

Tvååkers mosse

- A collaborative project in the development of a multifunctional landscape



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Abstract

Increased demands are being placed on sustainable land use development, and multifunctional landscapes have thus become a relevant issue in environmental management and planning (Boverket, 2020). Wetlands are areas that can generate multiple values and functions, such as recreational, ecological, and cultural-historical. A relevant area that includes a wetland area and has multiple functions is Tvååkers mosse. This study aims to better understand collaboration processes in multifunctional landscapes by exploring the components of the Tvååkers mosse project. By examining the importance of the physical landscape, it is possible to understand why and how the collaborative process influenced the land use change in the development of this multifunctional landscape. The study uses an actor-driver model (DFA-C) to systematically analyze how these components influence each other during the process. Within a contextual landscape perspective and through the lens of time-geography, in this thesis these approaches function as interpretive horizons that elucidate how human activity, material constraints, and spatial proximity collectively shape the physical landscape over a longer period of time. Using a qualitative case study where interviews, document analysis, and field observations were mainly used, the collaboration process was analyzed, and the importance of the physical landscape was understood. The change in land use has been possible thanks to local collaboration, strong civil society, and a clear common goal. The conditions of the physical landscape, in other words, its history and local values, have been decisive for how and why changes in land use have occurred at the Tvååkers mosse site.

Finally, the study of Tvååkers mosse demonstrates how locally anchored initiatives can create sustainability in the physical landscape through dialogue and collaboration among actors. The collaborative process that has emerged in the development of Tvååkers mosse can thus be a source of inspiration for similar areas.

Keywords: Sustainable development, multifunctional landscapes, land use change, collaborative process, local initiative, actor-driver model, time-geography, contextual landscape perspective

Sammanfattning

Idag är det ökade krav på att utveckla hållbar markanvändning och därmed har multifunktionella landskap blivit en aktuell fråga inom miljövard och planering (Boverket, 2020). Våtmarker är sådana områden som kan generera multipla värden och funktioner såsom rekreativa, ekologiska och kulturhistoriska. Ett aktuellt område som bland annat är just ett våtmarksområde och innehåller multipla värden och funktioner är Tvååkers mosse. Denna studie syftar till att få en bättre förståelse om samarbetsprocesser i multifunktionella landskap genom att utforska de komponenter som ingår i Tvååkers mosse projektet. Med utforskningen kring betydelsen av det fysiska landskapet kan varför och hur samverkansprocessen påverkat förändringen av markanvändningen vid utvecklingen av detta multifunktionella landskap förstås.

Studien använder en aktör-drivkraftsmodell (DFA-C) för att på ett systematiskt sätt undersöka hur dessa komponenter påverkar varandra under processens gång. När det kommer till användningen av ett kontextuellt landskapsperspektiv och tidsgeografi används de mer som en slags förståelsehorisont för att belysa hur mänsklig aktivitet, materiella begränsningar och rumslig närhet formar det fysiska landskapet över en längre tidsperiod. Genom att använda en kvalitativ fallstudie där främst intervjuer men även textanalys och fältobservationer använts har samverkansprocessen kunnat analyseras samt även betydelsen av det fysiska landskapet förstås.

Förändringen av markanvändningen har varit möjlig tack vare lokal samverkan, starkt civilsamhälle och ett tydligt gemensamt mål. Det fysiska landskapets förutsättningar det vill säga dess historik och lokala värden har varit avgörande för hur och varför det har uppstått förändrad markanvändning i platsen för Tvååkers mosse.

Slutligen, studien av Tvååkers mosse demonstrerar hur lokalt förankrade initiativ kan skapa hållbarhet i det fysiska landskapet genom dialog, och samarbete som sker aktörsöverskridande. Samverkansprocessen som har uppstått vid utvecklingen av Tvååkers mosse kan därmed fungera som inspiration för andra liknande områden.

Nyckelord: Hållbar utveckling, multifunktionella landskap, markanvändningsförändringar, samverkansprocess, lokalt initiativ, aktör-drivkraftsmodell, tidsgeografi, kontextuellt landskapsperspektiv

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Five years of studies go by fast when you constantly spend time on your field of interest, which is, of course, geography! So, with this thesis, I am ending these years of knowledge-building.

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Olsfors, 2025.05.25

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1. Introduction

1.1 Introduction and problem description

In today's era, where the impact of climate change becomes more and more apparent, how can land use practices respond to the increasing need for sustainability and at the same time be robust enough to meet the needs of future generations? The Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES) Nexus assessment report considered that wetland restoration is important for, among other reasons: strengthening biodiversity protection, but also concerning mitigating climate change, which now affects all of the Earth's ecosystems to varying degrees, and that these areas also offer recreational opportunities (IPBES, 2024). In this perspective, the importance of deepening the understanding of how multifunctional landscapes are shaped and managed through local collaborative processes emerges. Such processes can be crucial in promoting the long-term, integrated, and sustainable development of the physical landscape, balancing ecological, social, and economic values through shared management practices (Termorshuizen & Opdam, 2009).

The concept of multifunctional landscapes refers to areas that fulfill several functions simultaneously. Outdoor recreation areas, many of which are located in forests, are one example. These areas may provide both recreational functions and generate economic value through forest production (Boverket, 2020; Sarlöv Herlin, 2012, p. 14). Areas previously described can also contribute to cleaner air and through this provide ecosystem services, and at the same time be important from an ecological perspective by containing several different plant species and serving as homes for many insects in the logs and dead wood (Emmelin et al, 2010, p. 75-77; Herlin, 2012, p. 27). Wetlands are interesting in several respects: they can harbor a rich plant and animal life, which combined with high ecological values, also can create a place for humans to visit in their everyday lives (Naturvårdsverket, 2024A). In this respect, wetland areas are particularly relevant, and Sweden is one of the countries in Europe with the most extensive total area. However, the area covered by wetlands was historically much more significant (Naturvårdsverket, 2024A). An underlying reason why a vast number of wetlands no longer exist is related to large-scale drainage to create more arable land, which led to the draining and disappearance of many wetlands, especially in the 19th and 20th centuries (Runefelt, 2010, pp. 12-13). However, today, there is a focus on re-wetting them and returning the water to the landscape.

To develop and manage these potentially multifunctional landscapes, it is essential to establish collaborative processes across sectoral boundaries and thus involve various actors. This ensures that all actors are and consider themselves involved in decisions concerning landscape management (Länsstyrelsen Hallands Län, n.d.; Termorshuizen & Opdam, 2009). In this aspect, the sustainability perspective is brought in as various considerations are taken into account, and the physical landscape becomes a result of a joint effort. A case that can serve as a good example of a collaborative process is the development of the Tvååkers Mosse (Tvååker bog), which is a multifunctional landscape with a wetland character in a semi-urban location. The site contains, after the project started, among other things, a landscaped lake and wetland areas in the form of, for example, a swamp forest. There are also pastures and a path to make the area more accessible. Tvååkers mosse is also intended to be linked to the Green

Route (Gröna stråket), which is being developed to make several outdoor areas in Tvååker accessible (Positiva Tvååker; Varbergs sparbanksstiftelse, n.d.; Varbergs kommun,2020).

Changes in environmental conditions and the increased demand for sustainable landscape management have raised questions about how and why land use changes locally. Previous research emphasizes that land use change is seldom due to a single factor and, in many cases, it can arise through an interaction of various actors and driving forces (Fors et al., 2023; Hersperger et al., 2010). The driving forces can vary, ranging from economic instruments to social factors, policy reforms, or climate change. Meanwhile, actors such as landowners, associations, and authorities play a key role in interpreting, negotiating, and operationalizing the driving forces into practice.

The interactions between these components are often complex and place-bound, and thus, the collaborative process regarding land use change needs more research. This study can contribute to a better understanding of the dynamics when it comes to local collaborative processes in multifunctional landscapes.

1.2 Aim

This thesis aims to increase the understanding of local collaboration processes in multifunctional landscapes by exploring the components involved in the Tvååkers mosse project.

The research questions will be presented following the theoretical framework in section 4.2.

1.3 Delimitation

The primary focus is on the collaborative process that has resulted in land use changes, rather than land use changes alone. Notably, this thesis has a human geography focus and will thus focus on processes relating to human use of land. It does not consider a biophysical perspective on, for example, changing soil conditions.

1.4 Disposition

The thesis is divided into eight chapters, and after the introduction comes the second chapter, which is the background. Here, knowledge and valuable information are presented to have in mind when reading further about the collaboration process. Chapter three will discuss previous studies that are relevant to the study. In chapter four, the theoretical approach that this thesis relies on is an actor/driver model, time-geography, and contextual landscape perspective. Chapter five contains the methodology section, which outlines the methods used in the study to answer the research questions. The sixth chapter presents the study's results and thus answers the research questions. Chapter seven is the analysis section, discussing the results, and Chapter eight contains the study's conclusions.

2. Background

2.1 Study area: Tvååkers mosse

Tvååker demonstrates a willingness to develop and create spaces for both humans and wildlife to thrive. At the time of writing (spring 2025), a multifunctional landscape is being developed in Tvååker, which is located southeast of Varberg (Positiva Tvååker, 2022; see figure 1).



Figure 1: Overview of Tvååkers mosse. Source: Sofia Glad.

Tvååker has a population of about 3000, which makes it one of Varberg municipality's largest service towns (Varbergs kommun, 2025A). Large fields of agricultural land surround the town, and there is a need for outdoor recreational areas, since a community like Tvååker where there is a lot of agricultural land, does not automatically mean that there are plenty of recreational areas. Hence, there are other outdoor areas nearby, such as the Jungfru Maries naturstig (Virgin Mary's Nature Trail).

The area of Tvååkers mosse totals around 30 hectares, which includes a landscaped lake, wetland areas, paths, and pastures. The area contains values contributing to biodiversity and nature-related experiences for those who live and visit Tvååker (Tursvattenråd, 2023). The plan is that Tvååkers mosse will be part of the "Green Route" that is being developed in Tvååker and makes an earlier part more accessible than before the project started

(Varbergs kommun, 2020). Now, it is possible to both walk and take a swim at Tvååkers mosse.

2.2 History of the area

An insight into the characteristics of the study area has been given. Knowing a place's history is important for understanding why land use patterns are constructed the way they are. Hence,

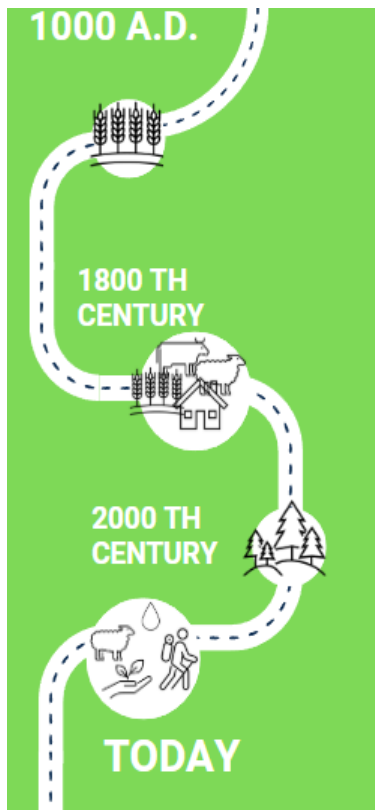


Figure 2: An illustration of historical land use in the area of Tvååker. Source: Sofia Glad

selected parts of Tvååker's earlier history until today are included to reflect how the community has developed over time (see figure 2).

In Tvååker, remnants of land use dating back a long time have been discovered, including a large expanse of fossilized farmland, commonly called strip plots (Bandparceller). The strip plots show that the area has been cultivated since the Early medieval period, around 1000 A.D. These long, narrow plots of land were a new land division system that was a sign of a larger-scale change in power relations in the landscape (Rosén, 2004, p.115; Ekstam & Forshed, 2000, p. 66). This land distribution system can still be observed in the Tvååkers mosse project area (see figure 3). The Land use in the 18th century in Tvååker parish consisted of half in-farm land and half outfield land. The farms were located on the outfield land where the terrain was flat and open. On the outfield lands, which were shared, the animals grazed before being sent to graze on the fields in the fall. The number of animals each farm was allowed to graze on the common outfields was strictly defined. Only the number of cattle that could be born over the winter was allowed to be kept on the outfields. In 1787-88, the outfields were parceled out, resulting in smaller grazing communities (Ekstam & Forshed, 2000, pp. 67-68).

In the 19th century, several enclosure reforms were carried out, dividing the outfields into individual farms instead of being jointly owned as before. In addition, each farmer could now dispose of their own land, and in the following decades, almost all the land was cleared. Documents from 1899 indicate proposals to drain the area of Tvååkers mosse to farm the land.

An economic map from 1925 showed that the former grassland landscape was converted to arable land (Ekstam & Forshed, 2000, p. 68). Tvååkers mosse was primarily agricultural land with a small area where peat was extracted, traces of which can still be seen in the physical landscape. Due to the waterlogged conditions, the area became unmanageable. It ceased to be utilized as agricultural land in the second half of the 20th century and quickly became overgrown with forest and bushes.

Tvååker is still a countryside community with extensive farmlands. However, in recent years, there has been an influx of residents, thus creating a greater need for those living in Tvååker to access outdoor areas nearby (Varbergs kommun, 2025A).



Figure 3: Displays the distribution of properties in Tvååkers mosse. Source: Daniel Andersson.

2.3 Legislations and regulations

To understand how specific relevant laws and regulations apply to the development of Tvååkers mosse, they will now be described in general terms. These are important for all actors, but most of all for landowners and various authorities. However, in the case of land use changes, especially the collaboration process, several of these can come into question. Thus, it is important to recognize and apply them to the Tvååkers mosse project, just like other physical landscapes undergoing land use changes.

All EU Member States have various regulations and directives to implement and consider in their national legislation (Michanek & Zetterberg, 2021, pp. 88-91). The following briefly explains what they entail for various collaboration processes within Sweden: a regulation is directly applicable in the Member States and trumps national law in the event of conflict. While a directive is binding on the member states to reach the determined result, the way to get there is up to each state to decide (Naturvårdsverket, 2025A; Michanek & Zetterberg, 2021, p. 82).

In June 2024, the European Parliament and the Council of Ministers adopted the Nature Restoration Regulation (EU 2022/869), which requires Member States to strengthen ecosystem services, increase biodiversity, and thus create a more resilient nature. Different milestones are set for 2030, 2040, and 2050, covering a variety of habitats and species living on land and in fresh- and saltwater. This is a continuation of the “Green Deal” presented by the European Commission in December 2019, the ultimate goal of which is to make the EU climate neutral by 2050 (EUR-Lex, 2024, recitals 1,2,3; Naturvårdsverket, 2024A). The Swedish Environmental Protection Agency (Naturvårdsverket), the central authority for the environment in Sweden, will continue to play an important role in this work. At the time of writing (spring 2025), the Swedish Environmental Protection Agency, together with the Swedish Agency of Marine and Water Management (Havs- och vattenmyndigheten), the Swedish Forest Agency (Skogsstyrelsen), the Swedish Board of Agriculture (Jordbruksverket), and the National Board of Housing, Building and Planning (Boverket), are working on a proposal regarding a national nature restoration plan that will comply with the EU regulation (Naturvårdsverket, 2025B).

The European Union's Water Framework Directive (WFD) ensures that water is managed similarly in all Member States. The aim is to safeguard water resources and ensure that future generations have access to good quality and sufficient quantity of water. One of the foundations of the WFD is that management is based on river basins, and in Sweden, there are five, of which Tvååker belongs to the Västerhavet river basin (Vattenmyndigheterna, n.d.A).

Efforts to ensure good status in water, air, soil, or the environment in general are governed by environmental quality standards (miljö kvalitetsnormer), where the standard specifies a minimum permissible level (Vattenmyndigheterna, n.d.A). In 2004, the WFD was introduced into Swedish legislation and is included in the Water Management Ordinance (Vattenförvaltningsförordningen).

Collaboration is an important element of the European water management agenda, and it takes place at all levels - international, national, regional, and local. The water authorities in Sweden cooperate with County Administrative Boards (Länsstyrelser), municipalities,

authorities and other actors on issues relating to water management (Vattenmyndigheterna, n.d.B).

Sweden's comprehensive environmental legislation is contained in the Environmental Code (Miljöbalken), which replaced a collection of different environmental, water and nature protection laws with the aim of, among other things, coordinating them (Michanek & Zetterberg, 2021, p .97). Chapter 1. section 1 § 1–4 st. outlines how the Environmental Code is implemented:

“The regulations in this Code aim to promote a sustainable development which means that present and future generations are ensured a healthy and good environment. Such a development is based on the realization that nature has a protection value and that man's right to change and use nature is associated with a responsibility to manage nature well.

The Environmental Code shall be applied so that

1. human health and the environment are protected against damage and nuisance, whether caused by pollution or other influences
2. valuable natural and cultural environments are protected and cared for
3. biodiversity is preserved
4. land, water and the physical environment in general are used in such a way as to ensure good long-term management from an ecological, social, cultural and socio-economic point of view [...].”

The Environmental Code is a framework law, meaning a more general description of the law. Consequently, various ordinances (förfordningar), such as the Species Protection Ordinance (artskyddsförordningen), the Water Management Ordinance (vattenskyddsförordningen), water activities, and so on, are relevant in this case. These various ordinances exist because specific legislation is needed in certain areas; otherwise, applying the law might be difficult (Naturvårdsverket, n.d.; Michanek & Zetterberg, 2021, p. 384).

The Planning and Building Act (PBL) is also relevant to developing areas such as Tvååker mosse, as detailed planning may be required in consultation with the municipality. Chapter 1, section 1§ of PBL reads:

“This Act contains provisions on the planning of land and water and on construction. The provisions aim, with due regard for the freedom of the individual, to promote social development with equal and good social living conditions and a good and long-term sustainable living environment for people in today's society and for future generations.”

2.3.1 The European Landscape Convention (ELC)

It is important to understand which aspects of the physical landscape planning different projects in Sweden need to consider in order to achieve a holistic approach. Therefore, the European Landscape Convention (ELC) is included in this part.

Following the ELC's ratification, Sweden has complied, highlighting the importance of including the entire landscape in planning and management (Riksantikvarieämbetet, 2025). The ELC is highly relevant to the development of Tvååkers mosse and demonstrates how the work should be carried out following the Convention. However, it should be pointed out that

the ELC is not a law, but can still be used to influence the interpretation of current regulations and thus possibly influence judicial practice.

ELC emphasizes that the landscape is a collective resource and that we must all manage it together in the best possible way (Riksantikvarieämbetet, 2025). The definition of landscape in this convention is: “an area as perceived by people and whose character results from the influence and interaction of natural and/or human factors”. (Article 1, The European Landscape Convention). In the physical landscape, multiple functions such as ecological, social, economic, and so forth come together, and therefore, a holistic approach must be taken to achieve sustainability in the protection, planning, and management of the landscape as a whole (Riksantikvarieämbetet, 2025).

2.4 Physical planning

Physical planning is an important element when changing land use. Consequently, a section has been included to explain how it can affect the Tvååkers mosse case.

Varberg municipality, to which Tvååker belongs, has an outdated comprehensive plan from 2010. However, a proposal for a new one has been submitted for public consultation (Varbergs kommun, 2025B). A comprehensive plan is a goal-oriented document that all municipalities must have and keep up-to-date. The plan governs the development of land and water areas and how the built environment in the municipality should be used and preserved. In other words, it guides the municipality's strategic plan for creating a sustainable future, considering public interests, national interests, and compliance with environmental quality standards (Boverket, 2024). It coordinates various sectoral interests and provides a tool for the municipality, in dialogue with other actors. The comprehensive plan is not legally binding, but it can serve as a basis for reviewing detailed plans and building permits (Boverket, 2024). In PBL (2010:900) Chapter 3. 6,6 a §§ contains how the comprehensive plan should be designed to describe the purpose clearly.

3. Previous research

3.1 The multifunctional landscape and its significance

Humans depend on constant contact with our living environment, a prerequisite for our existence. The increasingly tangible climate change to which all Earth's ecosystems are exposed has put the biosphere back on the agenda. In the introduction to the book “Used landscape - used and valued”, it is mentioned that the living space or “all-space” (allrum), as Hägerstrand called it, has again become a relevant issue (Wästfelt, 2014, p. 8). The short explanation of the meaning of an all-space is that it is a shared spatiotemporal space, a conceptual model for understanding how time and space are interconnected (Hägerstrand, 2009, pp. 159-164). It would be fair to say that the physical landscape is like a section of the all-space, like a slice of a larger cake. Politics come into play because they are decision-makers in how society organizes the landscape and environmental management planning. Several processes are constantly taking place, such as ecological, social, and physical, that need to be coordinated and entered into the equation. However, for this to work, the social landscape must be considered in planning to reflect users' preferences, needs, and opportunities and thus incorporate sustainability (Sanglert & Vestbö-Franzén, 2014, pp. 65-66). The importance of looking in the rearview mirror is something that Sanglert & Vestbö-Franzén also believe is important, and the project “The past as a contemporary resource - the consequences of the indivisible cultural landscape” addresses. This is because it is important to know the history of one's surroundings in order to build stronger ties to the physical landscape.

As the name implies, multifunctional landscapes fulfill several functions simultaneously, including, among others, ecological, social, biological, and many more. Multiple land use is not a new phenomenon; it has been practiced even before our modern days. Before mechanization, various land uses were combined to farm the land (Sarlöv Herlin, 2012, p.14). It was, for instance, impossible to farm without livestock, which contributed to the fertilization of the land. In addition, several different types of land were needed to keep the animals on, and forest grazing was common, where trees could also be used to contribute nitrogen to the soil. After the advent of industrialization, land use became increasingly specialized and intensive, which meant that the multifunctionality of land use was abandoned (Sarlöv Herlin, 2012, p.14). Initially, during the emergence of the society we live in today, different values such as biodiversity, landscape, cultural values, and so on were seen as separate values in planning, which meant that different sectors were responsible for only one part. It emerged not until the 1980s, with the Brundtland Report, for example, that the focus on creating a sustainable society for current and future generations. Furthermore, Sarlöv Herlin explains that the Landscape Convention described multifunctionality as an effective and sustainable way of dealing with future challenges with heavy pressure on land and other complex problems that may arise. Fors et al. (2023) address this in a study outlining an increased demand for land use to meet multiple functions to deliver services to both humans and nature. Therefore, Fors et al. suggest that researchers from different disciplines should study this to provide a broader spectrum and ultimately a better overall picture of how communities should be able to implement it in the planning of multifunctional areas. Given

that these areas create more value than monofunctional landscapes, it is important to focus on the values found in the area from the initial planning phase. It is also essential to identify the existing structures and functions of the landscape in order to create a balance between the different values that exist in the specific context (Lovell & Johnston, 2009). Their study addresses the importance of including the role of ecology in creating multifunctional landscapes in agriculturally dominated areas. When these diverse values are combined, social, ecological, and economic sustainability can, according to Lovell & Johnston, be incorporated at the planning stage, and the multifunctional landscape can contribute to a more resilient society. Considering the ecological perspectives can create more pleasant outdoor areas in which to spend time.

When it comes to the development of outdoor recreation and nature conservation, which share common roots in the history of ideas, their parallel development has taken place since the preservation of nature is an important component of being able to conduct outdoor recreation in green surroundings (Bladh et al., 2013, p. 229). Hiking along trails is an example of outdoor recreation, and they tend to cross different landowners' properties and sometimes intersect various land uses (Godtman Kling et al., 2019). In Godtman Kling et al.'s study, they investigate how recreational trails in mountain landscapes in Sweden can be a source for creating and resolving conflicts between different land users. This is undoubtedly the case in mountain landscapes, and it may also be relevant for other multifunctional landscapes, as trails typically cross the properties of several different landowners. By involving landowners and the local community in decisions that affect them, Godtman Kling et al. state that conflicts can be counteracted and sustainable management strengthened.

3.2 Forming a physical landscape

Non-human activities and the human hand have reshaped the physical landscape through all our endeavors over the centuries (Sarlöv Herlin, 2012, p. 10). Areas of land that were previously arable and today are overgrown with trees and shrubs are common in Sweden. Farmland abandonment is not a new phenomenon and is driven by various factors that have varying impacts on biodiversity, ecosystem services, cultural-historical landscapes, and rural communities (Subedi et al., 2021).

There are various driving forces behind agricultural land abandonment, as described by Beilin et al. (2014), which can both counteract agricultural abandonment and lead to an increase. Beilin et al. indicate that pressures driving the abandonment of agricultural land include a decline in the number of young people who want to continue farming, difficulties in living and working in rural areas, and a focus on forestry rather than agriculture. Frictions that the Beilin et al. state counteract abandonment of these lands can be various forms of subsidies and grants, recreational values can keep the landscape open, and financial support to preserve meadows that are important for particular species, and also from a cultural heritage point of view. Attractors increase abandonment, and, for example, it may be due to increasing production costs, resulting in less profitable operations, a lack of water, or nutrient-poor soils (Beilin et al., 2014). When agricultural land is no longer used in this manner, some of these lands, many of which have been wetlands in the past, may be subject to re-wetting.

At first glance, the creation or restoration of a wetland can be seen as a rather technical installation, as the primary functions are usually to act as a filter and prevent watercourses from becoming eutrophic or to reduce greenhouse gas emissions. At the same time these values are produced, a new physical landscape is also developed, which Holmgaard (2025) describes in terms of natural values, and the local population gains a new relationship to that place. In Denmark, as Holmgaard's study is based on, it becomes a new rather than a copy of the past. The place can have a renewed land use, new memories can be created, and ties strengthened to the “new place”. In order to develop something new, a collaborative process needs to be established, as various actors and their responses to different drivers must interact to drive the process forward.

3.3 Local engagement in collaborative processes on land use change

A study by Helldin & Dahlberg (2014) discusses a new management model for Swedish national parks. According to Helldin & Dahlberg, the focus in the past has been on protecting from human impact, and instead, they argue that humans should be seen as part of the ecosystem. However, they also point out that Södra Öland's cultivated landscape and Kristianstad Vattenrike demonstrate that the management model should take place through collaboration between different actors and stakeholders to create a long-term approach to planning.

When it comes to landscape management, collaboration means, according to the Swedish Environmental Protection Agency (Naturvårdsverket) (2017, p.10), that two or more actors work together and can be described as an arena or meeting place to achieve a common goal or project. It is important to jointly establish the project's objective at an early stage, for instance, the framework conditions of the process or “its rules of the game” (Bjärstig et al., 2020). The role of the various actors is important to clarify in achieving successful collaboration. In a collaborative process where the actors involved may have different inputs, this can be a good practice and also a source of conflict. In a thesis on collaboration and boundaries, Löfström (2010, pp. 19-20) explains that the actors bring their limits from their everyday lives and meet other actors', meaning new common boundaries must be constructed when creating a successful collaboration. By the concept of personal limits or group limits, Löfström means that it serves as a platform for cooperation and collaboration between different actors' knowledge, experiences, missions, and so on. However, the actors do not need to share common goals and values, which can be a breeding ground for conflicts and differences of opinion, which can lead to reduced opportunities for collaboration. It is important to be aware of this and highlight them already in the beginning (Naturvårdsverket, 2017)

Successful collaboration requires good communication and mutual trust among involved actors. This is something that Cronin et al. (2021) address in a study on multi-actor collaboration in processes in the agriculture and rural development sectors. Both Löfström and Cronin et al. argue that there must be structures that maintain learning and communication. In other words, the involved actors listen and take advantage of each other's different backgrounds and expertise when collaborating on, for example, land use change. Plummer et al. (2017) address this in an article on adaptive co-management, where the results show that improved collaboration and learning lead to maximizing the positive effects for both people and ecosystems.

Pitfalls for collaboration can occur if, for instance, there are conflicts between how nature should be cared for and land use. Sandberg & Jakobsson (2018) emphasize this in their study on how trees can be both conflict-creating and collaborative. In 2012, after a long process characterized by conflict, a biosphere reserve was finally created east of Lake Vättern in southern Sweden. Initially, the process was driven by conflicts between landowners, authorities, and local conservation groups. The conflict involved farmers and forest owners perceiving a threat to local forestry and agriculture. At the same time, local conservation groups saw a lack of consideration regarding sensitive ecosystems. Having a common platform where a project group was created with representatives from authorities, farmers, forest owners, and non-profit organizations created conditions for conducting a dialogue (Sandberg & Jakobsson, 2018). Common perspectives were formed and led to a shift from conflict to consensus among nature conservation, forestry, and agriculture.

3.4 Summary

Previous research on multifunctional landscapes demonstrates that these should not only be considered as “physical” areas, but also as dynamic and temporal entities. Hägerstrand's concept of all-space illustrates how social, physical, and ecological processes cooperate in a common space. Space, as Wästfelt (2014) points out, has become a topical issue in connection with the current climate change and sustainability challenges we face as a society.

Multifunctional landscapes simultaneously provide multiple values and functions, such as ecological, social, cultural, and economic. Several studies highlight the need to reintroduce a holistic approach to landscape planning. Lovell & Johnston (2009) emphasize that ecological perspectives are crucial to creating sustainable landscapes in areas dominated by agricultural land. Regarding the view of the human role in the ecosystem, Helldin & Dahlberg (2014) argue that in the past, humans were seen as separate from the ecosystem; instead, it is proposed that the focus should be on seeing human activities as part of the ecosystem.

Today, the demands on land use to fulfill multiple functions have increased, which Fors et al. (2023) point out requires interdisciplinary research and planning that considers a holistic perspective. Identifying values and existing structures during the planning stage creates better conditions to balance different interests. Bladh et al. (2013) and Godtman-Kling et al. (2019) illustrate that recreation often takes place on land shared by several landowners and can generate conflict and also create opportunities for cooperation.

Today, farm abandonment is a relatively common phenomenon in Sweden. Beilin et al. (2014) describe the driving forces behind this development as Pressures (reduced profitability), Frictions (recreational values and subsidies), and Attractors (poor soil quality).

When former wetlands are re-wetted, it is not a return to how the land was used in the past; rather, new values and functions are generated, which, according to Holmgaard (2025), can contribute to the creation of new relationships between the physical landscape and its users. Collaboration is required to ensure a successful outcome. Clear communication, trust, and common goals are central to successful collaboration (Naturvårdsverket, 2017; Cronin et al., 2021; Plummer et al., 2017). Common platforms where dialogue can be conducted and actors can express their opinions and convey their boundaries are central to managing differences in knowledge and values (Löfström, 2020). Lastly, by having inclusive forms of collaboration,

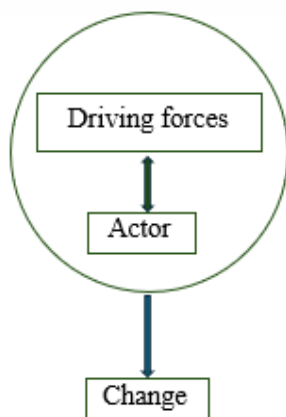
Sandberg & Jakobsson (2018) demonstrate that conflicts between different interests can be bridged.

4. Theoretical framework

4.1 Model Driving Force/Actor- Land use change (DFA-C) – linking driving forces and actors with land use changes in the physical landscape

An extended version of the Hersperger et al. (2010) model, DFA-C, will be carried out to explore how actors and driving forces affect land use changes (see Figure 4). The primary focus is the land use change collaboration process, demonstrating that everything happens in a specific context. Thus, the contextual landscape is used. Time-geography is also included to illustrate that a time-space (tidsrum), enables or restricts an individual's activities, movements, and actions. It demonstrates that there can be both cooperation and conflicts between various activities and land claims (Slätmo, 2014, p. 35). In this study, time-geography and contextual landscape perspectives serve as a worldview or basic premise, and the developed DFA-C model is used more concretely to approach a framework in order to understand why land use changes occur.

The DFA-C model focuses on the interaction between actors and drivers, which ultimately results in land-use change (Hersperger et al., 2010). However, the actors' activities



subsequently lead to changes in land use. The chain of causation is therefore not linear, which would be for example: driving forces → actors → change. Instead, it emphasizes the interaction and possible feedbacks between actors and driving forces. Structural aspects are included to avoid limiting the driving forces to social structures. Nevertheless, this was done to consider the physical contexts, as will be further explained.

This model enables a focus on gaining a deeper understanding of how actors and driving forces influence land use changes, ultimately facilitating a collaborative process. According to Hersperger et al. (2010), the DFA-C

Figure 4: The DFA-C model by Hersperger et al. (2010) can be observed.

model is well-suited for case studies that cover a smaller geographical area. The model also shows that drivers and actors are important in

land use change but operate at different stages of a collaborative process (Slätmo, 2014, p. 37). Hence, it is helpful for the exploration regarding this study.

Land use changes can be seen through the relationship between time and space (Ellegård, 2018, pp. 21-22). In time-geography, time and space are integrated, which can be visualized by the fact that when a material object, such as a large stone, is dug up from a construction site, it occupies and affects a specific space in both space and time. The material connection in time-space makes this a limited resource, where competing activities strive for space (Hägerstrand, 2009, p.165). These *Capability constraints*, therefore, mean that there are limitations on what can happen in the time-space over a period of time. The power struggle in time-space shows that priorities are constantly set at individual and societal levels (Slätmo, 2014, p. 32). There must be coordination in time and space. We have common concepts and various categories to measure and recognize changes in space-time, such as clocks,

coordinates, land use categories, and so forth, and this is called *Coupling constraints* (Gren & Hallin, 2003, pp. 123–124; Slätmo, 2014, pp. 31-32). The understanding of time and space is not only objective, but also based on our personal experiences. Thus, the socially immaterial dimensions are woven in because time is agreed upon and personally experienced (Ellegård, 2018, pp. 12–13). In all we do, there are power structures or so-called *Authority constraints* that constitute regulations on what is permitted or not in order to form a functioning structure of the environment (Ellegård, 2018, pp. 44–45).

The material viewpoint and the context indicate that the landscape can be seen as an ever-changing diorama. Time-geographic space is thus shaped by the interconnectedness of people, organisms, and things and the exercise of power in time and space (Hägerstrand, 2009). The role of the human being in the processes of change in the landscape is called a *Project*. This term is defined as a series of interrelated actions that individuals perform in the physical environment, which are directed towards a common goal. All projects are coordinated in the same limited period, which means that not all projects can be implemented, and priorities must be set, thus creating competition (Gren & Hallin, 2003, pp. 123-124).

The model DFA-C visualizes the impact of the actors and driving forces on the changes in land use and thus demonstrates the special conditions that prevail in a contextual perspective. A contextual landscape perspective involves analysing the uniqueness of an area, such as its ecological, historical, and socio-economic context. This allows us to understand how these factors interact and shape the physical landscape over time, rather than seeing it in isolation from its surroundings. In other words, it offers a tool to enable analysis of both actor-level and structural relationships. It helps demonstrate the relationships between social interests and land use changes (Slätmo, 2014, pp. 34-35).

The modification of the DFA-C model aims to customize the specific conditions that prevail in Tvååkers mosse and which have resulted in land use changes. Hägerstrand defines landscapes as dynamic areas continuously reshaped by the interaction of geophysical and biophysical processes, human activities, organisms, and objects (Hägerstrand, 2009; Sui, 2012). Thus, a view of the landscape can be explained as an arena where the activity of humans and other actors unfolds in time and space, and not just as a backdrop that consists more of a passive surface. In order to understand why changes in the landscape occur, both immaterial and material dimensions need to be considered. The material dimensions are related to the physical changes in the landscape, while the immaterial dimensions concern a landscape or place's intangible and social aspects. These can include various values linked to the local population's perception and experience of a site (Slätmo, 2014, p. 32).

4.1.1 Actors

Actors have different opportunities to impact a collaborative process, and thus, they are analyzed based on Hägerstrand's (1993, pp. 37-40) designations of them.

Territorial competence (TC)

Territorial competence means that actors who occupy this role have a practical ability to change and thus directly influence within a specific geographical area. In this context, Hägerstrand (1993, pp. 37-40) argues that the actors who have territorial competence are, for

example, landowners, farmers, or companies. They have practical knowledge of the area, but they usually do not influence major decisions.

Spatial competence (SC)

Actors with spatial competence, such as planners, politicians, and authorities, have the symbolic power to create laws and regulations and formulate various plans that govern how the land should be used and by understanding how different actors can influence the physical landscape in time and space, Hägerstrand (1993, pp. 37-40) outlines that it creates the conditions for more sustainable planning.

Local knowledge, therefore, needs to be linked to larger-scale decisions to take advantage of those with territorial competence, as mentioned earlier, practical knowledge, and spatial competence. When this is taken advantage of, Hägerstrand (1993, pp. 37-38) believes that the likelihood of a successful outcome is greater than if the gap between them remained.

4.1.2 Driving forces

The term "driving force" might have many different meanings and can be rather complex depending on the level at which it is studied (Hersperger et al., 2010). This study divides driving forces into enabling, directly triggering, and limiting. This is to communicate straightforwardly the impact of the driving forces on the collaboration process.

Enabling driving forces

Driving forces considered beneficial for implementing the development of a multifunctional landscape are called enabling driving forces. Co-operation between, for example, landowners, authorities, and organizations is an example of an enabling driving force because by joining forces, stakeholders can work towards the same aim. This, in turn, can lead to increased engagement and a greater willingness to contribute to non-profit work (García-Martina et al., 2016). Financial contributions can help support the development of both recreational and wetland areas (Naturvårdsverket, 2023:19, 24). The function of the wetland to provide ecosystem services can contribute to achieving support for the project and can be an incentive for policymakers to invest in re-wetting wetlands.

Constraining driving forces

Constraining driving forces are considered limiting or can create obstacles to continued activity. Financial and bureaucratic barriers are examples of this kind of driving force. For instance, when it comes to wetland development, Geranmamayeh et al. (2024) describe complicated application processes and high costs for restoration and long-term financial maintenance, which can act as barriers. Conflict of interest between landowners can also be a constraint, limiting the space for implementing sustainable solutions (Godtman Kling et al., 2019).

Directly triggering drivers

Circumstances involving direct changes in land use are such drivers that are directly triggered. Whether the landowner considers the land more profitable to continue farming or convert to a wetland is a direct determining factor in development (Hansson et al., 2012). If there is an

interest in restoring wetlands through investments in environmental and climate initiatives, which can lead to more restoration and, in this case, are considered as directly triggered drivers, in addition, legislation can then tighten the requirements or create new laws that can make the need to restore more land a reality.

4.2 Summary and research questions

This study has used in-depth research questions, which will be presented in this section. Hence, a contextual landscape perspective and time-geography, as well as a developed version of Hersperger et al.'s (2010) DFA-C model, are used in order to explore the dynamics of how the collaborative process with the involved components, actors, and driving forces has played out. The contextual landscape perspective and time-geography are not really used to clarify change systematically in this case. Rather, it is used more as an understanding horizon to highlight how human activity, material constraints, and spatial proximity shape the physical landscape over a more extended period. This perspective correlates with Slätmo's (2014) point about using a contextual landscape perspective and time-geography, namely that it enables a more actor-oriented and place-bound analysis of why the changes in land use occurred in that specific context.

A more process-oriented tool is recognized when it comes to DFA-C. It raises the question of how the collaborative process involving actors and driving forces unfolded, and which has subsequently led to a change in land use? With these two approaches, the worldview or horizon of understanding and the analysis model, it is possible to analyze what has happened in practice and at the same time gain a deeper understanding regarding the role of place, time, and collaboration in the development of the physical landscape that is today Tvååkers mosse. The research questions in the thesis are as follows:

- How has the collaboration process been carried out to develop Tvååkers mosse?
- Who are the actors involved?
- What driving forces have affected the approach of the actors?

5. Methodology

5.1 Introduction

This is a case study of the Tvååkers mosse project, a collaboration process involving actors and driving forces resulting in changes in land use. In order to find out how these factors affect the process, qualitative interviews have been conducted with various actors involved. Document analysis and observations have also been carried out to further build on the knowledge base on the collaboration process. This section will present the methods used to conduct the study. First, the study's design will be presented, followed by the use of a qualitative method. Then, the sampling and presentation of the informants will be provided. Next, interviews and the study's method of coding data will be presented. A section on document analysis will follow this, and finally, a discussion of methodology.

5.2 Case study design

There are various types of cases, as Bryman (2018, p. 99) explains, and when it comes to Tvååkers mosse, it is a case of a collaboration process towards creating a multifunctional landscape. Using a case study design means that a specific case or phenomenon is examined in depth and could potentially be transferred into other areas with similar conditions (Denscombe, 2009). Usually, this research method is associated with analyzing a particular place, such as a residential area, walking route, an event, organization, etc. (Bryman, 2018, p. 96). According to Flyvbjerg (2001, pp. 135-136), using a case study method to understand conditions at a location or a process dynamic is beneficial because cases exist in a context. Hence, the context in which it takes place must be considered in order to interpret reality. The study of how the collaboration process is taking place regarding the development of Tvååkers mosse can thus be described as a case study, as it is limited to a specific location. Hence, what is interesting in this context is related to the particular case and is not really generalizable; rather, answers are sought that could be transferred to similar contexts.

5.3 Using a qualitative method

Qualitative research seeks the multiple and partial representations of reality that are formed in the course of social life. The focus on increasing understanding through concepts and descriptions from the perspective of those studied is central to the qualitative research approach (Dyck, 2001, p. 12618). Within qualitative research, there are various research methods, where interviews, observations, and analyses of text and documents are commonly used in this type of research approach (Bryman, 2018, p. 457). In this study, qualitative interviews have primarily been used, but text analysis and observations have also been used to gain further insight. The observations consisted of two meetings: the first was with landowners and the second was with the Local History Association (Hembygdssföreningen). Notes were taken to further contribute to a deeper understanding of the dynamics of the creation of Tvååkers mosse. This method was used more as an understanding of the dynamics between the actors and will thus not be explained further. The reason why document analysis was conducted is to strengthen the informants' statements further.

5.4 Data collection

The informants were selected to provide the study with different perspectives from actors of interest to obtain a good distribution. Contact with involved actors and residents was obtained through the Project coordinator and some through snowball sampling, where the informants, as Bryman (2018, p. 245) recommended, were asked to contact other relevant informants.

Below is a presentation of the informants and why they are relevant to the study (see Table 1):

Table 1: *An overview of the informants in the study.*

Informant	Date of interview	Motivation to participate in the interview study
Informant 1	2025-02-24 in person (1 hour)	Landowners with properties within Tvååker mosse.
Informant 2	2025-02-24 in person (30min)	Chairman of the Local History Association and also a local resident.
Informant 3	2025-02-25 in person (1:15)	Chairman of the TUR Water Council and also a local resident.
Informant 4	2025-03-04 via Teams (30min)	The Swedish Forest Agency (Skogsstyrelsen)- advisor on forestry issues in the Tvååker mosse project.
Informant 5	2025-03-06 in person (30 min)	An official from Varbergs Sparkbanksstiftelse who has handled the application regarding economic funds.
Informant 6	2025-03-07 via Teams (30 min)	Action coordinator within LEVA (local engagement for water), Falkenberg municipality, which cooperates with TUR's water council.
Informant 7	2025-03-12 via e-mail correspondence	Member of the board of Positiva Tvååker.
Informant 8	2025-03-13 in person (35 min)	Landowner with properties within Tvååker mosse.
Informant 9	2025-03-18 via Teams (30 min)	Nature conservation officer (wetland coordinator) Halland County

		Administrative Board (Länsstyrelsen) who has helped to apply for grants.
Informant 10	2025-03-20 via Teams (25 min)	Development strategist from Varberg municipality.
Informant 11	2025-03-24 via Zoom (20 min)	Has previously lived near Tvååker mosse, is today a resident of Höråsen, which is an outdoor area in Tvååker.
Informant 12	2025-04-04 via Teams (30 min)	Rural coordinator from Varberg municipality.
Informant 13	2025-04-07 via Telephone (3 hours)	Project coordinator and resident.

5.5 Qualitative interviews and interview guides

In order to obtain information regarding how the dynamics behind the development of a multifunctional landscape at Tvååkers mosse unfolded, 12 in-depth interviews and one through e-mail correspondence have been conducted with involved actors. The interviews were semi-structured, and the interview process was flexible since there was an interview guide (see Appendices 1-8), which laid the foundation for the questions raised during the interview, according to Bryman (2018, p. 563). However, there is more room for new questions to arise during the interview, making it more flexible than a fully structured interview, even though a specific framework exists to relate to (Bryman et al., 2021, pp. 425-426). This means that the interviewee can manage some of their responses, and the questions do not always follow a strict order; instead, the process becomes more fluid. That is the reason why semi-structured interviews are used in this case.

Interview guides were created, depending on who the informants were, as the informants had different roles in the project (see Appendices 1-8). However, there was a “base” guide, which was subsequently modified to fulfill the purpose. The interview guides were all constructed in an order that allowed all the areas of interest to be covered (Bryman, 2018, p. 565). The introduction began by introducing myself, the study's purpose, and the informants' importance to the study. Before the questions began, the informants were asked for permission to record the interview and for their names to be published in the study. This was followed by warm-up questions, where the informants were asked to start by providing basic personal information. The questions were divided into themes such as knowledge of the project or their thoughts about the place. The interviews continued with follow-up questions and concluded by asking if they had anything else that might help in understanding the situation's dynamics (Bryman,

2018, pp. 563–564; Esaiasson et al., 2017, pp. 273–276). All quotations have been verified with the informants for their consent to use.

5.6 Coding and thematic analysis

According to Bryman (2018, p. 727), coding data is important to qualitative analysis. This is done to conceptualize the content of the collected material and thus understand what it can contribute to the study. In this regard, the program NVivo has been used to generate different themes and sub-themes to simplify the process.

A qualitative thematic analysis has been used to find themes in the interviews systematically and contrasts in the material, thus understanding the actors involved and the driving forces in the collaboration process. To briefly explain what a thematic analysis means, it analyzes spoken and written text, which is later coded into similar observations where more general themes can be discerned (Bryman, 2018, pp. 702-708). Since the purpose of the study is precisely to find how actors and the driving forces influence the land use changes in Tvååkers mosse, Braun & Clarke's (2006) step-by-step guide has been used. The guide's goal is to simplify the process of extracting relevant information from the collected data.

A few decisions must be made when conducting a thematic analysis, which will now be described before the guide is presented. What counts as a theme must first be determined to capture what is relevant to the study. According to Bryman (2018, p. 703), a theme is linked to a study's research questions, and the focus is thus determined according to it. It is also a category identified by the person who analyzed the collected material. This study includes economic, political, and social themes because they are linked to the questions intended to be answered. It is important to note the frequency with which a theme is mentioned and its significance, as it can indicate something of broader relevance to the analysis (Braun & Clarke, 2006). Whether one wants to give an overall picture of the collected data material or whether the study wants to provide a more focused picture of a particular perspective also needs to be decided before the thematic analysis begins. The choice in this case study is to provide a richer description of several aspects related to the area's nature, which is multifunctional and thus holds several different values. It will be more interesting if several perspectives are considered; thus, a richer description of themes is included.

Thematic analyses are usually flexible, which, according to Braun & Clarke (2006), means that the approach does not have to be strictly inductive or deductive. However, an interaction can take place between them. This study is a proof of this, where both theoretical frameworks, including an actor-driver model, aimed to discover new patterns and codes that do not necessarily have to be embedded in theories. Thus, it can be characterized as a “hybrid approach,” i.e., a theoretical framework and the questions that guided the coding, while remaining open to discovering new themes that emerged along the way. Another decision that has to be made in advance is which epistemological approach will guide the analysis. In this case, it is more of a realistic approach given that what the informants say forms the basis of the facts on which the study is based, i.e., their statements are considered as real and actual experiences in the study. Braun & Clarke's (2006) step-by-step guide is divided into six steps:

The first step was to familiarize myself with my material; in this case, it was by transcribing it. Two transcription programs have been used: Word and ScriptMe to facilitate the

transcription process and focus on reading. Patterns and reflections that emerged were noted since they could be relevant at a later stage during the transcription process. The second stage of the Braun & Clarke (2006) guide is where the initial coding of the material takes place, and anything in the data that is relevant and linked to the research question was added to the code.

The NVivo program was used to save the annotations (codes) of interest. These codes can capture both what is expressed at the explicit level (semantic codes) or something at the implicit level (latent codes), i.e., something more underlying in what is said. For example, an informant may describe the design of the physical landscape, thereby interpreting an underlying meaning of the significance of the place for that particular person or group. The use of what was expressed at both explicit and implicit levels provides depth, which is an intention to achieve with this study; therefore, both levels have been “listened to”. To explain this step straightforwardly, you pick apart the material and label the interesting parts into codes, always keeping the research questions in mind, because that is what is interesting for the study.

Braun & Clarke's (2006) guide's third step is connecting the codes and forming overall themes. That is, categorizing the codes into broader patterns to create themes. As mentioned, this has been done in the NVivo program and added to the primary and sub-themes to see which categories exist in the study. A “coherent story” began forming in the collected material in this step. Once confident that this step was completed, it was time to start the fourth step, which involved systematically examining the preliminary themes developed in the previous step to determine if they provided a representative picture of the data. According to Braun & Clarke (2006), the review of themes takes place at two levels: in the first level, all coded data were reviewed to find out whether they fit together. Some data was moved to other themes, as it felt like it was not related, indicating that it may not fit there, but may be a new theme or sub-theme. The second level involved reviewing the themes again, and when it seemed they had good interrelationships and proceeded to read through the data again. This was done to double-check whether the themes that had formed captured what was most interesting and central in the material. Nevertheless, also necessary to see if something had been missed or coded incorrectly and possibly make corrections.

Braun & Clarke's fifth step began when the themes identified were sufficiently stable. Each theme was named and given a brief summary. The names were chosen to be concise, providing an easier overview and making them easier to understand. The summary was done to link it to the study's questions and later refine them, thus increasing understanding and ultimately readability.

As this is crucial for the final analysis, having the themes stable and clearly defined facilitated the sixth step, which was producing the report. At this point, the themes were presented and their relationship to the study questions. These were then woven into the structure to give a more vivid result.

5.7 Document analysis

Document analysis of various relevant sources was used to strengthen the credibility of this study (Dittmer, 2010, pp. 280-282). The analyzed documents help to build up an understanding together with the collected material from the interviews about the dynamics of the collaboration process in the Tvååkers mosse project. The documents were transcribed by searching for relevance to the purpose of the study, such as planning different areas in the municipality. Nevertheless, what is to be analyzed and what is meant by that must be linked to the research objectives (Dittmer, 2010, p. 281). The documents that have been analyzed in this study are relevant to the purpose of the research as they relate to the objectives.

The documents used and analyzed in more detail are;

Översiktsplan för Varbergs kommun-Fördjupning för Tvååker planförslag-Antagandehandling 2020-05-19 (Varbergs kommun, 2020).

LONA: 501-3651-21 (Naturvårdsverket, 2024).

5.8 Method reflections

In evaluating a method, some factors are involved, such as validity, which can be translated as the replicability and quality of a study. When using a case study design, it can be difficult to replicate as it represents only a small group (Bryman, 2018, p. 98). However, this thesis is under no illusion that it can represent all collaborative processes around land use change. Rather, the contribution could be to create insight into how this process can take place in contexts with similar conditions as Tvååkers mosse and this is usually called transferability. Qualitative research often focuses on going in depth into the contextually unique, as this study from Tvååkers mosse does. Not all research needs to be replicable to be useful, but some parts of a study could serve as inspiration.

In-depth interviews have been used to gather the various actors' perspectives on how the process of creating Tvååkers mosse was carried out. Through this, it has been able to form an idea of how it went from an idea to a changed land use. However, it needs to be pointed out that not all relevant actors such as landowners have been heard, which means that only some have contributed their perspectives to the study. With this in mind, if everyone had participated, it could have contributed to a different end result. When it comes to the use of informant interviews, those interviewed are central sources and have in one way or another contributed to the development of Tvååkers mosse. But they still have a touch of respondent character in some cases, as they also contribute with how they, for example, experience the physical landscape today in comparison with how it appeared before. For the sake of simplicity, the choice has been made to call them informants because they possess knowledge that is considered central.

Another factor that can be discussed is whether the anonymity in this study relates. In this case, no one requested to remain anonymous. The informants were asked before the interview to agree to the publishing of their names in the study; however, it is difficult to keep individuals anonymous in a local context where most people know each other.

Thematic analysis is, as previously mentioned, a way of coding and finding patterns and themes, as in this case from material collected during interviews. When it came to performing the thematic analysis, a step-by-step guide designed by Braun & Clarke (2006) was used. The chosen method worked well and was thus easier to see patterns in the material because it was easier to visualize when performed in different steps. In addition, the program Nvivo has facilitated the creation of the codes because it has various features that are time-saving such as having all transcripts in one document.

6. Results

6.1 Introduction

The interviews with various actors and the subsequent thematic analysis have resulted in a deeper understanding of how the actors and driving forces have affected the land use changes in Tvååkers mosse. The results section is structured to answer the research questions in this thesis. It begins with the involved actors and driving forces, as these components of the collaboration process reveal how and why Tvååkers mosse has developed. This is followed by the importance of the physical landscape in gaining a deeper understanding of why the change in land use occurred in this particular context.

6.2 Involved actors and driving forces leading to land use changes in Tvååkers mosse

6.2.1 Actors

This category includes various actors who have been identified as having, in one way or another, contributed to the creation and thus development of Tvååkers mosse. The actors involved in the collaboration process include landowners, Authorities, Residents, Coordinators who play a coordinating role, and Facilitators of change who have provided financial grants in one way or another, acting as guarantors of financial resources or as associations themselves.

Landowners

Obtaining a fixed number of landowners proved challenging, as the informants provided diverse answers. The project is still ongoing, and as some informants commented, more landowners may be included in the future within the area of Tvååkers mosse. At present, there are about 20 landowners whose properties are within the project boundaries.

Authorities

Several actors holding authority roles have contributed to the development of Tvååkers mosse, including the County Administration Board, actors from the municipality of Varberg, the Swedish Forest Agency, Falkenberg Municipality (action coordinator), the Swedish Environmental Protection Agency, and the Swedish Board of Agriculture. In addition to the actors mentioned in the interviews, several other actors have been involved, including municipal ecologists, administrators of financial funds applied for, and so forth.

Residents living close to Tvååkers mosse

Residents have been involved in the development of Tvååkers mosse. Several informants mentioned that residents had the opportunity on several occasions to have their say on various decisions regarding, for example, the design of the Green Route or other matters.

Coordination

→TUR's Water Council

In the creation of Tvååkers mosse, some actors do not have the same ability to impact changes in land use as, for example, landowners can, but are still involved in the development of the physical landscape. Several informants mentioned TUR's water council (Törlan, Uttran, and Ramsjö Canal) as an actor with more of a coordinating function. Many different authorities and organizations are represented on the board and among the members, as the chairman of TUR explained:

" Yes, I see our water council as a coordinating force. I think many people see it that way. Because the board and members are composed of both private farmers, private as interested.... people from the association.. for example nature conservation association and ornithologists and so, but also from authorities, from municipalities and municipal companies that have a lot to do with water for example Drivab for example here in Falkenberg, Varberg which was the water company. But also the housing companies that build residential areas that release stormwater and must manage it." (Informant 3).

As the TUR's Water Council Chairman explained, many different actors from various authorities and the private sector work together to address water-related issues. In Falkenberg municipality, an action coordinator works with water issues and collaborates with TUR's water council. The action coordinator (Informant 6) explained that they usually have a more coordinating function and stated that, thanks to the many engaged people involved in the project, it was, in this case, more of a representative role.

TUR has dual roles, acting both as a Coordinator and Facilitator of Change. Since TUR is a guarantor for the financial funds they applied for in the project regarding Tvååkers mosse. The chairman explained that it was decided that TUR would distribute the grant in stages within a specific timeframe after completing each step.

→Project coordinator

The informant was assigned as Project Coordinator by landowners within the Tvååkers mosse project. The Project coordinator has been involved since the start and coordinated various interests that have resulted in the development of Tvååkers mosse. Most informants believe that the Project coordinator initially set the framework, which was subsequently developed in cooperation with other actors involved.

This actor does not own any land within what is currently Tvååkers mosse, but is a resident and thus has no territorial competence. However, the informants unanimously expressed that they considered the commitment of the Project coordinator to be important when it comes to the development of the bog.

Facilitators of change

→Positiva Tvååker

Positiva Tvååker is a community association consisting of residents that works for the best interests of Tvååker residents in issues relating to community planning, the environment, housing, contact with Varberg municipality, and so forth. Some of the informants explained that the role Positiva Tvååker has had when it comes to the creation of Tvååkers mosse is that

they have been a guarantor for the applied financial grants from Varbergs Sparbanksstiftelse, as commented by Varbergs Sparbanksstiftelse:

"We received an application [...]. There is a community association called Positiva Tvååker. We wanted them to be applicants, so normally we do not give grants to individuals; we want them to be non-profit organizations." (Informant 5).

→*The Local History Association*

The Local History Association is located near what is today Tvååkers mosse. Since Tvååker mosse is “a project-within-a-project”, the Local History Association does not have anything to do with the bog itself, such as digging out the lake or similar. The informant representing the Local History Association mentioned that the association provides parking for visitors to Tvååker mosse. Nevertheless, there was expressed concern among residents that there could potentially be a large influx of visitors to the area and that it was therefore important to have a designated “route” there through the Green Route. The role of the Local History Association was explained like this:

"To be involved in being able to tell people about both this area, the bog, and the road between Höråsen and down towards the community via information boards and other things. Because it is part of this project that we call the Green Route." (Informant 2).

The local history association has applied for funding from LLUH (locally led development in Halland) for this purpose.

→*Varbergs Sparbanksstiftelse*

The foundation has contributed financially to facilitate the development of Tvååkers mosse. Several informants believed that the foundation's contribution played a significant role in creating and changing the land use in Tvååkers mosse.

6.2.2 Driving forces

This section includes the different driving forces that contribute to the collaboration process. Enabling driving forces act beneficially to develop multifunctional landscapes; Constraining driving forces can hinder or stop development; and Direct triggering driving forces are circumstances that directly trigger, such as a farmer believing, for example, that the profit can be greater if another crop is grown or the like.

Enabling Driving Forces

Financial funding is an example of an enabling driving force necessary to change the physical landscape. In the case of Tvååker mosse, the project has received financial contributions from several different donors. The informants stated that they had received contributions from Varbergs Sparbanksstiftelse, LONA (Local Nature Conservation Initiative), LLUH, the municipality, and TUR's water council, among others.

Some of the informants mentioned that non-profit work has been an enabling factor in the realization of Tvååkers mosse. Landowners and residents have contributed with unpaid work, such as digging, clearing the forest, and putting up poles. However, some of the informants

stated that this was a matter of necessity because they felt that it would otherwise not be possible to develop Tvååkers mosse.

The collaboration that has arisen between the various actors involved has been mentioned by several of the informants as being beneficial to the development of Tvååkers mosse. At an early stage, contact was made with various actors such as the municipality, the County Administrative Board, and the Swedish Forest Agency to cover all perspectives in the planning, as several informants mentioned. Some informants from different authorities stated that they had been out on site together with, among others, the Project coordinator, and had thus been able to form their own opinion of how the area should be developed. This is not something that is mandated by law, but rather has been achieved on a voluntary basis. The informants expressed this as facilitating the ability to drive the project forward in a common direction. Some of the informants who are landowners and residents mentioned that they have experienced that the sense of community between them as neighbors has been strengthened by having this joint project to develop:

"That is what has set the whole thing in motion. Then we have our meetings.... Once a month... It is quite fun to get together. The neighborly spirit increases enormously." (Informant 8).

The meetings serve to update and see the next phase to be carried out to drive the project forward. Thoughts are raised, and how the landowners feel about various decisions regarding the development of Tvååkers mosse are discussed. The informants also mentioned a collaboration with Munkagårdsskolan (Agricultural secondary school), where they have grown apple and pear trees that will eventually be planted at Tvååkers mosse. Some informants have experienced that some residents who previously had thoughts or concerns about various reasons related to the development of Tvååkers mosse have changed their minds to a more positive attitude. They explained that this might be because they saw how the result turned out.

Political will is a factor enabling projects like Tvååkers mosse to be developed. Most of the informants experienced that Varberg municipality is positive about the development of Tvååker mosse and the Green Route that is being developed in Tvååker. The in-depth comprehensive plan of Tvååker includes the Green Route, to show that the municipality wants to make various outdoor areas in the urban area accessible to residents and visitors (Varbergs kommun, 2020).

Constraining driving forces

Within the Tvååkers mosse project, there are some constraining driving forces. The Tvååkers mosse itself, as the informants described, is "a project within a project". When it comes to the project involving the loop to the bog that is part of the Green Route, which has to do with the Local History Association and its application for financial support from LLUH, funded by the EU and paid by the Swedish Board of Agriculture. A few informants mentioned that they faced bureaucratic challenges. One of the informants expressed that:

" The Swedish Board of Agriculture is not easy to deal with. [...]On the one hand, they have very long processing times. Then it's complicated. Both the application process and the accounting process. It has become worse and worse, so it is important to handle it correctly, so as not to risk the association's finances. That is what it is... it is about...[...] A small local History Society Association does not have

the opportunity to do that...And if it turns out that it is not done correctly and large deductions are made, you risk the economy of the local history society." (Informant 2).

The informant stated that the application was submitted about a year ago, and the Local History Association is currently waiting to be informed whether or not it will receive the funding it applied for.

LONA (Local Nature Conservation Initiative) is a financial grant that municipalities can apply for, but another organization, such as the Tvååkers mosse project can initiate the application. Previously, applying for all types of "nature conservation initiatives" was possible. As of 2025, LONA is limited to wetland projects, and Halland County has received less funding this year than before. The informants considered this less important for Tvååkers mosse since they received financial resources from other donors.

Directly triggering driving forces

In Tvååkers mosse, the landowners, together with the Project coordinator, considered that the land use could be better utilized than it was before the project started. Several of the informants expressed that the land use in the past did not generate any added value for the inhabitants of Tvååker, as they referred to the area as "impermeable."

Grants from LONA are currently only given to wetland measures, and informant 9 explained that there is an interest at the national level in re-wetting wetlands. When it comes to supporting local initiatives financially, the informant from the County Administrative Board expressed it this way:

"We want these grants to go to local engagement above all. And it does here... It certainly does. So I think you find these areas where there is local initiative, or where there is a drive to do something more with their neighborhood, and that it is not the municipality that drives it, but there are others who want to do it. Then I think it gives a higher added value to the place. And we weigh.... Well into that too." (Informant 9).

When applying for LONA grants in the Tvååkers mosse project, grants were applied for, among other things, flow equalization, water management, and increased biodiversity (LONA: nr-501-3651-21).

6.3 The changes in land use of Tvååkers mosse

In this case, several reasons exist for changing the land use in the Tvååkers mosse area. Initially, as many of the informants stated, it started with an idea from the Project coordinator to develop a new land use for this approximately 30-hectare site. At this stage, before the project started, several informants stated that the area was perceived as impenetrable and not visitor-friendly (see Figure 5). To illustrate this, it was mentioned that:

"Even before Tvååkers mosse was developed, a road ran next to it and people just passed the area to get around the community and out to a larger road, a natural loop to walk for the residents of Tvååker" (Informant 11).



Figure 5: Photo taken before the clearing of Tvååkers mosse. Source: Daniel Andersson.

The informants expressed that they did not personally pay any attention to the area before the development of Tvååkers mosse began to be discussed. The informants and especially the landowners explained that on-site at the Tvååkers mosse, they wanted to change the land use.

It was further explained that there was a desire to form a sense of connection to the site for the people of Tvååker and thus use it in their everyday lives. Hence, the informants were united in the view that it would contribute to other values, such as increasing biodiversity and preserving water in the landscape.

6.3.1 Inspiration from other projects in the vicinity - creating an urban area with coherent green environments

In close proximity to Tvååkers mosse is another recreational area called Jungfru Maries naturstig (Virgin Mary's nature trail), which is located next to the meadows and pastures that are a Natura 2000 area, indicating a high conservation value within the location (Varbergs kommun, 2020). In 2014-15, the trail was developed by some of the landowners coming together and deciding to create a place that highlights the importance of grazing animals for biodiversity and, at the same time, prevents the area from becoming overgrown. Signs were put on site to inform visitors about today's physical landscape and the area's historical land use. The landowners perceived the result as successful, and one of the informants described how the project idea of creating Tvååkers mosse began:

"It started with the Jungfru Marie nature trail [...] And then we worked together with [Informant 8] And then it has spread to this Tvååkers Mosse project." (Informant 3).

Inspiration was taken from the Virgin Mary's nature trail, where several of the informants expressed that the area of Tvååkers mosse could build on the same spirit and create a space for Tvååker residents and its visitors. Initially, the idea was that it was supposed to be a wetland area without a water mirror. However, in discussions between landowners and with actors from authorities, it was decided to change the approach by creating a lake and wetland area. The informants believed that this would create more value and functions. In the summer, Tvååkers mosse can serve as a bathing and barbecue area, thus being a place where people socialize or spend time in green environments. Most informants living in Tvååker mentioned

that when the ice settled at the beginning of this year (2025), several locals skated and played hockey on the ice (see Figure 6).



Figure 6: A photo of the ice at the beginning of 2025. Source: Sofia Glad.

As Tvååkers mosse is one of several projects, the intention is for the bog to link up with the Green Route and increase the accessibility for the residents of Tvååker in terms of access to urban recreational areas. The Green Route is a separate project because, as some informants pointed out, it will be easier to distinguish between them in applications and reporting of, for example, financial resources if they are not mixed up. However, one of the informants from the municipality mentioned:

"One thing that emerged clearly in dialogue with the community association in Tvååker is that the landowners feel that people go where they should not go. The community has grown, and when it was smaller, people perhaps knew the farmers in a different way. Back then, more people knew better which fields they could and could not cross. And it's clear that in a growing society, local contacts disappear. Or the natural interfaces, perhaps one should say." (Informant 12).

According to some informants, the Tvååker community has grown in recent years, and the natural routes for those living nearby are no longer as obvious. For this reason, Informant 12, among others, considered it important to invest in various outdoor areas in Tvååker and create a designated route to get to them easily.

6.3.2 Creating a space that continues to be used and cared for in the future

Land used by humans needs to be managed in a variety of ways. In the case of the management of Tvååkers mosse, several of the informants believe that from the very beginning of the project, they have envisioned shaping the physical landscape to require as little management as possible in the future:

"We have tried to do this now so, as "unobtrusively" as possible. We are all getting old, so I do not intend to spend much time down there. Because it is the pasture that's supposed to take care of the area, and then we will put stones on the path, so that we do not have to do anything there, because then the sheep graze around the stones." (Informant 8).

Several of the landowners stated that, as informant 8 mentioned, they are getting older and therefore want the area to “manage itself” as far as possible. Grazing animals will keep the landscape open and reduce the need for maintenance in terms of clearing bushes and shrubs (see Figure 7). The informant from the County Administrative Board explained that the wetland area will need to be managed at some point, otherwise there is a risk that it will, for example, sediment again. Trees that are planned to be planted will also need some care. The interviewed landowners hope that those who succeed them will protect Tvååkers mosse and, in the event of a sale, that those who buy the land will undertake a commitment to take care of the part of the bog within their property boundary.



Figure 7: Grazing animals will keep the landscape open. The photo is from Tvååkers mosse. Source: Daniel Andersson.

The informants' general opinion was that they want the area of Tvååkers mosse to be a space that will be used in the future, and a natural part of the people of Tvååker's everyday lives.

6.3 Summary of the results

The results show that a diverse range of actors have been involved in developing the physical landscape in what is today known as Tvååkers mosse. The various actors that emerged from the interviews are: landowners, authorities, residents, coordinators, and facilitators of change. The actors have jointly responded to the various driving forces that have been relevant in developing this area, which benefits both people and the environment.

The identified drivers include *enabling drivers*, which encompass financial contributions from various donors. However, it also requires a strong local commitment and political will from, among others, the municipality to develop green environments for the residents of Tvååker. Tvååkers mosse is as earlier mentioned like “a project within a project,” and there are *constraining driving forces* in the form of bureaucratic obstacles, regarding the management of state funding. *Direct triggering driving forces* were mainly the will of the landowners and the Project coordinator to transform the previously rather inaccessible land into an area that fulfills both ecological and recreational values.

Tvååkers mosse is still under development and is intended as part of a larger ambition to be able to connect green environments and thus create areas that Tvååker residents can visit in their everyday lives. Long-term management is in the planning with minimal need for future interventions such as using grazing animals to keep the landscape open. The result indicates how local anchoring, common goals and collaboration together can contribute and form the basis for successful landscape development.

7 Analysis

7.1 Introduction

This section will analyze the results of the interviews and document analysis. It will provide further insights into the research questions and the study's aim of exploring how the components (actors and driving forces) have affected the collaboration process in Tvååkers mosse. The study's in-depth questions are: How has the collaboration process been carried out to develop Tvååkers mosse? who are the actors involved? furthermore, what driving forces have affected the approach of the actors? The developed version of the Hersperger et al. (2010) DFA-C model will be included and explained in this part. The purpose is to use the results, which are based on interviews and document analysis, to identify patterns and analyze the various actors and driving forces involved in the collaboration process. The result thus reflects the components, and the analysis contributes with an analysis of how the process has taken place.

7.2 From the DFA-C to the DFACFR-C model - a more place-based version

Hersperger et al. (2010) DFA-C model is analyzed and subsequently built upon. In order to highlight the dynamics of the driving forces and actors in Tvååkers mosse, it was modified and made more place-based. The model DFACFR-C (Driving Forces-Actors-Coordination-Facilitators-Residents-Change) is developed to better fit an area with the conditions of Tvååkers mosse than the original DFA-C, which emphasized how actors and drivers influenced land use changes (see Figure 8). The arrows in the model symbolize flows,

showing that the process is not linear, but rather that feedback loops are created. To make the model readable, driving forces are within the same circle, even though several are included.

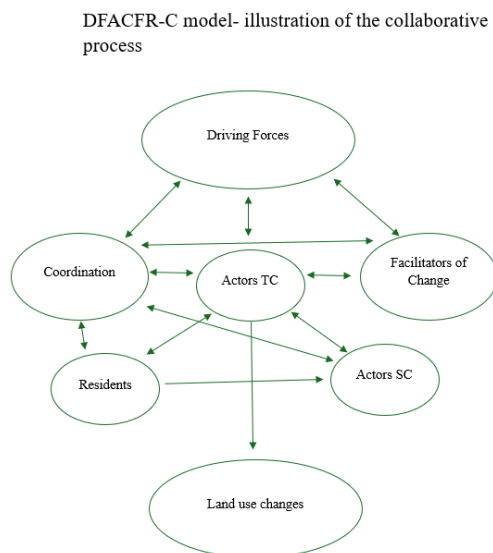


Figure 8: This is an illustration of how the process flows in Tvååkers mosse's collaboration process has taken place.

In this section, the DFACFR-C model can be observed to explain how the process and its dynamics occur in Tvååkers mosse. A little further on, a process will be discussed to better understand how the model can and has been applied. In the developed DFACFR-C model, there is also an interaction between actors and driving forces. However, here there are other actors such as coordination and residents that are living close to the Tvååkers mosse, and influencers, or as they are called in this study (Facilitators of change), who do not hold any territorial or spatial competence but who, in any

case, play an important role in the development of the bog. As mentioned earlier, the study uses territorial and spatial competence, which Hägerstrand (1993, pp. 37-40) argues illustrates that actors have different opportunities to influence decisions during a process. The roles of the actors in a project are important to clarify in order to achieve good results in a collaborative process, as the Tvååkers mosse project is, which is supported by the study from the Swedish Environmental Protection Agency (Naturvårdsverket, 2017, p. 10).

When it comes to the extent to which different actors can impact change in the collaborative chain, it differs depending on whether they hold a territorial or spatial competence. Landowners, for example hold a territorial competence (as can also be seen in the model), and they are the ones who ultimately decide whether there will be any change (see Figure 8). While those with spatial competence are the municipality, the Forestry Commission and the County Administrative Board, etc. In other words, they can decide on various measures, such as whether it is approved to cut down the forest or apply for water activities.

The will or interest in creating a multifunctional landscape at the Tvååkers mosse is both a direct triggering and an enabling driving force. When it comes to making changes in land use, as is the case in Tvååkers mosse, financial resources are required, which is also an enabling driving force. Beilin et al. (2014) state that grants are needed to create recreational values and functions and thus keep the landscape open, as these are relatively costly measures. To illustrate how the process of applying for financial resources from, in this case, Varbergs Sparbanksstiftelse, has proceeded, only this process is shown (see Figure 9).

DFACFR-C model- illustration of the collaborative process

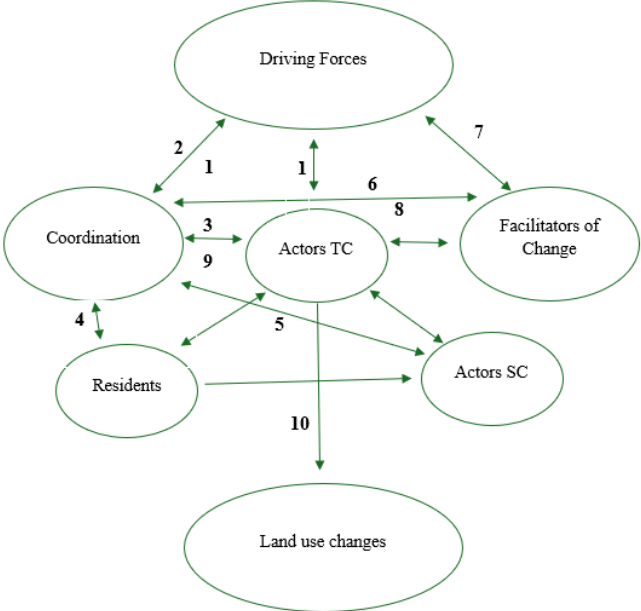


Figure 9: Illustrates the dynamics among driving forces and actors when applying for financial support from Varbergs Sparbanksstiftelse.

The actors TC and the Coordination are driven by the desire to change the land use (**Arrow 1+1**). Then the driving force arrives at the Coordination (**Arrow 2**), who communicates with

the Actors TC (**Arrow 3**) and returns with how they want to shape the landscape in order to apply for a grant. The Coordination communicates with Residents (**Arrow 4**) who give feedback on how they want it. Then, this is brought up with Actors SC (**Arrow 5**), who returns with approval to do these measures as for instance water activities to Coordination. When this is done, Positiva Tvååker, who is a Facilitator of change, applies for financial support from Varbergs Sparbanksstiftelse (**Arrow 6**) and Driving Forces are involved as financial means are an Enabling driving force and return to Coordination Facilitators of change (**Arrow 7**) the grant is approved, which is then sent back to Coordination (**Arrow 8**) and then to Actors TC (**Arrow 9**), the measure is implemented (**Arrow 10**) and results in land use change at the site of Tvååkers mosse.

7.3 How can the process of actors and driving forces be understood from the perspective of the physical landscape?

The changes in land use carried out in Tvååkers mosse are a consequence of the significance of the local landscape, both in terms of how it is physically used and as a meaningful environment. Tvååkers mosse consists of a part of what Hägerstrand (2009, p. 159-164) calls all-space. That is, the temporal-spatial context in which various processes, such as ecological, social, and material, interact. The physical landscape is therefore not just a physical surface but an arena where different layers overlap. Initially, the site where Tvååkers mosse is located today was used as farmland, pasture, peat bog, etc. In the latter part of the 20th century, conditions became too difficult to farm the land, and it quickly became overgrown. The land was overgrown until Tvååkers mosse began to develop and was thus cleared. Here, it can be said that the change in Tvååkers mosse might be interpreted as an expression of the site's former function and perceived values and use are reinterpreted and thus end up in a new sustainability-oriented context.

In response to the increasing impact of climate change, Wästfelt (2014) argues that issues relating to man's relationship with the physical landscape have once again emerged, especially on the political agenda to create long-term planning. This can be understood by the function and meaning of the physical landscape being actualized, for example, through projects such as the development of the Tvååkers mosse wetland, where functions such as recreation, water management, and ecology are integrated, which together create a multifunctionality in the landscape. Multifunctional landscapes, where Fors et al. (2023) and Sarlöv-Herlin (2012, p. 27) describe that it is the best way to go in order to meet the increasingly complex problems that climate change, among other things, brings with it, sustainably. In addition, Fors et al. and Sarlöv-Herlin argue that it is important that these values are identified already in the planning phase, which was done in the case of Tvååkers mosse. From the very first discussions, landowners and residents expressed that they wanted to create multiple uses at the site of Tvååkers mosse to develop an area intended for both people and the environment. There were also thoughts about how Tvååkers mosse should be managed in the future, which shows that a long-term perspective has been taken into account in the project. Taking this approach to planning multifunctional landscapes is supported by Lovell and Johnston's (2009) study, which suggests that combining different values contributes to social, ecological, and economic sustainability, and this in itself can help lead to a more resilient society.

In terms of local significance, it is central to how the physical landscape is used and also as a kind of identity-creating space for civil society. Tvååkers mosse has been developed as a joint project in which landowners, residents, associations, water councils, and authorities have collaborated to create a new understanding of the site's value. The social landscape is thus recognized, as Sanglert & Vestbö-Franzén (2014) emphasize, because various users' relationships with the physical landscape are actively considered. Through this, it can be highlighted that the physical landscape of Tvååkers mosse and the changes in land use can be understood in dialogue with the social and historical layers the site possesses. The initiative to develop Tvååkers mosse came from landowners and residents, which means that the driving force to create Tvååkers mosse has grown out of the importance of the place for the people who live and operate in Tvååker. The site where Tvååkers mosse is located has previously been some form of wetland, and now a wetland area has been created again. This correlates with Holmgaard's (2025) study, where at the same time as the values a wetland area generates, the physical landscape changes. Thus, it can be said that by changing the land use, new memories can be created and stronger ties to the site of Tvååkers mosse can be created for the inhabitants of Tvååker. The interviews with the informants demonstrate precisely this, that the aim was to create a recreational area that was beautiful and good from an ecological point of view, as well as an area that means something to those who will use Tvååkers mosse.

8. Conclusions

8.1 Conclusions and reflections

This thesis has explored how the actors and driving forces have affected the collaboration process at the site of Tvååkers mosse. The study reveals that the collaboration process is not linear; rather, it illustrates a non-linear process where feedback is created between different actors and driving forces. The result is a chain of cooperation created through communication between the various actors and their actions on the driving forces identified in the study. It becomes clear that changes in land use, as in the Tvååkers mosse case, should be seen as a dynamic system of interdependent relationships between actors and driving forces.

At an early stage of development in Tvååkers mosse, contact was initiated between actors, including authorities (spatial competence), landowners (territorial competence), residents, coordinators, and facilitators of change. The study has identified the importance of the contribution of coordinators and facilitators of change, i.e., their roles as both enablers and coordinators of driving forces and actors, as elements that have enabled Tvååkers mosse to be developed. The actors met on site in the early stages of Tvååkers mosse planning. They established a meeting place to jointly start shaping the project design and share their diverse knowledge and experiences. In other words, the project's framing was set early on, and the actors' roles were made visible. Other discussion platforms, such as landowner meetings, have been established within the Tvååkers mosse project framework. When there is broad collaboration between different actors, with clear frameworks and room for discussion platforms and meeting places where opinions can and dare to be raised, it creates a foundation for a successful collaboration. This highlights the dynamics of the collaboration process; in other words, driving forces such as enabling and directly triggering driving forces have been implemented due to the actor's actions in changing land use. Constraining driving forces also exist in this case, although they are not directly influential in the development of Tvååkers mosse.

In conclusion, Tvååkers mosse demonstrates the power of communication in collaboration processes on land use changes. Allowing all voices to be heard creates a common will and trust between the different actors, which makes it possible to build a long-term perspective into the project. When creating a sense of community, the incentives to care for and preserve what the actors have created are enhanced. Two discussion sections will follow up on what the Tvååkers mosse project can contribute in terms of inspiring other areas to develop and its significance to the residents of Tvååker.

8.2 The collaboration process of developing Tvååkers mosse can serve as an inspiration to other locations with similar conditions

Tvååker is an agricultural landscape, and the land use at what is now Tvååkers mosse was also once agricultural land. The study by Beilin et al. (2014), which deals with various factors that can act to reduce and increase abandonment of agricultural land, is relevant to the case of Tvååkers mosse. This is partly because the Beilin et al. study reveals that various financial

contributions can help keep the landscape open and create recreational values. In Tvååkers mosse, this is precisely what has happened as various donors have given financial contributions to change the land use. The funding has enabled, to name a few, the creation of the lake and other related efforts to shape the area into a multifunctional landscape. Before Tvååkers mosse was developed, the informants described the area as inaccessible and something “you just passed by”. By clearing and opening up the physical landscape, the residents of Tvååker have gained a new place and recreational area to visit and connect to. Tvååkers mosse is a multifunctional landscape with a wetland character, and just as Holmgaard (2025) describes, the values created when re-wetting wetlands include filter function and retaining water in the landscape. When this is done, the physical landscape is changed, and something new is developed, rather than copied as before the land was used as agricultural land, among other things. The area where Tvååkers mosse is located has become a new place with room for both humans and the environment.

Tvååkers mosse would not have been developed without committed residents and landowners who decided to make something of the inaccessible area of about 30 hectares. Thus, it can be argued that engagement is necessary to develop anything at all. However, communication is needed to engage the majority of actors, as in this case. Communication is an essential factor that cannot be repeated too many times. This not only applies to Tvååkers mosse but can also be applied to other collaboration processes. If the various networks created thanks to the different actors involved had not spoken to each other, many potential conflict areas might have been created instead.

Setting the “rules of the game” in a project from the start is important, as Löfström (2010, pp. 19-20) describes in a study on collaboration and boundaries, which can be difficult to do later in a collaborative process. This was done early on in the Tvååkers mosse project, which has created a discussion climate that allows different opinions to be raised, and the participating actors in the project have together created a common goal. During the meetings with landowners, one meeting was attended and observations were made and revealing that the participants could raise issues if they disagreed. Nevertheless, the actors from, for example, the County Administrative Board, the Swedish Forest Agency, and so on were invited early in the process, which was expressed as rewarding to work together. Inviting actors holding various roles can help avoid tensions between how nature should be cared for and its land use. This correlates with Sandberg & Jakobsson's (2018) study on how trees can create conflict and contribute to collaboration. There may also be challenges with a project like Tvååkers mosse, where relatively many landowners must agree. However, the fact that the landowners ultimately decide whether a change in land use is created proves that the collaboration process has been successful.

Creating a bridge between actors with different competences has successfully developed Tvååkers mosse, which several informants mentioned in the interviews. This could serve as a model for other landowners, village associations, municipalities, or organizations that want to change land use. Working closely with the local community is a factor that Helldin & Dahlberg (2014, p. 31) believe should be emphasized in local anchoring and co-management. This means that when collaboration takes place between those who possess territorial competence, residents, and those actors with spatial competence, better conditions are created for there to be a long-term perspective in planning and a sense of participation in the development of, for example, a multifunctional landscape such as Tvååkers mosse. Trust and

listening to those who will use the physical landscape are essential, which all municipalities and authorities must emphasize when planning strategically.

8.3 Can Tvååkers mosse contribute to creating a stronger civil society?

Tvååkers mosse is a local community project initiated by landowners and residents. Within the project, the knowledge of the actors involved has been utilized. This approach is a method of action supported by Cronin et al's (2021) study, which shows that there must be structures in a collaboration process that support and maintain learning and communication. As Plummer et al. (2017) argue, utilizing the knowledge and background of different actors in a collaboration process can contribute to a positive outcome for both humans and the environment. When civil society is involved in the design of the physical landscape, it can contribute to more sustainable landscape management. Those who know and connect to the place influence decisions that affect them, which counteracts top-down governance and thus creates a bottom-up governance. Citizens become a voice in the public debate and allow new ideas and needs to be captured. Suppose civil society perceives that they are listened to by authority actors (spatial competence). In that case, the relationship between these actors will likely be better than if they are not listened to. This can make future actions easier to implement if they were previously experienced positively. Of course, these future actions must also be imbued with and collaborative to succeed.

All places have unique conditions to consider when planning land use changes. Neglecting to involve those who use the physical landscape and have local knowledge of the place can lead to misdirected efforts and cause values and functions to disappear. Social and ecological sustainability is thus improved if local perspectives are taken into account, as it is often those who use the land who have the best knowledge of the ecological conditions in that specific context. Participation in developing an area like Tvååkers mosse can also contribute to a sense of belonging and that “we” are managing the physical landscape together. Several informants also mentioned feeling a greater sense of neighborliness since they started developing Tvååkers mosse. When one has been involved in planning and developing an area like Tvååkers mosse, it can increase the incentive to care for what has been jointly created. This can lead to the residents of Tvååker having a new relationship with the place and developing a local pride in this joint project. The inclination to care for what they have helped develop may be stronger, and more emphasis can be placed on ensuring future management. Another aspect that is important to consider from a sustainability perspective is economic conditions. In the case of misdirected efforts, financial resources can be spent on efforts that are not in the project's best interest and ultimately lead to more commitments having to be made, thus making it more expensive in the end.

The development of Tvååkers mosse is an example of a collaboration process that has produced multiple positive results. The several factors described earlier lay the foundation for a stronger sense of community and thus the conditions for strengthening civil society in Tvååker.

8.4 Further research

This thesis investigated the impact of actors and driving forces in the collaboration process of changes in land use at the site of what is today Tvååkers mosse. Suggestions regarding further studies on the Tvååkers mosse project would be to take a closer look at it from a socio-economic perspective. What does it actually cost to change the land use in Tvååkers mosse? Everything from an administrator's time when an application, for example, a notification of water activities, comes in and is to be processed. To the landowner's time, it takes that the person may have had to take time off from work or similar. This would be an interesting complement to this study and could contribute to highlighting what it costs to develop new land use. A model like the one used in this thesis could be developed to visualize and provide insight for various authorities and other stakeholders who want to know what the cost may end up in the event of a change in land use.

A more longitudinal study of Tvååkers mosse and the other initiatives in Tvååker would be of interest. That is to say, to follow the project over a more extended period to be able to explore what the process might unfold in 5-10 years, for example. This can be interesting because Tvååkers mosse is still under development and to study the importance and use of the area in the future. It takes time to connect to places, which can, if a project is followed for a longer period, reveal how it changes during this time and create new links for those who live and reside in Tvååker.

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Appendix 1: Interview guide- original (in Swedish)

Inledning:

Anledningen till intervjun är att få in era perspektiv till studien om hur ni olika aktörer som är involverade i projektet tillsammans har arbetat fram Tvååkers mosse och hur dynamiken mellan olika drivkrafter har bidragit. Därigenom få fram betydelsen av ett landskap och varför man utvecklar områden som "Tvååker mosse". (Fråga om tillåtelse att spela in samt publicera deras namn i arbetet).

Uppvärmningsfrågor:

- Berätta lite om dig själv, såsom vad du arbetar med eller arbetat med,
- Hur länge har du bott på platsen (anknytning till platsen och landskapet- *om det är en markägare eller närboende*)

1. (tematisk fråga) Vad är din roll i "Tvååker mosse" hur kommer det sig att du blev involverad i projektet?

- Om aktiv=> på vilket sätt? (*förtydliga om det behövs* exempelvis har du deltagit i möten eller t.ex sökt bidrag, deltagit på annat sätt utöver att vara markägare osv)
- Hur många markägare är ni sammanlagt?

2. (tematisk fråga) Känner du till hur arbetet har gått från idé till hur det är idag?-

- vad tror du har påverkat och därmed bidragit till att projektet realiserades? (motivationen till att "Tvååkers mosse" utvecklades?)
- Ser du några eventuella förbättringsområden i samverkan eller liknande?- om ja i så fall på vilket sätt. Kan du berätta om hur samarbetet har gått till mellan er som har varit involverade exempelvis markägare, kommun osv.. (vad har varit bra och vad skulle kunna förbättras?)

3. (tematisk fråga) Vet du något om platsens historia ex vad marken har använts till tidigare?

- Om ja=> berätta gärna mer om det (för att få reda på hur landskapet användes tidigare)

4. (tematisk fråga) Vad betyder platsen där Tvååker mosse ligger för dig, nu har den förändrats och därmed kan ju också betydelsen påverkas, berätta gärna... (till de som bor och är närboende)

- För Tvååkerborna blir ju mossen ett förhållandevis nära friluftsområde, hur tror du platsen kommer att betyda för de närboende nu när det har fått nytt användningsområde?

5. **(tematisk fråga) Vet du om det finns några planer framåt, det vill säga för att ha ett långsiktigt tänk med skötseln av området?**
6. Hur tror du att ”Tvååker mosse” kommer att se ut och användas i framtiden?

Avslutande fråga: Är det något mer du tror skulle kunna bidra till studien?

Appendix 2: Interview guide- TUR's Water Council (in Swedish)

Inledning:

Anledningen till intervjun är att få in era perspektiv till studien om hur ni olika aktörer som är involverade i projektet tillsammans har arbetat fram Tvååkers mosse och hur dynamiken mellan olika drivkrafter har bidragit. Därigenom få fram betydelsen av ett landskap och varför man utvecklar områden som "Tvååker mosse". (Fråga om tillåtelse att spela in samt publicering av namn).

Uppvärmningsfrågor:

- Berätta lite om dig själv, såsom vad du arbetar med eller arbetat med,
- Hur länge har du bott på platsen (anknytning till platsen och landskapet- *om det är en markägare eller närboende*)

1. Kan du berätta om vad ett vattenråd gör?

- Vad har du i din roll som delaktig i vattenrådet bidragit till projektet med?

2. (tematisk fråga) kan du förklara hur arbetet har gått från idé till hur Tvååker mosse ser ut idag?-

- vad tror du har påverkat och därmed bidragit till att projektet realiserades? (motivationen till att "Tvååker mosse" utvecklades?)
- Kan du berätta om hur samarbetet har gått till mellan er som har varit involverade exempelvis i din roll som delaktig i vattenrådet, markägare, kommun, länsstyrelsen osv.. (vad har varit bra och vad skulle kunna förbättras?)

3. (tematisk fråga) Vet du något om platsens historia ex vad marken har använts till tidigare?

- **Om ja=>** berätta gärna mer om det (för att få reda på hur landskapet användes tidigare)

4. (tematisk fråga) Vad betyder platsen där Tvååker mosse ligger för dig, nu har den förändrats och därmed kan ju också betydelsen påverkas, berätta gärna... (till de som bor och är närboende)

- För Tvååker borna blir ju mossen ett förhållandevis nära friluftsområde, hur tror du platsen kommer att betyda för de närboende nu när det har fått nytt användningsområde?

5. (tematisk fråga) Vet du om det finns några planer framåt, det vill säga för att ha ett långsiktigt tänk med skötseln av området i framtiden så att det inte växer igen?

6. Hur tror du att ”Tvååker mosse” kommer att se ut och användas i framtiden?

Avslutande fråga: Är det något mer du tror skulle kunna bidra till studien?

Appendix 3: Interview guide- Action coordinator at Falkenberg municipality (in Swedish)

Inledning:

Anledningen till intervjun är att få in era perspektiv till studien om hur ni olika aktörer som är involverade i projektet tillsammans har arbetat fram Tvååkers mosse och hur dynamiken mellan olika drivkrafter har bidragit. Därigenom få fram betydelsen av ett landskap och varför man utvecklar områden som "Tvååker mosse". (Fråga om tillåtelse att spela in samt publicering av namn).

Bakgrund

- Berätta om dig själv och din tjänst.
- Kan du berätta övergripande om LEVA Halland och vilka huvudmål ni arbetar mot?
- Vilken roll har Tvååkers mosse-projektet inom LEVA Hallands?

Projektets uppkomst och motiv

- Hur uppstod idén om att jobba med just Tvååkers mosse? / hur kom ni i kontakt med projektet?

Planering och samverkan

- Vilken typ av samarbetsformer har ni använt er av?
- Finns det specifika utmaningar i kontakten med markägare när det gäller vattenåtgärder eller våtmarksrestaurering generellt eller i Tvååkers mosse projektet?

Åtgärder och genomförande

- Vilka miljönyttor siktar ni främst på att uppnå i Tvååkers mosse (t.ex. minskad övergödning, ökad biologisk mångfald, förbättrad vattenkvalitet)?
- Har ni stött på några oväntade hinder eller positiva överraskningar under genomförandet?

Ekonomi

- Har ni hjälpt till med någon rådgivning för att söka ekonomiska medel för projektet?
- Finns det långsiktiga planer för hur kostnader för underhåll och skötsel ska hanteras och planeras?

Uppföljning

- Hur mäter och följer ni upp olika effekter av utförda åtgärder?
- Har ni sett några konkreta resultat hittills?

Framtidsperspektiv

- Hur ser de framtida planerna ut för Tvååker mosse?

Avslutande fråga

Har du något mer du vill tillägga som kan vara till hjälp för studien?

Appendix 4: Interview guide- County Administrative Board (in Swedish)

Inledning:

Anledningen till intervjun är att få in era perspektiv till studien om hur ni olika aktörer som är involverade i projektet tillsammans har arbetat fram Tvååkers mosse och hur dynamiken mellan olika drivkrafter har bidragit. Därigenom få fram betydelsen av ett landskap och varför man utvecklar områden som "Tvååker mosse". (Fråga om tillåtelse att spela in samt publicering av namn).

Uppvärmningsfrågor

- Berätta om dig själv och din tjänst på Länsstyrelsen
- Vad gör din avdelning inom Länsstyrelsen?

Tema: Roll i projektet (ekonomiskt)

- Hur kom du i kontakt med Tvååker mosse projektet?

Tema: ekonomi:

- Om inte förklarar vilka bidrag som hjälpt till att söka fråga det i så fall
- Berätta gärna om finansiering av våtmarker och liknande naturprojekt- finns det EU- och statliga bidrag för att restaurera eller utveckla våtmarker?
- Har du några ansökningar eller liknande som du skulle kunna dela med mig?

Tema: vilka förväntningar hade ni när ni gick in i projektet?

- Vilka resultat har ni hittills sett?
- Hur tror du slutresultatet kommer att bli?
- Hur skulle du önska att slutresultatet blir?

Tema- Process och utveckling av multifunktionella områden

3. Hur kan processen se ut från idé till genomförande när man arbetar med att utveckla ett våtmarksområde/ multifunktionellt område likt Tvååkers mosse?
4. Hur samarbetar ni med olika aktörer, såsom kommuner, markägare och miljöorganisationer, vid planering av projekt?
5. Finns det exempel på lyckade våtmarksprojekt i Sverige som kan fungera som inspiration för Tvååker mosse?

Avslutning:

Har du något mer du vill tillägga?

Appendix 5: Interview guide the Swedish Forestry Agency (in Swedish)

Inledning:

Anledningen till intervjun är att få in era perspektiv till studien om hur ni olika aktörer som är involverade i projektet tillsammans har arbetat fram Tvååkers mosse och hur dynamiken mellan olika drivkrafter har bidragit. Därigenom få fram betydelsen av ett landskap och varför man utvecklar områden som "Tvååker mosse". (Fråga om tillåtelse att spela in samt publicering av namn).

Uppvärmningsfrågor

- berätta om dig själv och vad din tjänst på Skogsstyrelsen innebär.

Bakgrund och Skogsstyrelsens roll

- Kan du berätta om Skogsstyrelsens generella uppdrag?
- På vilket sätt har Skogsstyrelsen varit involverad i planeringen av Tvååkers mosse?
- Vilka faktorer tar ni hänsyn till när ni ger råd om skogsplanering i ett område som Tvååkers mosse?
- Fanns det några naturvärden som skulle bevaras?

Skogen och ekologiska frågor

- Hur balanseras skogsbrukets med andra intressen?
- Vilka skogliga åtgärder rekommenderar ni för att minska negativ påverkan på den hydrologiska balansen i mossen?
- Finns det särskilda trädslag eller skötselmetoder som är mer lämpliga för området?
- Har Skogsstyrelsen föreslagit några åtgärder för att restaurera våtmarken och förbättra den biologiska mångfalden?

Vatten, mark och klimatpåverkan

- Kan du beskriva om på vilket sätt avverkning, dikning eller annan skogsbruksåtgärd påverkar vattennivån i Tvååker mosse?
- Ser ni några klimatförändringar som påverkar skogsförvaltningen i Tvååker mosse?

Samverkan och framtida arbete

- Hur har samarbetet med markägare, kommunen och andra aktörer fungerat i skogsplaneringen?

- Finns det pågående eller planerade projekt när det kommer till skogen i området?
- Hur kan markägare och allmänheten bidra till en hållbar skötsel av skogen i Tvååker mosse?

Avslutande fråga:

Har du något mer som du tror skulle kunna bidra till studien?

Appendix 6: Interview guide- Varbergs municipality (in Swedish)

Inledning:

Anledningen till intervjun är att få in era perspektiv till studien om hur ni olika aktörer som är involverade i projektet tillsammans har arbetat fram Tvååkers mosse och hur dynamiken mellan olika drivkrafter har bidragit. Därigenom få fram betydelsen av ett landskap och varför man utvecklar områden som "Tvååker mosse". (Fråga om tillåtelse att spela in samt publicering av namn).

Bakgrund

- Berätta om dig själv och om din roll i kommunen samt hur du har varit involverad i Tvååker mosse-projektet?
- Hur länge har kommunen arbetat med detta projekt?

Kommunens involvering och arbete

- Vad har varit kommunens huvudsakliga bidrag i projektet?
- Vilka avdelningar eller samarbetspartners har varit inblandade?
- Har det funnits några särskilda utmaningar under projektets gång?
- Tvååker vill ju skapa ett grönt stråk, hur arbetar ni med det från kommunens sida, med detta sammanbindande stråk som ju vad jag förstår är utanför detaljplanerat område?

Syn på projektet

- Vad anser du är de viktigaste målen med projektet?
- Finns det några specifika aspekter av projektet som du tycker är särskilt positiva och värda att belysa extra?

Betydelse för Tvååker och dess invånare

- Hur tror du att Tvååker mosse kommer påverka området och lokalbefolkningen?
- Finns det några planer för hur området ska användas av invånarna i framtiden? (t.ex. rekreation, naturvård, utbildning)
- Hur kan kommunen stödja och främja engagemang kring området efter att projektet är genomfört?

Avslutande fråga: Finns det något mer du vill tillägga om Tvååker mosse-projektet?

Appendix 7: Interview guide- Varbergs Sparbanksstiftelse

Inledning:

Anledningen till intervjun är att få in era perspektiv till studien om hur ni olika aktörer som är involverade i projektet tillsammans har arbetat fram Tvååkers mosse och hur dynamiken mellan olika drivkrafter har bidragit. Därigenom få fram betydelsen av ett landskap och varför man utvecklar områden som "Tvååker mosse". (Fråga om tillåtelse att spela in samt publicering av namn).

Uppvärmningsfrågor

- berätta om dig själv och din tjänst på Sparbanksstiftelsen.

Vad är Sparbanksstiftelsen för verksamhet

1. Berätta om Sparbanksstiftelsens generella uppdrag och hur ni brukar stödja lokala projekt?
 - Hur blev Sparbanksstiftelsen involverad i Tvååker mosse-projektet?
 - Vad var det som gjorde att ni valde att stödja just detta projekt?

Sparbanksstiftelsens roll i Tvååker mosse-projektet

2. Vilken typ av stöd har Sparbanksstiftelsen bidragit med i projektet?
3. Hur ser ert samarbete ut med de andra aktörerna i projektet, såsom kommunen, länsstyrelsen eller ideella föreningar?
4. Vilka förväntningar hade ni när ni gick in i projektet, och hur har dessa utvecklats under projektets gång?

Framtiden

5. Vilka resultat har ni sett hittills av projektet? Finns det några konkreta framgångar ni vill lyfta fram?
6. Hur tror ni att projektet kommer att påverka Tvååker och dess invånare på lång sikt?
7. Finns det planer på att stödja liknande natur- och bevarandeprojekt i framtiden?
8. Hur ser ni på Sparbanksstiftelsens fortsatta engagemang i projektet när det går in i nästa fas?
9. Hur önskar ni att det blir?

Avslutning: Finns det något mer du skulle vilja tillägga?

Appendix 8: Questions sent to Positiva Tvååker (in Swedish)

Notera: Diskussion fördes innan frågorna skickades, därav ingen inledning.

Hej Positiva Tvååker,

Här är några frågor som jag skulle vilja ha svar på angående Positiva Tvååker och er anknytning till Tvååkers mosse:

- Kan du berätta om Positiva Tvååker: när föreningen bildades, varför och föreningens syfte.
- Hur kom ni på Positiva Tvååker i kontakt med Tvååkers mosse projektet?
- Vad har ni för roll, det vill säga hur har ni bidragit till projektet?

o Berätta gärna om hur ni har samarbetat med andra aktörer, det vill säga till exempel Sparbanksstiftelsen, markägare osv.

- På vilket sätt tror ni att Tvååker mosse kommer att betyda för Tvååkerborna och bygden i stort? Det vill säga hur ni tror att den kommer att brukas nu när området har blivit mer tillgängligt.

- Har ni någon framtidsplan när det kommer till hur ni fortsatt ska stötta projektet från Positiva Tvååkers sida?

Om du har några frågor eller liknande hör gärna av dig.

Med vänliga hälsningar,

Sofia Glad

