is there an overlap between clauses of different laws or are the in contrast. Example: Act on Mountain Herding, the QMS, Act on Soil Reclamation, Act on Agricultural Products and Act on Land?

- Now, the discussion on sheep encroachment has been noticeable in recent years, both between sheep farmers and other landowners. In your opinion, how does the QML tackle this affair and do you think it should?
- The QMS divide land after its property rights. Similar assessment criteria are on hand for it. In your opinion should it be more differentiation between property-rights even a special system after its property rights?
- In your opinion has the QMS increased awareness on sustainable land use?

Stakeholder's cooperation

- How is the cooperation/communication between different actors?
- Does the QMS take into consideration the needs of every stakeholder? Are some considerations more prominent?
- How was your approach in the beginning?
- How is your approach to the current governance of the QMS?
- Do you think that some stakeholders viewpoint be more ruling than other in the formation and pursuance of the QMS regulation?
- What is your feeling about the consumer's awareness and opinion of the QMS?

In Finale

- In your opinion, how could the QMS be improved? Or do you think that this system should be abolished and construct a new one?