Paths to Collaboration? A Study on Multifunctional Mountain Trails

Kristin Godtman Kling

Main supervisor: Peter Fredman
Co-supervisor: Sandra Wall-Reinius

Faculty of Human Sciences
Thesis for Licentiate degree in Tourism Studies
Mid Sweden University
Östersund, 2019-01-18
Akademisk avhandling som med tillstånd av Mittuniversitetet i Östersund framläggs till offentlig granskning för avläggande av filosofie licentiatexamen den 18 januari, kl. 10.00, G1352, Mittuniversitetet Östersund. Seminariet kommer att hållas på engelska.

Paths to Collaboration? A Study on Multifunctional Mountain Trails

© Kristin Godtman Kling, 2019
Printed by Mid Sweden University, Sundsvall
ISSN: 1652-8948
Cover photo by Ebba Samuelsson
Faculty of Human Sciences
Mid Sweden University, SE-83125
Phone: +46 (0)10 142 80 00
Mid Sweden University Licentiate Thesis 150
# Table of contents

Abstract ................................................................................................................. i

Svensk sammanfattning ....................................................................................... iii

List of papers ..................................................................................................... v

List of tables ..................................................................................................... v

Acknowledgements ......................................................................................... vi

1 Introduction .................................................................................................... 1
  1.1 Aim and Research Questions ..................................................................... 5
  1.2 Definition and functions of trails ............................................................... 6
  1.3 Outline of the thesis ................................................................................... 7

2 Study area ...................................................................................................... 9
  2.1 Mountain trails .......................................................................................... 11
  2.2 The Association Gränsfjällen Sylarna i Samverkan ................................... 12

3 Theoretical frame .......................................................................................... 13
  3.1 Land-use conflicts in tourism and outdoor recreation .............................. 14
  3.2 Trail conflicts ........................................................................................... 15
  3.3 Managing land-use conflicts in tourism and outdoor recreation .............. 19
    3.3.1 Collaboration ....................................................................................... 19

4 Research Design ............................................................................................. 27
  4.1 Case study research .................................................................................... 28
  4.2 Mixed-methods research design and the pragmatism paradigm ............... 29
  4.3 Qualitative data collection ......................................................................... 31
    4.3.1 Community-based participatory research ........................................... 31
    4.3.2 Interviews ............................................................................................ 32
    4.3.3 Validity, reliability and data analysis ................................................... 33
  4.4 Quantitative data collection ........................................................................ 35
    4.4.1 Systematic quantitative literature review .............................................. 35
    4.4.2 Web-based Survey ............................................................................... 36
    4.4.3 Visitor survey ........................................................................................ 37
Validity, reliability and data analysis ................................................................. 38
4.5 Reflections on methods and research design .................................................. 39
  4.5.1 The case study and generalizability ............................................................ 39
  4.5.2 Thoughts on how to apply mixed methods research and pragmatism .......... 40

5 Paper summaries ............................................................................................... 45
  5.1 Paper I. Trails for Tourism and Outdoor Recreation: A Systematic Literature Review ........................................................................................................ 45
  5.2 Paper II. Negotiating improved multifunctional landscape use: trails as facilitators for collaboration among stakeholders ........................................ 47

6 Discussion and Conclusions .............................................................................. 50
  6.1 Research on trails for tourism and outdoor recreation ................................. 50
  6.2 The role of trails in conflict management ....................................................... 52
    6.2.1 Collaborative platforms and facilitators .................................................... 55
  6.3 Implications for policy and management ...................................................... 57
  6.4 Future research ............................................................................................. 59

7 References ......................................................................................................... 61
Abstract

Trails in natural areas constitute an essential resource in tourism as they provide infrastructure for both tourists and tourism companies. Trails allow access to nature and increase safety for visitors by guiding them to the appropriate route, where places of danger are avoided and the risk of damaging ecologically sensitive areas minimized. Even so, touristic activities in natural settings are today increasing and are more diversified as there are many ‘new’ activities becoming accessible for more people, for example mountain biking, trail-running and mountaineering. These trends and changes in tourism and outdoor recreation have resulted in an increase of trail-use, which in turn entails more trail-based conflicts. Conflicts occur between different recreational activities that use the same trail, but also between trail-based recreationists and other land-use interests. Thus, planners and managers of natural areas increasingly have to handle conflicts related to trail-use. Although conflicts relating to trails are becoming more common, research on trails as a conflict management tool is limited. Research has mainly focused on conflicts between trail-based recreation activities, and not on how the trail itself can be used to handle conflicts between land-use interests. As a number of land-use interests use the trail for various purposes, it can be argued that the multi-faceted features and flexible characteristics that constitute a trail can be helpful in handling such conflicts. The point of departure for this licentiate thesis is the assumption that trails in the natural landscape can function as a conflict management tool. Through the recreational trail, dialogue and discussions are made possible among stakeholders. Trails can therefore function as facilitators for communication, and thus enhance the possibilities of building trust and promoting collaboration between actors.

The results of this thesis derive from a case study of the southern Jämtland mountains in Sweden, an area where conflicts of interests exist. There are several different interests and perspectives on how the mountain landscape should be used, perspectives including those of tourism companies, reindeer herding, nature conservation interests and local population. The trails in the area are, however, important to all stakeholder groups, and collaboration around the trails is therefore examined in this thesis as an applied example where stakeholders communicate and negotiate.

Data for this thesis was collected by working closely with stakeholders in the area and by organizing workshops where different interests could meet and
discuss issues relating to trails. Results show that creating platforms for collaboration and dialogue are important for increasing the understanding between different interests represented within stakeholder groups. Such platforms can therefore be highly valuable in handling conflicts regarding land-use.

This licentiate thesis contributes to increased knowledge on the multi-faceted roles of trails intended for tourism and outdoor recreation. This is achieved by the examination of international trail research to identify research gaps, together with the analysis of trails as a tool for collaboration and communication to handle land-use conflicts. The thesis contributes to the existing literature on handling multiple land-use interests, and adds to previous knowledge by taking on a rather new approach; that of the recreational trail as a facilitator for communication.
Svensk sammanfattning


Resultaten av denna avhandling härstammar från en undersökning av södra Jämtlandsfjällen i Sverige, ett område där intressekonflikter föreligger. Det finns flera olika intressen av och perspektiv på hur landskapet bör användas, perspektiv från turistindustrin, rennäringen, naturskyddet och den lokala befolkningen. Lederna i området är emellertid viktiga för alla intressenter och samarbetet kring lederna är därför undersökta i denna avhandling som ett verkligt exempel där de olika intressenterna kommunicerar och förhandlar med varandra.
Dataunderlaget för avhandlingen har insamlats genom arbete i nära samarbete med olika intresseenter i området och genom att genomföra workshops där olika intressegrupper kunde mötas och diskutera frågor relaterade till leder. Resultaten visar att skapandet av plattformar för samarbete och dialog är viktiga för att öka förståelsen av de olika intresseområden som representeras av intressentgrupperna. Sådana plattformar kan därför vara mycket värdefulla vid hanteringen av markanvändningskonflikter.

Licentiatavhandlingen bidrar till ökad kunskap om de mångskiftande funktionerna hos leder avsedda för turism och utomhusrekreation. Detta uppnås genom undersökning av internationell forskning om leder, för att kartlägga forskningsluckor och att analysera funktionen av leder som verktyg för samarbete och kommunikation för att hantera markanvändningskonflikter. Avhandlingen bidrar till befintlig litteratur om hantering av mångfaldiga intressen inom markanvändning och är tillägg till tidigare kunskap genom ett delvis nytt angreppssätt; synen på rekreationsleder som främlare av kommunikation.
List of papers


List of tables

Table 1: Summary of individual papers.............................................. 43

List of figures

Figure 1 Map of the case study area and the trails within...................... 11
Figure 2. PRISMA chart....................................................................... 36
Acknowledgements

I would say that trails in the mountain landscape have come to play a more prominent role in my life than I ever could have imagined. Growing up in the center of Gothenburg and only visiting the Swedish and Norwegian mountains for skiing holidays, I would never have guessed that the paths of life would eventually lead me to working in a snowy, windy mountain station in Jämtland. The only way of getting to, or from that mountain station was by following the red wooden crosses. These crosses became my good friends in the sometimes soft, sometimes harsh landscape, and I have spent many hours following the trails on the map planning for ski tours, hikes and trail running routes. It is something intriguing about looking at the trails on the map and preparing for what challenges and experiences they will bring; it is exciting to try to envisage where they will take me in an unfamiliar landscape where I am a stranger. Even though I may not know what the surroundings will look like, I do know that the trails will guide me safely through the landscape. The guiding values of trails cannot be underestimated.

I could not have guessed either that I would end up writing a licentiate thesis about trails. The paths in one’s life can truly take unexpected turns, and here I find myself about to summarize two and a half years of trying to understand the essence of trails.

Along the way, I have had the great privilege of being guided through the academic landscape by excellent people whom I am forever indebted to. My thesis supervisors Peter Fredman and Sandra Wall-Reinius who have shown me nothing but support and encouragement, and who have guided me with wisdom and kindness through this research process. I could not have wished for better mentors when entering the world of science.

I am also truly thankful to Annika Dahlberg, who is such an inspiration to me and whom I feel fortunate to be given the opportunity to work with. I can only hope to one day achieve the same level of competence. Beginning a tentative career as a researcher would not have been the same without Daniel Svensson, and I value our discussions about life as a PhD-student and about life in general. I am grateful for you welcoming me into the scary world of science by making it a little less scary.

It is important to recognize that this thesis would not have been the same without the valuable contribution from Matilda Andersson. The association Gränsfjällen Sylarna i samverkan and its members, together with Lennart
Adsten, deserves a special acknowledgement for supporting the data collection process. Thank you to the respondents in the interviews.

I want to direct a special thank you to Maria Lexhagen and Daniel Laven for contributing with highly valuable comments on this thesis and substantially improving the overall result. Thank you Jack Shepherd for proofreading this thesis and making welcome changes to improve the English language.

I have been very lucky to be surrounded by amazing colleagues at the Department of Tourism Studies and Geography at Mid Sweden University. During these years, there has always been time for pep talk, a coffee, or a good laugh. It is such a privilege to be surrounded with brilliant minds and kind hearts. Rosemarie Ankre, Dimitri Ioannides, Kristina Zampoukos, Daniel Wolf-Watz, Maria Lexhagen, Daniel Laven, Tatiana Chekalina, Matthias Fuchs, Bosse Bodén – thank you. Special words of gratitude goes out to my two PhD-role models Lusine Margaryan and Solène Prince, who are great sources of inspiration. I feel very fortunate to be able to share this PhD-experience with my fellow student colleagues Kai Kronenberg, Anders Nordvall, Jennie Gelter, Martin Wallstam, Jack Shepherd, Michael Röslmaier, Jonathan Yachin and Eugenio Conti – I treasure our intellectual (?) conversations and I am looking forward to two and a half more years of equally intellectual discussions. Sandra Wåger and Märit Christensson – I am forever thankful for all your professional and personal support and for always making me laugh.

Finally, I want to thank those who made this, sometimes a bit overwhelming, experience possible and whose love and support I can always count on – my family. Mom, Dad, Erik and Sara – I seriously do not know what I would do, or where I would be, without you. I wish everyone could have such an amazing family as I have. My dear cousins Ulrika and Annika, you are simply the best. I want to direct a special thank you to Christer Marking, who has been so very helpful, kind, and supporting in this process. I am truly grateful for all the hours you spent on reading, commenting and discussing my work with me. My two life-at-the-university-comrades-in-arms Sara Häggström and Lovisa Högberg, thank you for the lunches and fikas that helped me through seemingly endless days of writing and reading. Thank you to my bff Malin – having you as a friend makes life in general a lot more fun.

Tack till er alla!

Kristin Godtman Kling

Östersund, November 2018
1 Introduction

Throughout the centuries of human presence in the Swedish mountain landscape, patterns of mobility in the form of trails have evolved. These have been essential to activities such as reindeer herding, travel, and commerce; and of late also to tourism. These patterns of mobility provide access to mountain landscapes for diverse interests and are of great significance in a historical and heritage context as they tell stories of travel and traditions. Moreover, they reveal ideas, ambitions and tensions regarding the use of the landscape through different periods of history (Svensson, Sörlin & Wormbs, 2016; Timothy & Boyd, 2015). Trails have helped form the basis of human mobility patterns and have been essential to travel and tourism, and trails in natural settings and outdoor areas are one of the more important resources for tourism and recreation today (Timothy & Boyd, 2015). Today, trails are used by people for a number of purposes, such as exercise, self-renewal, relaxation, wildlife viewing, visiting cultural features, travel to scenic viewpoints and inspiration. Trails also function as guides in the natural landscape, as they allow access into nature and provide a route for visitors to follow to reduce the risk of becoming lost, confronting physical dangers or damaging sensitive places (Lekies & Whitworth, 2011; MacLeod, 2016; Newsome, Moore & Dowling, 2013).

Deepening the discussion on the function of trails in the landscape, Moor (2016) argues that the core function of a trail is to connect, and in a much wider context, even to unite. From a historical perspective, trails acted as connectors between villages and people, thus uniting travelers and walkers with their destination. Trails also played an important role in the connection of distant places and through the trail a line of communication was established which enabled development through commerce and information flow. Still today, linear resources such as roads, highways, routes and trails function as modes of communication that connect people and places (Moor, 2016).

There are a number of different types of trails such as aquatic trails, wildlife trails, trails used for industrial purposes etc. This licentiate thesis focus on trails used by humans for touristic and recreational purposes. Trails and paths are recognized as important elements of human landscapes and have provided the basis for contemporary road networks worldwide, thus constituting an indispensable resource for human mobility (Timothy & Boyd, 2015). Trails have also been an essential component in the very early forms of tourism and leisure and can therefore not be disconnected from tourism, as
they are inseparable partners in this setting. Nevertheless, researchers have given little attention to their role in the context of tourism and recreation (Timothy & Boyd, 2015). The multi-faceted features and flexible characteristics that constitute a trail is an under-researched area that would benefit from increased scholarly attention, as there are a number of intriguing and important aspects of trails that are not being considered (MacLeod, 2017). There are therefore reasons to examine if trails intended for tourism and outdoor recreation have more to offer than solely providing a safe way of passage through the landscape, but perhaps can be significant contributors to sustainable development in natural areas.

Trails are an important resource from a touristic perspective as they provide infrastructure in the natural environment and serve tourists, tourism companies and businesses supporting the tourism companies. For example, in the Swedish mountain area, companies providing food and supplies for tourist mountain stations without access to road use the same trails as tourists when they deliver goods by snowmobile or snow cat (Godtman Kling, Wall-Reinius & Fredman, 2017). There is a growing demand for nature-based tourism services, and hence a variety of natural resources is increasingly utilized to cater to the needs of consumers in natural settings (Balmford, Beresford, Green, Naidoo, Walpole & Manica, 2009; Margaryan, 2017; UNWTO, 2017). For nature-based tourism businesses organizing for example guided tours, the trail serves as a resource for getting from point A to point B, thus indirectly providing an important touristic service (Fredman, 2018; Fredman & Margaryan, 2014). A basic component of the tourism industry are visitor attractions, and these play a crucial role in how appealing a destination is, as many tourists see attractions as a major reason for visiting a place (Page & Connell, 2009). In a trail context, these can function as tourist attractions in themselves and many places use well-known trails for marketing purposes to build destination images and increase arrivals and revenues (Timothy & Boyd, 2015).

The examples stated above illustrate that different groups consider trails important and use them for various purposes, which makes them particularly interesting to study. Timothy and Boyd (2015) suggest that it is often impossible to distinguish the local trail users from the tourists as both groups use the same trail resources. This indicates that the relationship between tourism and other interests in a trail context is multi-faceted and complex as both groups use the trails and they often do it for the same purposes (e.g. recreation). However, tourists’ and other land-use interests’ views of the trails
and the landscape they are located in will inevitably differ as tourists might view the landscape as wild, magnificent, or pristine, but for locals it is their everyday landscape (Wall-Reinius, Prince & Dahlberg, 2018b). Thus, the trail will represent different values for different user groups. Moreover, as tourists are visitors outside of their usual surroundings, the trail plays a particularly important guiding role for the tourist in an un-known landscape, and thus increases the safety of those travelling in that landscape for the first time compared to for example locals who are familiar with the terrain (Lekies & Whitworth, 2011). Trails are also a tool to direct tourists as most people follow the trails. By organizing and planning them so that they are located in environmentally and socio-culturally suitable places, management can to a certain extent control where tourists are (Fredman, 2018). In addition, trails can provide important opportunities for visitor interpretation and enhance the tourist experience; they can build awareness and appreciation of natural landscapes among recreationists (McLeod, 2016; Timothy & Boyd, 2015).

Popular tourist trails in peripheral natural environments are often located in mountainous landscapes (Beedie & Hudson, 2003; Timothy & Boyd, 2015). Mountainous landscapes globally constitute an important resource for many different interest groups, not least tourism. The question of whose interests have, or should have, primary access to that same resource has become central for the management of mountain areas, so also in Sweden (Bjärstig, Eckerberg & Zachrisson, 2016; Holmgren, Sandström & Zachrisson, 2017; Wall-Reinius et al., 2018b). Landscapes used for several different purposes can be described as multifunctional, and there is a great challenge in balancing and combining multiple interests, values and needs in a natural area where space is limited (Israel & Wynberg, 2018; Reyers, O’Farrell, Nel, & Wilson, 2012). An increased and more diversified recreational and touristic use of the mountain landscape together with the presence of other strong economic and governmental land use interests (e.g. reindeer herding, forestry and nature conservation interests) has led to land-use conflicts between actors who use the Swedish multifunctional mountain landscape for different purposes (Zachrisson & Beland Lindahl, 2013). It is of great importance to develop practices that can handle such conflicts constructively in order for the management of the natural, multifunctional landscape to be sustainable and successful. Neglecting to address such conflicts can result in the degradation of important ecological areas, and in a tourism context negatively affect the competitiveness of the destination (McComb, Boyd & Boluk, 2017; Raitio, 2013; Wondolleck & Yaffee, 2000).
It has become increasingly evident that although trails provide a number of benefits to various user-groups the recreational and touristic patterns and trends in natural areas also entail conflicts. Touristic activities in natural settings are today more diversified as there are many ‘new’ activities becoming accessible for more people, for example mountain biking, trail-running and mountaineering (Apollo, 2017; Fredman et al., 2014; Manning, 2011; Pröbstl-Haider, Lund-Durlacher, Antonschmidt & Hödl 2018). In addition, nature-based tourism operators offer a plethora of recreational options to participate in, many of which require specific equipment, such as mountain bikes or snowmobiles (Fredman & Margaryan, 2014; Fredman & Tyrväinen, 2010). These trends and changes in tourism and outdoor recreation that have come to include a greater number of different trail-based activities means an increased visitation to natural areas and an increased use of existing trail networks which has led to more trail-user conflicts (Dolesh, 2004; Newsome, Moore & Dowling, 2013). Conflicts related to trails can occur between different recreational activities that use the same trail such as between hikers and mountain bikers or between skiers and snowmobilers (e.g. Jackson, Haider & Elliot, 2003; Koemle & Morawetz, 2015). There can also be conflicts between trail-users and other recreationists, for example between hikers and hunters (e.g. Emborg & Gamborg, 2016), or between trail-users and non-recreation land-uses, such as between forestry and recreationists (e.g. McKercher, 1992). Trail-based tourism can also give rise to conflicts between trail-users and local communities, for example when the demand for activity-specific trails increases and new recreational planning frameworks within the community are needed (Kline, Cardenas, Viren & Swanson, 2015). As trails in the natural landscape to a large extent direct and shape how people move in that landscape, the existence of trails can create conflicts but they can also reduce and potentially prevent conflicts (Bakhtiari, Bredahl Jacobsen & Søndergaard Jensen, 2014; Miller, Vaske, Squires, Olson & Roberts, 2017).

In the context of natural resource management and tourism, trails that are well-planned and well-developed can contribute to creating a tourism product in the natural landscape that is socially, economically and environmentally responsible, therefore playing an important role in the sustainable management of tourism resources (MacLeod, 2016). On a more philosophical level, trails constitute an asset that unites people by the stories surrounding them, stories that are shared among the users for the purpose of effectively navigating through the landscape (Moor, 2016). By talking about experiences and communicating around the trail, knowledge about our complex surroundings is shared and ‘...through collaboration and
communication, personal wisdom is transformed into collective wisdom’ (Moor, 2016, p. 333). The trail therefore functions as an instrument to build and pass on knowledge about the features of the landscape, and one can thus argue that this collective wisdom can serve as a component in handling land-use conflicts.

Following the notions suggested by Moor (2016) regarding trails as an important communicative and collaborative element in the landscape and by MacLeod (2016) that trails can constitute a socially sustainable tourism product, trails could be a tool in the management of land-use conflicts in natural areas. Communication in land-use conflict management is central as it is crucial for a fruitful collaboration process in which the involved parties can together examine and express what the fundamental differences between perspectives are (Westberg, Hallgren, Bergeå & Sandström, 2016). Conflicts are often based on misunderstandings and lack of information and therefore interaction between parties is essential for establishing communicative platforms. It is necessary for those involved to find constructive ways of communicating in order to understand each other and form relationships that can function as a starting point for a conflict management process, thus enhancing the possibilities for a sustainable use of the land in question (Berglund, Hallgren & Aradóttir, 2013; Prager 2015; Towner, 2018).

In light of the aforementioned, it is useful to thoroughly examine scientific research on trails in the mountain landscape, and specifically to investigate the current knowledge on the role of trails in land-use conflicts. It can be argued that there are reasons to consider new or revised forms of planning and management of trails where trails can function as a tool to manage conflicts. Moreover, to study the trail as a facilitator for collaboration and communication can provide important insights on how the trail can function as a mean to minimize conflicts between interests in a mountain landscape. The more various interest groups understand about each other’s perspectives and why these exist, the greater the possibility is of finding constructive ways to move forward (Westberg et al., 2016).

1.1 Aim and Research Questions

The aim of this thesis is to (i) examine the current status of scientific research on recreational trails, and (ii) based on this, analyse the role of trails as facilitators for collaboration and communication to manage land-use conflicts.
in the context of a mountain landscape where tourism is a prominent use. The aim is addressed through the following research questions:

- What is the status of scientific research on trails intended for tourism and outdoor recreation in non-urban settings?
- How can trails function as a mean for collaboration and communication to manage conflicting interests in a multiple-use mountain landscape?

This thesis provides new knowledge that further a sustainable development of mountain landscapes in a wider perspective. The Swedish Environmental Protection Agency (SEPA, 2014) state that the mountain landscape is in need of efforts that enable multifunctional use and ensure equal opportunities for different interests to act in that landscape. By exploring the trail as a resource that encompass more than just the physical construct, challenges in handling and balancing multiple interests are examined and thus contributes to new approaches to land-use conflict management.

Moor (2016, p. 3) states that: ‘the soul of a trail – its trail-ness - is not bound up in dirt and rocks; it is immaterial, evanescent, as fluid as air. The essence lies in its function: how it continuously evolves to serve the needs of its users’. In this thesis, I elaborate on this view and explore the idea of the function of the trail as a potential conflict management tool, around which actors in the mountain landscape where tourism constitute a major interest can communicate and collaborate.

1.2 Definition and functions of trails

There are a number of suggestions on how to define what a trail is (Moore & Ross, 1998; Moore & Shafer, 2001). One definition of trails is provided by an American task force of trail groups and government agencies that states that a trail is ‘a linear corridor, on land or water, with protected status and public access for recreation or transportation’ (American Trails, 1990 p. 2). Axelson et al. (1999, p. xii) define a trail as ‘a path of travel for recreation and/or transportation within a park, natural environment, or designated corridor that is not classified as a highway, road, or street’. A third definition is suggested by Timothy and Boyd (2015, p. 4); according to these authors, a trail ‘includes all natural or human-made linear corridors in rural or urban areas designated as trails, paths or routes for the use of recreationists, tourists or
travelers regardless of their mode of transportation’. This definition will be used in this licentiate thesis as it involves multiple aspects of the trail concept and therefore provides a more comprehensive view on the subject. It includes not only trails in natural settings but also linear resources in cultural areas, the countryside and cities, as well as involving multiple scales and different aspects of trail-use in terms of activities (Timothy & Boyd, 2015).

As stated in the introduction, a central starting point for this thesis is that trails in a conflict context essentially have two roles: trails can give rise to conflicts; and trails can be used as a tool to reduce conflicts. Of these two assumptions, research has hitherto given most attention to the former (e.g. Tumes, 2007; Walker & Shafer, 2011). By stating that trails can give rise to conflicts, I refer to situations when for example two different recreational activities take place on the same trail as often is the case with the emerging activity of mountain biking and the more traditional activity of hiking. Trails can also cause conflicts by their location in the natural landscape as the users of the trail may disturb other land-use interests.

1.3 Outline of the thesis

The main components of this thesis are two independent, but connected scientific articles, and a cover essay. The two papers address the research questions and the cover essay provides a description of the case study area and a literature review that positions the thesis within a theoretical framework. I also describe the research design and the data collection process, as well as discuss methodological considerations. The cover essay also include an overview of the articles and summarizes the findings in a concluding discussion.

**Paper I** lays the foundation for understanding scientific research on recreational trails and how this research is conducted within academia. This paper is a literature review that provide a relevant starting point for this thesis, as it examines the topics trail research focuses on, and where there are research gaps.

Drawing from the results of the first paper, **Paper II** investigates recreational trails as a means for collaboration and communication in a mountain landscape where there are conflicts between land-use interests. It is based on
several data sources and discusses important elements for handling and balancing multiple interests in a landscape characterized by multifunctionality, and how the recreational trail fits in this context.
2 Study area

The case study area is located in the county of Jämtland in Sweden where the empirical research is conducted for Paper II. This thesis focuses on actors and land use in the mountainous part of the two municipalities of Åre and Berg; an area of about 2,250 square kilometers, and hereafter called the southern Jämtland mountains, see figure 1. It is an area with varying geographical features, such as mountain peaks with glaciers, highlands, valleys, open and forested lands, lakes and rivers. The study area is located at a distance from the population centers in the two municipalities. The lower mountains and forested areas close to the case study area are sparsely populated with villages and single houses. It is somewhat difficult to estimate the number of inhabitants in the study area due to lack of reliable and accurate statistics at a village level. Overall, there are about 500 inhabitants living in the surrounding small villages (Statistics Sweden, 2016). For people living in the villages, it is common to have multiple means of income, often combining small-scale tourism businesses with other work (Wall-Reinius et al., 2018b).

Extensive reindeer herding is a dominant activity in the case study area, an activity which is distinct to the Sami people, and a marker of their cultural identity. Three Sami villages keep reindeers in the case study area, and reindeer herding is a business that largely relies on opportunities of flexibility, as the reindeers move over vast areas throughout the year to find pasture (Sametinget, 2018). One of the Sami villages, Handölsdalen, has their calving area and summer grazing land in the same location as some of the most frequented trails for recreation activities.

The southern Jämtland mountains have historically been used for a number of purposes apart from reindeer herding such as small-scale farming, small-scale mining, manufacturing and energy production. Today, the area is mostly characterized by reindeer herding, nature conservation initiatives and outdoor recreation/nature-based tourism activities.

At present, a large part of the study area is a nature reserve and a Nature 2000 area, and there are regulations of motorized activities, dogsledding, hunting and fishing to protect the flora and fauna (County Administrative Board Jämtland, 2018a). In addition to the current protected area, state authorities have proposed the establishment of a national park and have initiated a process to set the frames of this new park (County Administrative Board Jämtland, 2018a).
The area is a popular destination for outdoor recreationists and nature-based tourists, primarily due to accessible transportation to the area (roads and railways). The trail system in the area is well developed and there is accommodation in cabins along the trails which makes transportation (e.g. hiking, biking, cross-country skiing) safe and encourages day-trips. In the study area, the Swedish Tourist Association (STF) operates ten mountain cabins – some with restaurants, sauna and showers – and these are connected through the trail network (STF, n.d.). In 2017, the number of guest nights in STF cabins was nearly 62,000, an increase of about 12% from the year before (L. Welander, personal communication 2017). According to the County Administrative Board in Jämtland, visitor counters adjacent to a specifically popular trail in the area showed that the number of visitors has increased by a factor of five between 2013 and 2017, and that the number of bicycle passages has gone from 14% of all passages in 2015 to 33% in 2017 (Godtman Kling, 2018). These estimations suggest that the total number of visitors is increasing.

Some of the most popular activities among recreationists, both local and visitors, are trail-based such as overnight hikes and shorter hikes in the summer (Wall-Reinius et al., 2015) or cross-country skiing in the winter (County Administrative Board Jämtland, 2015; Ankre & Kronenberg, 2015). In recent years, there has been an increase in newer forms of recreational activities in the area such as mountain biking, trail-running, mountaineering/alpinism, heli-skiing, river rafting, and organized sport events (Fredman et al, 2014; Godtman Kling, 2018; County Administrative Board Jämtland, 2016; Wall-Reinius et al., 2015). Various types of events and competitions take place close to the smaller villages in the eastern part of the study area; there are, for example, races in cross-country skiing, mountain marathon, and mountain orienteering (Godtman Kling, 2018; County Administrative Board Jämtland, 2016; Vålådalen, 2018). During one of the most intensive summer weeks, the ‘mountain marathon week’, about 2000 people participate in organized running competitions (Godtman Kling, 2018).
2.1 Mountain trails

In the case study area, there are about 500 kilometers of marked trails managed by the County Administrative Board (County Administrative Board Jämtland, 2018b). In the county of Jämtland as a whole, there are 2 000 kilometers of state managed mountain trails for summer and winter usage, and an equal number of trails managed by municipalities, landowners, organizations, and tourist establishments (County Administrative Board Jämtland, 2018b).

![Map of the case study area and the trails within. Map by Marika Wennbom](image)

In the Swedish mountain region as a whole, the state managed trail system consists of in total 5 500 kilometers (of which 2000 kilometers are located in Jämtland) of marked trails in four counties. The trail network includes summer trails, winter trails, bridges, wind shelters, signs and footbridges (SEPA, 2014). The purpose of the Swedish mountain trails is to make the mountain area accessible to visitors, to increase mountain safety, and to channel visitors in consideration to other values and activities (Fredman, 2018). Today, SEPA is in charge of the central work on planning and coordination of the state trail network, to direct on principles for the planning...
of trail systems, the standard of the signage, marking and facilities (for example wind shelters), and to allocate state funds for the maintenance of the state trails to the county administrative boards. The four mountain counties are responsible for the regional work on coordination and maintenance regarding trails and facilities adjacent to trails such as wooden boardwalks, shelter and bridges. SEPA (2014) recognizes that changes in outdoor life (e.g. new types of recreation activities) in the mountain region and inadequate financial resources have negatively affected the management of trails, and major parts of the trail system in the mountains are in need of extensive restoration.

According to the county administration board in Jämtland, the increase in the number of visitors and new types of activities (e.g. mountain biking) have caused land erosion, litter, conflicts between different trail-users, and a disturbance of the reindeer and reindeer herding (County Administration Board Jämtland, 2018b).

2.2 The Association Gränsfjällen Sylarna i Samverkan

The association Gränsfjällen Sylarna i samverkan has played a major role in this research project. The organization is non-profit and aims to promote responsible and sustainable tourism development in the mountains on the border of Sweden and Norway (Gränsfjällen, n.d.). The members of the organization represent a number of interests that affect, or are affected, by tourism activities such as tourism associations, local entrepreneurs and public authorities. Gränsfjällen Sylarna i samverkan organizes a meeting platform called ‘Fjällforum’ twice a year on either side of the Norwegian/Swedish border. The meeting usually takes place for half a day and during the meeting private and public actors from Sweden and Norway meet to share information and knowledge about the mountain area, and to increase the understanding of different interests and perspectives.

We in the research project used the ‘Fjällforum’ meeting to gain knowledge about the actors in the mountain area, their activities and their opinions. In connection to the forums, we organized two workshops with the members of the organization to collect information on the members’ perceptions of trails and nature conservation, respectively. We also sent out a quantitative survey on trails to the members to examine their opinions on this topic. A detailed description of these data collection procedures is found in sections 4.3.1 and 4.4.2.
3 Theoretical frame

In this chapter, I discuss academic literature relevant for the theoretical positioning of this thesis. I use frameworks of soft management approaches, namely collaboration, communication, and trust in this thesis to underpin my theoretical contribution of trails as a means to handle land-use conflicts in a mountain area.

In order to place the trail in the touristic system it can be helpful to use the work by Leiper (1990) and Wall (1997) on tourism attractions. Leiper (1990) use a systems approach to explain tourist attractions, and argues that a tourism attraction system is the empirical connection of tourist, nucleus and marker. The attraction is not just a specific site that is valued among tourists, but it consists of the actual point of attention (the nucleus), the tourists who visit the attraction, and marker, i.e. items of information about the nuclear element. The attraction is thus much more than just a place or an object, but it comprises human values and must be desired, interpreted and preserved in order to be an attraction (Leiper, 1990).

Wall (1997) suggests that tourism attractions include linear resources of two types: those with physical linear attributes such as coastlines and rivers and those that channel tourists along a specific path such as routes and trails. Both these types of linear resources mean that visitors are concentrated along narrow strips of land or transportation corridors.

Linear resources such as trails constitute an important part of the touristic system as the environment they are located in, for example, national parks and rural areas, might have several point attractions, which corresponds to Leiper’s (1990) argument of nuclei in attraction systems. These nuclei are nodes in a larger attraction system, connected by linear resources that channel tourists between nodes, as suggested by Wall (1997).

The case study area examined in this thesis is characterized by the existence of nodes (e.g. mountain stations or places with scenic views) connected by linear resources (trails), but also of multiple other land-use interests, which has led to increasing conflicts between actors. In recent years, these land-use conflicts in the area have become more significant and visible, mainly due to the growing number of visitors resulting in stakeholders competing for space to practice their activities and operations. There is a need in the southern Jämtland mountains to find constructive ways of managing these conflicts.
and moving beyond them in order to promote sustainable use of the mountain landscape and give interests equal opportunities to exist.

Stakeholder engagement and collaborative efforts are approaches increasingly employed to manage complex conflicts over land-use and natural resources; conflicts relating to forestry, tourism, game management, recreational activities and nature conservation, to name a few (Davies & White, 2012; Graci, 2013; Saarikoski, Raitio & Barry, 2013). In tourism, attempts to manage conflicts over resources using soft management approaches such as the highly intertwined components of collaboration, communication and trust building have proven to be successful, thus approaching the ideal of sustainable tourism development (Dredge, 2006; Towner, 2018). Soft management approaches, as opposed to hard management instruments (e.g. regulations, laws, fees and taxes) are often recognized as effective means to establish legitimacy in processes of resource-management among relevant stakeholders, rather than imposing top-down decisions (Schuett, Selin & Carr, 2001; Waayers, Lee & Newsome, 2012)

As the second research question of this thesis focuses on trails as a means for collaboration and communication to manage land-use conflicts, literature on such elements has a prominent role in this section. I place collaboration, communication and trust in a broader land-use conflict perspective to discuss how trails together with these soft management approaches can play a role in minimizing conflicts of interests between stakeholders in a mountain landscape.

Research on trail conflicts has mainly focused on conflicts between people participating in different recreation activities or groups and within recreation groups, and less on how trails can function as a means for collaboration and communication to handle conflicts between different users in the landscape (Godtman Kling et al., 2017).

3.1 Land-use conflicts in tourism and outdoor recreation

Tourism growth in natural areas has resulted in increasing land-use conflicts related to tourism and outdoor recreation in recent decades as tourists, tourism developers, local communities, and industrial interests compete for the same space and the same natural resources, such as forests, mountain landscapes, fisheries and surf breaks (Buckley, Guitart & Shakeela, 2017; Dredge, 2010; McKercher, 1992). McKercher (1992) describes how commercial forestry has affected tourism activities in a Canadian wilderness area by
destroying fish and wildlife habitats, and disturbing visitors with logging operations, thus resulting in conflicts between forestry workers, tourists and tourism developers. However, an interesting aspect of the land-use conflict described by McKercher (1992) is that the construction of logging roads enabled large numbers of visitors to come to the remote area by car, which led to problems of mass recreational use such as crowding, littering, overstressed fisheries and noise. The increased number of visitors to the area that the industrial forestry brought thus resulted in more conflicts between land-use interests. In a different setting, Buckley et al. (2017) examine surf tourism in the Maldives and find conflicts between stakeholders over access to surf breaks. Here, local interests are increasingly opposing the privatization of surf breaks and the right to exclusive access to surf sites that some foreign tourism corporations claim, thus prohibiting the local population from using the surf breaks.

Examples such as those described above illustrate resource competition leading to land-use conflicts related to tourism and outdoor recreation and help us understand why conflicts become apparent. Abrahamsson (1984) argues that land indeed can be used for different purposes at the same time without conflicts arising, but there are elements that affect a harmonious land-use. Relations between users can change if: (1) land-users change their behavior or activity, (2) land users increase their use in time or space, or (3) new land-users appear in the area. This perspective can also be applied to land where tourism constitutes a major interest as tourism activities can change the conditions of a geographical area or landscape by bringing in new land-users that engage in new types of activities (Dredge, 2010; McKercher, 1992), von der Dunk, Grêt-Regamey, Dalang & Hersperger (2011, p. 149) define land-use conflicts as a conflict that occurs ‘whenever land-use stakeholders (=conflict parties) have incompatible interests related to certain land-use units (=geographical component)’. These incompatible interests can hinder effective and sustainable planning of the geographical area in question (von der Dunk et al., 2011). Managers and stakeholders increasingly have to handle user conflicts due to tourism and outdoor recreation, which requires adequate planning and management of tourism resources (Reis & Higham, 2009; Sæþórsdóttir, 2012).

3.2 Trail conflicts

Trails used for various recreational and tourism purposes are potential sources of visitor conflicts in natural areas as diverse activities often take place
on the same trail at the same time (Beeton, 2006; Wolf, Brown & Wohlfart, 2018). Researchers have explored conflicts in trail use between recreationists practicing different activities in a number of studies (e.g. Beeton, 1999a; Mann & Absher, 2008; Ramthun 1995; Tumes, 2007). A studied recreational conflict is the one between motorized and non-motorized recreationists sharing the same trail where, for example, cross-country skiers may experience conflict when noise from snowmobiles disrupts the peace and quiet on the mountain, thus lowering the cross-country skiers’ experience of nature (e.g. Lindberg, Fredman & Heldt, 2009; Vittersø, Chipeniuk, Skår & Vistad, 2004). Similar findings were also reported by Shilling, Boggs & Reed (2012) who found that hikers and horse riders in a National Forest area in the U.S were highly disturbed by off-highway vehicles (OHVs), and these two recreation activity groups suggested that such vehicles should be banned from the trails. Both these studies are examples of ‘asymmetrical’ recreation conflict, where non-motorized trail-users experience reduced quality in their activity due to, for example, OHVs and snowmobiles, yet the motorized trail-users’ experiences are unaltered (Switalski, 2018). Another observed conflict between recreationists engaging in trail-based activities is between hikers and bikers. Chiu & Kriwoken (2003) found in their study of a natural area in Tasmania, Australia, that mountain biking is perceived by hikers to damage the surrounding natural environment and cause erosion to the trails, thus leading to irritation among hikers. Conflicts between bikers and other recreationists also occur when mountain bikers show little respect for other trail-users and move at a high speed as Pröbstl-Haider et al. (2018) pointed out in their study of mountain bike tourism in the Austrian Alps. Beeton (1999b) found in her study of horse riders and bush walkers in an Australian national park that some bush walkers perceived horse tour groups to be environmentally careless and as not respecting other recreationists sufficiently. However, Schneider, Earing and Martinson (2013) identified horseback riders as being specifically sensitive to hearing other trail-users, and that noise from hikers was a source of conflict for this group so there appears to be mutual perceptions of irritation between hikers and horse riders.

Many studies on conflicts related to recreation and trails have applied the theoretical framework of goal interference conceptualized by Jacob and Schreyer (1980), where the physical presence of one group or individual interferes with the goals of another group or individual. In this framework, there must be direct or indirect social contact between individuals, why goal interference is also referred to as interpersonal conflict in academia (Gibson & Fix, 2014). In a trail context, examples of interpersonal conflict can occur when
there is direct social contact, as when a mountain biker passes a hiker on a narrow trail at high speed. However, Gibson and Fix (2014) studied motorized and non-motorized river recreational users in Alaska and found that interpersonal conflict is limited in areas where the geographical attributes minimize interactions between recreational users, for example, when outdoor recreation management has implemented zoning of incompatible uses.

Building on Jacob and Schreyer’s model (1980), Carothers, Vaske and Donnelly (2001) provided an alternative explanation to recreation conflict: social values conflict. Social values conflict can occur between groups that do not share the same values and/or norms, and conflicts can arise even though there is no actual contact between the groups. The theory of social values conflict therefore differs from interpersonal conflict in the sense that in the absence of direct interaction between recreationists or users, it focuses on the perceived conflicts between stakeholders’ interests (Gibson & Fix, 2014). For instance, when hikers and hunters participate in their respective recreational activity in the same natural area, conflicts are primarily associated with norms and social values, i.e. the ethical dimension of hunting. For the hikers, simply knowing that there are hunters in the area can trigger perceptions of conflicts (Vaske, Donnelly, Wittman & Laidlaw, 1995).

Conflicts related to trails are not limited to different recreational activities, but there can also be conflicts between trail-based recreationists and other land-use interests. Conflicts can occur between recreationists and private landowners, as highlighted by Emborg & Gamborg (2016) in their study of cooperation and competition among landowners, hunters and other recreationists in Denmark, although this study revealed that nearly all landowners, hunters and recreationists had strategies to avoid or reduce conflicts. Reindeer herding interests and recreationists can come into conflict with each other as recreational trail-users can scare the reindeers and disperse the flock, thus leading to problems for the reindeer herders (Godtman Kling et al., 2017). In a study on land-use conflict potential in the north of Finland, Brown, Kangas, Juutinen & Tolvanen (2017) found that second-home owners in the area opposed increased use of the trail-based activity snowmobiling but residents and visitors were in favor of more use of snowmobiles. The conflicting opinions on this recreational activity reflect different dimensions of place attachment, where second-home owners and residents have contradictory perceptions of land use.
Nelson, Jennings and Henschell (2005) segment the range of conflicts on trails into five types:

1. among (e.g. hikers, mountain bikers and equestrians) or between trail users (e.g. cross country skiers and snowmobilers)
2. between trail users and other recreationists (e.g. hikers and hunters)
3. between trail users and adjacent private landowners (e.g. hikers and second-home owners)
4. within a single trail use (e.g. hikers and trail runners)
5. with non-recreation land uses (e.g. hiking and reindeer herding)

Previous research has shown that trails themselves can create conflicts, for example, when stakeholders perceive them as inappropriately located. Snyder, Whitmore, Schneider, and Becker (2008) researched location planning for trails for all-terrain vehicles (ATVs) in the U.S. and found that it is crucial to consider elements such as environmental impacts, land ownership, noise, rider preferences, trail separation, and views in order to construct an ATV-trail that is considered appropriate. Trails without a well thought out design can cause conflicts, as they might not provide high quality visitor experiences, for example, when they are unsuitably located or poorly managed. Trails can also fail to protect adjacent vegetation and other natural resources, thus giving rise to conflicts between planners and nature conservation interests. Marion & Wimpey (2017) argue that there is a need for more guidance for recreational trail developers and managers to meet the requirements of a sustainable trail, as there is a great challenge in providing recreational access and offering high quality visitor experiences whilst at the same time preserving natural conditions. Consequently, they developed a Trail Sustainability Rating that they offer as a tool to trail-designers to improve the sustainability of new or existing trails.

The examples in this section show that scientific research on conflicts related to outdoor recreation and the use of trails is widespread and highlight a number of issues on this topic. Even so, the examples illustrate that research on trail conflicts focus mainly on conflicts between recreational interests and less on how the trail itself and its inherent properties of connecting and uniting, as suggested by Moor (2016), can function as a tool to reduce and manage conflicts.
3.3 Managing land-use conflicts in tourism and outdoor recreation

The management of conflicting interests regarding resources in tourism and outdoor recreation is extensively researched within academia (e.g. Manning, 2011; Plummer, 2009; Schweinsberg, Wearing & Darcy, 2012; Similä & Jokinen, 2018), thus providing management agencies with different strategies for handling and reducing such conflicts. Here, I discuss the conflict management strategies that are most relevant to the enquiries of this thesis.

Gibson and Fix (2014) argue that it is important to correctly identify recreational conflicts related to interpersonal and social values in order to plan for the most effective and appropriate management strategies. When conflicts are a consequence of direct personal contact, it can be effective to separate groups where people engage in different activities by zoning these groups in time and/or space in order to limit interactions between users (Manning, 2011; Riley et al., 2015). It can also be useful to develop alternative infrastructure to reduce interpersonal conflicts, thus enhancing recreational opportunities and making sure that multiple activities have the possibility for quality recreational experiences (Gibson & Fix, 2014). Regarding social values conflicts, it can be more effective to attempt to reduce such conflicts by adopting interpretation programs in order to broaden the general understanding among users and educate recreationists about how to interact properly with other activity groups (Manning, 2011; Needham, Szuster, Mora, Lesar & Anders 2017).

These management approaches mainly aim to reduce conflicts among or between recreational stakeholders and not so much to reduce conflicts between recreation and other land-use interests. Therefore, I will continue this section on managing land-use conflicts in tourism and outdoor recreation by examining literature on collaboration, trust and communication; elements that have proven essential in the management of conflicts between land users (e.g. Almeida, Costa & Nunes da Silva, 2018; Newsome et al., 2016; Schuett et al., 2001; Wondolleck & Yaffee, 2000).

3.3.1 Collaboration

Building bridges between agencies, organizations and individuals can lead to increased understanding between stakeholder groups and enhance the capacity of agencies and communities to handle future challenges. Collaborative processes can assist in sharing knowledge between
stakeholders on different levels and can provide a framework for interdisciplinary learning and conflict resolution (Wondolleck & Yaffe, 2000). Collaborative work is a process that takes time and requires efforts from all stakeholders in order to be successful. These efforts relate to establishing mutual goals, mutual learning and building trust (Berkes, 2010; Davies & White, 2012). Okazaki (2008) argues that when stakeholders involved in community-based disputes over resources try to solve their problems independently this often results in failure as different groups have different objectives. Therefore, it is more fruitful to attempt to find solutions to these types of issues through collaboration as acting together will provide better conditions for a successful problem solving than acting alone. Okazaki (2008) conducted a case study on a community-based tourism project managed by indigenous people in the Philippines, and the first step of the collaboration process was for stakeholders to recognize their interdependence with each other and the importance of working together to identify the problems that existed between stakeholders. If there is no consensus of the nature of the problem, there can be no formulation of common goals.

Careful planning of the collaborative process can have a major positive impact on the interaction between various stakeholder groups (Waligo, Clarke & Hawkins, 2013). Collaboration is thus an important strategy to address issues and conflicts related to tourism development in natural areas. However, it is crucial that collaboration includes multiple stakeholders representing public, private, environmental, community/resident and business interests in order for the collaboration process to be perceived as legitimate (Graci, 2013; Jamal & Getz, 1999; Towner, 2018). Collaboration between public and private stakeholders in the management of resources can also generate positive outcomes for sustainability, especially for social sustainability. In a study on public-private collaboration in the Swedish mountains, Bjärstig (2017) concludes that collaboration initiatives have led to increased trust and confidence between stakeholders. The public representatives were municipality officers and officials at the county administrative boards, and the private actors represented interests such as tourism, forestry, water management, reindeer herding, wind energy and trails and access. Although the participants in the initiatives might not always agree, working together has resulted in greater respect and understanding for the different positions and perspectives of the actors after the collaboration project.

Collaboration to overcome disputes between stakeholders is an essential element in the management of natural areas impacted by tourism, but it is a
difficult process that requires extensive efforts from those involved (Dredge, 2006; McComb et al., 2017; Schuett et al., 2001). Collaboration can be obstructed by factors such as its ineffective management, limited skills and difficulties in reaching consensus (Wondolleck & Yaffee). Almeida et al. (2018) argue that there are a number of barriers to collaboration regarding conflicts between tourism interests and other land-use interests. Among the central barriers are the stakeholders’ unpreparedness for the collaboration process and their lack of negotiation and communication skills; the lack of time for stakeholders to prepare for and attend meetings; and mistrust between stakeholders due to communication problems and lack of information and knowledge. However, Almeida et al. (2018) researched collaborative approaches to manage conflicts between tourism development and nature values conservation in a coastal area in Portugal, and found that the most prominent barrier to collaboration in conflicts between tourism and other land-use interests is the climate of mistrust that feeds the conflict. The mistrust in this case had its roots in communication problems and the lack of information and knowledge. This implies that establishing communication and developing relationships between parties is essential to collaboration (Almeida et al., 2018).

In addition, relationships between some stakeholder groups has long been characterized by conflict and mistrust, which can constitute barriers to collaboration. For Sami stakeholders, for example, conflicts are not only concerned with increased tourism and public authority decisions, but often have their roots in wider issues of the history of colonization and ethno-political discourses (Smed Olsen, 2016).

3.3.1.1 Trust

Building trust is a key element in conflict management as the degree of trust between parties determines whether one individual or group believes that the other individual or group will commit and follow through on proposed actions. Trust is therefore crucial to the success of collaboration and conflict management processes (Hamm, 2017; Lewicki, 2006; Smith, Leahy, Anderson & Davenport, 2013; Stern & Coleman, 2015)

Trust in conflict situations is highly complex as it builds on personal values and perceptions, which affect the possibility of working together to manage conflicts. It is less problematic to handle conflicts when the parties trust each other, but if they do not, the conflict often becomes bitter and destructive and can go on for many years (Lewicki, 2006). As the development of trust
between groups or individuals is based on relationships, trust is different in different types of relationships. Lewicki (2006) identifies two broad types of relationships: professional and personal, of which both are of interest to this thesis. The professional relationship is task-oriented and the parties’ activities aim to achieve goals outside of their relationship. The personal relationship is socio-emotional and focuses on the relationship itself and the persons engaged in it. The components of RQ 2 in this thesis include collaboration and communication among stakeholders to handle land-use conflicts, and thus relationships between stakeholders to build trust become central.

The personal relationship can lead to a type of trust where parties mutually identify with the others’ desires and intentions, and is based on common values and goals. The parties have a positive emotional attitude towards each other and are able to collaborate to reduce conflicts (Lewicki, 2006). Davies and White (2012) researched collaboration in deer management in Scotland and found that stakeholders build trust by working together and developing personal relationships, which leads to the development of mutual understanding and objectives.

Professional relationships can according to Lewicki (2006) lead to two types of trust: calculus-based and identification-based trust. Calculus-based trust can briefly be explained as based on deterrence, that individuals do what they promise to because of fear of punishment of violating the trust. In addition, calculus-based trust is also grounded in the rewards that come with keeping a promise. This type of trust is a market-oriented, economic calculation where the rewards of being trustworthy (and trusting) are compliant with the negative reputation a person will attain among friends and associates by violating trust. Most people want to be seen as trustworthy as this is a valuable asset, so opportunities to be untrustworthy to gain short-term benefits must be weighed against the long-term benefits from maintaining a good reputation (Lewicki, 2006). The second type of trust in professional relationships is identification-based trust, which often comes with the development of more intimate personal relationships. This leads to the identification of the other party’s desires and intentions, and the trust exist because the individuals can effectively understand each other and ultimately each person can effectively act for the other (Lewicki, 2006). Cole (2006) studied community participation and how tourism can empower indigenous communities in Indonesia, and found that education about tourism processes, communication and trust building between tourism actors is crucial for achieving sustainable socio-cultural tourism development. In this particular
case, it proved to be essential that the government authorities and the local communities met in so-called tourism forums, where they could begin to form professional relationships and work together towards mutual goals. Due to cultural structures of hierarchy, the local communities and the governmental representatives did not form personal relationships, but were able to collaborate on tourism issues and understand each other’s perspectives, thus establishing professional relationships that nevertheless benefited both groups (Cole, 2006).

In order to build trust between actors, especially in the management of resources when there are disagreements between government agencies and local interests, it is important to focus on strategies that build informal relationships and provide opportunities for repeated interactions so that the involved interests can form personal relationships (Davenport, Leahy, Anderson, & Jakes 2007; Graci, 2013). By creating platforms where stakeholders can meet, the likelihood of representatives of different interests coming together, learning about each other’s perspectives, and thus taking steps in the trust-building process increases (Towner, 2018). Davenport et al. (2007) discuss the importance of including knowledge and values from the local community in the management process for building personal relationships and trust. Using local experts and local businesses, for example, strengthens the relationship between government and local communities. In contrast, the two most common explanations for a low degree of trust between government agencies and the local community identified by Stern (2008) are 1) a lack of meaningful social interaction, or a ‘social distance’, and 2) inadequate communication.

3.3.1.2 Communication

Disagreement can significantly affect the management of natural areas impacted by tourism, as it highlights different viewpoints and thus provides opportunities for learning. Conflict regarding land-use in tourism can be constructive if the management-process is conducted appropriately with a focus on communication (Jamal & Getz, 1999; Westberg et al., 2016). There is often an expectation that collaborative efforts will contribute to a constructive handling of conflicts regarding resources, and that these efforts will lead to more sustainable and legitimate management. Communication therefore becomes central to collaboration (Westberg et al., 2016).

A central communicative capacity in conflict-management dialogues is that the stakeholders involved in the collaboration process can discuss the nature
of the conflict and examine and express fundamental perceptual differences. It is necessary for those involved to find constructive ways of communicating in order to understand each other (Berglund et al., 2013; Prager 2015). Krauss and Morsella (2006) argue that communication and conflict can be viewed from what they refer to as a dialogic perspective, where communication is regarded as a joint accomplishment of those involved in the conflict. From the dialogic perspective of communication, the actors collaborate to reach communicative goals, listeners are responsive and the participants are actively engaged in making sure they understand and are understood. This perspective enhances the possibilities for mitigating conflicts (Krauss & Morsella, 2006). Although communicative efforts are often seen as the universal solvent for conflict, Krauss and Morsella (2006) stress that communication needs to be viewed realistically. Communication can be used as a neutral instrument that can reduce conflicts as well as exacerbate them. Krauss and Morsella (2006, p. 156) state that ‘good communication cannot guarantee that conflict is ameliorated or resolved, but poor communication greatly increases the likelihood that conflict continues or is made worse.’

Participants in collaborative approaches can be skeptical of the possibilities of maintaining good relationships when conflict arises over particularly sensitive issues. This means that participants in the collaboration process often avoid addressing certain issues over which there is disagreements, as not to jeopardize good relationships. This leads to a lack of motivation to participate in collaborative initiatives as the involved actors avoid bringing up important issues, leaving the actual source of the conflict unrevealed (Westberg et al., 2016) Thus, the conflict cannot be explored or managed, nor can it form the basis for mutual learning. A prerequisite for conflict management is that the participating stakeholders examine together the source for the conflict, and based on this knowledge find ways forward (Leahy & Anderson, 2010; Waayers et al., 2012; Westberg et al., 2016).

3.3.1.3 Collaborative platforms and facilitators

An essential component in using collaborative efforts to reduce land-use conflicts is the existence of a common platform where stakeholders can meet. Such platforms constitute a practical basis of collaboration. Collaborative platforms can be non-governmental organizations, annual forums, associations etc., and it is of great importance to invite all involved stakeholders to such platforms (Cole, 2006; Towner, 2018; Wondolleck & Yaffee, 2000). Hossu, Ioja, Susskind, Badiu & Hersperger (2018, p. 3) suggest,
people collaborate when opportunities for collaborative practices are available’, thus emphasizing the need for inclusive arenas where stakeholders can come together.

It can be highly useful to employ third-party facilitation in the collaboration process regarding land-use conflicts in tourism as it can add an element of professionalism to the process and allow stakeholders to feel more comfortable in discussing issues they experience as problematic (Jamal & Stronza, 2009; Waayers et al., 2012). Bjärstig et al. (2016) researched collaborative approaches in the Swedish mountains and found that when there are long-standing conflicts between parties, for example, between private interest groups and public authorities, there is a need for long-term efforts and patience with the process. In these situations, using a third party in the mediation process is helpful as professional mediators contribute to improved conditions for collaboration. Bjärstig et al. (2016) emphasize the importance of allowing these collaborative efforts to take the time they need.

Organizations can also function as facilitators, as suggested by Prager (2015). She studied agri-environmental collaboration initiatives in Germany and the Netherlands, and found that these can function as bridging organizations in landscape management. Landscape management in many of the researched areas were characterized by conflicts between farming and conservation interests, which were one of the reasons why the agri-environmental collaborative initiatives were established in the first place. The initiatives provided an arena for the stakeholders to engage in common projects, which enhanced communication and collaboration between stakeholders that played an important role in landscape management. These bridging organizations improved communication between stakeholders and helped to build trust, thus paving the way for successful collaboration in the future (Prager, 2015).

Researchers working closely with stakeholders can also play an important role as facilitators in the collaboration process, as suggested by Cole (2006) and Arnold and Fernandez-Gimenez (2007). Cole (2006) argue that focus groups organized by researchers, where local communities and public authorities meet to discuss tourism development are not just a successful data collection method, but they can also function as an arena where knowledge is transferred between stakeholder groups. Arnold and Fernandez-Gimenez (2007) conducted participatory research in an American Indian nation, and found that working together with a local advisory committee on the management of natural resources had positive effects on social capital.
processes. The researchers functioned as facilitators and encouraged participants to exchange ideas, and were careful to include as many members of the nation as possible in every step of the research process.
4 Research Design

This research has been part of a larger research project, as mentioned in the foreword. The Swedish Environmental Protection Agency (SEPA) funded ten research projects between 2013 and 2015 under the ‘Magnificent Mountain’ program, a research effort that aims to increase knowledge about the Swedish mountain region and contribute to future sustainable management of the mountain landscape (Storslagen fjällmiljö, 2016). Based on the combined results of three of the projects in this program, the new research project ‘Negotiating Pathways to Multi-functional Landscapes’ was initiated in 2016 and was set to run until the end of 2017. Results from previous projects had shown that trails play an important role for many stakeholder groups in the mountains, and therefore the new project focused on issues concerning trails, including the use and management of trails in the Swedish mountains. A central theme in the project was also to explore land-use conflicts and the role of trails in handling these conflicts (Storslagen fjällmiljö, 2016). The articulated purpose was to analyze ‘(i) conservation and protection strategies in a multifunctional landscape; (ii) the historical and contemporary use of mountain trails; and (iii) the role of trails in mountain management and the funding of trails’ (Wall-Reinius, Fredman, Dahlberg, Svensson, Sörlin & Godtman Kling, 2018a, p. 8).

I have in this research project focused on the role of trails in land-use conflict management. To do this, I started by conducting a systematic quantitative literature review on trails, which aimed to examine the status of research on trails for tourism and outdoor recreation in non-urban settings. The results of the literature review provided the project with a thorough overview of trail research, thus contributing to knowledge on what topics related to trails have previously been researched and what topics are under-researched.

The second study in the thesis relates to the purpose of analyzing the role of trails in mountain management in the sense that it focuses on how trails can function as a means for collaboration and communication between stakeholder groups in the case study area. Thus, the study connects to one of the project’s central theme, which was to explore the role of trails in handling land-use conflicts.

The data collection of this thesis is extensive and it employs a variety of methods that serves to thoroughly examine the aim of the thesis and answer the research questions. However, I have not done all the data collection by myself but I had the advantage of being able to take part of data previously
collected for the ‘Magnificent Mountain’ program and conduct new analyses of that data (see section 4.4.3). This opportunity was highly beneficial for me as it allowed me to use data and methods I would not have had access to otherwise, thus contributing to the body of knowledge on how different types of data and methods combine to enhance research results. I consider this thesis’ methodological contribution as an essential part of the results.

4.1 Case study research

In the case study approach, the researcher explores a real-life bounded system, or multiple systems, in depth for a specific period of time. The case study is characterized by a wish to thoroughly understand complex social phenomena and real-life events (Yin, 2018). The data collection can include various sources of information, such as interviews, surveys, observations, documents etc. (Creswell, 2013; Yin, 2018). The way the subject is studied, quantitatively or qualitatively, does not decide whether the study is a case study or not, it is the characteristics of the unit that is decisive (Flyvbjerg, 2011).

Creswell (2013) categorizes different types of case studies, and this particular study can be placed in the collective case study category. According to Creswell (2013), a collective case study has one chosen issue or concern but the researcher selects multiple case studies to illustrate the problem. In this study, the chosen issue relates to the role of trails in handling land-use conflicts in a specific area, and the multiple cases are represented by different stakeholders in the area and different aspects and interests connected to the use of trails. These multiple cases expect to shed light on different perspectives of the issue of trails in the context of conflict management.

The southern Jämtland mountains was chosen as a case study area because it is an area with multiple interests such as reindeer herding, a large number of visitors/tourists that practice various recreational activities, nature conservation interests, recreational and occupational opportunities for local communities and various historically interesting features. User groups with different perspectives and expectations on how the mountain landscape should be used thus use the area. The southern Jämtland mountains therefore provides an interesting case to research as there are major challenges in balancing and managing different, and at times conflicting, interests and values in a complex, multi-functional landscape (Wall-Reinius et al., 2018a).

Creswell (2013) suggests that researchers conducting case studies often take on a pragmatic interpretive framework and focus on the outcome of the
research and solutions to problems. In this way they emphasize that the important aspect of research is the studied problem and the questions raised about that problem, rather than a focus on methods. This pragmatic framework is applied in the case of the southern Jämtland mountains, as the results of the research project aims to contribute to minimizing conflicts between land-use interests.

4.2 Mixed-methods research design and the pragmatism paradigm

This thesis applies data from various sources, both quantitative and qualitative, which situates this work within the realm of mixed methods research. Mixed methods research design is a problem-centered approach that involves collecting and integrating quantitative and qualitative data, which may lead to a more holistic and comprehensive understanding of the issue that is being researched (Johnson & Onwuegbuzie, 2004; Leavy, 2017). In this thesis, I have collected qualitative data from in-depth interviews as well as from a workshop involving stakeholders in the case study area for the purpose of answering RQ2. An essential methodological framework in the qualitative data collection was that of Community-based participatory research (see section 4.3.1), and it was within the scope of this framework that the workshop was conducted.

This thesis also includes quantitative data from a systematic literature review relating to RQ 1 and a web-based quantitative survey regarding the trails in the area that was distributed among those participating in the above-mentioned workshop, relating to RQ2. I have also conducted new analyses on the results from a quantitative visitor survey conducted in the area in 2013 in order to answer RQ2. Here, I have focused on the questions relating to trails in order to possibly identify connections between trail-use and visitors’ experiences of conflicts.

Mixed methods research in tourism studies is becoming increasingly articulated as a methodological approach in its own right, and a growing number of scholars recognize the use of both quantitative and qualitative methods as important and useful (Heimtun & Morgan, 2012; Khoo-Lattimore, Mura & Yung, 2017; Molina-Azorín & Font, 2016; Pansiri, 2006). Mixed methods research does not aim to replace either quantitative or qualitative research approaches but rather to use the strengths of both and try to minimize the weaknesses (Johnson & Onwuegbuzie, 2004). Consequently, as
mixed methods research values multiple ways of seeing and understanding the social world, there is no particular philosophical or theoretical framework dedicated to this research design (Leavy, 2017). However, researchers employing a mixed methods design often take a pragmatist position (Hall, 2013; Leavy, 2017). Pragmatism in mixed methods research supports this approach by providing assumptions about knowledge that separates it from other main research paradigms. Purely quantitative approaches are based on a philosophy of positivism and purely qualitative approaches on a philosophy of interpretivism or constructivism, and hence pragmatism distinguishes mixed methods research from other paradigms (Denscombe, 2008; Johnson & Onwuegbuzie, 2004).

Researchers who base their work on pragmatism generally focus on the outcomes of the research, i.e. ‘what works’ and the solutions to the problems that are examined (Creswell, 2013). The focus on methods therefore becomes less prominent and the consequences of inquiry are central. Johnson and Onwuegbuzie (2004, p. 18) list the following among the general characteristics of pragmatism:

- Both the natural/physical world and the social and psychological world including language, culture and subjective thoughts, are recognized.
- Knowledge is viewed as both constructed and based on the reality of the world we experience and live in.
- Theories are viewed instrumentally; they become true depending on to what extent they can be applied in a particular circumstance.
- Action is to be preferred over philosophizing.

As the case study area the southern Jämtland mountains is highly complex with many conflicting interests, the researchers included in the project deemed it suitable to use a mixed-methods approach in order to obtain an understanding as thorough and holistic as possible of the relations and conditions of the area. Denscombe (2008) suggests that mixed methods research, and its philosophical partner pragmatism, provide social researchers with a third option when neither qualitative nor quantitative research alone will provide sufficient evidence for their area of inquiry. The second research question in this thesis focus on exploring the role of trails as a tool in land-use conflict management. Consequently, I employ a pragmatist framework, aiming for the results of the thesis to be viable and functional for the area and the stakeholders operating in it.
4.3 Qualitative data collection

Various types of qualitative data were collected for the purpose of meeting the goals of paper II, including in-depth interviews, workshops, fieldwork and walking interviews.

4.3.1 Community-based participatory research

This research project employed methodological elements of Community-based participatory research (CBPR), also referred to as community-based research or participatory action research. This approach refers to a research-process that involves academic scholars forming partnerships with stakeholders outside of the academia in order to conduct research on a particular issue that has been identified within a community (Leavy, 2017). In these types of research processes, stakeholders and researchers work together to co-create knowledge by focusing on communicative and trust-building efforts (Mackenzie, Tan, Hoverman, & Baldwin, 2012; Nchanji, Levang & Jalonen, 2017). CBPR constituted an important component in this research project and was conducted through workshops involving stakeholders representing the interests in the area. These workshops served as important data-collection procedures for the research team.

The research team, together with the association Gränspjällen Sylarna i samverkan (see section 2.2) organized two lunch-to-lunch workshops, of which one was of great importance for this thesis, together with stakeholders in the area. The purpose of the workshops was to discuss pressing topics relating to the area that stakeholders have expressed to be important, as well as to present the research project and to collect data through focus group interviews. Of great significance also was the aim to involve the stakeholders in the research process (see e.g. Davies & White, 2012; Hopkinson, Huber, Saah, & Battles, 2017).

The first workshop of the research project took place in April 2016 with about 40 participants. The overarching focus of the discussions was current and future use and management of trails in the area, and these issues were discussed in groups of three to six people, with one researcher assigned to each group. The focus group interview on the first day lasted about an hour, and the session on the second day lasted 45 minutes. Each group was given the same set of questions. The participants discussed topics such as the definition of a trail, the use of trails in the area, management and information of trails, conflicts associated with trails, future needs, changes in the trail system, future challenges in trail management, finance, and responsibility etc.
The groups appointed one secretary to take notes and the moderating researcher also took notes. When the sessions had been concluded, the moderating researchers from each group presented a summary of the discussions in front of the whole group, which led to some issues being discussed in the larger group of all participants. The researchers compiled the notes after the workshop and shared them within the research team.

CBPR has previously been employed when researching collaborative efforts in natural resource management (e.g. Ens, Daniels, Nelson, Roy & Dixon 2016; Mendis-Millard & Reed, 2007; Trimble & Lázaro, 2014). Results from earlier studies show that there is a great likelihood for increased stakeholder engagement and the forming of informal networks and relationships when researchers and stakeholders work closely together. Guribye (2013) argues that researchers involved in a community-based project can have an important communicative role to play as they can serve as a link between community and the public sector.

It is also more likely that stakeholders will consider the process of addressing a certain issue as more legitimate when they are invited to take part in the process (Green & Dzidic, 2013; Mackenzie et al., 2012; Moore et al., 2001). An important feature of collaborative research approaches is that researchers have the opportunity to serve as a neutral third party in the collaborative process, thus functioning as a platform on which to build trust between various groups (Hopkinson et al., 2017). The workshops organized within this research project aimed to involve the stakeholders in the area in the research process and hopefully help build relationships contributing to development of collaboration regarding trails.

4.3.2 Interviews

Interviews are one of the most important sources of information in case study research (Creswell, 2013; Yin, 2018). The semi-structured interview approach is often used in tourism studies (Botterill & Platenkamp, 2012), as was the case for the data collection for Paper II.

The data for Paper II includes qualitative, in-depth interviews about trails, conflicts and collaboration in the case study area. In total, 15 interviews with various stakeholders were conducted in the spring of 2016, of which 10 took place in Jämtland and five were telephone-interviews. The interviewed stakeholders represented the County Administrative Board, SEPA, tourism businesses, Sami villages, local landowners, and one consultant (a project
leader for a mountain bike project initiated by the County Administrative Board).

The interviews were semi-structured and allowed for follow-up questions and elaborations on the topic. The questions concentrated on issues of trail use and management in the case study area, with a particular focus on conflicts relating to trails. By interviewing stakeholders from various interest groups, different perspectives of conflicts related to trail use can be highlighted and contribute to a deeper understanding of trail conflicts (see e.g. Leavy, 2017).

All respondents were selected prior to the interviews based on their roles in the organizations they represented. The interviews were audio recorded or recorded by written notes with the consent of the respondents. The interviews lasted for about one to two hours and were all conducted in Swedish. Afterwards, they were transcribed in Swedish.

Paper II also includes data from in-depth qualitative interviews with 37 stakeholders in the area. These interviews were conducted for a previous research project that took place in the same area from 2014 to 2015. Respondents in this project talked about experiences of landscape use and perceptions of landscape change, conflicts of interests, and their general thoughts about the future. There were no specific questions about trails, but the respondents brought up trails in the various themes discussed during the interviews, and I therefore read the transcripts and highlighted all discussions relating to trails to use in Paper II. A thorough description of the qualitative data collection is found in Paper II.

In addition to the in-depth interviews, fieldwork was conducted in August 2016, where the research team hiked trails in the area and met with various stakeholders. Although these discussions with stakeholders were not formally documented, they provided the research team with important knowledge about the area from different perspectives. The walking interviews conducted during fieldwork is an illustrative example of the great variety of data collection methods employed in this thesis, aiming to capture a comprehensive image of the complexity of the case study area and increase the researchers’ understanding of stakeholders perceptions of and relations with the mountain landscape.

4.3.3 Validity, reliability and data analysis

The reader of a scientific work must be able to trust the research process and ultimately the findings. In qualitative research, the issue of validity relates to
questions of credibility and trustworthiness of the project (Leavy, 2017). Creswell (2013) suggests that validation in qualitative research is an attempt to assess the ‘accuracy’ of the findings, which the researcher together with the participants knows best how to appreciate. However, there are many forms of validation in qualitative research and it is important for researchers to reference their validation strategies (Creswell, 2013). Reliability signifies the consistency and stability of results and methods (Ekinci, 2017). In qualitative research reliability ‘often refers to the stability of responses to multiple coders of data sets’ (Creswell, 2013 p. 253).

Creswell (2013, p. 250ff) suggests a number of validation strategies to increase the trustworthiness of qualitative research. Some of these strategies have been used for Paper II to enhance the level of credibility and trustworthiness. This study include stakeholders in the case study area that have been involved in the ‘Magnificent Mountain’ program since its start in 2013, and the prolonged engagement and persistent observation-strategy is therefore employed (Creswell, 2013 p. 250). This strategy includes building trust with participants and deciding in the field what aspects are relevant to the purpose of the study, thus correlating to the approach of CBPR used in Paper II.

A second validation strategy used in Paper II is the triangulation technique where multiple methods and data sources are used for the purpose of addressing the same question and shedding light on a theme or perspective (Creswell, 2013; Leavy, 2017). For this study, a combination of data collected through in-depth interviews, focus groups and fieldwork provided important research insights and helped to build a strong foundation on which the data interpretation and analysis was built. The validation strategy of peer debriefing was also important for Paper II. This strategy provides the research process with an external control, and the role of the peer debriefer is to ask hard questions about research design, methods and interpretation (Creswell, 2013). The results of the data analysis for Paper II has undergone peer debriefing through presentations of the study at academic conferences and PhD-courses, as well as through discussions with the co-authors, in order to increase the trustworthiness of this work.

Methodological reliability for Paper II was reached by developing an interview guide, transcribing the interviews and listening to the audio tapes a second time in order to discover mistakes or mishearing (Kvale, 1996). In addition, I read the transcripts and had regular discussions with the co-authors to talk about the data analysis process and the themes that emerged from this process to ensure reliability.
The data analysis process started with exploring the data and reading through the transcripts from the interviews to get a general sense of the qualitative material (Creswell & Plano Clarke, 2018). Recurring words and expressions were then grouped in themes, and the transcripts were searched for opinions and experiences related to how use of the landscape was linked to different types of trails, and opinions and experiences of trails that stakeholder groups share.

4.4 Quantitative data collection

The quantitative data for this thesis were collected through a systematic literature review (paper I), an online survey on trails distributed to stakeholders in the study area, and a visitor survey (paper II).

4.4.1 Systematic quantitative literature review

The main source of quantitative data are from the systematic quantitative literature review. Conducting a review of literature was important for this thesis as it gave an overview how trails have been researched and what trail-related topics have been examined, both today and in the past. Ridley (2008) argues that the literature review serves as a starting point for scientific inquiry. Without the literature review, it will not be possible to identify what has already been researched, and what knowledge gaps need to be filled.

The literature review for Paper I followed the procedure outlined in Pickering, Grignon, Steven, Guitart & Byrne (2015) and Petticrew (2001). The review only included original research papers published in English language journals that were obtained by searching the electronic databases Academic Search Elite, Scopus and Leisure Tourism. These databases were selected in order to get a broad and extensive collection that covers various disciplines.

The selection of the articles followed the protocol developed by the Preferred Reporting Items for Systematic Review Recommendations (PRISMA) (Moher, Liberati, Tetzlaff, & Altman, 2009) in order for the process to be as thorough and elaborate as possible. Figure 2 displays how the selection of the articles included in the literature review was performed and the reasons for excluding certain papers. To start with, 380 papers were identified from searching the on-line databases. I then screened the selected papers and excluded a number of articles identified in the initial database-search, which gave me a total number of 195 articles that were included in the literature review.
Results from the literature reveal that studies on trails in a socio-cultural context, for example studies focusing on heritage, the financing of trails, interpretation, and conflicts relating to trails are scarce and that trail research primarily studies methods to reduce and manage environmental impacts of trail use. The insight that trails as a tool in land-use conflict management is an under-researched topic gave me further incentives to explore the role of trails as a tool that stakeholders can collaborate around.

4.4.2 Web-based Survey

Prior to the first workshop in 2016 with the meeting platform Fjällforum, a web-based survey regarding trails in the case study-area was distributed to the 107 members of the Gränsfjällen Sylarna i samverkan order to explore stakeholder attitudes towards and opinions on trails (see e.g. Leavy, 2017).
The sampling frame of the association is referred to in the literature as a purposive sampling as it targets subjects with certain characteristics (Sirakaya-Turk & Uysal, 2017). In this particular case, the targeted samples are stakeholders in the case study area. Consequently, this sampling procedure resulted in a biased sample, as only members of Gränsfjällen Sylarna i samverkan were given the opportunity to take part in the survey and not all stakeholders in the case study area. However, as the research project aimed to collaborate mainly with stakeholders that are members of this association as they represent a great variety of interests in the case study area, this sample was considered suitable for providing the researchers with basic information about stakeholders’ opinions on trails prior to the workshop.

The survey was available online between April 4 and April 21 2016 and two reminders were sent out. The survey concerned a number of issues such as the role of trails in general and potential conflicts associated with trails, marked trails in the area, historical trails and unmarked trails, and the respondents’ own use of the trails in the case study area. In total, 54 people answered all questions in the survey and 10 people completed parts of the survey, which gives a response rate of 60 % (n=64). Answers were provided anonymously.

Two-thirds of the respondents were from Sweden and one-third was from Norway. Among the respondents, 59 % were male and 41 % female; 48 % represented public authorities, 24 % represented local businesses; 17 % non-profit organizations and 6 % represented private persons or local landowners.

4.4.3 Visitor survey

Visitor survey data used for this thesis is older data where I have not been a part of the collection process. That said, I have conducted analyses on this material that have not been done before. This material contains elements that highly relates to my research and it was therefore suitable to include this visitor survey in the data for this thesis. Parts of the data from this survey have already been reported and published, but the analyses I conducted have not been made public prior to the publication of Paper II.

Activities, attitudes and perceptions of recreationists and tourists in the case study area have been investigated by a quantitative survey. This survey was conducted in the summer of 2013 and it was designed in two steps, where people first filled out self-registration cards that could be found in self-registration boxes around the case study area. The respondents who filled out their email address on the card then received a questionnaire about their stay
in the southern Jämtland mountains. A detailed report on the two steps can be found in Paper II. In total, 578 Swedish and international people completed the questionnaire. The response rate was higher (70 %) among the Swedish respondents compared to the response rate among the international respondents (48%). It is important to point out that for this thesis, only a few questions in the survey have been used in the analyses since the focus here is to know more about perceived conflicts.

The study design has been widely used in outdoor recreation research in other locations and countries (Ankre & Wall-Reinius, 2010; Manning, 2011). This data set is named a visitor survey. It is important to note, however, that the registration cards were available for everyone, not only to visiting tourists. The majority (80%) of the respondents were Swedish, followed by Germans (11%) and Norwegians (4%). Looking only at the Swedish respondents, almost one in five came from the Jämtland County where the case study area is located.

4.4.4 Validity, reliability and data analysis

Validity in quantitative research refers to the success of measuring what is supposed to be measured, i.e. to what degree a scale accurately assesses the constructs being measured (Ekinci, 2017). By asking the question, ‘do we really measure what we are supposed to measure?’ the nature of a study’s validity is targeted. It is not possible to prove completely that a measure is valid, but there are different types of validity that I attempt to reach in this thesis in order to improve the research quality. Validity can be understood as a combination of (amongst other types) face and content validity (Ekinci, 2017; Leavy, 2017). Face validity is an assessment we make based on ‘common sense’, that the measure is examining what we claim it is. If someone on the street was to be asked if they understood what the measure is considering, they should be able to answer ‘yes’. Content validity concerns the inclusion of all necessary aspects in the measurement, so that the construct is fully and holistically represented. I have tried to reach face validity for the two papers included in this thesis, of which Paper I is solely based on quantitative data and Paper II is partly based on quantitative data. Paper I was submitted to an international journal and underwent blind peer-review, which will also be the process for Paper II. In addition, the results of these studies have been presented at academic conferences and seminars between the years 2016 and 2018. Thus, the two papers received critical questions and comments from independent academic scholars, which helped to verify the validity of the used measurements and improved the quality of the research. Content
validity has been ensured through a thorough examination of best practices in conducting a literature review (for Paper I) and through scrutinizing scientific literature related to the topic, both state-of-the-art and older publications that have been essential for the development of the field (for Paper II).

Reliability in quantitative research refers to the consistency of results, i.e. if the results would be the same if the measuring were done again under the same conditions (Leavy, 2017). Ergo, reliable results are stable. To increase reliability for Paper I, which is based on quantitative data, I followed a carefully elaborated and articulated method for systematic literature reviews that is well known with scholars (Pickering & Byrne, 2014). The researchers included in the project tested the quantitative survey relating to the workshop on trails included in Paper II prior to the e-mailings of the survey and we discussed the questions, thus increasing reliability.

4.5 Reflections on methods and research design
4.5.1 The case study and generalizability

Flyvbjerg (2011) discusses the paradox of case studies and argues that the paradox lies in that even though case studies have a long history in research of various disciplines and that much knowledge have been produced by case study research, the case study methodology as such is held in low regard within the academia, perhaps because it is poorly understood. According to Flyvbjerg (2011), a misunderstanding of the case study is that ‘one cannot generalize on the basis of an individual case; therefore, the case study cannot contribute to scientific development’ (Flyvbjerg, 2011, p. 302). This misunderstanding is considered problematic for the case study. Yin (2018) suggests that a researcher can think of the case study as an opportunity to highlight theoretical concepts or principles, rather than as a sample that represents a larger population. Thus, concerns of case studies not being able to provide a basis for scientific generalization are irrelevant. Attempts at formally generalizing findings is an important mean for scientific development, but it is also important to have a broad perspective and not view formal generalization as the only legitimate method of inquiry as such view limits science (Flyvbjerg, 2011).

The important point is the analytic generalization in the case study, which advances theoretical concepts articulated in the research design process. The
generalization will therefore be at a higher conceptual level that that of a specific case (Yin, 2018).

RQ 2 in this licentiate thesis takes its starting point in theories of collaboration as a means to handle land-use conflicts in areas impacted by tourism and outdoor recreation. The case study area the southern Jämtland mountains is a unique area with specific features, and therefore this raises the question of to whether generalizability of the results to other parts of the Swedish mountain region is possible. One should therefore be careful if attempting to extend the results of this thesis beyond the specific context. However, there may be stories and lessons learned from this mountain area that can be useful to other areas dealing with similar issues. It could be argued that shedding empirical light on the theoretical standpoint of collaboration around a resource such as trails to reduce land-use conflicts lack a strong local specificity and is thus of general interest.

4.5.2 Thoughts on how to apply mixed methods research and pragmatism

Mixed methods research has often raised concerns of being resource-intensive in terms of time, efforts and costs as data collection is extensive (Khoo-Lattimore et al., 2017). It might require a whole research team as opposed to only one researcher (Johnson & Onwuegbuzie, 2004). In addition, one of the most debated topics among scholars doing mixed methods research is that of quality. There is no absolute criteria on how mixed methods studies should be conducted in order to guarantee high quality research, which makes quality a complicated issue (Fàbregues & Molina-Azorín, 2016). It is difficult to elaborate standards to ensure quality in this particular type of research, as researchers and mixed method studies are diverse and the concept of quality can be viewed from different philosophical perspectives. However, Creswell and Plano Clark (2018, p. 282) suggest four key characteristics of mixed methods research that help to identify a mixed methods study of good quality. To conduct and evaluate a mixed methods study, it is crucial that the researcher:

- collects and analyzes both qualitative and quantitative data rigorously in response to research questions and hypotheses,
- intentionally integrates (or combines) the two forms of data and their results,
- organizes these procedures into specific research designs that provide the logic for conducting the study, and
frames these procedures within theory and philosophy

These criteria constitute the key elements expected in a good mixed methods study, and highlight the need for these key elements to follow each other in a logical way (Creswell & Plano Clark, 2018).

In this thesis, I have attempted to ensure research quality by following the above-listed criteria in order to conduct a mixed methods study that would qualify as ‘good’, based on the key elements suggested by Creswell and Plano Clark (2018).

The pragmatic stance within mixed methods research has been criticized as being unreflective and only focusing on ‘what works’, thus threatening the validity of the findings (Hall, 2013). The term pragmatism is occasionally used in the same sense as ‘expedient’, which implies that the approach lacks principles, consistency and agreement. Thus, mixed methods research is in danger of becoming an approach where ‘anything goes’ which can undermine the legitimacy of the paradigm (Denscombe, 2008).

Hall (2013) argues that the trivialization of pragmatism as being expedient and unreflective is a misrepresentation of the approach that need to be further examined. In the context of validity, other validity constructs than the traditional one are included in a pragmatism approach. Rather than searching for an objective truth, as is the case for traditional validity, pragmatism is concerned with consequential validity. Consequential validity requires researchers to work abductively and assess how their findings apply to concrete situations. As this approach is contextual, it enhances the credibility of mixed methods research because the researchers need to reflect on the implications their results have on others, which requires ethical concern (Hall, 2013). Pragmatic researchers therefore become, through reflections, concerned with issues of equity and must consider the economic, cultural and social context of the subject they are studying.

In this thesis, I have based on the notions suggested by Hall (2013) used reflection to critically consider the methodological decisions used, as well as to motivate the conclusions and assumptions I reached. As I had access to such an extensive set of different types of data, I have indeed reflected on these kinds of data and considered what to include for Paper II to best serve the purpose of this thesis. Choosing to take a pragmatic stance and use the mixed methods research approach is in this thesis both a blessing and a curse, as it is challenging to navigate through the deep woods of data options and apprehend the most relevant ingredients. It is also challenging to relate to
consequential validity and to assess how my research applies to the conditions of the southern Jämtland mountains, as land-use conflicts between stakeholders are sensitive issues that require tactfulness and reflection. Being in the very beginning of my research career and realizing that the results of the research project I am a part of may have an actual, practical impact on the area in question brings about a feeling of nervousness of not measuring up to the ethical concerns of all the data collection methods, as suggested by Hall (2013). However, I consider the benefits of using such a comprehensive data set to outweigh concerns of not being qualified of adequately handling that same data, as I believe a pragmatic approach serves to maintain methodological flexibility and enhance the credibility of mixed methods research.
I. Trails for tourism and outdoor recreation: A systematic literature review (Godtman Kling, Fredman & Wall-Reinius, 2017).

What is the status of research on trails intended for tourism and outdoor recreation in non-urban settings within the academia?

Review of 195 research papers published in peer-reviewed academic journals.

Systematic quantitative literature review.

International trail research has mainly focused on environmental and managerial aspects of trails, and less on trails from a social science perspective. Research is also concentrated to Western, English-speaking countries and hiking is the most researched trail activity.

II. Negotiating improved multifunctional landscape use: trails as facilitators for collaboration among stakeholders (Godtman Kling, Dahlberg & Wall-Reinius, 2018).

What are the perceived conflicts surrounding trail use and the management of trails among various stakeholders, be they local, regional or national?

How can trails be used as a means to handle multiple and sometimes conflicting interests and thus further a sustainable development of mountain landscapes?

In-depth interviews, focus group interviews, online survey and visitor survey.

Mixed methods research.

Conflicts between land-use interests surround trails in the mountain landscape on many levels, but trails can be used as a resource to enhance collaboration and communication among stakeholders. Creating collaborative platforms where stakeholders can meet and discuss issues regarding trails builds trust and increases understanding of different perspectives, thus forming the basis of reducing conflicts of interests in the mountain landscape.

<table>
<thead>
<tr>
<th>Articles</th>
<th>Questions</th>
<th>Data</th>
<th>Methods</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Trails for tourism and outdoor recreation: A systematic literature</td>
<td>What is the status of research on trails intended for tourism and outdoor</td>
<td>Review of 195 research papers published in peer-reviewed academic</td>
<td>Systematic quantitative literature review.</td>
<td>International trail research has mainly focused on environmental and managerial aspects of trails, and less on trails from a social science perspective. Research is also concentrated to Western, English-speaking countries and hiking is the most researched trail activity.</td>
</tr>
<tr>
<td>review (Godtman Kling, Fredman &amp; Wall-Reinius, 2017).</td>
<td>recreation in non-urban settings within the academia?</td>
<td>journals.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>II. Negotiating improved multifunctional landscape use: trails as</td>
<td>What are the perceived conflicts surrounding trail use and the management</td>
<td>In-depth interviews, focus group interviews, online survey and visitor</td>
<td></td>
<td>Conflicts between land-use interests surround trails in the mountain landscape on many levels, but trails can be used as a resource to enhance collaboration and communication among stakeholders. Creating collaborative platforms where stakeholders can meet and discuss issues regarding trails builds trust and increases understanding of different perspectives, thus forming the basis of reducing conflicts of interests in the mountain landscape.</td>
</tr>
<tr>
<td>facilitators for collaboration among stakeholders (Godtman Kling,</td>
<td>of trails among various stakeholders, be they local, regional or national?</td>
<td>survey.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dahlberg &amp; Wall-Reinius, 2018).</td>
<td>How can trails be used as a means to handle multiple and sometimes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>conflicting interests and thus further a sustainable development of</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>mountain landscapes?</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
5 Paper summaries

This section summarizes the two papers included in this thesis. Each overview provides the background, methods and the key findings of the study.

5.1 Paper I. Trails for Tourism and Outdoor Recreation: A Systematic Literature Review

Authors: Kristin Godtman Kling, Peter Fredman and Sandra Wall-Reinius

Journal: Tourism

Status: Published

Background

In the initial stage of this thesis project, it became clear that it was important to analyze the status of international trail research in order to obtain a comprehensive understanding of the trail concept. Paper I therefore provides a thorough overview of research on trails intended for tourism and recreation in non-urban settings. It sets the foundation for understanding what aspects of, in which geographical regions and by which methods trails intended for tourism and outdoor recreation have been researched. Thus, paper I contributes to increased knowledge on the nature of trail research and where research gaps within the academic literature remain.

In order to analyze some of the key content of trail research, a systematic quantitative literature study was conducted to provide insights on (i) the geographical location of trail research, (ii) the methods and types of data used in trail research, (iii) trail activities and (iv) study topics. As publications cover the timeframe from 1970 to 2016 it was also possible to study how trail research has changed over time.

Methods

The systematic quantitative literature review followed the approach outlined in Pickering et al. (2015) and Petticrew (2001). Three electronic databases were searched for original research papers published in English language journals. Main keywords for the literature search were ‘trail and recreation’ and ‘trail and tourism’, in combination with terms reflecting various activities and study topics, such as ‘walk*’, ‘hik*’, ‘bik*’, ‘management’, ‘environment*’, ‘multi-use’ and ‘conflict’. After the screening of the papers identified in the initial search, 195 scientific articles were included and reviewed in the
literature study. The search in the databases was done without time limitations, and therefore all articles since the 1970s were reviewed. The included articles were then categorized and analyzed.

**Main findings**

Trail research has mainly been conducted in English-speaking Western countries, with just over 40% of the papers being from North America. Although trail related research has over time come to include a wider distribution of countries, results points to a clear geographical skewness in trail research. Methods used in the reviewed studies both originated from social sciences, such as interviews and surveys, and from natural sciences, such as point sampling and experimental simulators. However, a majority of the studies were natural science studies and used quantitative data (55%), and only 11% of the studies used qualitative data.

The most examined trail related recreation activity is hiking with little over half of the studies researching this activity. The second most common ‘activity’ to research is multiple-use, which includes combinations of activities such as walking, biking, jogging and horse riding. Over time, there has been a clear increase in studies looking at multiple-use, which could point to an increase in the number of trail-based activities, and a diversification of trail activities. Trails for tourism and outdoor recreation have predominantly been studied within the topics of environmental protection and trail management to protect species and soils, with a clear focus on natural science and quantitative data.

It is obvious that trails in a socio-cultural context is an under-research area as less than one third of the reviewed publications had a primary focus on social science topics such as economic impact, heritage, conflict management, public health and interpretation and education.

The results of this study reveal that although there has been an increased interest in researching multiple-use trails, research on conflict management related to trail-use has not followed a similar direction. It could be argued that as a greater variety of activities take place on the same trail, conflicts between users would become more visible. However, the reviewed articles do not reflect this hypothesis, even though scholars have raised issues of e.g. crowding and conflicts in recreational settings. In addition, none of the reviewed publications researched what role trails can have in handling conflicting land-use interests, as natural areas are often used by diverse actors, not of all which use the area for touristic and recreational purposes.
5.2 Paper II. Negotiating improved multifunctional landscape use: trails as facilitators for collaboration among stakeholders

Authors: Kristin Godtman Kling, Annika Dahlberg & Sandra Wall-Reinius

Journal: tbd

Status: Manuscript

Background

The results of Paper I revealed that conflict management related to trail-use is an under-researched topic. Paper II builds on this knowledge and has a clear focus on the role of trails in the context of managing different uses in a mountain area. Central to paper II is the role of trails in handling land-use conflicts, and most of all how trails can function as a facilitator for communication between stakeholder groups.

In the case study area, there are multiple different interests concerning how the mountain landscape should be used, today and in the future. There are conflicts between actors that use the landscape for different purposes, such as between conservation authorities and local communities, between Sami interest and tourism activities, between local people and visitors/tourists and between recreational activities (e.g. hiking and biking). These conflicts are, direct or indirect, related to trail-use primarily through such issues as erosion, worn trails, fragmentation of landscape, disturbance of reindeer and reindeer herding, detrimental effects on sensitive vegetation and displacement of wildlife. Largely, it is argued that this is an effect of unsuitably located trails, an increase in visitors and a growing number of diverse interests in how the mountain landscape should be used.

The starting point of paper II is therefore that the existence of trails can create conflicts but they can also reduce and potentially prevent conflicts. Thus, it can be argued that there are reasons to consider new or revised forms of planning and management of trails, where trails can function as a conflict management tool. Paper II studies trails as an applied example of where actors in the mountain landscape do or potentially could negotiate and collaborate around multifunctional use of space and resources. The study aims to discuss the handling of multiple land-use interests by viewing trails as a resource, which can facilitate communication and collaboration among stakeholders.
Methods

Paper II employs a variety of methods, including in-depth interviews, surveys, focus groups and fieldwork. A central approach of Paper II is that of Community-based participatory research (CBPR), where the research team worked closely with stakeholders from different groups and organized workshops where issues regarding trails were discussed. The study used different methodological approaches and employed an extensive data collection to reach an in-depth understanding of the conditions and relationships in the case study area.

Main findings

There are a number of conflicts surrounding the trails in the case study area. The findings of Paper II show that stakeholders in the southern Jämtland mountains find conflicts between those who participate in different recreational activities, for example between hiker and mountain bikers, to be most prominent and visible. However, there are also conflicts on other levels, such as between reindeer herding interests and trail-based recreation, and between managing authorities and tourism businesses. Stakeholders highlight that conflicts of interests regarding trails also concern issues of erosion, worn trails, unsuitably located trails, disturbed reindeer husbandry and dispersion of wildlife.

There is mistrust between stakeholders in the case study area that challenges collaboration to reduce land-use conflicts. However, results from interviews and workshops with actors in the area reveal that a majority find collaboration an important means to handle conflicts, thus implying that collaborative initiatives under the right circumstances are possible. Results also showed that trails constitute an important resource to a majority of the stakeholders. During the research process, it became clear that the workshops the researchers organized and the meeting platform ‘Fjällforum’ contributed significantly to the understanding of different perspectives among the represented stakeholder groups. By using the trail as a communicative resource, stakeholders indirectly discussed larger issues that cause land-use conflicts, such as issues of resources and power. The trail thus functioned as a facilitator for communication in this context. In addition, the research team together with representatives of Gränsfjällen Sylarna i samverkan also played the role of facilitators in the workshops and many stakeholders expressed a desire to participate in more workshops. It was also clear from the interviews and feedback from the workshops that the respondents considered Gränsfjällen Sylarna i samverkan and the platform ‘Fjällforum’ important
arenas for collaborative initiatives. Findings also revealed that there is a need for more and more effective information channels to enlighten visitors on how to show respect to the environment, animals and other visitors.
6 Discussion and Conclusions

The aim of this licentiate thesis is twofold. Firstly, I examined the scientific literature on trails intended for tourism and outdoor recreation and based on this, I continued to explore the role of trails as a means for collaboration and communication in a context of land-use conflicts in the Swedish mountain landscape. In this section, I will discuss trails, their functions and role in conflict management. Moreover, I address how this thesis can contribute to more sustainable tourism in the southern Jämtland mountains and reflect on the positioning of this thesis within the subject of tourism studies. The thesis ends with implications for policy and management and suggestions for future research.

This thesis also aimed to contribute to the tourism field of research by analyzing the functions of one of the most important resources in tourism: the recreational trail. Readers of this thesis are invited to consider the trail as more than solely infrastructure in mountain landscapes, but to reflect on its characteristics and inherent properties. Trails have more functions than channeling visitors between nuclei in the touristic system, to use the terminology of Leiper (1990) and Wall (1997). Trails can constitute tourist attractions in themselves, as suggested by Timothy and Boyd (2015). There are therefore good reasons to ask if the linear resources between nodes identified as trails can be viewed as the main attraction, and not the other way around. If this is the case, there are even more incentives for new forms of planning and management of trails intended for tourism and outdoor recreation, where the visitor experience of the trail have a more prominent role, regardless of mode of transportation.

6.1 Research on trails for tourism and outdoor recreation

The first research question in this thesis concern the status of scientific research on trails intended for tourism and outdoor recreation in non-urban settings. The systematic literature review on trails identified an apparent research gap in research on trails intended for tourism and outdoor recreation, as research mainly focused on environmental and managerial aspects of trails and not so much on social science aspects of trails and trail-use. For the purpose of this thesis, it was particularly interesting to note that scientific literature on trails as conflict management tools is limited. The trail is an under-used resource that potentially has more functions than what is reflected in scientific research, and there is a need to further examine what benefits
these functions entail for tourists and managers of natural areas (MacLeod, 2017; Timothy & Boyd, 2015).

Trails constitute an important resource in tourism for both the supply- and demand side (Fredman, 2018; Fredman & Margaryan, 2014), and the results of Paper I are therefore somewhat unexpected as there is such an emphasis on erosion, trail degradation, and trampling effects and how such problems can be managed. As there is a growing demand for tourism in natural settings (Margaryan, 2017) and new types of activities take place on the outdoor recreation arena, conflicts between different recreational activities and between tourism and other land-use interests is increasing (Beeton, 2006; Newsome et al., 2013; Pröbstl-Haider et al., 2018). It would therefore be expected that more studies would focus on the role of trails in handling such conflicts, but this does not appear to be the case. Studies on conflicts relating to trail use in a tourism and outdoor recreation context primarily examine conflicts between recreational interests and do not take other land-use interests in consideration.

From the aforementioned, it can be assumed that research on trails will increasingly have to address issues such as new recreational activities, crowding and the channeling of visitors as such issues will likely affect the visitor experience to a greater extent than presently. Participants in the workshops representing local, regional and national interests, both public and private expressed that channeling, i.e. directing and concentrating, activities is the most important purpose of the trail, but at the same time the trail is an under-used resource for directing mobility in the mountain landscape (Paper II). In the workshops, the stakeholders discussed management approaches such as zoning in time and/or space, adaptive trails that can be relocated during for example the reindeer calving period, the closing of particularly problematic trails, activity-specific trails etc., and it was evident that stakeholders request a more innovative approach towards planning and management of trails to reduce conflicts. Although the public authorities ultimately handle decisions on how trails should be organized, research can provide important insights on such decisions by working together with local interests and managers of natural areas.

The prevailing emphasis on the natural sciences perspectives in trail research is problematic, as social science aspects are not given enough space to examine the multifaceted functions of trails for tourism and outdoor recreation. Moreover, managers applying a social science perspective can mitigate the identified environmental issues that often follow with an increased trail-use,
such as erosion and trampling. By carefully addressing issues such as site selection, integration and interpretation, trail developers can create tourism products that are socially, economically and environmentally responsible (MacLeod, 2016). A greater focus on social science aspects of trail management and planning in the southern Jämtland mountains would likely be beneficial to all stakeholders, and interpretation about the history of the landscape, the Sami culture and other local use could enhance the visitor experience and inform visitors about how to behave appropriately.

The southern Jämtland mountains are increasingly being used for various types of sports events, a trend also seen globally where organizers of such events target nature conservation areas as venues for promoting extreme fitness, endurance and personal achievement (Newsome & Hughes, 2018). It is interesting to note that none of the reviewed articles in Paper I examined how such events affect trails, even though trails constitute an important infrastructure for trail-running competitions, hiking events, cross-country skiing races etc. As trail research is mostly concerned with environmental issues relating to trails and how to manage these, it could have been expected that studies would have focused on the sportification of outdoor recreation (e.g. Fredman et al., 2016) and how this development influence resources in the natural environment.

6.2 The role of trails in conflict management

Land-use interests in the southern Jämtland mountains have previously been able to co-exist without major tensions, but in the last decade, the number of tourists and visitors coming to the area has increased rapidly. It is clear that the large number of visitors practicing various touristic and outdoor recreational activities has led to tensions between recreationists and reindeer herding and between recreationists and nature-conservation interests. In the case of the southern Jämtland mountains, the three elements of land-use change that make relations between actors more strained, as suggested by Abrahamsson (1984) are all present. Firstly, land-users have changed their behavior and activities as there are a number of new recreational activities practiced in the area (County Administration Board Jämtland, 2018b). Secondly, there has been, as previously mentioned, a great increase in the number of tourists to the area (Paper II). Thirdly, there are new land-users in the area as there are for example more tourist businesses using the area with their guests and more companies organizing sports events (Godtman Kling, 2018). Based on this, I conclude that the touristic activities in the southern
Jämtland mountains have changed the dynamics in the landscape to a high degree, and has challenged in many ways the outlooks of sustainably managing and balancing interests in a multi-functional mountain landscape. I propose a renewed view on trails intended for tourism and outdoor recreation to meet the abovementioned challenges, one where trails are recognized as facilitators for collaboration and communication. This proposition is inspired by Moor’s (2016) ideas of the trail as a uniting element in the landscape, and the notion of well-planned trails as socially, economically, and environmentally sustainable tourism products as MacLeod (2016) suggests.

It is suitable to apply the view of the trail as a collaborative and communicative resource in the management of land-use conflicts to the southern Jämtland mountains, as trails are important to all user groups in the case study area and a majority of both stakeholders and visitors use the trails for various purposes (Paper II). Trails constitute a resource that is considered legitimate among users, and can therefore function as a physical tool in the natural environment to channel and organize the increased flow of tourists. However, the focal point of the second research question in this thesis is how trails can enhance collaboration and communication between stakeholders and thus promote efforts to handling conflicts between land-use interests in a multiple-use landscape. Research has identified collaboration, trust and communication as crucial components when attempting to manage land-use conflicts in natural areas where tourism constitute a major interest (e.g. Almeida et al., 2018; Graci, 2013). Although these elements are highly complex and difficult to capture within one single perspective, findings from the case study support the notion that these components constitute a framework in which conflict management can be conducted.

Results from Paper II show that stakeholders operating in the southern Jämtland mountains highlight the need for collaboration, communication and information to manage conflicts surrounding land-use conflicts and the use of trails. Bjärstig (2017) found in her study of collaborative public-private partnerships in the Swedish mountain region that collaboration increased participants’ confidence and trust in the other parties, and that the social dimension of sustainability was perceived strengthened. Although Paper II did not measure levels of trust between stakeholders, it can be assumed that similar benefits as the ones found in the study by Bjärstig (2017) can apply to relationships between stakeholders in the southern Jämtland mountains. It is however important to acknowledge that if there is to be collaboration projects regarding a resource used by many stakeholder groups, there is a need for
formal initiatives to organize such projects (Jamal & Stronza, 2009; Prager, 2015). It is one thing to wish for increased collaboration but another to participate actively in such initiatives. Collaboration appears to be an obvious strategy to handle conflicts between land-use interests, but it requires much effort and planning for it to be successful, as suggested by the literature (e.g. Cole, 2006; Towner, 2018; Wondolleck & Yafee, 2000).

It is important to recognize that in an area such as the southern Jämtland mountains, the number of individuals able to represent the existing interests and take part in all collaboration projects is limited. Collaboration projects in this area may therefore require even more efforts and planning for the outcome to be rewarding and valuable for all parties. Bjärstig et al. (2016) found in their study of collaboration in the Swedish mountain region that stakeholders representing different interests, especially the Sami villages, feel they have not enough resources to participate in all suggested collaboration initiatives. The physical distances between places where meetings are held are long and there are too few engaged representatives from the local communities, so the responsibility of collaboration falls on a few individuals that are expected to take part in a number of initiatives.

The situation in the southern Jämtland mountains is similar to that described by Bjärstig et al. (2016), and although stakeholders are positive towards collaboration projects there is a perception among some of them that ‘it is always the same people’ invited and all initiatives do not lead to concrete outcomes, it is often just talk. In contrast to the perceived purposelessness of some of the collaborative initiatives, it can therefore be argued that collaboration around a resource such as the trails, where all stakeholders agree on the need for changes in management and planning actions to reduce conflicts and promote a sustainable use of the mountain landscape, has the potential to produce fruitful results. The trail constitute a specific resource that is important to all stakeholders, and it is in the interest of all groups that the planning and management of the trails benefits the area. One of the main conclusions of this thesis is therefore that trails can be viewed in the role of a facilitator that stakeholders collaborate and communicate around. This conclusion connects to the quote from Moor (2016) presented in the introduction of this thesis, where he states that the essence of the trail lies in its function. The findings of this work concur with his view, in the sense that the trail serves its users by handling conflicts. Findings from a recently published study by Pröbstl-Haider et al. (2018) suggest that key elements in reducing conflicts between mountain bikers and other recreational activities and land-users include collaborative planning around the mountain bike
trails where all stakeholders are invited to participate. This indicates that trails intended for tourism and outdoor recreation are becoming recognized as tools for communication and collaboration, and implicitly also conflict management, although research on such roles and functions of trails is still under-developed.

A central component for successful conflict management is communication and opportunities for constructive dialogue (e.g. Berglund et al., 2013; Krauss & Morsella, 2006). However, getting to the point where communication is effective and the conflicting issues are adequately addressed is a complicated process, as suggested by Westberg et al. (2016).

The findings of this study also show that forums where stakeholders can meet and where contributions of all knowledge holders are appreciated are essential to collaborative processes (Arnold & Fernandez-Gimenez, 2007).

6.2.1 Collaborative platforms and facilitators

Creating platforms where stakeholders can meet and communicate around the problem is highly important in conflict-management processes, as well as the use of facilitators in such processes (Okazaki, 2008; Westberg et al., 2016). Paper II demonstrates that the association Gränsfjällen Sylarna i samverkan and Fjällforum are considered legitimate and just among stakeholders, which indicates that these platforms can be used as collaborative arenas in the continued process of minimizing conflicts. As Prager (2015) suggests, such bridging organizations can constitute an important element in handling conflicts between land-use interests and governing agencies should consider using organizations that already exist and build on their efforts. The workshops organized by the research team together with Gränsfjällen Sylarna i samverkan was appreciated by the participants, and there were requests for more workshops on pressing issues in the area in the future. It was clear that this collaboration initiative fostered an atmosphere of creativity and productivity around the practical issues of trail design, planning and management.

A valuable insight gained from this project is that many of the stakeholders participating in the workshops appeared positive towards the fact that it was managed by researchers, and not public authorities or private actors. It was clear that most participants viewed the research team as a ‘neutral’ third-party actor, which contributed to the legitimization of the workshops. Similar results are put forward by, for example, Towner (2018), Waayers et al. (2012), and Arnold and Fernandez-Gimenez (2007), who found that employing a
third party facilitator brings an element of professionalism and formalization to such workshops, and illustrates the significance of the event.

Another important factor contributing to the workshops being well received by the participants was the social component, as these two events were lunch-to-lunch so the invited stakeholders had the opportunity to socialize in a non-formal setting. The research project paid for accommodation and food, so financial aspects other than transportation costs did not limit the stakeholders to participate. It is important to acknowledge that the workshops allowed stakeholders to socialize and form personal relationships, which is essential for building trust in collaborative processes (Davenport et al., 2007; Graci, 2013; Lewicki, 2006). Fjällforum constitutes a suitable platform for repeated interactions that gives stakeholders opportunities to get to know each other on both personal and professional levels, and it can therefore be recommended that Fjällforum should continuously be used in handling issues in the southern Jämtland mountains that require collaboration between interest groups. Stern (2008) argues that a low degree of trust between government agencies and the local community is most commonly a result of a social distance and poor communication, which collaborative platforms potentially can help counteract.

Although the workshops appeared to be received positively among stakeholders, there is the risk of stakeholders not expressing their real opinions on the matter to avoid jeopardizing good relationships, as suggested by Westberg et al. (2016). There were no open conflicts or direct confrontations in the workshops, although stakeholders discussed conflicts surrounding trails in the case study area, so the conflicts were known and apparent to all participants (Godtman Kling et al., 2017). It is likely that the absence of direct conflicts in the workshops reflects this avoidance of addressing sensitive issues as not to create an ‘uncomfortable atmosphere’, especially since the workshops was the first time the stakeholders came together in this particular setting. Conflict, if handled properly, can however have a liberating effect and can enable a more honest discussion about the needs and interests of stakeholders (Dredge, 2006; Okazaki, 2008).

There is at times a perception that collaboration between stakeholders to handle issues of land-use is a rather simple way to manage conflicts, but the efforts of planning, organizing and conducting such initiatives should not be underestimated (Hopkinson et al., 2017; Schuett et al., 2001; Sæþórsdóttir, 2012). There are several challenges with collaboration projects when state and regional agencies, researchers and public stakeholders are working together.
Clashes of different organizational cultures, goals and norms can cause confusion and misunderstandings, and it is a major task to cope with such issues (Hopkinson et al., 2017).

Collaboration between stakeholders in the southern Jämtland mountains entail a number of problematic questions that need to be addressed and handled for a successful outcome. As previously mentioned, only a few individuals represent many land-use interests, thus putting strain and pressure on some stakeholders to participate in several collaboration projects.

Successful collaboration is also a matter of resources and support in terms of staff, time, monetary resources and physical space (Schuett et al., 2001). These practical elements complicate collaboration efforts as it is difficult to accommodate such needs when large groups are involved. Conducting and analyzing only two workshops can be viewed as a limitation in this research, as stakeholders may perceive this setting as restricting and it could be uncomfortable to express strong opinions or be confrontational in a ‘new’ environment. It is possible that more workshops would bring up conflicting issues more openly, as participants may feel safer in this environment after repeated interactions. However, due to limitations of time and resources it was not possible to conduct additional workshops within this project, but organizing more workshops with stakeholders in the southern Jämtland mountains is an interesting point for the future.

6.3 Implications for policy and management

Paper I used a systematic quantitative literature review (Pickering et al., 2015) in order to examine research on trails for tourism and outdoor recreation and identify where there are research gaps. This approach was useful for this purpose as it provided a straightforward method to increase understanding of trail research and it gave a point of departure for my continued work. Although the literature review revealed that studies on trails predominantly focus on environmental and managerial aspects in Western countries, it nevertheless illustrated the inherent elusiveness of the trail. The literature review showed that there are many different ways to view trails and its functions, users and purposes.

Working closely with stakeholders and using the CBPR-approach proved to be highly useful in the research project and provided important insights and data for Paper II in this thesis. Organizing workshops in collaboration with Gränsfjällen Sylarna i samverkan was an essential component for the outcome
of the research. The results from Paper II shows the benefits of applying a multitude of methods within a research project to gain a comprehensive understanding of the complex conditions and relationships in an area such as the southern Jämtland mountains. More importantly, using mixed methods allowed for examining stakeholders’ perceptions of trails and conflicts at more in-depth levels through interviews, but also on the overall level through surveys.

Improved understanding of the structures of collaboration and how resources such as trails can be used in reducing conflicts between tourism and other land-use interests could help develop management and planning approaches that are more effective. The findings of this thesis recognize a few key points as important for policy and management when initiating collaboration projects.

Facilitators can be useful when there are conflicts surrounding a resource, especially if the conflict is long-lived (e.g. Bjärstig et al., 2016). This thesis contribute to existing literature on the use of facilitators by recognizing that such assets may consist of multiple elements, such as a resource, an organization or a person/group of people. These types of facilitators can be used within the same collaborative project (Paper II).

Common resources, such as trails or waters, that multiple stakeholders use can function as tools for collaboration, communication and trust building when there are conflicts between land-use interests. By using the resource as a point of departure for the collaborative process, it is possible to address indirectly bigger issues of conflict relating to the resource, issues that may be difficult for stakeholders to bring up due to their complex nature. For this research project, the resource constituting the facilitator are trails in the case study area.

Using interest organizations that already exist and that stakeholders are familiar with to promote collaboration has previously proven successful (e.g. Arnold & Fernandez-Gimenez, 2007; Prager, 2015), and the results of Paper II included in this thesis supports this notion. Identifying an organization that is perceived legitimate among stakeholder groups that can be used as a bridging organization between interests, is advantageous for actors aiming to manage and reduce conflicts. The association Gränsfjällen Sylarna i samverkan is an example of such a facilitating organization.

Researchers can also function as facilitators in collaborative projects by working closely with stakeholders, as suggested by Cole (2006). Researchers
can play the role of the ‘neutral third-party’ by organizing workshops and providing a framework in which constructive dialogue and exchange of ideas is encouraged.

Prioritizing efforts to promote collaboration, communication and trust building between conflicting land-use interest, although such efforts demand substantial resources, is nevertheless a promising way to reduce conflicts. Based on previous research, it appears as collaborative initiatives pay off in a long-term perspective and it is therefore important for management and planning agencies to consider collaboration as a way forward in land-use conflicts.

6.4 Future research

The increasing number of visitors to natural areas and a diversification of trail-based activities will likely lead to more conflicts related to trails that need to be managed. Research on trails intended for tourism and outdoor recreation as a conflict management tool is today scarce, but there are increasing evidence that the trail itself can be a valuable resource when attempting to reduce such conflicts. More efforts to study the role of the trail in this context should therefore be encouraged. Trail research has hitherto mainly focused on trails for summer-use, and it could therefore be important to give attention to winter trails.

There is also a need for more research on the meanings and symbolizations of trails in different contexts, perspectives, cultures etc. A clearer picture of what constitutes a trail can mean less misunderstandings and conflicts when involved interest groups share the view of what a trail is, and what it could be. The findings of this thesis show that trails can function as conflict management tools, and it would therefore be valuable to explore further what roles the multifunctional trail can play in different settings and socio-cultural contexts.

There are also reasons to believe that trails will increasingly be used in various forms of organized sports competitions, as the number of such events is growing worldwide (Newsome & Hughes, 2018). It is therefore important to examine how trail-based competitions affect the quality of the trail, as well as the surrounding physical environment.

Another important aspect that needs further studying relates to the increased number of outdoor recreationists and how these can be informed about the conditions in a specific area. How can we reach visitors that only spend a short
time in, for example, the mountain landscape? These visitors are perhaps not aware of the conflicts surrounding trails and land-use interests and need to be informed how to behave to reduce the likelihood of conflicts. What information channels are most effective to communicate such messages? This thesis has not focused on the tourist/visitor-experience of trails and conflicts in the southern Jämtland mountains, which is a limitation in the research. Tourists are prominent stakeholders in contexts, such as the one for this thesis, and their experiences, perceptions and knowledge of conditions and conflicts in the mountain landscape need to be further explored in depth to promote a more sustainable tourism in this landscape.
7 References


research: self-critical assessment of research in Cameroon. *Forests, Trees and Livelihoods*, 26(1), 47-64.


