



The Department of International Environment and Development Studies, Noragric, is the international gateway for the Norwegian University of Life Sciences (NMBU). Eight departments, associated research institutions and the Norwegian College of Veterinary Medicine in Oslo. Established in 1986, Noragric's contribution to international development lies in the interface between research, education (Bachelor, Master and PhD programmes) and assignments.

The Noragric Master thesis are the final theses submitted by students in order to fulfil the requirements under the Noragric Master programme "International Environmental Studies", "International Development Studies" and "International Relations".

The findings in this thesis do not necessarily reflect the views of Noragric. Extracts from this publication may only be reproduced after prior consultation with the author and on condition that the source is indicated. For rights of reproduction or translation contact Noragric.

© Ane Botterli, May 2015

abotterli@hotmail.com

Noragric

Department of International Environment and Development Studies

P.O. Box 5003

N-1432 Ås

Norway

Tel.: +47 64 96 52 00

Fax: +47 64 96 52 01

Internet: <http://www.nmbu.no/noragric>

Declaration

I, Ane Botterli, declare that this thesis is a result of my research investigations and findings. Sources of information other than my own have been acknowledged and a reference list has been appended. This work has not been previously submitted to any other university for award of any type of academic degree.

Signature.....

Date.....

Acknowledgements

Firstly, I would like to express my gratitude towards the Dubti villagers who through openness, cooperation and kindness made this thesis possible. I would also like to thank the various offices and departments both in Dubti *woreda* and the Regional Afar Government in Samara, as well as Mekelle University for their assistance, expertise and knowledge. To Mahmoud; I am deeply grateful for your patient hours of translations, your friendship and valuable conversations.

Further, I offer sincere thanks to my supervisor Postdoctoral Fellow Lutgart Lenaerts, who has provided valuable guidance, support and in-sight throughout the fieldwork and writing process. Last but not least, thank you to my family and all the people who in some way have lent their time and ear to me during this period.

Abstract

Climate change is considered a threat to global and local stability with high uncertainty regarding how these trends will affect natural resources, and the livelihoods and national economies that dependent on them. The adaptive capacity of pastoral livelihoods in the dry lowlands of Afar, is increasingly compromised though deteriorating natural resources, and socio-political processes increase vulnerability trough compromising local coping- and adaptation capacity. The objective of this thesis is to critically assess the assumption that villagization, as an adaptation strategy to climate change, will improve pastoral adaptive capacity and reduce vulnerability. This will be done through an investigating the key drivers of vulnerability and how these have been affected by villagization, in addition to applying five the principles of the Sustainable Adaptation Framework to assess the ability for villagization to provide stainable development pathways.

This qualitative study follows an inductive scientific method. Data was collected through a non-probability sampling strategy and accumulated from mainly semi-structured interviews and participatory observation during 3 months of fieldwork in an Afar village in Ethiopia.

Villagization increase sedentary vulnerability by compromising certain exciting adaptation strategies. These strategies include flexible herding of livestock and social exchange mechanisms. Food insecurity has increased after villagization as a result of decreasing livestock and lack of agricultural yields. In addition to food insecurity, decreasing livestock leads to change in diets and nutritional intake which causes deteriorating health. However, villagization has also benefitted sedentary pastoralists through increased services and infrastructure which can improve adaptive capacity. In order to increase adaptive capacity and reduce vulnerability, the villagization must incorporate an understanding of the vulnerability context. Participation of local and marginalized stakeholders is necessary to achieve further positive outcomes. The premise of top down agricultural expansion embedded in Villagization further prevents sustainable pastoral pathways, but committing to a Sustainable Adaptation Framework will improve the exciting sedentary conditions. And the framework is promoted to guide national development pathways.

Table of Contents

Declaration	iii
Acknowledgements	v
Abstract	vii
Abbreviations	1
1 Introduction.....	2
1.1 Objectives and research questions	4
2 Theoretical background.....	7
2.1 Understanding vulnerability.....	7
2.2 Adaptation and top-down development as usual.....	9
2.2.1 Sustainable adaptation.....	9
3 Methods	11
3.1 Study area.....	11
3.2 Sampling approach.....	13
3.2.1 Data collection and analysis	15
3.3 Challenges, limitations and ethical considerations	16
4 Findings.....	18
4.1 Climate change and vulnerability.....	18
4.2 Villagization and agro-pastoralism	19
4.2.1 Agricultural challenges	20
4.2.2 Decreasing numbers of livestock.....	21
4.3 Loss of land and representation.....	22
4.3.1 Loss of independence.....	23
4.3.2 Women’s role in the village.....	24
4.4 Resettlement and services	24
4.4.1 Water service.....	25
4.4.2 Health service	25
4.4.3 School and gender	26
4.4.4 Outlook on the future.....	28
5 Discussion	30
5.1 Vulnerability to climate change within a political context.....	30
5.2 Villagization and livelihood diversification.....	31
5.2.1 The importance of livestock in risk management	31
5.2.2 Sedentary agro-pastoralism	32

5.3	Food insecurity and deteriorating health.....	33
5.4	Gendered opportunities and constraints.....	34
5.4.1	Access to education.....	35
5.5	Discussing villagization from a sustainable adaptation framework.....	35
5.5.1	Nr. 1 Contextual vulnerability	36
5.5.2	Nr. 2 Different values and interests influence adaptation outcomes	36
5.5.3	Nr. 3 Local knowledge	37
5.5.4	Nr. 4 Potential feedback between local and global processes.....	38
5.5.5	Nr. 5 Empower vulnerable groups.....	38
6	Conclusion	40
7	References.....	43

Abbreviations

ANRS	Afar National Regional State
CRGES	Climate Resilient Green Economy Strategy
FDRE	Federal Democratic Republic of Ethiopia
PARDB	Pastoral Agriculture and Rural Development Bureau
PSNP	Productive Safety Net Program
SA	Sustainable Adaptation
WCYDB	Women Children and Youth Development Bureau

1 Introduction

Climate change poses a threat to global and local stability, and there is high uncertainty regarding future climate trends and how these trends will affect natural resources, and the livelihoods and national economies dependent on them (Adger, Huq, Brown, Conway, & Hulme, 2003). The Ethiopian agricultural-led economy highly dependent on its natural resource base will be affected by the predicted future climate change, including increased temperatures in all seasons (Conway & Schipper, 2011). Agricultural development provides the basis for Ethiopian economic growth and will continue to do so in the future, with ambitions of increasing both commercial export-driven cultivation, and domestic food independence and food security which presents a vast challenge for the government (FDRE, 2011a). Rural areas in Ethiopia are prone to high levels of chronic and seasonal food insecurity and pastoralists in semi-arid and arid areas such as the Afar lowlands, are particularly considered at-risk populations (Negatu, 2008).

Pastoralists in arid and semi-arid African Sahel have developed diversified coping- and adaptation strategies built on principles of flexibility and mobility. These strategies involves spreading and managing risks through cooperative communal herding, diversifying livestock composition depending on the animals food- and water needs (Pedersen & Benjaminsen, 2008), and/or other strategies such as migrating to find seasonal wage-labour jobs, trade, and agricultural cultivation (Little, Smith, Cellarius, Coppock, & Barrett, 2001). Changing climate trends in Afar region includes increased frequency of spring drought over the last 15 years (Viste, Korecha, & Sorteberg, 2013), experienced warmer temperatures, unpredictable precipitation patterns and prolonged dry-spells deteriorating the soil and increase risk of soil erosion, and frequency and increased intensity of weather events such as drought and flooding (S. H. Eriksen & Marin, 2011).

Deteriorating biological conditions and the increased difficulty to predict weather events challenge pastoral livelihoods which depend on localized knowledge of these conditions, such as seasonal rainfall patterns guiding mobile herding of livestock, and exciting local adaptation strategies are compromised by climate change (ANRS, 2010; S. Eriksen & Marin, 2015). In Afar region, as well as in other east African pastoral areas, livestock holding sizes have declined over the last decade (Little et al., 2001). The ability to secure sufficient livestock in Afar is not only influenced by deterioration of the natural resource base, but also socio-economic processes shaping access to these resources (S. Eriksen & Marin, 2015). One of these processes is land-cover change, converting pastoral rangeland into agricultural

cultivated areas (Tsegaye, Moe, Vedeld, & Aynekulu, 2010). Since the 1960's, the Federal Ethiopian Government has increasingly transformed fertile land along the Awash River from communal grazing areas into commercialized irrigated agriculture (Rettberg, 2010). . Between 2005 and 2010, Ethiopia achieved a 40% increase in agricultural yields, which was attributed to increased investments and a 15% expansion of agricultural land (FDRE, 2011a). Land-cover change and extensive agricultural development means that valuable pastoral rangelands are lost which adds stress on pastoral dependent livelihoods (Tsegaye et al., 2010). Many Afar pastoralists are thus pressured into assuming agriculture as a livelihood diversification strategy, a strategy which is further promoted and facilitated by government policies and the development of irrigated agro-pastoralist communities. (S. Eriksen & Marin, 2015).

Socio-political engineering schemes transforming nomadic pastoralist production systems into sedentary agro-pastoralist communities are called villagization (Scott, 1998). Villagization schemes were first implemented in Ethiopia during the Dergue regime in the mid-1970's and 1980's, inspired by the compulsory villagization model in Tanzania. The political ideology behind the scheme was one of modernism and top-down developmental progress; to arrange scattered and rural populations into structured and ordered communities to encourage productivity. The rural structure would also increase centralized control and bureaucratic convenience as organized populations are easier to control, influence and manage than scattered ones (Scott, 1998). After the fall of the Dergue regime, villagization was abandoned, political power were decentralized, and pastoralists were given the right to freedom from expulsion from their customary herding lands (Tsegaye et al., 2010). However, pastoralists are yet again finding their land-rights compromised through the agricultural-led development pathway (Lavers, 2012a, 2012b).

Villagization is a recurring component in development policies and projects implemented by the FDRE (Assefa, 2008), including poverty reduction schemes which focus on agriculture and rural development providing access to service such as schools, health facilities, roads and water systems through the extensive development of villages (Kassa, 2008). Food security policies promotes villagization through emphasizing sedentary agro-pastoralism, however also components concerning improvement of livestock management and productivity among nomadic pastoralists are also a part of the strategy (Negatu, 2008). In 2011, the FDRE committed itself to plan a Climate Resilient Green Economy Strategy (CRGES). Through a green economy, Ethiopia hopes to become a middle-income country by 2025, and this economic growth should occur in an environmentally sustainable way so as to limit the effects

on natural resources, and bring socio-economic benefits to local communities (FDRE, 2011b). These highly ambitious goals will be achieved through focusing on agricultural productivity, strengthening industries and growing exports, mitigation efforts and environmental conservation (FDRE, 2011a). The report estimate that the national carrying capacity for livestock will be reached within 20 years (FDRE, 2011a). The livestock industry is a major contributor to the national GHG emissions, and the focus of development in rural and areas is to improve crop and livestock productivity to increase food security and local incomes from farming, whilst also reducing emissions (FDRE, 2011a).

Deteriorating conditions of Afar pastoralist environments derives the need to implement robust adaptation strategies that strengthens the local adaptive capacity and reduce the root causes of vulnerability should (S. Eriksen & Marin, 2015). The Ethiopian development pathway promotes agro-pastoral villagization in pastoral areas as an adaptation strategy to spread risk and reduce vulnerability to climate change, improve production efficiency, increase food security, and more generally to provide improved infrastructure and access to services.

1.1 Objectives and research questions

The objective of this thesis is to critically assess the assumption that villagization, as an adaptation strategy to climate change, will improve pastoral adaptive capacity and reduce vulnerability. In order to do this, this thesis will provide an investigation of how villagization has both benefited and harmed the lives and conditions of previously nomadic pastoralists after the transition to sedentary agro-pastoralism. The government and local communities often has differing perceptions on risk and what drives vulnerability through differing lived experiences (Rettberg, 2010). Indeed, the villagization process in Ethiopia has received criticism for reducing rather than improving adaptive capacity, in addition to generate unwanted and unpredictable outcomes that has further accelerated the local vulnerability context (Devereux, 2006; S. Eriksen & Marin, 2015). In order to guide the investigation 3 overarching research questions were formulated in addition to related sub-questions. The main research questions were as follows:

- 1. What are the key drivers of vulnerability?*
- 2. How have these key drivers been affected, positively and negatively, by villagization?*
- 3. Does villagization lead to sustainable development pathways?*

Firstly, mapping key drivers of vulnerability includes the exploration of the actual conditions on the village. Villagization is based on several political objectives mentioned earlier in the introduction, and these objectives provide the foundation for additional sub-questions to explore the village situation, including:

- Is climate change considered a livelihood risk?*
- Has agro-pastoral production increased food security?*
- What are the conditions of the services in the village (health, school and water)?*
- What other risks are identified in the village?*

Secondly, how people experience vulnerability and village conditions is influenced by how the process- and actual transition occurred, as well as influence people's willingness to participate and the outcomes of villagization (Scott, 1998). Additionally, what kind of conditions people moved from, are essential to understand how villagization has affected vulnerability because it provides a background to draw comparisons between previous seasonal nomadic pastoral livelihoods and sedentary agro-pastoral livelihoods. Therefore, additional sub-questions were formulated to understand how the transition may have affected perceptions and comparisons.

- Why, when, how and by whom did the villagization process occur?*
- How does the village conditions compare to the previous living conditions?*
- Have any new risks been associated with villagization?*

Thirdly, adaptation strategies should be sustainable thus sustainable adaptation should “contribute to socially and environmentally sustainable development pathways” (S. Eriksen et al., 2011, p. 15). As proposed by the CRGES initiative, the FDRE is committed to a sustainable development pathway (FDRE, 2011a). Related to the objective of this thesis, the sustainability of villagization as an adaptation approach will be investigated through the Sustainable Adaptation Framework. The Sustainable Adaptation Framework offers five normative principles to guide sustainable development pathways and policy implementations (S. Eriksen & Marin, 2015). This framework will be discussed in detail in the following chapter, and its five principles will guide the critical analysis of villagization, as the second objective will be answered in chapter four- the discussion chapter.

The following chapter will provide a theoretical background discussion on central concepts instrumental to answering the two objectives presented above, namely the concepts of vulnerability and sustainable adaptation. Chapter 3 will outline the research methods used to collect and analyse the data that this thesis builds on. Chapter 4 will provide the research findings based on the first study objective and related research questions, while chapter 5 will provide a discussion of these findings related to both thesis objectives. The discussion chapter is divided into two parts, the first section will discuss objective number one regarding vulnerability and villagization, while the last part of the chapter will provide a discussion on villagization through the application of the five normative principles of the Sustainable Adaptation Framework. Lastly, the concluding chapter will shortly summarize the main findings and arguments of this thesis before offering some thoughts on the road ahead for Ethiopian national development pathways.

2 Theoretical background

In order to investigate key drivers of vulnerability for settled pastoralists, there needs to be an understanding of the concept itself. The first section of this chapter will present two different understandings of the concept, namely vulnerability from the outcome oriented framework and the contextual vulnerability framework. The latter incorporates a broad view on vulnerability; as a constant evolving context of multiple stressors and processes, which is relevant for understanding the stories and narratives of the informants of this study. The last part of this chapter will give focus to the sustainable adaptation approach as a framework for an alternative development pathway to the top-down development strategy promoted through villagization and agricultural modernization policies that have been, and still are, prevalent in Ethiopia.

2.1 Understanding vulnerability

Individuals and societies with the least coping capacity are the ones who will be the most vulnerable to- and negatively affected by climate changes (Adger et al., 2003). Vulnerability can be understood “in terms of the capacity of individuals and social groups to respond to, that is, to cope with, recover from or adapt to, any external stress placed on their livelihoods and well-being” (Kelly & Adger, 2000, p. 352). Local climate change manifestations such as increased spring drought and variability of expected seasonal rains are considered livelihood risks or stressors as they affect- and may alter biophysical conditions which pastoral livelihoods depend upon. Furthermore, vulnerability to climate change is created through multiple stressors that limit the adaptive capacity or coping mechanisms in response to these climate and weather related risks (S. Eriksen & Marin, 2015). For example in semi-arid and arid lands drought is a naturally occurring event which pastoralists have learnt to cope with and adapt to over several generations of experience. Thus, increased vulnerability to drought has to do with socio-economic processes, like policy implementation, which reduces the ability for pastoralists to efficiently utilize their already existing coping and adaptation mechanisms (Devereux, 2006). Following this view, vulnerability is “a socially constructed phenomenon influenced by institutional and economic dynamics” and how these affect and influence exposure to climate threats (Adger et al., 2003, p. 181).

How vulnerability is conceptualized and framed has implications for knowledge production and the type of responses promoted towards climate change related risks (K. O'Brien, Eriksen, Nygaard, & Schjolden, 2007). O'Brien et al. (2007) identify two main frameworks in the literature on vulnerability to climate change called outcome vulnerability and contextual

vulnerability. Within the outcome vulnerability framework, vulnerability is understood as the “negative outcome of climate change on any particular exposure unit” (K. O'Brien et al., 2007, p. 76). This understanding of vulnerability builds on a framing of climate change as a specific and measurable threat that needs scientific and technological adaptation responses and solutions. Vulnerability is the end-point of analysis; a result or an outcome after climate threats have been assessed and responses have been implemented.

The contextual vulnerability framework understands vulnerability as a process influenced by multiple stressors simultaneously. The context of the ‘exposure unit’ is the starting-point for the analysis of climate impacts (Adger et al., 2003). The impacts of climate change are assessed within the context of social and political relations and processes and how these affect vulnerability. “Both climate variability and change are considered to occur in the context of political, institutional, economic and social structures and changes, which interact dynamically with contextual conditions associated with a particular ‘exposure unit’” (K. O'Brien et al., 2007, p. 76). The contextual vulnerability framework is useful when analysing key drivers of vulnerability at the level of a community, household or individual, because it seeks to assess multiple stressors and processes at play, whether climate change is a relevant threat to a specific community, why some groups are more vulnerable than others, and assesses local coping and adaptation capacities (K. O'Brien et al., 2007). Gender and financial status are both social categories which may involve differing risk perceptions and varying vulnerability context within the same society. For instance, the vulnerability context of men and women may differ because of their embedded cultural roles and responsibilities which affects their opportunities and limitations to pursue (Rettberg, 2010). Financial status and wealth may also determine availability of choices and this influence the vulnerability to certain stressors (Little et al., 2001).

This thesis builds on the contextual vulnerability framework as a way to understand how local Afar pastoralists cope and adapt to multiple processes of change, and how villagization affects their vulnerability context. Several studies conducted in Ethiopian pastoral areas illustrate the importance of the contextual vulnerability framework in generating knowledge and promoting appropriate responses to climate change at the local level (Davies & Bennett, 2007; S. H. Eriksen & Marin, 2011; Sabates-Wheeler, Lind, & Hoddinott, 2013). Incorporation of a contextual vulnerability framework within development pathways and adaptation strategies will likely reduce negative outcomes and promote sustainability.

2.2 Adaptation and top-down development as usual

Adaptation to climate change should enhance people's capacity to deal with climatic challenges and ensure social and environmental justice and integrity, however this is no easy task (S. Eriksen & Marin, 2015). Adaptation is a political process where competing interests and objectives within a community or society influence the choice of adaptation responses, the process of implementing these and the outcomes of the adaptation responses (S. Eriksen & Marin, 2015). Socially embedded power relations dictate which objectives and interests are promoted over others and thus create winners and losers of the adaptation process (Adger et al., 2003; S. Eriksen et al., 2011). Climate adaptation strategies based on knowledge, interests and objectives of powerful stakeholders and elites, will not be promote sustainable adaptation but rather continue to marginalize already vulnerable groups, and thus follows the pattern of top-down development as usual approach (S. Eriksen & Marin, 2015). Adaptation strategies, to need to incorporate a process which consider existing power structures and stakeholder interest, and facilitate participation and ownership during the process so that the key drivers of vulnerability can be identified, then the adaptation strategy will have the potential to bring real transformative and sustainable outcomes and increase local adaptive capacity (O'Brien, 2012).

2.2.1 Sustainable adaptation

The FDRE's initiative to develop and implement the CRGES, a socio-environmental sustainable developmental strategy, has been promoted as an alternative to the globally dominant top-down development as usual development pathway (Bass, Wang, Ferede, & Fikreyesus, 2013; FDRE, 2011a). Nevertheless, the overreaching developmental pathway and subsequent climate change adaptation strategies implemented in Afar, such as villagization, seem to be at odds with the needs and objectives of pastoralists livelihoods and already excising local adaptation strategies (Devereux, 2006; S. Eriksen & Marin, 2015). As a response to this, Eriksen and Marin introduced the sustainable adaptation framework which provides five normative principles to conceptualize and drive environmental and socially sustainable adaptation, and bring forth justice and integrity (2015).

The first principle is to understand the vulnerability context of the people who are subject to the adaptation measures. Successful adaptation responses need to incorporate a broad understanding of the multiple stressor which affect pastoral livelihoods. Secondly, there needs to be awareness of how different values and interests affect the outcomes of adaptation in order to limit unintended negative effects. Thirdly, integrating local knowledge in adaptation

responses is necessary. Forth, considering local feedbacks between local and global processes, and finally, empower vulnerable groups so they can influence development pathways and their climate change outcomes (S. Eriksen & Marin, 2015). The principles of the sustainable adaptation approach will be discussed more in detail at the last section of the discussion chapter.

3 Methods

This qualitative study follows an inductive scientific method, which bases empirical fieldwork at core of generating knowledge, guided by the set research questions and study objective, and provide an understanding of villagization as a social phenomenon. At its core, this study holds an interpretivist epistemological view; the understanding that knowledge is created through a social reality where its human subjects give meaning to- and interpret their social context guide and motivate their behaviour (Bernard, 2006; Bryman, 2012). There may be multiple social realities in relation to villagization, depending on the social context of the people generating the knowledge. For example the social reality of sedentary pastoralists will differ from one of a government official. Furthermore, this thesis follows a constructivist ontological assumption that social realities are generated through continuous processes of re-evaluation, re-interpretation and negotiations between the social actors who inhabit this reality. Hence, my role as a researcher is to interpret the existing interpretations of study subjects; interpretations of the pastoralists point of view (Bryman, 2012).

The following sections of this chapter will give an account of the study area and methods used for data collection and analysis, and lastly some challenges, limitations and ethical considerations related to qualitative research and fieldwork.

3.1 Study area

This thesis builds on a qualitative research approach, with data collected from fieldwork carried out in Afar region, Ethiopia, from October to December 2013. In terms of geography, the Afar National Regional State is located northeast in Ethiopia, sharing international borders with Eritrea in the north and Djibouti in the north east. The drought prone region has a hot and dry climate with low and varying precipitation ranging from below 500mm annual rainfall in semi-arid eastern part of the region and below 150mm in the arid eastern areas. Among the Region's three common rain periods, the *karma* season occur from mid-June to mid-September, and accounts for 60 percent of the annual rainfall (ANRS, 2010). *Karma* is followed by mid-December rainy showers (*dadaa/daddah*), and from March to April there is a short rain period called *suggum*. Additionally, rain showers may occur during October to November (*dababa*) (S. H. Eriksen & Marin, 2011).

The Afar region contains 5 zones and 30 administrative districts (*woredas*). Demographically, the Region has a population of 1.4 million people, about 91% of which are ethnically Afar and 96% of which are Muslim (ANRS, 2010). Approximately 87% of the population are rural

and more than 80% depend on livestock production through seasonal migration due to climate conditions (S. H. Eriksen & Marin, 2011). Increase of unpredictability of rainfall and frequency of drought, in an already drought prone region, has caused accelerated livelihood vulnerability to climate change, intensifying the urgency of sustainable adaptation (S. Eriksen & Marin, 2015). However, the amount of pastoral people transitioning to sedentary agro-pastoral production is increasing, particularly along fertile river land such as the Awash River in the southern part of the region. The Awash River and surrounding lands have been subject to great infrastructural investments over the last decade, including the development and expansion of the Tendaho Sugar Factory covering 60,000 ha of irrigated sugar cane plantation over several districts (S. H. Eriksen & Marin, 2011), in addition to the development of small-scale irrigated agricultural lands for individual production.

This research was carried out in a sedentary village located in close proximity to a Tendaho sugar cane plantation in the Dubti district. The initiation for this village came from the regional government who started building central infrastructure and services about 8 years prior to my visit. Most of the inhabitants had moved to the village within the last 5 years, and the majority had been given a 1ha irrigated plot connecting to the plantation.

The choice of research site was initially based on plans to conduct a study on Productive Safety Net Project (PSNP), providing food for work in Afar villages, and investigate its efficiency and constraints according to local beneficiaries. The village was chosen as a research site due to its registered participation in the PSNP, in addition to its accessibility. The site was easily accessible by car and within convenient driving-distance from Logia, a town where accommodational services were available. Within the first few weeks of interviewing, however, there had been little to no information gained about the PSNP in the village. According to informants, there was either no PSNP present in the village, or they did not have knowledge to share about the project. During interviews, the emphasis and focus of conversation would shift to topics related to their recent transition from nomadic pastoralism to sedentary agro-pastoralism. After consultations with my supervisor, I chose to change the research topic from PSNP to a focus on the sedentary vulnerability context. Whilst I could have continued to study the PSNP in the village or chosen a new field site, I rather changed the topic to allow further exploration of the information and stories already shared with me by the respondents. Additionally, the research site was highly relevant and compatible with the new research topic, and with limited prior fieldwork experience, staying in the village investigating a topic of current importance to the informants; allowed me to continue building

report with village informants and also gave me confidence throughout the fieldwork and data collection process.

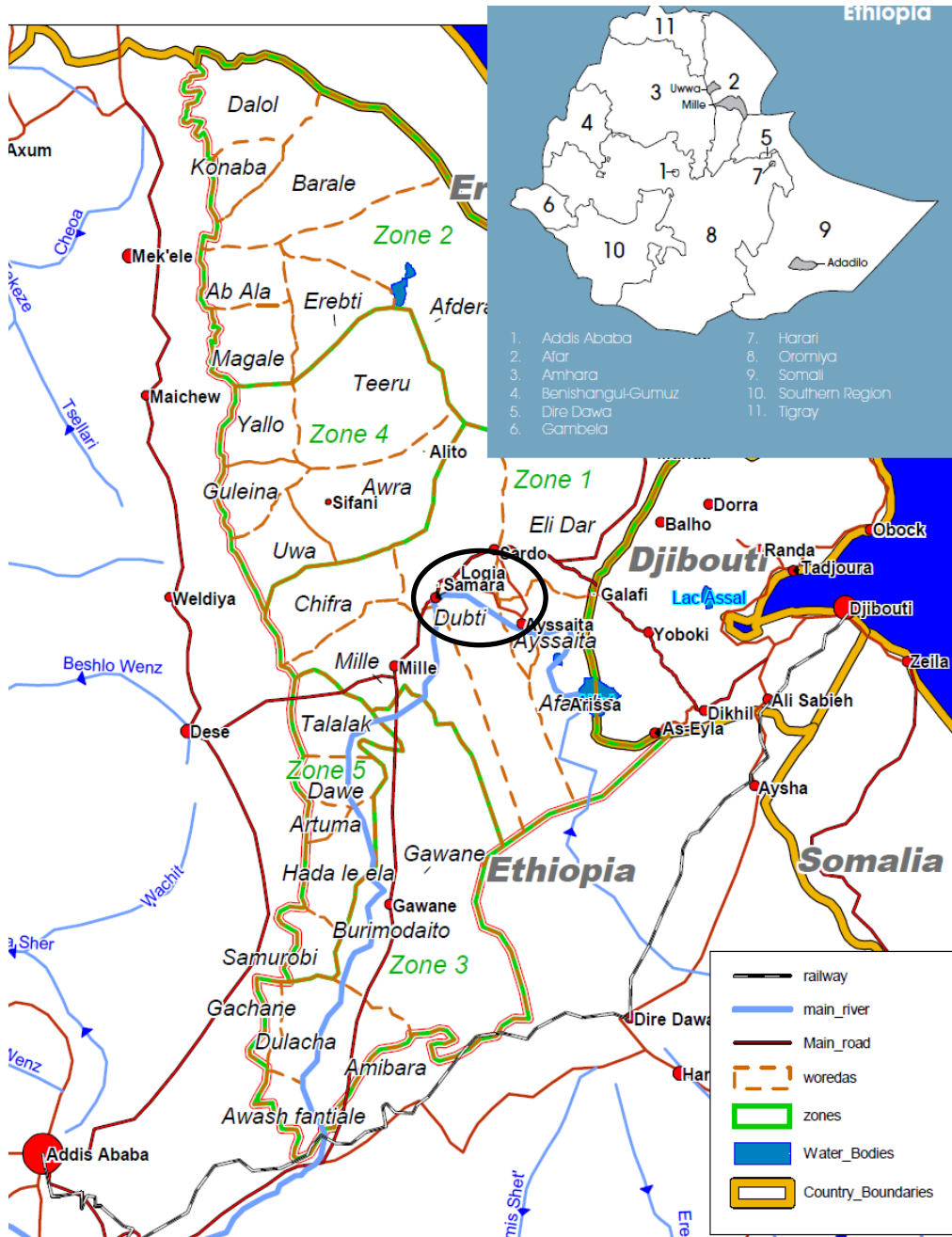


Figure 1: Map of Afar Region (S. H. Eriksen & Marin, 2011). The black circle shows the location of the field site for this research.

3.2 Sampling approach

Qualitative research methods seek to capture an understanding of a social phenomenon and/or contexts (Bernard, 2006). A non-probability sampling strategy is considered appropriate in either labour-intensive studies of a few cases, narrative studies where the informants are selected with a purpose, or a study on cultural data which needs expert informants. Following

the interpretivist scientific method of research, quantification is considered inappropriate for the generation of knowledge (Bernard, 2006). The focus is rather on gaining in-depth information to generate interpretation and understanding, and sample quality rather than sample size. Following the objective of this thesis, a non-probability sample strategy was chosen for this research, and the sample consisted of both purposive sampling and snowball sampling strategies.

Snowball sampling, respondents referring me to other potential informants, was used for the purpose of finding informants holding certain experiences, knowledge and expertise, particularly with regards to accessing villagers with administrative roles (Berg & Lune, 2012). For example, interviews with village committee members were guided by the assistance of respondents. The field sample was also based on a purposive sampling strategy, setting out to locate informants with specific knowledge serving the purpose of the research. This included the prior selection of government offices and bureaus that could provide information from the viewpoint of the government, including the Women Children and Youth Development Bureau in Samara and in Dubti *woreda*. Additionally, a purposive sampling was carried to include informants of both genders and of different generations. Social categories, such as gender, frames the social reality of subjects (Bernard, 2006) and according to achieve the objective the collection data needed a sample which would hold different social realities. The sample unit thus included close to 50/50 male-female and 50/50 young-old ratio.

The sample included 62 interviews with respondents from the village, 12 of which I consider interviews with one or more key informants. According to Bernhard, key informants hold and share vast cultural knowledge on one or multiple occasions during fieldwork (2006). 3 of the key informants I had more than one interview with, other important interviews included several key informants discussing different perceptions of relevant topics. Within the 62 interviews in the village, 8 interviews had one or more specialized informants. The categorization of 'specialized informants' is based on particular competence on a specific field, including the 4 teachers in the village school, travelling nurse, village committee members, *kebele* vice-president, clan elders, female and male plantation workers. 5 specialized informants were also selected from different offices in Dubti *woreda* and on regional governmental offices in Samara. On two separate occasions, I also travelled to the 'riverside' on the Awash River basin, about 40 minutes car-drive from the village where most of the informants had lived seasonally prior to settling in the village. In the 'riverside' location I also conducted 2 interviews.

3.2.1 Data collection and analysis

The data was collected mostly through the use of semi-structured or in-debt interviews. Semi-structured interviewing has a clear direction and follows a pre-determined outline, whilst being open-ended and invites a level of flexibility and ability for the researcher to follow the interviewee during the interview setting (Bernard, 2006). The interviews varied vastly in length, from 30 minutes to 2 hours and. Interviews were constructed with in introductory part and some ‘throwaway questions” questions in the beginning to easy in to the interview (Berg & Lune, 2012). During the process of changing the research topic in the early weeks of the fieldwork, interviews were conducted with more of the characteristics of unstructured interviews. For example, the interviewee had more control in leading the interview in terms of responses and conversation topics than during the semi-structured interviews (Bernard, 2006).

Collecting data from qualitative observation includes writing down notes and recording observations of activities and behaviour and may include varying degrees of participation form the researcher (Creswell, 2014). The interviews and conversations where recorded in real-time by hand-writing. In cases where conversations and observations would continue or arise outside an interview-setting, observations were written down separately from the recorded interviews. Following an interpretivist scientific method, interpreting behaviour as data, participatory observation were used to increase insight to social dynamics and human through several discussion among several informant human behaviour (Bernard, 2006).

During different scenarios in the field, I took the role of reactive observer, which means that the ‘observed’ was aware of my observation. During interviews I used descriptive notes to in these contexts by watching and listening (Bernard, 2006)

Qualitative research naturally accumulates an extensive amount of written material, and organizing, coding and analysing the data proved to be a substantial task. Interpretation and analysis of qualitative does not happen in a specific order, but as a cyclical process that takes place from the beginning of the research and all through the analysing and writing process (Berg & Lune, 2012). My data was re-coded and restructured several times during this process.

To get a first initial overview of my collected data, I transcribed the hand-written records into word documents and assigned key content themes. The transcripts where read in full with the intention of finding trends and topics in the data (Creswell, 2014). The theme overview assisted with identifying trends and patterns in the data. Later, the data was divided in related

to topics in an excel file with additional grouping of informants according to gender, age and specialization. Through analysis of the groupings, related to topic, new patterns were identified and provided nuances of meaning. The data based on observations, and the additional descriptive data, was also transcribed and put in an excel file and also coded after topic. This data was helpful in providing additional context to the interview-collected data.

3.3 Challenges, limitations and ethical considerations

The data analysis of this thesis is derived from multiple levels of interpretation between the respondents, the assisting Afarinya translator and me, the researcher. The translator was also Afar and was living in a town in the same district. The Afar translator was incredible helpful, not only providing necessary and highly appreciated translations but also through lengthy conversations where I could ask questions and be given social-cultural clarifications. On the other hand, information is filtered through an additional level of interpretations. There are cultural differences within the Afar region and between town and rural areas, and as a researcher one needs to be aware of the limitations and interpretive challenges that may come through the use of a translator.

As mentioned above, prior to the interview I would give an introduction of myself and the purpose of my visit, in order to give the potential respondent appropriate information before he or she decided to participate or not (Bryman, 2012). During interviews, it was common that neighbours and relatives would come into the home and participate in the conversation. This was particularly common when I would talk to female informants. I would start the interview talking to a female informant, and then a male relative may come in and take over the role of informant. This was challenging because I cannot assume that the new respondent was informed about my background and objectives. This may have created confusion about my role and may have affected the interview and information given.

These situations also provided challenges in regards to accessing stories from female informants. Culturally, it is appropriate that a man can talk on behalf of a woman. Also, female informants may not be able speak as freely and independently if male relatives are present. When I did interviews with female respondents individually or with the presence and participation of other women or children, there would usually be more information given and longer, more elaborate stories than when interviewing women in the presence of men. This was one of the reasons I found it important to talk to women during their domestic activities, However, as I spent more time in the village and developed a sense of trustworthiness, it was

easier to get uninterrupted interviews with women. These are all valuable observations that became a part of my field records and influenced my understanding of the sociocultural structure and hierarchy.

Another point worth mentioning is the ethical and moral dimensions derived from asymmetrical power between Western researchers studying vulnerable communities in developing countries. Even though I was open about my reasons for being in the field collecting data, I was occasionally asked for different types of assistance. Prior to the fieldwork I had contemplated these types of ethical issues and in the field I also found myself asking if it is okay to for a researcher to visit a community with a lot of hardships and then leave with the collected data without giving any assistance back to the community? While I do not have the answer for this, it is important to consider the role you have as a researcher in the field.

4 Findings

This chapter will present the findings based on data collected during fieldwork and accumulated from the qualitative research methods presented in the previous chapter. Furthermore, the findings presented below are based on the first and second main research questions and sub-questions related to vulnerability, as introduced in the introduction.

The fieldwork was carried out in a village located in the Dubti *woreda* of Afar Region. When I did my fieldwork, less than half of the village informants had lived sedentary for about five years, with exception of a few households who had settled there a few years longer.

Particularly in the last 2-3 years there had been a noticeable increase in village population density. The initial developments of the village had taken place prior to people settling there. The original school had been built 7 or 8 years prior to my visit however it had recently been renovated and expanded. Additionally, the government built a health post, a mosque and a water tower connected to three separate water pumps. Most households had been given a promise by the government to receive a 1ha irrigated agricultural plot if they settled in the village and all but a few informants had received the plot. The plots had been distributed to the male head of a household and one wife. If the man had more than one wife, the other wives were given one plot each and categorized as female headed households. The plots were located outside the village hamlets, which means people has to walk far distances to work on their land.

4.1 Climate change and vulnerability

Changes in rainfall patterns, both in terms of time and amount, is one of the major challenges for Afar livelihoods, dependent on pasture. There is an overall decrease of precipitation as well as increased unpredictability of seasonal rains. Seasonal nomads follow the expected seasonal rains, and the disruption of rain patterns make it increasingly difficult to find necessary water and graze-land for livestock. Having grown up as seasonal nomadic pastoralists, older Afar explained there used to be rain in every season when they were younger. In comparison, newer weather trends provided less and varied seasonal rainfall and lack of grass land. Consecutive years of prolonged dry-periods would cause soil degradation and increase the risk of soil erosion and flooding during the *karma* rains. Long longer-dry-spells and reduced vegetation limit the soil's ability to capture the massive amounts of *karma* rainfall. Furthermore, even with good rains, greening was slow and insufficient for local pastoralists and their herds.

There was a slight generational difference in the reasoning of why the climate was changing. According to clan elders, everything, including climate change, happens according to Allah's (God's) will. The current weather trends were a result of sinful human behaviour. People had become increasingly jealous, selfish and behaved out of competition instead of truthfulness, solidarity and cooperation. One male elder described it like this: "you sleep and there are ants on your leg, and you get bit. You brush off all the ants even though only one bit you. Some people do bad things, but all of society is affected by their sin" (old male informant, village 14 Dec. 2013). Young adults mostly accepted the knowledge of clan elders and God's will as a reason for reduced rainfall, while some referred to their own lack of education to provide an explanation for changing weather trends.

Insufficient rains and greening of rangeland caused reduced livestock production, shortage of pasture and subsequently shortage of food in pastoral communities. Agricultural crop production had also affected; which had caused major harvest losses in 2013. Food shortage that same year was further escalated by rising food prices which resulted in an estimated 600000 people living in serious food shortage in the Afar region (Disaster Prevention and Food Security Assessment, open meeting in Samara PARDB 13 Dec. 2013). The regional government strongly believed that agro-pastoral development represented the long-term sustainable option for securing pasture-dependent livelihoods and reducing food insecurity. According to the President of PARDB regional office in Samara pastoral livestock sizes are decreasing due to reduction of precipitation and resulting dry-spells, and that "In this environmental situation, being an agro-pastoralist is a necessity" (Samara PARDB 13 Dec. 2013). Additionally, villagization, would provide services and improve overall well-being, create health benefits and bring educational opportunities.

4.2 Villagization and agro-pastoralism

The vast majority of village inhabitants were previously nomadic pastoralists who in dry seasons would periodically settle close to the Awash River. Whilst sedentary, some households had assumed small-scale subsistence maize production on the fertile river basin. Since 2006, the Tendaho Sugar Factory project had been developed on the Awash River basin going through Mille, Dubti, Assayta and Afambo *woredas*. The development on the Awash River basin included the building of the Tendaho dam, vast expansion of irrigated farmland for the sugar cane plantation in addition to irrigated plots distributed to local households for grain, mainly maize, cultivation. According to the president of the Pastoral Agriculture and Rural Development Bureau (PARDB) in Samara, the Afar Regional Government had by

October 2013 distributed some 58000 ha of agricultural land to individual households in 28 *woredas* in addition to providing agricultural training.

4.2.1 Agricultural challenges

Although some informants had been able to harvest some maize in 2013, not one informant had gotten sufficient agricultural benefits to secure their food needs. People lacked skills, equipment and knowledge on managing irrigated agriculture and *woreda* administrators had not delivered necessary- and promised support. Many irrigated canals providing water for the plots were either left unfinished, destroyed by *karma* rain or overgrown with shrub *prosopis* (invasive species *Prosopis juliflora*). Furthermore, the model of plot distribution implemented by the regional government had caused dissatisfaction. The government's intended purpose was to increase work efficiency and reduce potential clan conflict by giving neighbouring plots to clan members of different clans. This way, individual plot owners would work separately on their own plots every day, instead of a situation where a clan sends one member to work on all the clan's neighbouring plots. Additionally, no clan would get favoured conditions over another clan. Nevertheless, this system had made it harder for clan members to help each other because they had to substitute a collective strategy with an individual working strategy. Plots belonging to members of the same clans would randomly be located and were often far apart from each other, which is exemplified by this informant's statement: "now, if I finish with my plot early, I walk one hour to help my brother on his land, but then I am too tired to work" (male informant, village plots 30 Oct. 2013).

Villagers tried to find collective solutions to issues created by the distribution model. For example, the people who had plots belonging to the same water canal elected a person responsible for fair water distribution. The elected person was also in charge of encouraging people to finish the plot preparation in time to start the water process, however, with limited success. The water responsible would only have legitimate authority among the people belonging to the same clan. Due to this, the watering process got delayed, causing irritation between plot owners and compromising the potential outcome of the harvest. Strategies such as employment of labourers from other regions to prepare the land, was not supported by the government. The Afar people were encouraged to develop and improve their agricultural skills, but because of lack of equipment, training and knowledge, many plot owners was dependent on governmental assistance.

4.2.2 Decreasing numbers of livestock

Keeping a relatively good amount of livestock depended on mobility, and after the transition of villagization there was less manpower available to take livestock and follow the rain.

Collective strategies were allied within clans for example; one clan member would stay in the village work on several plots belonging to the same clan, while other clan members would migrate with their combined livestock to find fertile grazing areas. Sometimes boys had to learn through ‘the college of the camel’ rather than to stay in the settlement and go to school. Households would do what they could to keep their animals. Households without available manpower to take livestock and ‘follow the rain’ would try to feed sedentary cattle by collecting grass from the plantation area. However, this was not sufficient to sustain more than a few animals. Households who had lost or sold the majority share of their livestock had become dependent on clan members who are still were able to keep livestock though a nomadic way of life.

The struggle to keep a mobile livestock affected food security, created changes in diet and caused financial instability and stress. Food prices, e.g. flour and maize, were high and while many informants, majorly women, had found employment in the sugar cane plantation, the income was not considered sufficient to secure food needs. Food security was understood in collective terms which included both the ability to secure individual household food needs, in addition to the customary obligation to assist and support members of the same clan when needed. The collective clan based distribution system was the reason why there “are no homeless Afar” (old male informant, village 14 Dec. 2013). A few older informants were concerned about the younger generations’ decreasing ability to provide for the clan members and relatives outside immediate family. In Afar tradition, livestock and cattle were used as exchange mechanisms and gifts. The reduction of livestock limited people’s ability to uphold cultural norms such as slaughtering cattle and providing meat and for visitors arriving from far away, or in ceremonies related to marriage and birth of a child.

Sedentary agro-pastoralism had not been able to provide food security for humans nor animals, and thus contributed to continued reduction of livestock through compromising mobility. Part of the problem was the lack of access to the Awash River due to the expansion of the sugar cane plantation. Taking livestock to graze along the river in the plantation area involved a perceived risk of getting fined or jailed. Consequently, the plantation was considered a major contributing factor to the inability to keep livestock and this to the food- and financial insecurities: “when I was young, we used to have many animals....Now there is

only grass along the river and we are not allowed to go there” (old female informant, village 18 Oct. 2013).

4.3 Loss of land and representation

The villagization process was associated with narratives of being forced away from their land by the government, whose interest, informants claimed, had been to financially benefit from agricultural cultivation along the fertile Awash River basin:

“The area we used to live in was a good agricultural area close to the river, so the government wanted it for sugar plantation use. We were unwilling to move because we were comfortable where we lived.... The government forced us to move” (old male informant, village 2 Nov. 2013).

While some people had experienced the process of villagization through non-violent negotiations, other people experienced clashes which had resulted in people being jailed or even killed and federal soldiers were brought in to prevent further escalation. “There has been some conflict [with the government] but not a lot....Both peace and war was available options for us, but we chose peace” (group of older male informants, village 2 Nov. 2013). During the process of villagization, many people had left to other parts of the region to pursue other fertile areas and continue nomadic pastoralism. On two occasions I visited the area by the river from which people had been evicted. In one female-headed hamlet, an older woman with sons, daughter in-laws and grandchildren, was still living there when I visited the area. The old woman explained that when the tractors had come to dig up the trees, the women (the men were migrating with livestock) had started throwing sticks and stones at the vehicles. Eventually, the hamlet had been able to negotiate with plantation leaders that they would not be evicted, at least for the time being.

The plantation had also provoked ethnic friction and occasional violence. The majority of plantation workers were non-Afar men from southern regions such as Oromia; they lived and work in the plantation area, and were perceived as a security risk particularly for Afar women and girls. I was told stories of rapes and killings of young Afar girls as they were traveling to town or to work in the plantation. “I am not afraid of the Afar boys, they are from my village. I am afraid of the immigrated workers. In another village they robbed a young woman” (young female, village 28 Nov. 2013).

4.3.1 Loss of independence

During my fieldwork, some hamlets and households packed their belongings and left the village. Others expressed their wish to do so, yet chose not to as they would risk losing their agricultural land; they believed the government would distribute their land to someone else if they left the village. Additionally, leaving the village would create an uncertain future as livestock resources were already highly reduced. The lack of alternative strategies were of concern, particularly for older Afar, who saw the village as a means for increased governmental control and less independence and freedom for local populations. Villagization had accelerated the government's accessibility to the local people. To accommodate communication between villagers and higher levels of administration, a 'village committee' (VC) had been created. There were 4 major clans in the settlement and each clan had one member to represent them in the committee. The committee was made up of three men and one woman. The recognition of the VC was not widespread. People suspected the government wanted to use the committee to further influence their own interests.

"It is not the people's wish to have such a committee. The government and the local leaders are in need of the committee. The committee will only serve the *kebele* leader, the *woreda* and the government" (female informant, village 27 Nov 2013).

Additionally, the government implemented village leadership through elections of the *kebele* leader. The elected *kebele* leader had moved out of the village to a nearby town after being elected. This made it difficult for villagers to communicate back to administrative levels unless government representatives came to the village, or villagers travelled to town. The *kebele* leader had been in his position for more than 5 years, and was mostly known for representing the interests of people in power at the *woreda* level. The dissatisfaction among the people accumulated to the point where the *kebele* leader and the *woreda* administration eventually agreed to organize a new election. 4 months after the election, people were still not given the results by the *woreda* administration. Regardless of being able to participate in a leadership election, the general view was that the *woreda* administrators would pick a candidate who represent would represent them, and if the chosen *kebele* leader did not agree with the *woreda*, he would be replaced with someone who would.

"The *Kebele* leaders have failed to be good leaders. We do not want the leaders anymore, but the *woreda* administration wants the *kebele* leaders to stay in power. It is democracy on paper only" (male informant village 14 Dec. 2013).

4.3.2 Women's role in the village

Both *woreda* and regional governmental levels of administration had bureaus devoted to empowerment of women. Providing education to both genders and supporting women to engage in income-generating activities were considered crucial elements of achieving gender equality. Culturally, women's responsibility was in the domestic sphere, which would incorporate shared responsibility for livestock, particularly the sedentary cattle, and some women would also work on the agricultural plot if needed, although agriculture was considered a male responsibility. Additionally, women contributed to the household economy through for example employment in the plantation. After sedentary livelihoods, the responsibility and workload of women had increased, and both male and female informants recognized that villagization has been particularly hard for women due to the changes in everyday activities, increased workload and the lack of proper nutrition.

Both the Dubti and Samara WCYDB offices contribute to the inclusion of both genders in development projects. These offices aimed to provide women's groups on all administrative , from regional, to *woreda* and *kebele*, in order to access the views of women and facilitate communication between women across scales, and the participation and representation of both genders as stakeholders in development pathways. However, there was no such women's group present in the village. On the other hand, women were invited to participate in village meetings, discussion and decision-making. In terms of political representation, some women considered village meetings to be outside of their gender roles and hence chose not to engage, while others simply did not have the time to join village meetings. While some women would attend, cultural conditions prevented them from fully participating. Usually, women would attend meetings but culturally it was not considered appropriate for a woman to share their views, express their opinions and fully participate unless they were directly addressed by a man and invited to talk. "Women are allowed to go to the meeting, but the men did not give us an opportunity to talk, so we could not talk. We are generalized with men and men talk for us" (female informant village 12 Dec. 2013).

4.4 Resettlement and services

It was easier and more efficient to provide services such as safe water, education and health to sedentary populations settled in communities than nomadic populations. The government heavily promoted these services in their negotiations with clan elders. However, overall people have been less than satisfied with the quality of the services provided. The services

were considered ‘false promotion’; they did not deliver as promised, but provided leverage to secure the real political objectives such as access to the Awash River.

4.4.1 Water service

The water service did not adequately provide safe drinking water, as the water pumps were working only sporadically. Usually, the water pumps would work one day, then not the next. There could be 3-5 days without clean water. By end of November 2013, the water service had improved to being accessible once a day. The water service was administered by an elected water-responsible in the settlement. He had to go back and forth to another settlement closer to Samara, in order to turn the water flow on and off. There was no organized system of transportation in the area, so the water-responsible mostly had to walk the distance if there were no cars driving on the road next to the village which connected the village with Samara.

Despite the unpredictability of the water service, women would develop cooperative strategies to efficiently collect the water in the short time it was available. Due to unpredictable availability of water from the pumps, many women could not depend on reaching the water pumps in time as they had jobs in the plantation and many other and time consuming responsibilities. Therefore, women kept their empty household jerry cans next to the closest water pump and in during the timeframe of available water, the women available would fill all the jerry cans until the water stopped. The other women would then select their respective jerry cans whenever they had the time.

One of the major concerns about the lack of proper water service was the health risks related to consuming unsafe water. When the water pumps were not working women and girls collect rest-water from the plantation or rainwater from a pond. Both animals and humans used the same water. People were in particularly concerned about the water related health risks, mainly diarrheal, affecting old people and children.

4.4.2 Health service

The local health service was not satisfactory, still access was considered better than when people were living scattered. According to *woreda* officers there was one male health worker (doctor) available in the health post and two ‘travelling’ nurses working in the area. During my fieldwork, I never met the doctor and according to the informants I asked, they had either never visited him or never seen him in the village or in the clinic. On two occasions I met one of the ‘traveling’ nurses while she was on her home visits in the village. She explained that

people usually do not go to see the doctor at the health post, and if they were really sick they preferred to go into town. The travelling nurse was from a nearby town. She had less than 6 months of training and her work mainly consisted of awareness-raising, particularly on mother-infant issues and nutrition, and she would provide mosquito nets. The traveling nurses assisted women to a clinic or health centre in town if serious problems would arise during pregnancy or delivery. The collective memory from older Afar, particularly older women, recognized an increase of maternal health issues compared with when they were younger. The lack of preferred food, milk and meat, and the substituted food consumption of maize and flour based bread, were considered contributing factors to nutritional deficit and deterioration of health in the village. The lack of overall food security was considered a major health threats, particularly for old people, women and infants.

Villagization had affected people's health negatively as a result of decreasing livestock and reduced access to animal produce such as milk, meat and butter. Malnutrition and malaria were considered the two major health risks in the region (Disaster Prevention and Food Security Assessment, open meeting in Samara PARDB 13 Dec. 2013). Decrease in livestock, food shortage and changed diets resulted in increased problems during pregnancy and after giving birth. Women were considered less fertile and were explained to have a harder time conceiving, which were a concern not only for the woman but also for the clan. "Now, some women are not able to get pregnant, they gave up reproducing because it is too hard for their bodies" (Older female informant, village 27 Oct. 2013).

4.4.3 School and gender

Giving children access to education was an important motivational factor for why people chose to settle. The school lacked predictability and quality. Officially, school hours were from 7.20-11.30am every weekday. However, in actuality, morning classes started at highly unpredictable times varying from 7.30am to 8.30am, occasionally later. In 2012, some days teachers would not come to the village at all. A change of staff, implemented by *woreda* administration, improved the school attendance. Additionally, *woreda* and regional representatives encouraged the teachers to live in an available room in the school building during the weekdays, to ensure that classes would start on time. During November 2013, the teachers prepared the available room in which they planned to live in during weekdays.

More female than male informants had a positive outlook on the school, while girls had limited access to education. Girls and boys finished 4th grade together in the settlement. After

4th grade, students had to walk through the plantation to continue their education in town and only boys would continue their education. Reasons for this were among others, proximity to town; walking to the school would take hours and in order to make it on time for morning classes, students had to start walking by sunrise. Only the ‘strong boys’ or the boys who did particularly well in school, would continue their education. Girls usually get married in their year of their first menstrual cycle, and will stop their education after marriage to attend their domestic responsibilities. Even if they do not get married after 4th grade they will stay at home to help their mothers and prepare for married life.

“If the school is close to home she will go to school. If the school is far from home, they [her parents] will not send her. When the girl reaches 4th grade, two things might happen; either she is needed at home, or she will be married” (specialized female informant, Samara WCYDB 16 Dec. 2013).

Empowerment of girls and women had been a highly sensitive social and political issue in the region. The lack of access to education for girls was one of the main focus-areas of the Women, Children and Youth Development Bureau (WCYDB) in Samara. Teachings of the Qur’an (Islam is the dominant religion among the Afar population) was used as a part of the awareness raising activities to promote the enrolment of Afar girls in school; “the first verse in the Qur’an says “read”. The Prophet Muhammad was ordered to read, to learn” (President of WCYDB office, Samara 16 Dec. 2013), and thus the rationale was that all people should value the learning process and have access to education. Most villages built through the villagization model, included a mosque. The involvement of mosque leaders in awareness raising projects, contributed to access local people from multiple levels of society. Mosques and religious leaders could create communicative bridges and to influence sociocultural norms through the help of clan elders who represent the cultural elite. The majority of Afar girls do not have access to education. Access to education for both genders improves through villagization yet at least in rural villages, education rarely extends beyond 4th grade.

“There are some female leaders in town. They are ethnically mixed, but partly Afar, and have finished 10th grade. We are envious of those women. I ask myself: why am I not learning [going to school] ? If my daughter will keep learning [stay in school], she can also achieve such a job” (young female, village 1 Dec. 2013).

4.4.4 Outlook on the future

During my time in the field, a girl refused a planned *absuma* marriage. *Absuma* marriage means cross-cousin marriage, a social exchange mechanism to ensure strong clan relations and cooperation. Refusing *absuma* marriage usually meant that his/her clan had to pay compensation to the other clan via transfer of cattle or cash. Most *absuma* refusals were initiated by girls. Due to its social and financial significance, refusing *absuma* marriage was highly stigmatized. Culturally condemnation of *absuma* refusal was a reason why few people would openly support it. The regional government together with mosque leaders would uphold a person's right to refuse marriage by enforcing its validity through national Ethiopian jurisdiction and Qur'an teachings. According to Islamic law, for marriage to occur, the woman must accept the proposed husband, and if the woman does not accept the man as her future husband, then the marriage is not religiously valid. In practice, a person who chose to refuse *absuma* would usually go to an administrative or government office to get legal papers supporting his/hers claim, or go to a religious leader and scholar of Islam to get confirmation of her religious right. Increase in *absuma* refusals was mainly attributed to the changes in mind-sets among the young generation. These mind-set changes would develop through education as well as the social interaction in school. As boys and girls went to school together, cultural patterns of gendered interactions would be altered and this could change perspectives on social roles and marriage; from a social clan exchange to an individual choice.

Relating to generations, there was differing perspectives on future opportunities and constraints in the village. Due to the environmental conditions, some people had altogether 'given up' pastoralism. They would likely be able to keep a few sedentary goats, but that was not considered real pastoralism, which includes nomadic herding of sufficient size livestock, and so the pastoral way of life was no longer achievable. Society had become more individualized and clan members were no longer able to support each other in times of need as they used to. Livestock is closely linked with cultural identity, and particularly older Afar compared the survival of pastoralism with the survival of Afar people; if the animals die then the Afar would die. Additionally, older men associated villagization with the weakening of the Afar people; the Afar people used to be strong compared to the current situation where they were no longer able to resist external pressure compromising their freedom and independence.

“Afar are free-moving people. Now we live here in these conditions because we were defeated by federal forces, it is not out of choice...Historically, we could not be controlled by any government. We used to have independence” (male informant, village, 2 Nov 2013).

Young adults generally had a more positive outlook on the future in the village, considered maintaining a nomadic pastoral strategy as a less important pursuit than older generations did. For younger Afar, the survival of livestock, or at least a nomadic pastoral way of life, is not necessarily a precondition for the survival of the Afar people. However, there were multiple pressing challenges and limitations which needed to be addressed in order to improve livelihoods, opportunities and the well-being of sedentary life and to for villagization to deliver the developments it was promised to do.

“Now we understand that urbanization is better than pastoral life....But the Government should fulfil the needs for a good villagesettlement such as proper school, health service and electricity” (young male village 27 Oct. 2013).

5 Discussion

This chapter will first present a discussion following the objective and the related second and third research questions presented in the introduction. In the first part of chapter will discuss how villagization has affected the identified key drivers of vulnerability. The second part of this discussion will assess the sustainability claim of villagization, through the application of the five normative principles of the Sustainable Adaptation Framework. The five normative principles will be discussed in numerical order.

5.1 Vulnerability to climate change within a political context

Changes in climate and weather trends such as lack of rainfall and increased dry-spells and droughts, are considered major threats for pastoral livelihoods because it leads to deterioration of pasture over time, and subsequently loss of livestock. Healthy pastoral livelihoods depend on mobility. Pastoralists in arid areas have continuously adapted to their harsh environment through strategies such as diversification of pasture; varying herd composition depending on season and food and water needs of the type of livestock, social cooperative herding strategies, as well as trade and seasonal wage-labour employment (S. H. Eriksen & Marin, 2011; Pedersen & Benjaminsen, 2008). Factors and processes which limit livestock mobility and local coping strategies will likely contribute to reduced capacity for necessary risk management and adaptation to weather hazards and climate trends (Devereux, 2006; Wangui, 2008).

In Afar, land-cover change is one of the major contributing factors to reduced livestock mobility. Between 1972 and 2007, the grassland cover in semi-arid rangeland in Northern Afar, decreased by 88 %, while cultivated area increased eightfold (Tsegaye et al., 2010). Additionally, cultivated areas are predominantly located around river basins. The fertile land around the rivers is a vital part of dry-season migration and losing these rangelands means that nomadic pastoralist become increasingly vulnerable in dry-seasons because livestock will die or be sold. Many pastoralist have taken up agricultural practices after a period of drought because they have not been able to sustain enough livestock, or in hope that agro-pastoralism would help increase their resilience and coping mechanisms to drought (Wangui, 2008).

Land-cover in Afar is mostly a result of agriculture-focused development policies that take advantage of the fertile Awash River basin, either through expansion of plantation or through promoting individually owned irrigated agriculture (Lavers, 2012b). The Afar region is also of political and financial governmental interest because of its location. The road that connects

the coast of Djibouti and Addis Ababa goes through the Afar region, and as tension between the government and local people have intensified; the government has increased its military- and policing presence in the region in order to secure their trade- and financial interests (Rettberg, 2010). Thus, local pastoral assessments of risk not only include changes in rainfall trends but also the loss of access to fertile land and water resources due to political governmental objectives; objectives that compete with the local pastoral objective of keeping mobile and healthy livestock.

5.2 Villagization and livelihood diversification

5.2.1 The importance of livestock in risk management

Decreasing livestock is a major concern for sedentary agro-pastoralists. Livestock serve multiple functions in pastoral societies; as food for consumption, for trade and as a social security in times of hardship. In times of stress such as drought, pastoralists depend on accumulation of social capital for security and risk management (Davies & Bennett, 2007). This social capital is accumulated through participating in social reciprocal systems such as *absuma* marriage; creating close clan relations of cooperation. Additionally, herd splitting with people taking care of your herd means you have to pay a male animal for the services (Davies & Bennett, 2007). Villagization may weaken pastoral social risk management because it promotes agricultural labour which means divergence from livestock production and accumulation of social capital (Davies & Bennett, 2007).

However, for most sedentary Afar keeping mobile pasture through any means necessary is a major priority and the dominant risk management strategy among middle-income and wealthy herders (Little et al., 2001). The Afar cultural identity is closely connected to the animals because of both the social security in which livestock provides, and also because livestock production particularly in arid dry and hot areas are more productive means of subsistence. The successful nomads in terms of food security and financial security, are the once who concentrate on their core production and only engage in other economic activities as long as they do not interrupt with their core activity, pasture (Pedersen & Benjaminsen, 2008). Pastoralists who have this social security because they are nomadic are more secure than sedentary pastoralists because they lose considerable less animals during climate hazards (Little et al., 2001).

5.2.2 Sedentary agro-pastoralism

Many pastoralists diversify livelihood production by engaging in agro-pastoral cultivation. In climates where agricultural production is feasible, it is argued that agro-pastoral production systems are more resilient and generate higher coping capacity to extreme weather events such as drought, than pastoralism (Little et al., 2001). However, in drier climates with low precipitation, agro-pastoralism may be a less viable risk-management strategy due to the climate conditions. In addition, sedentary agro-pastoralism directs labour away from the mobile herding strategy, considered a precondition for successful livestock cultivation in arid environments, and thus sedentary livestock holdings will decrease (Pedersen & Benjaminsen, 2008). Middle-income and wealthy pastoral households may choose to diversify livelihoods as an investment strategy while maintaining a relatively large livestock size, whilst poor households 'diversify' out of lack of choice; due to inability to maintain sufficient income from livestock they may be pressured to substitute livestock production with other income-generating activities (Little et al., 2001).

Potentially, diversification of livelihoods through adoption of agro-pastoral production systems may be feasible for households who have the labour available to both migrate with livestock and cultivate sedentary agriculture (Davies & Bennett, 2007). Sufficient output from crop cultivation may increase food insecurity which allows households to keep cattle as security (Little et al., 2001). This is part of the rationale behind the Government's voluntary villagization projects. However, lack of sufficient rainfall, farming knowledge, technology and equipment has caused Afars to abandon agro-pastoral practices (Tsegaye et al., 2010). Additionally, sedentary agro-pastoralists become increasingly dependent on the government for governmental support for the maintenance of irrigated infrastructure and proper training (Davies & Bennett, 2007).

In hot, dry areas such as the semi-arid Afar lowlands, agricultural production demands a lot of labour input, including the constant process of clearing the invasive species *prosopis*. With the lack of rain, equipment, expertise and training, the input does not seem to balance the output. There is little financial incentive to adopt agriculture vis-a-vis incentive of continued livestock herding as the average sub-Saharan maize yield will provide less market value than livestock (Davies & Bennett, 2007; Little et al., 2001). Agriculture in dry-areas, continues to make people dependent on neighbouring sedentary farmers for grain such as maize, or increased reliance on food assistance from Government. Irrigation projects around the Awash River furthermore transferred the control over natural resources, from previously shared

pastoral management, to the ownership and management of the Regional Government (Behnke & Kerven, 2012).

5.3 Food insecurity and deteriorating health

One of the most fundamental differences between nomadic pastoralists and sedentary pastoralists is dietary change (Fratkin, Roth, & Nathan, 2004). Nomadic Afars depend somewhat on cereals, mainly maize and flour, from settled farmers or agriculturalists, particularly in dry- and food scarce seasons (Little et al., 2001). However, nomadic pastoralists have higher levels of protein intake than the sedentary pastoralists, through higher consumption of milk, meat and butter. Studies in the arid African Sahel show that sedentary, former nomadic pastoralists generally have less food security than nomadic pastoralists, in addition to higher levels of child malnutrition than both sedentary farmers and nomadic pastoralists (Fratkin et al., 2004; Pedersen & Benjaminsen, 2008). Villagization is associated with loss of livestock and the availability of animal produce, milk, meat and butter. Due to decrease in access to resources, livestock are taken even further away from the village in order to find water and grazing. It is common to leave sedentary milking cattle to provide milk and protein to children (Davies & Bennett, 2007), but not all households are able to do this because their livestock resources are already exhausted.

The dietary changes related to sedentary life increase nutritional stress particularly for at-risk groups such as infants, growing children, and pregnant and lactating women. Women experience reduced fertility, increased morbidity and increased child mortality as a result of villagization. Death during child birth is associated with women being too thin and the fact that they work hard up until delivery (Devereux, 2006).

Villagization is promoted as a way to increase food security and general well-being by providing basic services such as health facilities and education. Sedentary communities provide bureaucratic convenience because it is easier to provide quality health services for dense populations than in scattered areas (Scott, 1998). Towns have bigger economies often provides the best services. Through villagization, sedentary pastoralists have improved access to infrastructure and services than they used to have prior to villagization. On the other hand, services are rarely satisfactory. Seemingly, a contradiction exists within sedentary pastoral communities; there is both increased access to health facilities and increase in vulnerability related to health risks (Devereux, 2006).

The food insecurity and health situation in sedentary villages strongly argue that nomadic pastoralism and its flexible nature provide a better coping- and adaptive capacity in drought-prone Afar than sedentary life (Fratkin et al., 2004). The health related vulnerabilities of villagization need to be addressed. Nevertheless, one should not underestimate the potential positive benefits of increased access to services and increased wage-labour opportunities that come with villagization. For instance, villagization has led to employment opportunities for both women and men in the plantation. Providing women with access to markets and income-generating activities may not only empower women financially, but also improve the health condition for their children. Financial female independence and autonomy in terms of household spending have a positive effect on child nutrition and general well-being, because women, responsible for domestic and child-caring activities, will prioritize these (Fratkin et al., 2004; Fratkin & Smith, 1995).

5.4 Gendered opportunities and constraints

Villagization is a social engineering scheme; it does not only transform mode and means of production but also drives social structures and cultural changes (Scott, 1998). On the one hand, it is argued that access to employment opportunities and trade gives women financial autonomy and that women in wealthy, meaning livestock rich, households have fewer options to diversify their livelihood strategies than women in sedentary villages, because the latter tend to live closer to towns and markets (Little et al., 2001). On the other hand, the shift from communal land-owning and family-based herding, to *de facto* governmental land-owning and male control over agricultural plots have led to decrease in both female property rights and female controlled resources (Debsu, 2009). Afar girls are usually given at least one head of cattle at birth and as well to bring with her to her husband's clan when she gets married, while most of a man's property will be inherited by sons and thereby his own clan. With reducing livestock and splitting of families, sedentary females may lose property rights as land will continue to be handed down in the father's clan. In sedentary villages, a decrease of animals may also mean that women have less access and control over lactating cattle, and are less able to sell animal produce. Simultaneously, agriculture has majorly become a male activity and the gap between the public and domestic sphere has increased. Women have lost their customary control over livestock and their access to participation and negotiation in the public sphere has also been reduced.

Still, with work in the plantation, women control some income and hence have gained some monetary control in the household which may lead to negotiation power. Additionally, men

have also been affected by reduction of livestock, and hence wealth, and thus this creates a new dynamic in inter-household power (Devereux, 2006). Women may have gotten increased financial means, yet their responsibility and workload have increased as a result of villagization. A study from northern Kenya showed that men in urban centres and settled communities work less than they did in living in pastoral communities. Additionally, men in settled centres work less than both pastoral women and settled women (Fratkin & Smith, 1995). For instance, as sedentary children gain access to education, part of the household labour power is gone and as the women have the domestic responsibilities, it is likely that mothers take over the work activities and tasks that was previously done by children and youth (Wangui, 2008).

5.4.1 Access to education

Despite its shortcomings, education is still considered a positive benefit in the village. Most villagers, in particular women, are keen to send both their girls and boys to school. School is considered to increase the opportunities of the new generation and equip them with tools and skills that their parents did not have, and that will give the family a higher status and financial benefits (Wangui, 2008). Learning how to read and write may allow the young generation of sedentary pastoralists to make more informed decisions about the economic options (Little et al., 2001).

Villagization has increased girls' access and female enrolment in school. Female education not only empowering by providing knowledge and skills, but also seen as one of the factors decreasing mortality and fertility rates (Elliot M. Fratkin, Eric Abella Roth, & Martha A. Nathan, 1999). Continuously, the most important responsibilities of a woman are domestic and henceforth, the parents might find it rational to take stop education after marriage-ready age. In town some women may continue education after marriage if she is able to combine it with the responsibility and work as a mother and wife. One should not, devalue pastoral girls' own interest of going to school, however many years they attend.

5.5 Discussing villagization from a sustainable adaptation framework

Having discussed how villagization have affected the vulnerability context of sedentary pastoralists, the second part of this chapter will present a discussion of villagization as a part of the national adaptation and development pathway, from a sustainable adaptation framework perspective. The five normative principles of the SA framework will be discussed individually.

5.5.1 Nr. 1 Contextual vulnerability

The first normative principle of the SA framework is that adaptation strategies need to assess the context in which people, meaning adaptation subjects, are vulnerable (S. Eriksen & Marin, 2015). The contextual vulnerability of sedentary agro-pastoralism has already been discussed in the first section of this chapter. In Afar, climate and weather changes affect pastoral livelihoods through increased frequency of droughts, and thus generate risks associated with climate change. However, other stressors such as policy implementations that hinder existing adaptive capacity will increase vulnerability to climate stress. As argued in the first part of this chapter, villagization has increased pastoral vulnerability to climate change by reducing mobility through land-cover change and promoting sedentary production systems. This transition limits capacity for sufficient sized livestock holding, which may cause deteriorating social exchange mechanisms that help prevent long-lasting damaging effects of hazards such as droughts (Davies & Bennett, 2007). The dynamics of household labour availability can be central to the success or failure of development projects (Wangui, 2008). With reduction of livestock, villagization also changes diets and creates increased nutritional and health related vulnerability (Fratkin et al., 2004) even if health services are improved (Devereux, 2006). Villagization has increased access to wage labour and education, which is believed to create opportunities particularly for the future educated Afar. Naturally, this is the biggest reason why the young generation of sedentary Afar wants to continue sedentary agro-pastoralism. However, any sustainable adaptation policy needs to address this context and avoid the serious negative and long-term effects of local people.

5.5.2 Nr. 2 Different values and interests influence adaptation outcomes

Recognizing both the socio-political and environmental drivers of vulnerability leads to the second normative principle, which is understanding how stakeholders' differing values and interests affect adaptation measures and outcomes (S. Eriksen & Marin, 2015). One should not assume that pastoralists are passive agents in the villagization process. Pastoral communities and households have taken up agro-pastoralism as a rational livelihood diversification and risk management strategy. Individuals, households and communities are active agents that make choices based on opportunities and anticipated outcomes, however, these are framed within a power structure of social and political relation (S. Eriksen & Lind, 2009).

One of the objectives behind promoting villagization and sedentary irrigation communities, is to improve rural livelihoods and conditions through modernization and industrialization that

favours agricultural-led development (Scott, 1998). There is an idea that well-structured 'modern' communities are more productive than unstructured scattered livelihoods. However, as proven in the discussion above, introducing technologies such as irrigation canals does not always equate with increased efficiency. Additionally, the interest of the State is to gain bureaucratic control over scattered and unruly rural populations, land and resources (Scott, 1998), whilst increased government control is by pastoralists considered to be a threat to their independence. The villagization process is a political negotiation process between several key stakeholders; *kebele* leaders, clan elders and government officials. In this case, it is also important to note that inter-community power dynamics may favour the interests and objectives of elites and social authorities, which may or may not be in conflict with objectives of other fractions of the community or clan. However, pastoralist communities and clan leaders are under serious pressure, and the encouragement of sedentary agro-pastoralism can in some cases turn violent.

5.5.3 Nr. 3 Local knowledge

Thirdly, local knowledge must be integrated into adaptation planning and responses (S. Eriksen & Marin, 2015). Herein also lays the importance of recognizing the power structure of stakeholders involved and whose knowledge is valued and generated for adaptation and development purposes. The modernist top-down approach, promoted through villagization projects, is based on a one-size-fits-all idea of development and productive efficiency. One of the reasons why the villagization projects proved miserably unsuccessful in the 1970's, was exactly the lack of recognition of the localized place-based knowledge (Scott, 1998). Although some pastoralists had knowledge and experience on dry-season small-scale maize cultivation prior to settlement, this does not necessarily translate into efficient sedentary irrigated agricultural production. Likewise, the knowledge generated through generations of experience on how to manage resources through migratory strategies may no longer be appropriate or sufficient in sedentary communities.

It is argued that local and indigenous knowledge creates 'moral economies' in that it is based on the local socio-cultural context (Nyong, Adesina, & Osman Elasha, 2007). However, that not all local knowledge and practices are environmentally sustainable, nor that they automatically and will lead to sustainable adaptation if applied in development projects (Nyong et al., 2007). Additionally, as this study has shown, local knowledge is not universal within the same community, or necessarily within the same household. Knowledge is generated through how individuals experience and interpret the world.

5.5.4 Nr. 4 Potential feedback between local and global processes

The fourth normative principle involves the consideration of potential feedbacks between local and global processes (S. Eriksen & Marin, 2015). The world is interconnected through the globalized financial system, which means small communities in Afar may be negatively affected and marginalized by exposure to both global climate change and the liberal trade economy (K. L. O'Brien & Leichenko, 2000). For instance, the dietary changes of villagization create a greater dependence on purchasing power to buy grains, which means sedentary food security is closely related to international grain prices. When grain prices increase, like it did in 2013, sedentary pastoralists also become increasingly food insecure because livestock herd sizes have decreased and may no longer be sufficiently available in times of food shortage.

The Ethiopian Federal development strategy of large-scale commercial agriculture highly encouraged foreign investment and further escalated the expropriation of 'unused' land, that is land which is considered by the state to be insufficiently utilized and would be more valuable if utilized by private or domestic investors for public purposes (Lavers, 2012a, 2012b; Rahmato, 2008). The federal constitution of Ethiopia from 1994, declared the freedom from land-displacement and pastoralists' rights to grazing areas and rangeland (Tsegaye et al., 2010). However, without the ability to prove the historical or cultural significance of the land, local pastoralists may have little negotiation power (Lavers, 2012b). This undemocratic top-down practice has led to increased authority of local government and *woreda* administration and further marginalized rural populations (Rahmato, 2008). It seems evident that pastoral communities in fertile river-lands such as the Awash River area have little autonomy or influence in the development of adaptation approaches and responses.

5.5.5 Nr. 5 Empower vulnerable groups

The last normative principle of the sustainable adaptation framework is that adaptation responses should aim to empower vulnerable groups to participate and influence development pathways and climate change outcomes (S. Eriksen & Marin, 2015). Women are one of the vulnerable groups often marginalized even further in the adaptation processes (Gabrielsson, 2015). Villagization addresses gender and empowerment of girls by increasing the opportunity for female enrolment in public education, and through inclusion encouraged (Rahmato, 2008) participation of women in administrative and political forums (Devereux, 2006). However, women are still limited from participating due to increased domestic

responsibilities and an increased differentiation between the public male dominated and the domestic female dominated sphere (Debsu, 2009).

Additionally, *woreda* administrators have tried to increase participation and improve communication by initiating village committees and arranging village meetings where people can voice their concerns to government representatives. However, these efforts seem to suffer from the negative tension already existing between the government and most of the villagers. One of the keys to success of any adaptation strategies is to include participation from local stakeholders from an early stage of the process to allow ownership and joined interest and incentives to provide positive outcomes of the adaptation responses (Nyong et al., 2007). The villagization process itself has marginalized people by forcing them to give up their land and vital natural resources. Logically, there is a great deal of scepticism and distrust towards the government which may influence the longer-term outcomes of villagization.

Pastoralists are marginalized during the adaptation process through undemocratic processes, lack of negotiation power, the consideration for local knowledge and needs, and lack of participation and ownership (S. Eriksen & Marin, 2015; Lavers, 2012a). However, to assume pastoralists are unable to affect adaptation outcomes is a slight misconception. Success and failure of adaptation strategies depend on the response and cooperation of the stakeholders who are the subjects of implementation (Scott, 1998). The process and transition of villagization experienced as pressured, non-voluntary or sometimes violent, further constrained the village-government relationship. Scepticism and distrust limit both parties' willingness to communicate, cooperate and actively engage. It may be that if the initial stages of planning and implementation had included the participation of local people, generating ownership of the process, then communication and cooperation with different levels of government may have resulted in additional beneficial outcomes and reduced some of the negative outcomes preventing adaptive capacity.

6 Conclusion

Climate change generates risk and future uncertainty for natural resource-dependant livelihoods and societies, and for the national Ethiopian development pathway as a whole (Creswell, 2014). Pastoralists and agro-pastoral communities in the semi-arid and arid areas will continue to be affected by increased frequency of extreme weather events such as drought and floods, and changing climate trends such as instability and unpredictable rainfall patterns, longer dry-spells, and warmer temperatures, and exciting pastoral adaptation strategies are compromised (ANRS, 2010). The promotion of agro-pastoral promotion through villagization, is based on an assumption that pastoralism is environmentally unsustainable, both in terms of local resource use, and in terms its contributions to the national Ethiopian GHG emissions (FDRE, 2011a). On the other hand, the contextual socio-economic processes are considered key drivers influencing the local vulnerability context and determining the level of adaptive capacity (Devereux, 2006; S. Eriksen & Marin, 2015).

The objective of this thesis was to investigate the assumption that villagization, as an adaptation strategy to climate change, would improve pastoral adaptive capacity and reduce vulnerability. The term ‘villagization’ denotes historical negative connotations in the Ethiopian context (Scott, 1998) and is often substituted with ‘sedentarization’, ‘resettlement’ and ‘settlement’ in the context of current national policies and projects (Assefa, 2008). However, in practise, these terms describe the same policy implementations. Villagization and agricultural development goes hand-in-hand as recurring component of most rural development policies implemented by the FDRE (Assefa, 2008) The National Poverty Reduction Strategy proposes voluntary small-sale irrigation settlements in more fertile and productive areas such as the Awash River (Kassa, 2008). In addition to Rural increasing access to service such as schools, health facilities, roads and water systems through the extensive development of small villages. National food security policies emphasize the need for building and improving the agricultural capacity in rural and pastoral areas, and programs such as is the Productive Safety Net Program (PSNP), a food aid and food-for-work program, promotes sedentary lifestyles. However, components concerning improvement of livestock management and productivity among nomadic pastoralists are also a part of the strategy (Negatu, 2008).

Firstly, I have argued, that the socio-political characteristics of villagization has increased the sedentary vulnerability context due its undemocratic and top-down process marginalization of local customary land rights, and inherently reducing the populations’ access to natural

resources, while serving the interests of the State and other powerful stakeholders and agricultural investors (Lavers, 2012b; Vermeulen & Cotula, 2010).

Secondly, villagization has compromised culturally embedded coping- and adaptation mechanisms, such as risk spreading through social exchange and distribution systems (Devereux, 2006). Villagization has decreased livestock through lack of graze land and ability to continue mobile herding, at the same time; it has not been able to provide sufficient agricultural yields. With reduced livestock, coping- and recovering from for example in dry-spells and food shortage has been compromised, because clan members are no longer able to provide assistance and support to fellow clan members (Davies & Bennett, 2007).

One of the objectives driving villagization is the assumption that irrigated agro-pastoralism will increase cultivation productivity, generate more income, and increase self-sufficiency and food security (FDRE, 2011a; Negatu, 2008). However, in dry pastoral lowlands such as the conditions for the village studied in this thesis, agro-pastoral production has not increased food security, but rather had the opposite effect. It is suggested that agricultural production is not feasible in these conditions and thus does not provide increased food security (Little et al., 2001; Pedersen & Benjaminsen, 2008). On the other hand, with proper facilitation such as training, increased experience and equipment, irrigated agricultural practices in Afar may be more sustainable (Tsegaye et al., 2010). This outlook is mirrored particularly by the younger sedentary Afar who acknowledges the future possibilities of agriculture if provided with necessary assistance.

Villagization has both provided constraints and opportunities of varying degree between social groups in society (Fratkin et al., 2004). For women in the village, work burden and responsibilities has increased, while the opportunities to participate the public sphere has increased due to villagization (Devereux, 2006). Increased access to education for both genders is considered one of the major benefits of villagization, and is likely to increase adaptive capacity as education may provide increased variety of adaptation strategies and empower particularly the young generation (Wangui, 2008).

The historical context of villagization in Ethiopia has shown that top-down socio-political schemes can create severe negative consequences for local people both environmentally and economically (Scott, 1998). The current of villagization process promoted through the national development pathway, shares stark resemblance to the villagization schemes of the 1970's and 1980's. As shown in this thesis, the current villagization process lacks

consideration and incorporation of the local vulnerability context, local knowledge and interests and values. The CRGES promotes communication between- and participation of stakeholders across scales, between federal level and local communities, in the process of developing policy measures, as a means to achieve socio-economic benefits and environmental sustainability on all social levels (Bass et al., 2013; FDRE, 2011a). However, these goals are not mirrored in the current villagization process. If future villagization projects are to provide sustainable adaptation, planning and implementation need to consider and promote the participation and empowerment of local populations. Pastoral rangelands and natural assets are likely to deteriorate and increase pastoral vulnerability due to continued promotion of land-cover change through the agricultural-led development and villagization (Lavers, 2012a; Vermeulen & Cotula, 2010).

Villagization both increase and decrease different aspects of the localized vulnerability. In dry lowlands of Afar, villagization needs to address the multiple factors that reduce building of sedentary adaptive capacity. Current villagization implementation needs further participation and empowerment of local stakeholders to promote social and environmental justice and integrity (S. Eriksen et al., 2011). The ambitions of the CRGE are steps in the right direction to create a more sustainable national development pathway, although the focus so far has been on mitigation responses which does not necessarily lead to increased adaptation capacity (Bass et al., 2013). The normative principles of the Sustainable Adaptation Framework provide the basis for useful and valuable considerations, which if implemented in the villagization process, will avoid detrimental pitfalls which escalated the sedentary vulnerability context. National governments should strive for sustainable development pathways for all groups of its population, and the Sustainable Adaptation Framework provides a good place to start.

7 References

- Adger, W. N., Huq, S., Brown, K., Conway, D., & Hulme, M. (2003). Adaptation to climate change in the developing world. *Progress in Development Studies*, 3(3), 179-195. doi: 10.1191/1464993403ps060oa
- ANRS. (2010). *Afar National Regional State. Programme of Plan on Adaptation to Climate Change* Semera: Retrieved from <http://www.epa.gov.et/Download/Climate/Regional%20Climate%20Change%20Adaptation%20Programmes/Afar%20National%20Regional%20State%20%20Climate%20Change%20Adaptation%20program.pdf>.
- Assefa, T. (Ed.). (2008). *Digest of Ethiopia's National Policies, Strategies and Programs*. Addis Ababa, Ethiopia: Forum for Social Studies.
- Bass, S., Wang, S. S., Ferede, T., & Fikreyesus, D. (2013). Making growth green and Inclusive: The case of Ethiopia.
- Behnke, R., & Kerven, C. (2012). Counting the costs: replacing pastoralism with irrigated agriculture in the Awash Valley. *Catley A, Lind J and Scoones I. Pastoralism and development in Africa: dynamic changes at the margins. Earthscan from Routledge, London.*
- Berg, B. L., & Lune, H. (2012). *Qualitative Research Methods for the Social Sciences* (8th ed.). New Jersey: Pearson Education.
- Bernard, H. R. (2006). *Research Methods in Anthropology. Qualitative and Quantitative Approaches* (4th ed.). United States of America: AltaMira Press.
- Bryman, A. (2012). *Social Research Methods* (4th ed.). Oxford: Oxford University Press.
- Conway, D., & Schipper, E. L. F. (2011). Adaptation to climate change in Africa: Challenges and opportunities identified from Ethiopia. *Global Environmental Change*, 21(1), 227-237.
- Creswell, J. W. (2014). *Research Design. International Student Edition*. (4th ed.). United Kingdom: SAGE Publications Ltd.
- Davies, J., & Bennett, R. (2007). Livelihood adaptation to risk: Constraints and opportunities for pastoral development in Ethiopia's Afar region. *The Journal of Development Studies*, 43(3), 490-511. doi: 10.1080/00220380701204422
- Debsu, D. N. (2009). Gender and culture in southern Ethiopia: an Ethnographic analysis of Guji-Oromo women's customary rights. *African Study Monographs*, 30(1), 15-36.
- Devereux, S. (2006). *Vulnerable Livelihoods in Somali Region, Ethiopia*: Institute for Development Studies.
- Elliot M. Fratkin, Eric Abella Roth, & Martha A. Nathan. (1999). When Nomads Settle: The Effects of Commoditization, Nutritional Change, and Formal Education on Ariaal and Rendille Pastoralists. *Current Anthropology*, 40(5), 729-735. doi: 10.1086/300093
- Eriksen, S., Aldunce, P., Bahinipati, C. S., Martins, R. D. A., Molefe, J. I., Nhemachena, C., . . . Sygna, L. (2011). When not every response to climate change is a good one: Identifying principles for sustainable adaptation. *Climate and Development*, 3(1), 7-20.
- Eriksen, S., & Lind, J. (2009). Adaptation as a Political Process: Adjusting to Drought and Conflict in Kenya's Drylands. *Environmental Management*, 43(5), 817-835. doi: 10.1007/s00267-008-9189-0
- Eriksen, S., & Marin, A. (2015). Ch. 10: Sustainable Adaptation Under Adverse Development? Lessons from Ethiopia. In T. H. Inderberg, S. Eriksen, K. O'Brien, & L. Sygna (Eds.), *Climate Change Adaptation and Development. Transforming Paradigms and Practices* (pp. 178-199). New York, USA: Routledge.
- Eriksen, S. H., & Marin, A. (2011). Pastoral pathways: climate change adaptation lessons from Ethiopia.
- FDRE. (2011a). *Ethiopia's Climate Resilient Green Economy: Green Economy Strategy*. Addis Ababa.
- FDRE. (2011b). *The path to sustainable development: Ethiopia's Climate-Resilient Green Economy Strategy*. Addis Ababa: Retrieved from http://www.uncsd2012.org/content/documents/287CRGE%20Ethiopia%20Green%20Economy_Brochure.pdf.

- Fratkin, E., Roth, E., & Nathan, M. (2004). Pastoral Sedentarization and Its Effects on Children's Diet, Health, and Growth Among Rendille of Northern Kenya. *Human ecology*, 32(5), 531-559. doi: 10.1007/s10745-004-6096-8
- Fratkin, E., & Smith, K. (1995). Women's changing economic roles with pastoral sedentarization: Varying strategies in alternate Rendille communities. *Human ecology*, 23(4), 433-454. doi: 10.1007/BF01190131
- Gabrielsson, S. (2015). Gender matters: adaptive capacities to climate variability and change in the Lake Victoria Basin. In T. H. Inderberg, S. Eriksen, K. O'Brien, & L. Sygna (Eds.), *Climate Change Adaptation and Development. Transforming Paradigms and Practices* (pp. 83-97). New York, USA: Routledge.
- Kassa, H. (2008). Agricultural Extension in Ethiopia: Historical Evolution, Relevant Policies, and Challenges. In T. Assefa (Ed.), *Digest of Ethiopia's National Policies, Strategies and Programs* (pp. 153-175). Addis Ababa, Ethiopia: Forum for Social Studies.
- Kelly, P. M., & Adger, W. N. (2000). Theory and Practice in Assessing Vulnerability to Climate Change and Facilitating Adaptation. *Climatic Change*, 47(4), 325-352. doi: 10.1023/A:1005627828199
- Lavers, T. (2012a). 'Land grab' as development strategy? The political economy of agricultural investment in Ethiopia. *Journal of Peasant Studies*, 39(1), 105-132.
- Lavers, T. (2012b). Patterns of agrarian transformation in Ethiopia: State-mediated commercialisation and the 'land grab'. *The Journal of Peasant Studies*, 39(3-4), 795-822. doi: 10.1080/03066150.2012.660147
- Little, P. D., Smith, K., Cellarius, B. A., Coppock, D. L., & Barrett, C. (2001). Avoiding Disaster: Diversification and Risk Management among East African Herders. *Development and Change*, 32(3), 401-433. doi: 10.1111/1467-7660.00211
- Negatu, W. (2008). Food Security Strategy and Productive Safety Net Program in Ethiopia. In T. Assefa (Ed.), *Digest of Ethiopia's National Policies, Strategies and Programs* (pp. 1-22). Addis Ababa, Ethiopia: Forum for Social Studies.
- Nyong, A., Adesina, F., & Osman Elasha, B. (2007). The value of indigenous knowledge in climate change mitigation and adaptation strategies in the African Sahel. *Mitigation and Adaptation Strategies for Global Change*, 12(5), 787-797. doi: 10.1007/s11027-007-9099-0
- O'Brien, K., Eriksen, S., Nygaard, L. P., & Schjolden, A. (2007). Why different interpretations of vulnerability matter in climate change discourses. *Climate Policy*, 7(1), 73-88.
- O'Brien, K. L., & Leichenko, R. M. (2000). Double exposure: assessing the impacts of climate change within the context of economic globalization. *Global Environmental Change*, 10(3), 221-232.
- O'Brien, K. (2012). Global environmental change II From adaptation to deliberate transformation. *Progress in Human Geography*, 36(5), 667-676.
- Pedersen, J., & Benjaminsen, T. (2008). One Leg or Two? Food Security and Pastoralism in the Northern Sahel. *Human ecology*, 36(1), 43-57. doi: 10.1007/s10745-007-9136-3
- Rahmato, D. (2008). Ethiopia: Agriculture Policy Review. In T. Assefa (Ed.), *Digest of Ethiopia's National Policies, Strategies and Programs* (pp. 129-151). Addis Ababa, Ethiopia: Forum for Social Studies.
- Rettberg, S. (2010). Contested narratives of pastoral vulnerability and risk in Ethiopia's Afar region. *Pastoralism*, 1(2), 248-273.
- Sabates-Wheeler, R., Lind, J., & Hoddinott, J. (2013). Implementing Social Protection in Agro-pastoralist and Pastoralist Areas: How Local Distribution Structures Moderate PSNP Outcomes in Ethiopia. *World Development*, 50(0), 1-12. doi: <http://dx.doi.org/10.1016/j.worlddev.2013.04.005>
- Scott, J. C. (1998). *Seeing like a state: how certain schemes to improve the human condition have failed*. New Haven & London: Yale University Press.
- Tsegaye, D., Moe, S. R., Vedeld, P., & Aynekulu, E. (2010). Land-use/cover dynamics in Northern Afar rangelands, Ethiopia. *Agriculture, Ecosystems & Environment*, 139(1-2), 174-180. doi: <http://dx.doi.org/10.1016/j.agee.2010.07.017>

- Vermeulen, S., & Cotula, L. (2010). Over the heads of local people: consultation, consent, and recompense in large-scale land deals for biofuels projects in Africa. *The Journal of Peasant Studies*, 37(4), 899-916. doi: 10.1080/03066150.2010.512463
- Viste, E., Korecha, D., & Sorteberg, A. (2013). Recent drought and precipitation tendencies in Ethiopia. *Theoretical and Applied Climatology*, 112(3-4), 535-551. doi: 10.1007/s00704-012-0746-3
- Wangui, E. E. (2008). Development interventions, changing livelihoods, and the making of female Maasai pastoralists. *Agriculture and Human Values*, 25(3), 365-378. doi: 10.1007/s10460-007-9111-z



Norwegian University
of Life Sciences

Postboks 5003
NO-1432 Ås, Norway
+47 67 23 00 00
www.nmbu.no