Spatial planning for sustainable rural municipalities

When theory and practice meet

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Abstract

Local natural resources (LNRs) are essential for the socioeconomy of rural societies. The United Nations (UN) Agenda 21 and "Our Common Future" state that local spatial planning is central for the prospect of balancing ecological, social and economic sustainable development (SuD). Stakeholder participation in spatial planning enhances acceptance and improves preconditions for successful planning outcomes. Consequently, it is important to increase knowledge about LNRs and the use of them and to integrate such knowledge in local spatial participatory planning with a landscape perspective. These opening statements apply to Swedish boreal municipalities and describe the intentions of Swedish municipal comprehensive planning (MCP). The purpose of this work was to examine and analyze the preconditions for integrating MCP with a landscape perspective in rural municipalities.

The thesis is based on case studies in Swedish, rural, municipal contexts reported in five papers. In Papers I & II, local businesses in Vilhelmina Municipality were surveyed to describe the societal importance of LNRs. The results showed that LNRs are vital to 78 % of the businesses, of which half are based on forest farming, and there are strong bonds between entrepreneurs, their businesses, the municipality and LNRs. Papers III & IV present and discuss the characteristics of MCP in theory and practice. An e-mail survey was sent to municipal officials in all Swedish mountain municipalities. MCP-stakeholders in municipalities in Bergslagen, in central Sweden, were interviewed. Respondents in both case studies stated a belief that MCP can offer prospects in planning for SuD. However, resources and stakeholder participation in planning are generally scarce, especially in rural municipalities. Paper V illustrates how new knowledge on forest land use (to support MCP) can be gained by combining spatial and temporal data on forest condition, owners and land use values in a geographic information system (GIS).

This thesis provides scientific and practical contributions to aid in efforts aiming for SuD. It is done by framing MCP theoretically and contextually and by suggesting that MCP should be extended to include forest land use and by stressing the rural context in local spatial participatory planning. Opportunities in MCP have to be embraced, but local governments need enhanced knowledge about local land use, specifically forest land use. Moreover, stakeholder participation needs to be developed, requiring more resources. In the case of a Swedish rural municipality, it is crucial that efforts are made to develop MCP as a tool, not just in theory but also in practice.

Keywords: sustainable development, comprehensive planning, landscape perspective, local society, land use knowledge, forest land use, GIS, case study, stakeholder participation.

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Dedication

To all struggling rural municipalities
- keep fighting!

In theory, there is no difference between theory and practice.
In practice, there is a difference.
Unknown

Förord

- Och vem är du då? Det är nog en av de viktigaste frågorna jag fått under mitt arbete med denna avhandling. Alltså, vem är jag som skriver en avhandling om kommuner som lokalsamhällen, naturresursanvändning i det boreala skogslandskapet och hållbar utveckling genom kommunal fysisk planering? Är jag forskare? Fysisk planerare? Markanvändningsaktör? Svaret är varken kort eller entydigt, men det är viktigt för hur jag har valt att presentera min forskning och det är nog även viktigt för att du som läsare ska förstå vad jag vill förmedla och varför.

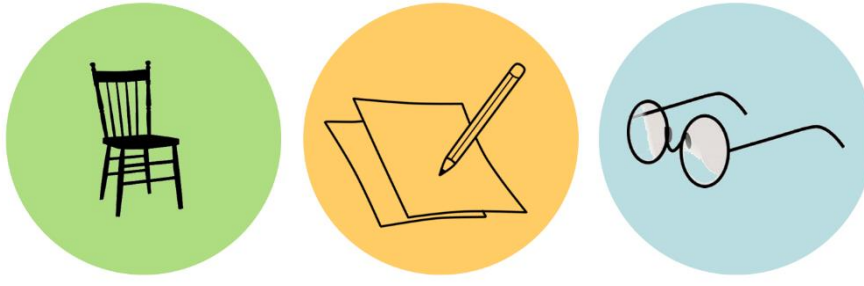
Allt började med att jag växt upp i södra Lappland där kommunerna är geografiskt stora och kämpar med minskande befolkning och krympande ekonomiska resurser sedan flera årtionden tillbaka. Kommunerna är naturresursrika och naturen och landskapet används på många olika sätt av en mängd aktörer inom olika sektorer. Stora arealer är även formellt skyddade eller ska värnas för olika nationella och allmänna ändamål. Detta medför både utmaningar och möjligheter för kommunerna som ansvariga för hållbar utveckling genom planering och beslut gällande markanvändning och bebyggelseutveckling inom de egna gränserna. Jag har länge frågat mig vad jag skulle kunna bidra med i den kampen. Under mitt yrkesverksamma liv har jag suttit på vindkraftexploatörens stol och funderat på hur man ska närma sig dessa kommuner; vill och tillåter de att man bygger vindkraftverk och i så fall var och hur? Jag har lånat den fysiska planerarens penna och suttit med tjänstemännen och politikerna som ständigt arbetar med att behålla och stärka kommandot över utvecklingen av kommunen. Under flera år har jag brottats med svårigheter och möjligheter med den kommunala översiktsplaneringen (ÖP)[1] som å ena sidan är en ogripbar och resursslukande pålaga och å andra sidan ett värdefullt verktyg och beslutsstöd. Forskarens glasögon har jag tagit på mig för att få tid och verktyg till att undersöka om och i så fall hur jag kan hjälpa markanvändaren, planeraren och beslutsfattaren. För att gå händelserna lite i förväg så stod det ganska tidigt klart att det är ÖP som är såväl motiv för mitt arbete som redskap i det jag vill försöka göra.

Svaret på frågan om vem jag är blir således att jag är summan av mina erfarenheter och att jag har haft den kommunala översiktsplanerarens arbete för ögonen när jag använt forskarens glasögon och verktyg för att formulera och

[1] ÖP ska, enligt plan och bygglag (2010:900) ha hållbar utveckling som mål och ett landskapsperspektiv på hur mark, vatten och bebyggelse i kommunen ska användas, utvecklas och bevaras. ÖP ska även uttrycka hur en rad olika allmänna intressen ska tillgodoses.

analysera besvara frågeställningar i denna avhandling. Praktisk erfarenhet kan förvisso öka subjektivitet i studiedesign och tolkning av resultat, men det har också gett mig många fördelar i kommunikation med olika aktörer och för förståelsen av mina resultat.

Avhandlingens övergripande syfte är att undersöka, analysera och problematisera förutsättningarna för en svensk, naturresursrik och till ytan stor, landsbygdskommun när det gäller ÖP som grunden i lokal fysisk planering för hållbar utveckling. Jag har inte använt mig av en vetenskaplig teori eller modell, utan utgått från en teoretisk och kontextuell inramning där socioekologiska system, hållbar utveckling, planering samt deltagande och samarbete i planering utgör centrala beståndsdelar. Den praktiskt inriktade målsättningen är att bidra till ökad förståelse för och förverkligande av kommunal ÖP, både när det gäller arbete med levande planering och med realisering av planens riktlinjer och ställningstaganden för en hållbar utveckling, främst i landsbygdskommuner.



Preface

"- And who are you?" That was probably one of the most important questions I was asked during my work on this thesis. Who am I and why am I writing a thesis about Swedish municipalities as local societies, the use of natural resources, particularly natural resources in the boreal forest landscape, and sustainable development (SuD) through municipal spatial planning? Am I a researcher or am I a municipal spatial planner or a land use actor? My answer is ambiguous but probably important for you as a reader in order to understand what I wanted to say and why.

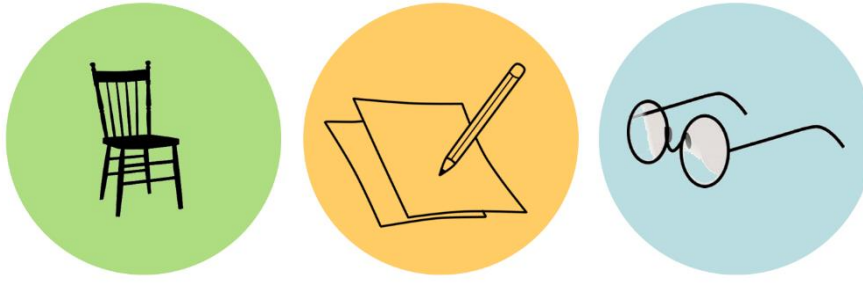
It all started with me growing up in boreal Swedish Lapland, where municipalities are geographically large and the populations and economic resources have been shrinking for decades. However, the mountain and forest natural resources are abundant and are used in various ways by diverse actors in different business sectors (e.g., forestry, mining, hydropower production, tourism, etc.). Large areas also need to be safeguarded for conservation purposes. This creates both challenges and opportunities for the municipal government as being in charge of SuD through spatial planning and decisions regarding local land and water use and the development of the built environment.

My work toward this thesis has been a journey through life, involving studies, applied work, more studies and more applied work. In my professional career, I have sat on a windpower developer's chair, wondering how to approach these municipalities and asking whether they would want and allow windpower development. If so, where and how? I have borrowed the spatial planner's pen, facing challenges in setting priorities and balancing local, regional and state interests, as well as ecological, social and economic sustainability with a minimum of time, personnel and financial resources. I have put on the researcher's glasses to investigate whether somehow I could help the land use actor, the municipal spatial planner and the local decision maker.

I began my career as a Ph.D. student in 2002 and a licentiate thesis on natural resource dependency in a Swedish boreal municipality context ensued. My findings on the vast dependency on local natural resources (LNRs) among small businesses in Vilhelmina Municipality and their strong links to the local society were exciting and important, but I had yet to figure out how to apply such knowledge. After finishing my licentiate thesis, I spent seven years in applied work with municipal comprehensive planning (MCP), the basis of the Swedish spatial planning system, in the south Lapland region. I also coordinated collaborative work between citizens, authorities, experts and researchers on land

use issues from a landscape perspective at a local level, within the Vilhelmina Model Forest[2]. Soon, the collective experiences of my own and others made MCP stand out as the desired tool to deal with the needs of the land use actor and local decision maker, and the process that the municipal spatial planner has to master. Thus, MCP in a rural context became the focus of my continued Ph.D. efforts.

So, back to the question about who am I. Clearly, I am the sum of my experiences. I have envisioned the work of the municipal comprehensive planner and made use of the researcher's glasses and instruments to examine, analyze, problematize and, hopefully, improve the understanding and preconditions for a Swedish, geographically large and natural resource rich, rural, boreal municipality regarding MCP as local spatial planning for SuD.



[2] The Model Forest is an international concept and network for collaboration on sustainable use of a defined landscape and its various resources and assets. In the Vilhelmina Model Forest, the municipality of Vilhelmina represents the designated landscape (Anon., 2017a).

Contents

List of publications

This thesis is based on work contained in the following papers, referred to by Roman numerals in the text:

I Thellbro, C. & Lidestav, G. (2008). Local natural resource dependency in rural boreal Sweden. *Studia Forestalia Suecica*, No 215. ISBN: 978-91-85911-41-7.

II Thellbro, C. & Lidestav, G. (2008). Commercial activities in a local natural resource dependency perspective. *Studia Forestalia Suecica*, No 216. ISBN: 978-91-85911-53-0.

III Elbakidze, M., Dawson, L., Andersson, K., Axelsson, R., Angelstam, P., Stjernquist, I., Teitelbaum, S., Schlyter, P. & Thellbro, C. (2015). Is spatial planning a collaborative learning process? A case study from a rural–urban gradient in Sweden. *Land Use Policy* 48, 270–285.

IV Bjärstig, T., Thellbro, C., Stjernström, O., Svensson, J., Sandström, C., Sandström P. & Zachrisson, A. (2017). Between protocol and reality – Swedish municipal comprehensive planning. *European Planning Studies*, DOI: 10.1080/09654313.2017.1365819.

V Thellbro, C., Stjernström, O., Sandström, P. & Lidestav, G. (2017). Visualizing the forest in a boreal forest landscape – the perspective of Swedish municipal comprehensive planning. *Forests*, 8, 189. DOI: 10.3390/f8060189.

The contribution of Camilla Thellbro to the papers included in this thesis was as follows:

I Developed the design of the study together with the co-author, performed the study and wrote the paper with suggestions and comments from the co-author.

II Developed the design of the study together with the co-author, performed the study and wrote the paper with suggestions and comments from the co-author.

III Contributed with comments on the manuscript based on municipal comprehensive planning expertise.

IV Developed the design of the study together with the co-authors, collected and compiled the results, participated actively in the preparation of the manuscript.

V Developed the design of the study together with the co-authors, performed the analyses, compiled the results and took an active part in the interpretation of the results. Prepared the manuscript together with the co-authors.

Abbreviations

CAB	Country Administrative Board
CG	Collaborative Governance
CLD	Causal Loop Diagrams
ELC	European Landscape Convention
ESRI	Environmental Systems Research Institute
EQO	Environmental Quality Objective [Miljökvalitetsmål]
EQS	Environmental Quality Standard [Miljökvalitetsnorm]
FAO	Food and Agriculture Organization of the United Nations
FMP	Forest Management Plan
FoDAA	Forest Data Assimilation Approach
GIS	Geographic Information System
LNR	Local Natural Resource
MCP	Municipal Comprehensive Planning
NIPF	Non-Industrial Private Forest(ry)
SA	Systems Analysis
SDG	Sustainable Development Goal (global)
SEPA	Swedish Environmental Protection Agency
SFS	Svensk författningssamling [the Swedish Code of Statutes]
SGU	Sveriges geologiska undersökning [Geological Survey of Sweden]
SKL	Sveriges kommuner och landsting [The Swedish Association of Local Authorities and Regions]
SOU	Statens offentliga utredningar [Swedish Government Official Reports]
SuD	Sustainable Development
UN	United Nations
VMF	Vilhelmina Model Forest

1 Outline, setting, scope and objectives

This thesis comprises an introductory part, structured in five chapters, followed by five appended papers. The purpose of the introduction is to explain the papers in a broader context and to further explore and discuss some of the most significant findings presented in them. Chapter 1 provides an overview of the research setting, scope and objectives. In Chapter 2 the materials and methods used in the studies are presented. Chapter 3 outlines the wider theoretical and contextual framing for the studies presented in the papers. This framing adds to the understanding and interpretation of my results, which are summarized and reflected on in Chapter 4. Chapter 5 presents the central conclusions regarding theoretical as well as practical implications of the overall results. An attempt is also made to suggest some policy recommendations to improve implementation and preconditions for successful outcomes of MCP. Finally, some thoughts on possible areas for further research are presented.

1.1 Setting

The boreal area of Sweden (Figure 1) and the people in the region have a long history and tradition of diverse uses of the mountainous as well as forest landscape. Yet, for thousands of years, northern Sweden, particularly the inland area, was considered to be “unknown land”. People were few and lived from hunting, fishing, gathering and, eventually, reindeer husbandry and livestock farming. In a desire for economic growth and space, the national government took possession of the land and its natural resources and the population grew. During this time, the Swedish municipalities developed (Arpi, 1959; Bergman et al., 2003; Anon., 2017b; the Sami Parliament, 2017).

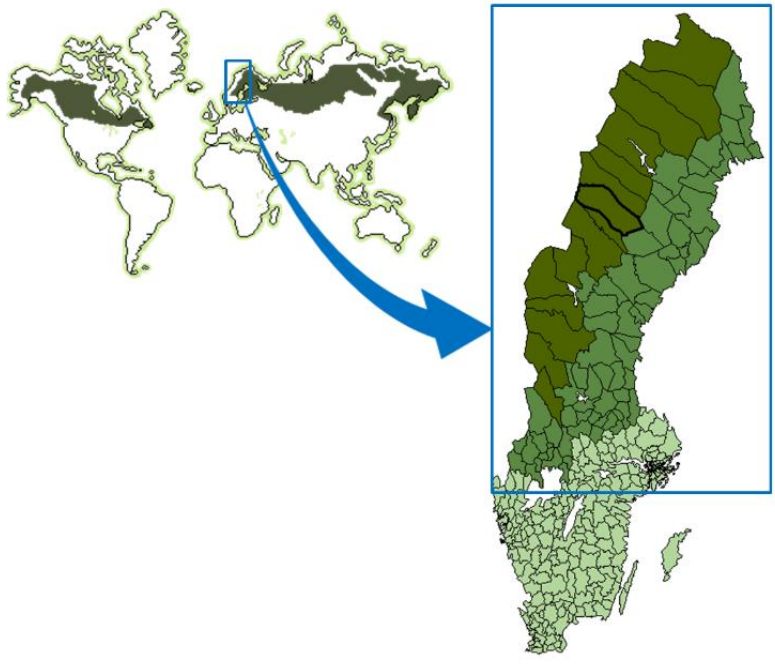


Figure 1. Circumboreal zone and the boreal region of Sweden, with the large rural mountain municipalities (dark green) and Vilhelmina Municipality (thick black outline) marked.

In the mid-20th century, mechanization of natural resource extraction and processing put an end to this demographic development and a rapid process of urbanization began (Sörlin, 1988; Persson, 1998; Lisberg-Jensen, 2002; Hedlund, 2016, 2017). As illustrated in Figures 1 and 2, today, the municipalities in the inland and mountain regions are large and sparsely populated (1 permanent inhabitant/km^2). Among them, Vilhelmina Municipality (0.8 permanent inhabitants/km^2) is a representative example with fundamental characteristics of the boreal municipalities (Thellbro, 2006). The land and the natural resources of the boreal inland and mountains, as well as other rural areas of Sweden, are still desired for many purposes by many different actors and this needs coordination. However, shrinking economic resources make it hard at a local level, to manage strategic spatial planning and achieve positive and sustainable societal development (Syssner & Olausson, 2016). This situation is further discussed in Section 3.2.1.

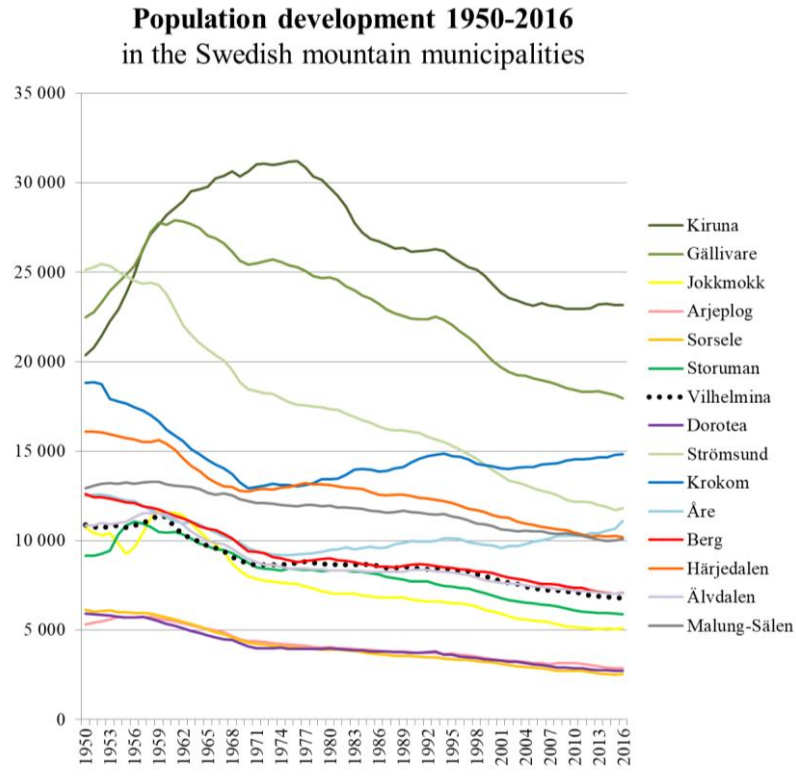


Figure 2. Population development in the mountain municipalities (with legend in "geographical order" from north to south on the map) between 1950 and 2016 (SCB, 2017). The population development in Vilhelmina Municipality is represented by the black dotted line.

The degree of local self-governance in Sweden is rather unique. In most industrialized countries, the regional level has a more pronounced role (Montin et al., 2014). Swedish municipalities have the main responsibility for spatial planning and land use decisions through a monopoly regarding spatial planning. MCP is the formal basis in the Swedish spatial planning system (see Section 3.3.4). All municipalities are required, by law, to have an active and democratically sanctioned, strategic MCP to guide legally binding spatial planning and decision making, on different levels, regarding land use. Through MCP, the municipal government should express where and how different types of land use should be carried out within the municipality borders, but there is no standard for what constitutes a MCP. According to the law, MCP should provide a holistic perspective on the municipal landscape and on balancing ecological, social and economic sustainability in expressing goals for the use of land and water resources and for how the built environment should be managed.

Furthermore, MCP should express how public interests should be safeguarded from a national, regional and local perspective (SFS 2010:900). However, there are some exceptions and constraints to the spatial planning monopoly. First, some land use types, such as mining and reindeer husbandry, are regulated by specific laws and authorities, limiting the extent to which they can be affected by means of spatial planning (SFS, 1971:437; SFS 1991:45). Second, rural development in shoreline settings (*strandnära lägen*)[3] and development of areas identified by the national government and national government agencies to be of national interest (e.g., valuable areas regarding Nature or cultural management, recreation and tourism, windpower and communication, but also mining and, in the north, reindeer husbandry), have to be "approved" by the County Administrative Board (CAB) as representing the state (SFS 2010:900). Third, even though it is stated in the Environmental Code to be a sector of national importance (*näring av nationell betydelse*), which sounds similar to national interests (*riksintressen*)[4], forestry is effectively removed from the regulations associated with environmental protection and public spatial planning by means of a separate forestry act (SFS 1979:429). In short, the purpose of separate acts is to protect property rights and production. Forestry is in fact regarded as ongoing land use (*pågående markanvändning*) that should not be affected by national interests (Prop. 1997/98:90, SFS 1998:808; Stjernström et al., 2013).

[3] Ever since 1975, land and water areas within 100 m (in general) from the shoreline of lakes, rivers and streams in Sweden have been protected from constructions to safeguard natural and recreational interests (*strandskydd*). Reasons for exemption from this protection are stated in the legislation, e.g., rural development. Since 2010, municipalities are required to identify shoreline settings suitable for rural development in their MCP (SFS 2010:900).

[4] Regulations regarding national interests can be found in the Swedish Environmental Code (SFS 1998:808). In Chapter 4 in the Code, large areas of great natural, cultural or recreational significance are defined geographically. Chapter 3 in the Code allows 12 national agencies to identify geographic areas of national interest with regards to their sector responsibility. The 12 national agencies are the Swedish Environmental Protection Agency (SEPA), the Sami Parliament, the Swedish Geological Survey, the Swedish National Heritage Board, the Swedish Transport Administration, the Swedish Post and Telecom Authority, the Swedish Agency for Economic and Regional Growth, the Swedish Agency for Marine and Water Management, the Swedish Radiation Safety Authority, the Swedish Armed Forces, the Swedish Civil Contingencies Agency and the Swedish Energy Agency. Within an area of national interest, land use can only be changed provided the values of national interest are not severely compromised. Geographic extent and value claims of the national interest areas are not exact but can be stated in more detail in MCP through dialogue with the County Administrative Board (CAB) as representing the state (the National Board of Housing, Building and Planning, 2017a).

As illustrated in Figure 3, the areas of national interest, including Natura 2000[5], are geographically extensive, especially in the natural resource rich, boreal municipalities. Similarly, there are large areas of formally protected land, forest land (foremost dedicated to forestry) and the reindeer husbandry area, within which the Sami have legal rights to conduct reindeer husbandry. In some municipalities, extensive areas are heavily affected by resource extraction within the mining industry, mainly extraction of metals, industrial minerals and peat. The mining sector is largely controlled by the state through the Mining Inspectorate.

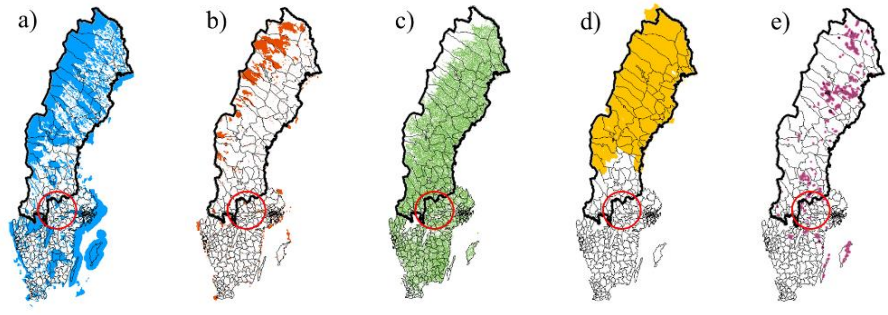


Figure 3. Areas in Sweden in general and within Swedish boreal municipalities (thick black outline) and the Bergslagen region (red circle) where spatial planning is to some extent affected by overlapping jurisdictions: a) national interest areas (changed land use has to be negotiated with the state) in blue, b) protected land, such as national parks and Nature and culture reserves (managed by the state) in red, c) forest land (planned and managed by owners) in green, d) reindeer husbandry area (with general reindeer grazing rights) in yellow, and e) mineral rights (administrated by the Mining Inspectorate) in pink.

In addition to the land uses illustrated in Figure 3, hydropower production is an extensive form of land use in Sweden that municipalities have limited opportunities to influence. Today, there are no plans for further geographic expansion of large-scale hydropower production, but the majority of the large river systems in Sweden are affected by power plants and dams built in the early

[5] Natura 2000 areas are protected according to the Environmental Code (Chapter 7) and on the basis of EU directives; "fågeldirektivet" (European Council Directive 2009/147/EC on the conservation of wild birds) and "habitatdirektivet" (European Council Directive 1992/43/EEG on the conservation of natural habitats and of wild fauna and flora). All Natura 2000 areas are considered national interests. Natura 2000 areas are natural areas where land and water may only be used if permission has been granted, usually by the CAB or a land and environmental court. The conditions for granting permits are that the activity or measure, alone or in conjunction with other ongoing or planned activities or measures, cannot damage the habitat intended to be protected in the Natura 2000 area. It should also not cause a disturbance that can significantly affect species in the area. In Sweden, the SEPA coordinates the work with Natura 2000 (SEPA, 2003).

and mid-20th century (SFS 1998:808; 1998:812; Swedish Energy Agency, 2017). The geographic extent of windpower production is still limited to a relatively low number of single windmills and wind farms in the rural boreal parts of Sweden. Today, municipalities can influence windmill establishment by means of spatial planning and building permits. According to current regulations, municipalities have a veto against wind farm establishments (Anon., 2017c).

The sectorial structure of authorities and businesses and the overlapping jurisdictions, poses severe challenges against maintaining a holistic and strategic management perspective in spatial planning (Stjernström et al., 2017). This is especially true in large rural boreal municipalities. In order to plan "for the benefit of all", the municipal officer responsible for planning and local politicians need broader and more in depth knowledge about the extensive areas with different types of land use and land use actors (Papers I, II & V). A great deal of vital information for spatial planning regarding national interests, formally protected areas and land use should be and is provided by the CABs. However, information about forest land use and forest owners is scant (Papers IV & V). In addition, stakeholder participation is a statutory requirement in MCP (SFS 2010:900). According to previous studies, planners and stakeholders need to communicate and learn from each other to build respect and trust to make planning an actual tool in efforts for SuD (Section 3.4). Hence, collaborative processes are essential in MCP and should build on shared knowledge about local preconditions and needs. Dialogue between the municipality and CAB concerning the safeguarding of state and public interests is statutory (SFS 2010:900). On the other hand, the perspective of the large number of forest owners does not have an equally obvious place in MCP today (Paper V; Stjernström et al., 2013). This is somewhat remarkable since the forest owners obviously manage the extensive and nationally important forest lands of Sweden, and hence a large part of the municipal landscape in general and of the rural boreal municipal landscape in particular.

One area in Sweden with similar characteristics to the mountain municipalities regarding the vast historic natural resource dependency and socioeconomic development is the commonly accepted but not yet clearly geographically defined Bergslagen region (Seebass, 1928; Angelstam et al., 2013a). In Bergslagen, the municipalities and areas of overlapping jurisdictions (as mentioned above) are geographically smaller than in the mountain region and there are both rural and more urban municipalities in terms of population and societal structure. These factors make this region a valuable complement for studying the dynamics of communication and knowledge exchange in the MCP process within and between municipalities.

1.2 Central concepts and delimitations

This thesis describes an interdisciplinary approach. Theories and concepts from different scientific traditions and fields are applied to address the objectives and connect and analyze the empirical findings. The theories and concepts drawn upon are too wide-ranging to cover in full within the scope of the thesis. However, the interdisciplinary approach is an important step in lifting the perspective in spatial planning from physical land use and "planning for the sake of planning". To view spatial planning at a local level and different types of land use in a wider perspective, is essential to maintain a holistic perspective in practical spatial planning when working towards SuD. This will be developed further in Chapter 3, but the most central concepts and how they are made use of in the work upon which this thesis is based are presented in Figure 4 (on tne next page) and discussed in the following text.

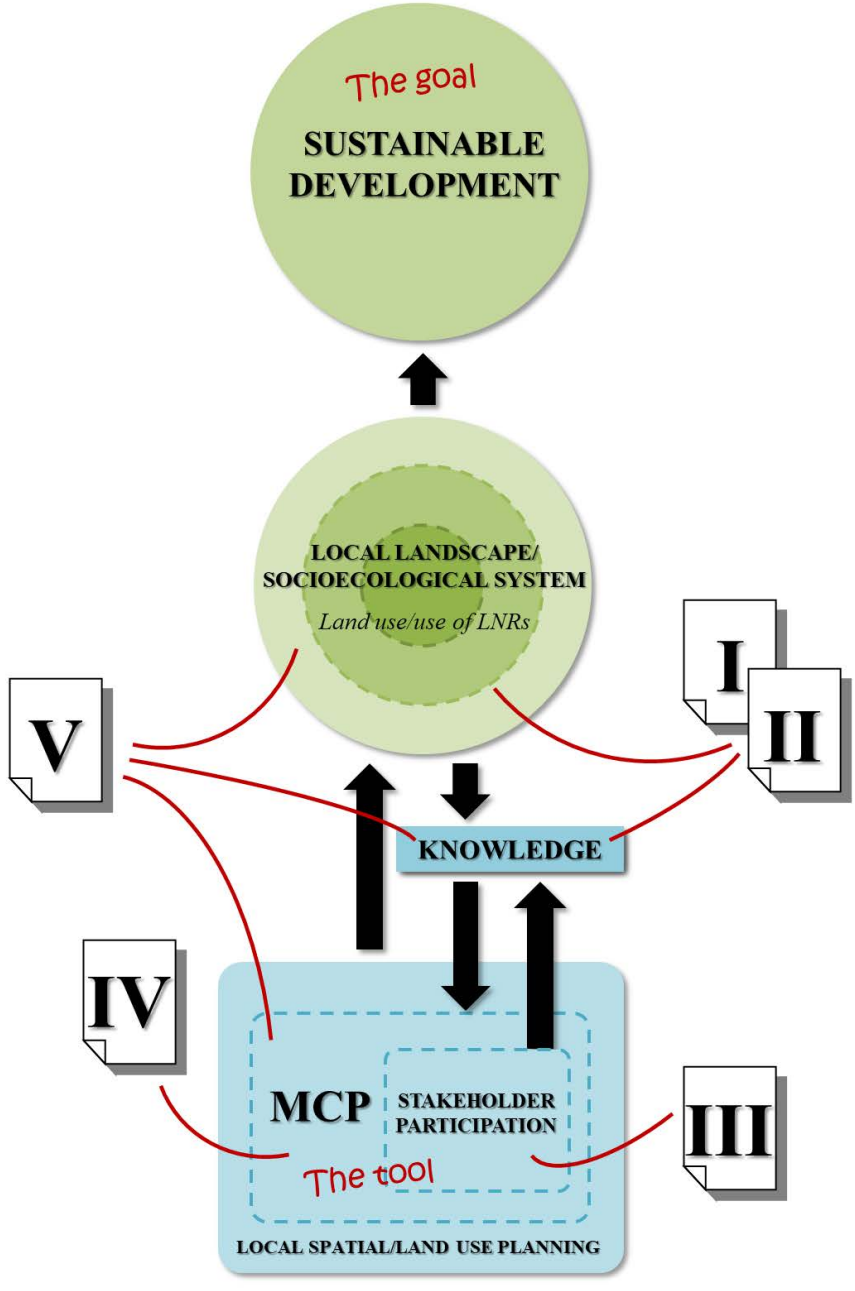


Figure 4. Schematic of theoretical concepts and fields and the connections between them that jointly form the context for Papers I-V and this thesis.

The concept of *sustainable development* (SuD) has its background in international conventions and directives and refers to development where spatial planning at a local level plays a vital role in attempting the balancing of ecologic, social and economic sustainability (WCED, 1987; UN, 1994). In this thesis, the Swedish municipality, specifically the rural boreal municipality, is referred to as the *local society* and a central *socioecological system* or *landscape* in spatial planning. Landscape is used in the sense of a geographic area and the natural and human systems that interact within that area (Scherr et al., 2013). This is motivated by the local level responsibility for comprehensive spatial planning aiming for SuD held by the municipal government. What distinguishes this thesis from many other research papers, essays, handbooks, etc. regarding spatial planning (e.g., Malbert, 1998; Nilsson, 2001; Sandström, 2002; Nyström & Tonell, 2012; Forsberg, 2013; Ziafati Bafarasat, 2015) and makes it an important complement to Fredriksson's (2011) thesis, is that it stresses spatial planning in a rural, as distinct from an urban, landscape. Further elaboration upon this is made in Sections 3.1 and 3.2.

In this thesis, the term *spatial planning* is used as a synonym for *land use planning*, which can be defined as a methodical assessment of the potential land and water use, alternative combinations of land use and other conditions (physical, social and economic) with the objective of choosing and implementing various land use alternatives (FAO, 1993; Nyström & Tonell, 2012). The assessment has to be built on *knowledge* about the landscape in hand (Sporrong, 2013). In Sweden, spatial planning is, in this sense, carried out at the local level (the municipalities) but should involve land users and other stakeholders in society through participatory processes. Relevant background for this thesis, regarding general planning theory, spatial planning and *municipal comprehensive planning (MCP)* as strategic land use planning, is presented and developed in Section 3.3.

Knowledge-based communication and *stakeholder participation* are considered to be essential for making planning relevant and effective. Collaborative processes between stakeholders should be built on and produce shared knowledge. A planning process can be organized in many ways and entail different levels of activity and influence from the stakeholders (Arnstein, 1969; Friedmann, 1987; Khakee, 2005; Ziafati Bafarasat, 2015). Because this thesis focuses on MCP as an overarching form of strategic spatial planning in Sweden, the concepts of stakeholder participation and deliberation concern different actors affected by MCP, e.g., authorities, organized interest groups and various land users, such as businesses and municipal residents. Formally, democracy and acceptance of the MCP is secured through consultation and exhibition of a plan proposal, but there are no restrictions for the municipal government to extend

and increase the collaborative process. However, possibilities for collaboration are affected by the sector structure of society. Further details of the challenges, preconditions and opportunities for successful cooperation between parties in spatial planning are introduced in Section 3.4.

1.3 Objectives

By framing a municipal comprehensive planning (MCP), which includes forest land use, theoretically and contextually and by highlighting the rural context in local spatial participatory planning, this thesis provides scientific and practical contributions to efforts for sustainable development (SuD).

Three intermediary objectives with overarching research questions guided the five papers in this thesis:

1 Quantify and characterize the importance of local natural resources (LNRs), including forest resources, in a Swedish rural boreal municipal perspective (Papers I & II).
   - Can LNR-use and the importance of LNRs to the boreal rural municipality be quantified and characterized by type and extent of LNR-dependency, engagement numbers, reasons for business establishment and future prospects, as stated by representatives of local commercial activities/small businesses?

2 Examine, analyze and problematize MCP as a tool in strategic and participatory spatial planning for SuD (Papers III & IV).
   - Is MCP a functioning tool in strategic, collaborative spatial planning for SuD?

3 Compile, analyze and communicate spatial data on forest ownership, forest condition and forest values to be integrated in MCP as a precondition for enabling participatory spatial planning for SuD (Paper V).
   - Can results from analysis in a geographic information system (GIS), providing information about forest condition, forest ownership and ecologically and socially valuable forest land be used as a common knowledge base for local (municipal) governments and stakeholders in MCP?

In view of Swedish municipalities as governments at a local level with territorial responsibility for planning for SuD, Papers I-V present central matters regarding local land use, including forest land use, and preconditions for MCP in rural

boreal municipalities. These matters need to be considered in order to develop MCP as the appointed tool for achieving local as well as overall SuD. Based on the results of the five papers, the overall goal of the work presented in this thesis was to improve the preconditions for participatory MCP and, ultimately, to contribute toward increased implementation of the planning and applicability of the adopted plan. This was achieved by providing new knowledge for MCP and by highlighting the problems with, and yet the potential of, MCP.

2 Case studies, research methods and materials

The case study approach is fundamental in the underlying studies of this thesis (Stake, 1995; Johansson, 2003; Yin, 2003; Merriam, 2009). With a practical orientation and focus on the contemporary and real life Swedish context, this type of approach was a rather obvious choice. Furthermore, the work in this thesis aims to examine and analyze, and thereby make possible to understand, support and explain, the dynamics in local strategic spatial planning for SuD in a rural setting. This intention calls for an interdisciplinary approach. In order to answer the research questions, it was most appropriate to focus on the fairly tangible circumstances linked to a Swedish rural municipality (cf. Flyvbjerg, 2006, 2011). The case studies provide reliability and validity to research findings that can help in their understanding. Furthermore, the approach could hopefully inspire as well as aid the development of theories and testing of hypotheses regarding strategic spatial planning for SuD in other settings (cf. Flyvbjerg, 2006).

2.1 Case study areas

As introduced in Chapter 1 and further developed in Section 3.2.1, the Swedish boreal rural municipality is an apt example of a population scarce, geographically large, natural resource dependent local society and governmental unit with direct responsibility for people and Nature within the municipality borders and for societal development. First, Vilhelmina Municipality was chosen as a good representative of the rural boreal municipalities, and therefore a suitable case study area (Papers I & II). Vilhelmina also provided a good example of a municipality where forest land, although covering a major extent of the area, is still not addressed in MCP (Paper V). Furthermore, Vilhelmina is one of the 15 mountain municipalities in Sweden studied in Paper IV, which all

represent the most extreme cases of rural municipalities considering their large areas with high natural and cultural values and sparse populations. Therefore, these municipalities, which make up the mountain region of Sweden, constitute useful cases for studying the preconditions for successful MCP in a rural context. A valuable complement to these cases was nine municipalities in the Bergslagen region in central Sweden (Paper III). These nine municipalities represent rural as well as more urban structures and were considered to be interesting with regards to variations in the implementation and legitimacy of the MCP process. More detailed description of the different case study areas (Figure 5) is presented below and in Table 1.

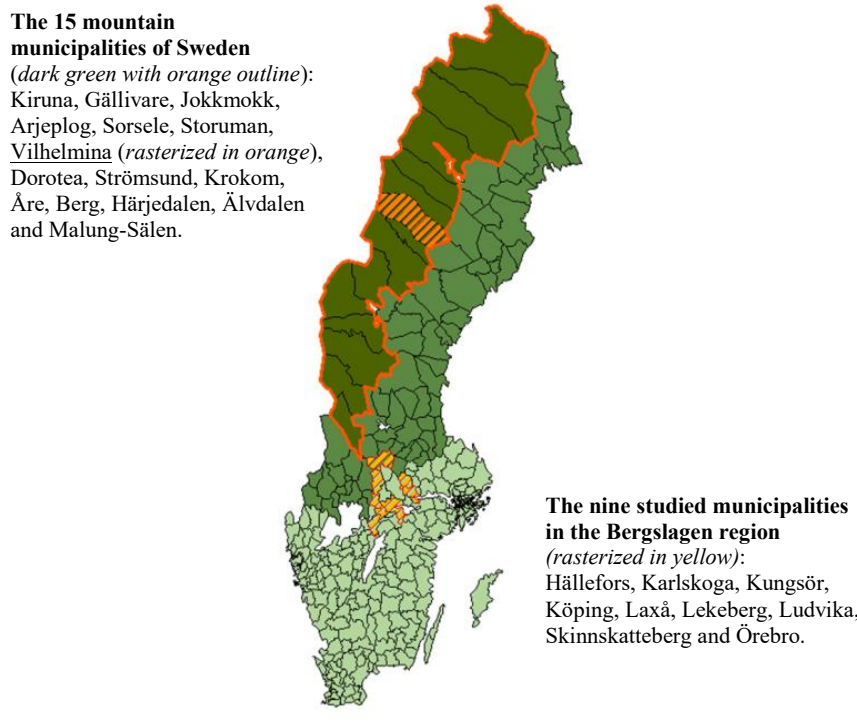


Figure 5. Case study areas: the 15 mountain municipalities of Sweden, including Vilhelmina and nine municipalities in the Bergslagen region.

Table 1. *Key characteristics of municipalities in the mountain and Bergslagen regions.*

Municipality	County	Population (t people)*	Total area (t km^2)*	Land (t km^2)*	Population density (people/ km^2 land)*	National interests (% of total area**)	Formal protection (% of total area**)	Forest cover (% of total area**)	Reindeer husbandry area (% of total area**)
MOUNTAIN									
Kiruna	BD	23.2	20.6	19.2	1.2	78	26	20	100
Gällivare	BD	17.9	16.8	15.7	1.1	70	40	39	100
Jokkmokk	BD	5.1	19.3	17.6	0.3	76	46	39	100
Arjeplog	BD	2.9	14.5	12.6	0.2	83	20	31	100
Sorsele	AC	2.5	8.0	7.4	0.3	92	50	43	100
Storuman	AC	5.9	8.2	7.3	0.8	69	20	41	100
Vilhelmina	AC	6.8	8.7	8.0	0.8	59	15	46	100
Dorotea	AC	2.7	2.9	2.8	1.0	74	19	60	100
Strömsund	Z	11.8	11.8	10.5	1.1	65	7	59	100
Krokom	Z	14.9	6.8	6.2	2.4	91	21	56	100
Åre	Z	11.0	8.2	7.2	1.5	93	23	38	100
Berg	Z	7.1	6.1	5.7	1.3	62	5	51	100
Härjedalen	Z	10.2	11.9	11.3	0.9	52	7	60	75
Älvdalen	W	7.0	7.1	6.9	1.0	56	27	66	80
Malung-Sälen	W	10.1	4.3	4.1	2.5	32	4	69	0

Municipality	County	Population (t people)*	Total area (t km^2)*	Land (t km^2)*	Population density (people/ km^2 land)*	National interests (% of total area**)	Formal protection (% of total area**)	Forest cover (% of total area**)	Reindeer husbandry area (% of total area**)
BERGSLAGEN									
Ludvika	W	27.0	1.6	1.5	18.2	52	1	76	0
Kungsör	U	8.6	0.2	0.2	42.2	28	2	44	0
Köping	U	26.1	0.6	0.6	43.1	6	1	57	0
Skinn-skatteberg	U	4.4	0.7	0.7	6.7	29	4	73	0
Hällefors	T	7.1	1.2	1.0	7.2	5	5	72	0
Karlskoga	T	30.5	0.5	0.5	65.2	1	4	67	0
Laxå	T	5.7	0.7	0.6	9.4	29	3	63	0
Lekeberg	T	7.8	0.5	0.5	16.8	16	4	58	0
Örebro	T	148.1	1.6	1.4	107.9	11	3	51	0

County; BD = Norrbotten, AC = Västerbotten, Z = Jämtland, W = Dalarna, U = Västmanland, T = Örebro

* t = thousand, source: SCB, 2017

** source: spatial analysis in ESRI GIS of municipal areas (SCB, 2017) in relation to major national interest areas, formally protected areas, forest cover and the reindeer husbandry area.

2.1.1 Mountain municipalities

The 15 mountain municipalities of Sweden, i.e., Kiruna, Gällivare, Jokkmokk, Arjeplog, Sorsele, Storuman, Vilhelmina, Dorotea, Strömsund, Krokom, Åre, Berg, Härjedalen, Älvdalen and Malung-Sälen, surveyed in Paper IV comprise the westernmost boreal municipalities extending from the Norwegian border to central northern Sweden. These municipalities cover over 155 000 km^2. This area equates to nearly 30 % of the total area of Sweden but contains less than 1.5 % of the population (SCB, 2017). Each municipality has one or two community centers, in which most residents live. During high tourist season periods, the population can increase manifold but is usually highly concentrated in a few villages foremost in the mountain regions (Lundmark & Marjavaara, 2005; Müller, 2005). Forest covers 77 320 km^2 of the area. The indigenous Sami people (Prop. 2009/10:80; Prop. 1976/77:80) are a national minority (Prop. 1998/99:143; SFS 2009:724), and therefore are granted rights of self-determination. For instance, they have the right to preserve and develop their culture, including reindeer husbandry for the reindeer herders in Sápmi, a geographic area that includes the mountain municipalities of Sweden. Hence, dialogue about and consideration of the culture of the Sami people's land use is a legally required and a key component in spatial planning. Incorporating reindeer husbandry into MCP represents an example of the necessity of considering full information for all lands.

2.1.2 Vilhelmina

Vilhelmina Municipality, the case study area in Papers I, II & V and also one of the 15 municipalities in Paper IV, is a typical example of a rural municipality of northern Sweden. Today, land use is characterized by active reindeer husbandry across the entire municipality and large-scale stand rotation forestry. Most of the river system of Ångermanälven is affected by hydropower production and traces from timber rafting. Land use linked to windpower production and mining is rare, even though there are remnants of a large mine in the mountain area. Based on property rights and the Common Right of Public Access, recreational activities such as fishing, hunting, berry picking, snow mobile driving, skiing, hiking, etc. are conducted throughout the area in private as well as commercial contexts (Östlund et al., 1997; Anon., 2000; Heberlein et al., 2002; Zachrisson et al., 2006; Sjölander et al., 2009; Zachrisson, 2009; Anon., 2010; Svensson et al., 2012; Beland Lindahl et al., 2015; SGU, 2016; Anon., 2016).

2.1.3 The Bergslagen region

The nine municipalities in Bergslagen, i.e, Hällefors, Karlskoga, Kungsör, Köping, Laxå, Lekeberg, Ludvika, Skinnskatteberg and Örebro in the counties Dalarna, Örebro and Västmanland, addressed in Paper III, are located along the Limes Norrlandicus (ca 59-61 N, 13-17 E), a transition zone that separates boreal forest dominated upland in the north from mixed forest and agricultural boreonemoral lowland in the south (Nelson, 1913; Nordiska ministerrådet, 1994). The municipalities also represent a gradient from a societal structure with largely urban influences to more rural settings (SCB, 2017). Geographically, these municipalities are considerably smaller than the boreal municipalities in general and the rural mountain municipalities in particular (Table 1). However, a common characteristic of the municipalities in Bergslagen is the long history of intense industrial use of natural resources, foremost with strong connections to mining, and socioeconomic development. Today, attention on the importance of natural and cultural landscapes is increasing and public and service sectors dominate the economy (Swedish Agency of Economic and Regional Development, 2011).

2.2 Research methods and materials

To cope with the different sets of case study areas, the research in this thesis was conducted using a mix of methods. The reasons for the overall scheme with varying methods were as follows: (i) to handle the different case studies conducted, (ii) to use methods that suited the questions asked regarding whom were involved or the purpose since different aspects of and preconditions for spatial planning were studied, (iii) to identify whom is using land, how and where, how that knowledge can be gained, preconditions needed for the municipal government to make use of the knowledge, and, ultimately, assess whether MCP as a tool for integrated spatial planning for SuD can actually work. An overview of the case studies and methods applied in Papers I-V is presented in Table 2.

Table 2. *Overview of case studies, methods, respondents addressed, materials used and main purpose in papers I-V.*

Paper	Case study area	Method	Respondent/material	Main objective
I	Vilhelmina	Telephone survey	Representatives of local businesses/ entrepreneurs	To quantify and characterize LNR use and dependency on LNRs
II	Vilhelmina	Telephone survey	Representatives of local businesses/ entrepreneurs	To quantify and characterize LNR use and dependency on LNRs
III	Bergslagen; 9 municipalities	Semi-structured, face-to-face interviews	Four types of stakeholders in MCP; CAB, local politicians, municipal officials and large landowners	To examine and analyze stakeholder participation and learning in MCP
IV	15 mountain municipalities	E-mail survey	Municipal officials with responsibility for comprehensive planning	To examine, analyze and problematise MCP in rural municipalities
V	Vilhelmina/ focus area within Vilhelmina	GIS-analysis	Available spatial and spatiotemporal data regarding forest land use and values identified on forest land	To combine, analyze and communicate spatial data on forest ownership, forest condition and forest values to be integrated in MCP

In Papers I & II, the goal was to quantify and characterize the importance of LNRs for a local society (in Vilhelmina, as a representative of Swedish rural boreal municipalities) and its development. One measure of the dependency on LNRs in Vilhelmina was considered to be how natural resources within the municipality are used and valued by local commercial activities/businesses. Official statistics in Sweden are currently not designed or structured to answer this type of question. Therefore, Papers I & II were based on results from a telephone survey. Questions (see Appendix 1) regarding LNR-dependency were formulated based on the concept of "ecological functions" (deGroot, 1992). Supplementary questions were asked about, e.g., business activities, numbers of people engaged in the businesses, links to Vilhelmina Municipality, and prospects for development. The questionnaire was tested on four entrepreneurs of acquaintances. It was then adjusted and sent out by mail (Lavrakas, 1993; Bourque & Fielder, 2002) to a random selection of 50 % of the local businesses in Vilhelmina Municipality. A dropout analysis was made and based on that, the responses were considered being representative of the targeted population (Papers I & II). The frequency of responses was 46.5 %. In order to refer results

to the entire target population, a multiplier was used. The quantitative data was compiled in absolute numbers and percentages, to some extent by means of cluster analysis[6] (Everitt et al., 2011).

Paper III is based on 36 semi-structured and recorded face-to-face interviews (Wengraf, 2001). Four types of stakeholders (CAB representatives, municipal officials, municipal politicians and large land-owners) involved in MCP processes in nine municipalities in the Bergslagen region were addressed. Interview questions are presented in Appendix 2. The main purpose was to analyze seven central attributes of MCP (level of stakeholder participation, learning among stakeholders, planning capacity, confluence of views, collaborative assessment and adaptation, implementation and collaborative assessment of plan outcomes) to identify if the planning process includes necessary conditions for collaborative learning. Collected data were analyzed in relation to attributes of strategic spatial planning (Arnstein, 1969; Mazmanian & Sabatier, 1981; Lundqvist, 1987). Systems analysis (SA), causal loop diagrams (CLD) and conceptual group modeling[7] (Forrester, 1969; Sterman, 2000; Haraldsson & Sverdrup, 2004; Senge, 2006; Andersen et al., 2007; Rouwette et al., 2011) were used to deeper analyze the driving forces behind and feedback processes involved in stakeholder participation. The research process is described in full in Paper III, and therefore not repeated here.

For the case study presented in Paper IV, a survey was designed to gain insight into the overall municipal experience of work with the MCP process in natural resource rich, rural municipalities. The survey was tested on two municipal officials and responses were collected by means of an e-mail survey (Schonlau et al., 2002) to municipal officials responsible for spatial planning in the 15 mountain municipalities of Sweden (see Appendix 3). Most questions in the survey were open-ended or had open-ended response options, which allowed for more qualitative/explorative answers, and therefore complemented the semi-structured interview results of the study in Bergslagen. An analytical framework regarding different schools and key features of spatial planning (Ziafati

[6] LNR-dependency profiles were identified by means of cluster analysis. The analysis involved calculating the distance between two individual responses based on the number of different answers possible. The clustering was hierarchic, i.e., a given cluster could not be split, merely merged with another cluster.

[7] In short, SA entails identification and organization of components of a system to better understand the system as a whole and the dynamics within it. The components of the system are mapped based on the causal connections between them. The system can be presented as causal loop diagrams (CLD) where major relationships are displayed (Paper III). Conceptual group modeling is a stakeholder-based tool where a group of stakeholders analyze a complex reality and together develop a concerted systems-based understanding of the problem that is applicable in decision making.

Bafarasat, 2015) was used to design the survey and compile the results. Thirteen out of fifteen municipalities responded to the survey. It was not clear why, despite reminders, two of the municipalities did not respond. Data on MCP (such as year of adoption, description of planning process, etc.) for the two municipalities that did not reply were acquired from their MCP documents. All 13 survey responses were triangulated with an analysis of the content in the municipality's MCP documents (Creswell, 2009).

In the last case study, on which Paper V builds, the attention was once again turned to Vilhelmina Municipality as well as to a focus study area in the eastern part of the municipality[8]. This time, the particular focus was the identified knowledge gap in MCP regarding forest owners and forest land use. Data overlays and query analysis were performed in ESRI ArcGIS. Spatial data were collected from different sources: forest cover and land ownership from the Swedish National Land Survey (*Lantmäteriet*), forest age from a forest change analysis (Svensson et al., in preparation), areas of high ecological values from the CAB (*Länsstyrelsen*) and the Swedish Forest Agency (*Skogsstyrelsen*) and areas of high social values from the Swedish Forest Agency, the Swedish National Heritage Board (*Riksantikvarieämbetet*) and through query analysis based on former research concerning areas likely to be used for recreational values. The analysis was named the "Forest Data Assimilation Approach" (FoDAA). The FoDAA provided new knowledge about the forest by individual forest owners as well as by forest owner category to be further developed.

2.3 Methodological pertinence

For any research question there is, at least in general, more than one possible and suitable approach depending on scientific field, research tradition and scope, theoretical frame, objectives, etc. It can also be argued that the approach has to appeal to the researcher. For a practitioner, case study research involving real people and their everyday work in a specific geographic context can be considered appealing since it attempts to identify and understand what can be referred to as a tangible reality (cf. Fredriksson, 2011). With regards to reliability and representativeness, case studies cannot be claimed to be either straightforward or undoubtedly consistent. They generally demand an interdisciplinary approach, which is challenging to any researcher, particularly as it is often hard to assess if all the relevant disciplines have been covered and the ones chosen are the right ones. However, in the efforts of this thesis, case

[8] Spatial data on forest age from Forest Change Analysis of final felled forests (Svensson et. al, in preparation) was only available for the eastern part of Vilhelmina Municipality due to an absence of clear satellite images for the western part.

study research provided additional knowledge to personal experiences about the challenges linked to societal development, local land use, MCP and how deeply rooted the traditions of the local society actually are in a rural boreal municipality. The disadvantage of having personal experience related to the questions raised in a scientific study (here, about MCP and some of the case study areas) is the risk of increased subjectivity, specifically the risk of formulating questions and of interpreting results based on preunderstandings. This was not an issue in the studies of Papers I, II & V. At the time of the study underlying Papers I & II, such personal experience had not yet been gained. For the reliability of GIS-analysis in Paper V, this type of personal experience was irrelevant. In Paper IV, the co-design of the questionnaire with co-writers less planning experience counteracted any undesired effects. Speaking the language and knowing about basic underlying structures (in the current case, the non-existing planning structure in the mountain municipalities) helped in understanding the importance of asking questions about where the respondents came from, i.e., professional background and formal role in MCP (Nilsson, 2001), and explaining why answering certain questions seemed to be harder for respondents than could have been anticipated. Personal experience also contributed in giving results a deeper meaning. In this respect, the study of MCP in the Bergslagen region also provided a valuable supplement to the study in the mountain municipalities. The interview questions were formulated and the interviews conducted by researchers with no planning experience. Nevertheless, results from both studies confirmed important aspects of MCP, through similarities as well as differences, in basic municipal characteristics and results regarding preconditions for MCP. Both case studies also offered new insights into the extent of "good thinking" that is never spoken out loud and how the efforts of MCP may be manifested differently as a consequece of local traditions and "occasion". Such observations strengthened the assessment of results as being equitable, but they also indicated a need for further case studies or pilot experiments to complement the completed studies.

With regards to the different survey methods used, the general conclusion was as expected: the responses reflected the questions asked and there were challenges to deal with as well as opportunities to appreciate in the encounter between research and practice and between theory and practice. In retrospect, the first survey (for Papers I & II) among small businesses in Vilhelmina was an ambitious approach. However, the response rate was satisfactory and even though the quantitative compilation and CA most likely could have been done in other ways as well, the study provided a valuable overview about the use of LNRs that would have been hard to obtain otherwise. Application of the results, other than to add knowledge specific to Vilhelmina, was not obvious at the time.

Nevertheless, the studies eventually became important first steps in an academic journey as well as a personal quest. In the two different studies conducted in the mountain municipalities and Bergslagen (for Papers III & IV), it became clear that it was not straightforward to unify a researcher's intentions with the ways of the real world, in this case, describing MCP based on the experiences of a municipal planner or stakeholder in the planning process. A contributing factor was that there is no single right way to conduct MCP. However, the two case studies in combination serve a good example of how different contexts and survey and analysis approaches can validate each other. They also demonstrated a need to take a rural perspective in MCP in order to improve it as a tool in local spatial planning for sustainable boreal landscapes. Development of the FoDAA in the final study (for Paper V) can be considered to be a success. The scope for acquiring, combining and analyzing spatial data that is compiled and structured within different sectors and by different authorities is limited (Andersson, 2011). However, even though the precision of the results may be uncertain, the FoDAA indicated that building a flexible and visible multi-sectoral knowledge base should be possible if desired.

3 Theoretical and contextual framing

In this chapter, an overview of theoretical concepts and scientific fields used throughout the work with this thesis are presented. However, because the aim of the work was to bring together theory and practice, the theoretical context here is complemented by more in depth contextual descriptions related to the concepts used. The purpose is to, more profoundly, present the logic of this thesis (see Section 1.2) and the background for the analysis of the results and conclusions drawn in Chapter 5.

3.1 Links between a rural municipality, local natural resources and a prosperous future

A society is defined based on scale and the perspectives chosen. Any society can be considered to be one part of another society or divided into many, and potentially different, types of societies. One way of comparing and describing societies is in terms of their utilization of and dependence on Nature throughout history but also the cultural, social, political and economic organizations that evolve alongside each other (Jungen, 1980; Papers I & II). Another way of describing this is by using the concept of a socioecological system, i.e., a complex structure made up of important connections between the society and Nature or, to put it differently, by ecological, social and economic subsystems and the interactions between them. The socioecological system can be viewed on different scales, from individual households and local societies to the entire world (Gallopín & Christianson, 2000; Limburg et al., 2002; Papers I & II). The Swedish rural municipality as a local society is stressed in this thesis. The reason for this is threefold.

First, natural resources are, by definition, Nature given means for people to reach different types of goals[9]. In socioecological terms, they are defined in relation to a specific society (cf. Hettne, 1980; Reed, 2003). Second, the geographical delimitation of the Swedish municipalities of today originates from administrative borders drawn up at the national level. Nevertheless, these borders are a relevant definition of the local society as a socioecological system because they derive from actual traditional geography in trade, communication and local governance (Ivarsson, 1992; Abrahamsson & Wastenson, 1993). Third, the Swedish municipality holds the primary responsibility for spatial planning aiming for SuD with a holistic perspective within its borders (SFS 2010:900).

The attachment between people and place is strong. Many of the fundamental choices made by individuals are shaped by where they consider having their roots (Paper I; Scanell & Gifford, 2010). Perceptions and preferences for Nature and natural resources are frequently connected to the things that are "familiar" to people (Paper I; Clement, 2005). Societal use of natural resources is defined by how the assets are used by individuals for their livelihood and commercially for market purposes (Paper II; Thellbro, 2006). Local culture and traditions, along with societal regulations and spatial planning, are examples of informal and formal institutions affecting how natural resources are viewed and in what manner and extent they can be used (Peters, 2012). In addition, issues concerning development and sustainability existing in many places around the world are not necessarily global in nature. Many global problems are most likely to be solved by diverse local solutions (Orr, 1995; Clement, 2005).

An illustration of the components of a socioecological system and how it is referred to, with respect to the Swedish boreal rural municipality, in this thesis is presented in Figure 6.

[9] Resources in general and natural resources in particular, as well as the use of them and issues related to their use, can be viewed and analyzed from different perspectives within natural and societal sciences (Månsson, 1993). Furthermore, natural resources can be systematized in various ways, e.g., biotic and abiotic resources, renewable and non-renewable natural resources (Holecheck, 2000) and fund, flow and storage resources (Anon., 1983). There are also more complex systematizations, such as ecological functions (production, regulation, carrying and information) of nature, natural capital (de Groot, 1992) and ecosystem services (Daily, 2000; Haines-Young & Potschin, 2013). One of the latest to be introduced is the valuing approach 'nature's contributions to people' (NCP) (Pascual et al., 2017). As this thesis does not aspire to contribute to the discourse related to natural resources and similar concepts, the general definition of natural resources is considered to be sufficient.

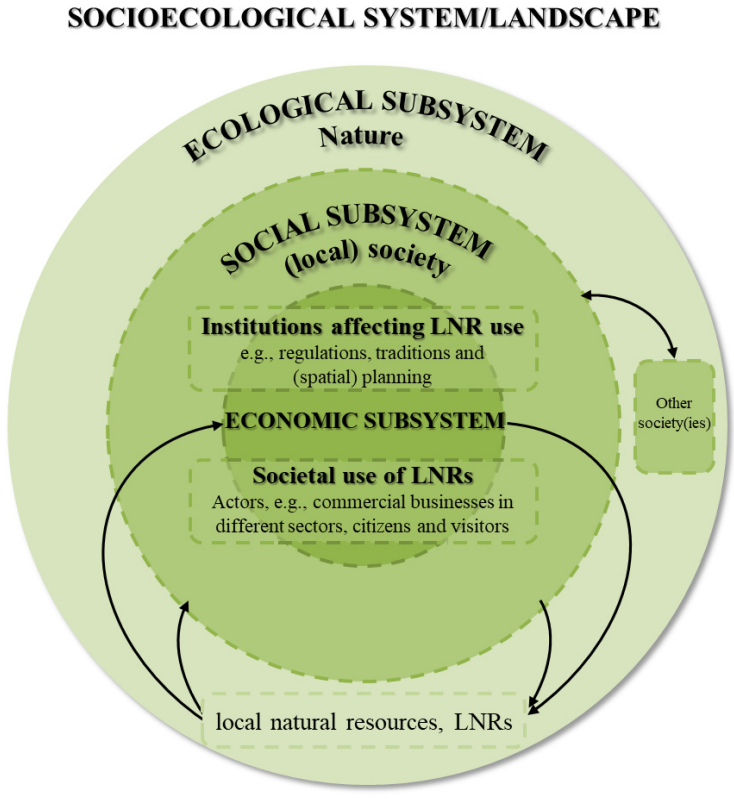


Figure 6. Simplified illustration of the complex relationship between Nature and the use of natural resources in a local society based on the principles of a socioecological system, i.e., Nature is a part of society and vice versa. Societal institutions affect how the (local) natural resources are used and by whom.

Predominant among human societies is that the use of natural resources has progressed from being extensive, where the production capacity of Nature limits production in society, to a more intensive use, where the use of natural resources that are more difficult to obtain are expanded by labor, economy and technology (Hettne, 1980) (this is further exemplified by the Swedish, rural, boreal municipality presented in Section 3.2.1). Hence, the sustainable use of natural resources and SuD have become increasingly important.

Sustainability issues affect the entire socioecological system, but sometimes a certain subsystem (ecological, social or economic) of the socioecological system is more affected than the others. Furthermore, development may include development in different subsystems or different phases in the development of one and the same socioecological system. However, to find a path to overall SuD, one must look at the entire socioecological system (Gallopín &

Christianson, 2000; Angelstam, 2013a, b, c). The three dimensions of ecologic, social and economic sustainability (for future as well as present generations), as presented in “Our Common Future”, is stressed in a contemporary societal development context (WCED, 1987). According to the latter report, the term SuD means that there are limitations to development imposed by the boundaries of technology, community organization, and natural resources and the biosphere's ability to withstand effects from different human activities. Thus, SuD takes into account ecological and social as well as economic dimensions within and linked to human society. The significance of these three dimensions is emphasized differently at different times and in different places, and the dimensions can both compete and interact with each other. This correlates with the way of defining societies according to their utilization of natural resources (as introduced above). In Sweden, ecological sustainability was, in general as well as in spatial planning, the most emphasized among the three dimensions during the 1990’s. Reasons for this emphasis were that the ecological dimension was considered to have been previously suppressed by the social and economic parts and also that scientifically generated criteria for ecological sustainability made it applicable in spatial planning (SOU 1997:105; Nilsson, 2001). As a result, the Environmental Code (SFS 1998:808) became a part of the Swedish government's efforts to achieve SuD along with Agenda 21 and now the 2030 Agenda with the global Sustainable Development Goals, SDGs (SOU 1997:105; Anon., 2017d).

A wide variety of ways have been used to illustrate SuD as ecological, social and economic dimensions that are interlinked and dependent on each other (Figure 7) (e.g., Costanza, 1994; Holmberg, 1995; UN, 2015). The common understanding is that SuD is a dynamic process rather than a static condition. Most, of the variants have their origin in ideas formulated in "Our Common Future" (WCED, 1987).

The concept of SuD has been criticized for being too vague, complex, ambitious, and almost utopian. The concept also has different meanings for different actors and individuals. At the same time, the three pronounced dimensions can be said to have introduced a paradigm with a holistic implication that has led to long-term rethinking about development, foremost in planning (Jarvis et al., 2001; Schleicher-Tappeser, 2001; Campbell, 2003; Hahn & Knoke, 2010). According to Clement (2005), SuD has gone from being a theoretical concept to providing practical guidance with influence at all levels of governance, from UN decisions down to the local society. Agenda 21 recognized the role of the local level (e.g., a municipality) for global SuD. A global focus on situations and conditions abstracts them from the context in which they occur and distances models from the reality that they are intended to reflect.

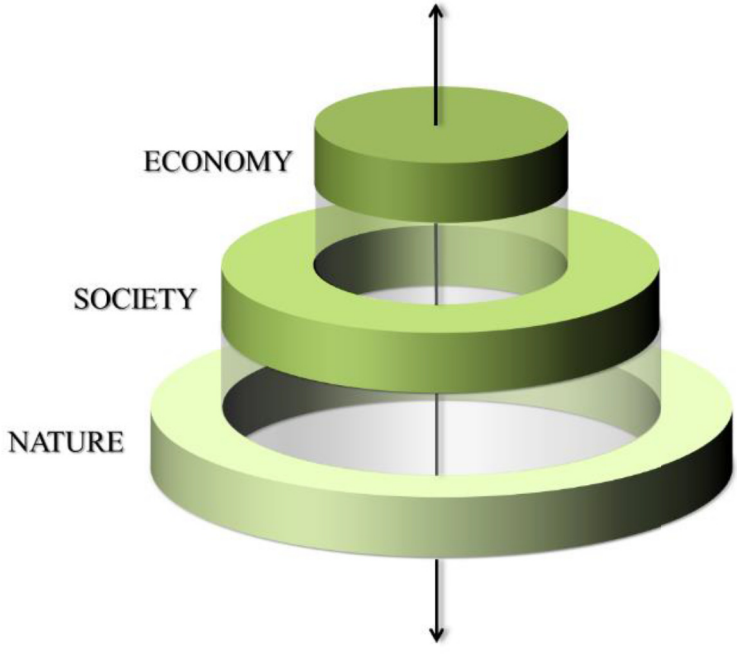


Figure 7. Nature, society and economy are interlinked in a socioecological system where Nature is a part of society and vice versa. The three components complete the disc. Sustainable development is a delicate process dealing with the balance between ecological, social and economic sustainability in the system. (Modified from Rockström & Sukhdev, 2017).

Hence, local authorities (e.g., the municipal government) and spatial planning at a local level led by the public sector (e.g., MCP) play a vital role in finding solutions to global sustainability related problems because they are commonly rooted in local activities and human behavior. Local authorities represent the level of governance closest to the people that simultaneously interact with the public as well as with high-level authorities (regional, national and international) (UN, 1994; UNEP, 2000; Eckerberg et al., 2007; Baker & Eckerberg, 2008; Sobol, 2008; Papers III & IV).

As indicated, the concept of SuD has had a strong impact on spatial planning. Planners must face the challenge of encouraging the economy to grow, distributing this growth fairly and simultaneously avoiding negative impacts on the cultural environment and ecosystems. The concept has come to legitimize planning efforts. Whether spatial planning can really lead to SuD, or at least sustainable outcomes, or actually handle the balance between the different dimensions is perhaps more uncertain (Campbell, 2003).

3.2 Rural natural resource dependent societies

The term rural it is often used to describe geographic areas that contrast with more densely populated and, regarding infrastructure, well-developed or 'urban' areas (Elands & Wiersum, 2001; Vennesland, 2004). Forsberg (2005) has argued that distinguishing between urban and rural can be seen as obsolete: mobility has diminished the difference between the two concepts and technological development has made the criteria for rurality, based on business, population density and size, irrelevant. However, (as Forsberg writes) in Sweden, the fact remains that urbanity has been the norm since the 1920s. As urbanization began to accelerate, there was an increased interest among researchers to describe the process. Simultaneously, the perception of rural areas as problematic and without a future began to rise. Rural areas were seen as leftovers on the map, which is still very much the case today, not necessarily because rural areas actually have no future but because the perception is so strongly rooted in local actors as well as in national politics. The simple dichotomy of urban or rural with regards to distance does not work in practice. Technologically, the distance between rural and urban has become shorter, but there is a contextual difference, or distance, that implies a problem with the urban norm. Geographic distances are still a tangible problem to overcome for local business development and in spatial planning (Amcoff, 2006; Amcoff & Westholm, 2007), and mobility is not unanimously positive if seen from the local perspective. Where people are registered for living and where they have their second homes may not reveal where they actually live or where they spend most of their time. This suggests that statistics and local income taxes do not reflect the actual use and pressure on the local society and Nature, which poses a major problem for many rural municipalities (Keskitalo, 2017). According to Forsberg (2005), one step toward solving the 'rural problem' is to increase the reciprocity in the relationship between rural and urban areas and allow local residents and government to take control of local resources.

There are different ways of categorizing municipalities in Sweden, which ranks them according to rurality nationally (Hedlund, 2016). Nonetheless, from a European perspective, most Swedish municipalities are defined as rural (Anon., 2015; Keskitalo et al., 2017). Among the most pronounced rural municipalities are the ones in the northern inland, boreal forest and mountain region. Many of these municipalities share a common history regarding both extensive and intensive natural resource use and their impact on the development of society, which is further discussed in Section 3.2.1. As a consequence, they also share basic preconditions regarding spatial planning, which differ from the preconditions in an urban context. Municipalities can of course be further divided into smaller societal units. However, Sweden has municipal self-

governance and the municipal government has the primary responsibility for societal development and strategic spatial planning (Section 3.3.4). Therefore, municipalities are the appropriate local level unit for the purposes of this research (Holmgren, 2006) and, as stated, to complement most other research in the field, the rural boreal municipalities are the specific focus in this thesis.

3.2.1 Development in a rural boreal municipality

In the boreal parts of Sweden, agricultural farming, i.e., different types of livestock husbandry, is limited by the tough climate and the scarcity of appropriate land and natural resources. The boreal forest has been essential for the livelihood of both people and livestock (Aronsson, 1991; Bergman et al., 2003; Hansen et al., 2006; Anon., 2017b). Historically, as a result of these conditions, people developed multiple skills, cooperated informally and made use of different niches of the forests, depending on supply and need throughout the year. These are characteristics still present in the economic, social and cultural structures of boreal municipalities (Westholm, 1992; Ekman, 2002; Papers I & II).

In most Swedish municipalities, forest cover is geographically very extensive, and in this respect, the boreal municipalities are outstanding. Extraction activities and processing of natural resources (e.g., within the forestry, mining and hydropower industries) is still relatively important to the socioeconomy of boreal municipalities. Small businesses, including small firms in non-industrial private forest (NIPF) farming and (even though not thoroughly studied to the same extent) reindeer husbandry remain a vital part of the local economy (Johannisson & Bång, 1992; Taylor, Bryan & Goodrich, 2004; Slee, 2006; Papers I & II; CAB Jämtland, 2009; CAB Norrbotten, 2011; Region Västerbotten, 2013; Lööf, in preparation). In general, many local entrepreneurs engage in a diverse range of activities, often with activities linked to the tourism industry (Westholm, 1996; Glesbygdsverket, 2005; Papers I & II). Furthermore, combining one's livelihood with multiple uses of the LNR, such as forest farming, berry picking, hunting and fishing, is a tradition in boreal municipalities. These types of activities complete the livelihood by providing additional monetary and material income as well as leisure opportunities (Westholm, 1996).

Today, the economy of boreal municipalities is much more diversified. The service sector has become increasingly important and the public service sector is a major employer. However, another persisting characteristic of most of the boreal municipalities is the socioeconomic recession and population decline that began in the middle of the 20th century due to mechanization of the extraction

and processing of LNRs (Section 1.1) (Sörlin, 1988; Persson, 1998; Lisberg Jensen, 2002; Hedlund, 2016; Syssner & Olausson, 2016; Hedlund, 2017). In order for the contemporary municipal government to secure the tax-based incomes necessary for maintaining societal services and infrastructure, i.e., the future survival and development of the boreal municipalities, a primary prerequisite is to increase, or at least stabilize, the population with regards to number and age structure. Naturally, work opportunities are very important for people's choice of place to live. Still, other local features, such as Nature, space, quietness, local culture, family traditions and also time, as in the length of property ownership, play significant roles in place attachment (Papers I & II; Nordström & Mårtensson, 2001; Stenbacka, 2001; Ekman, 2002; Nouza et al., 2015; Knez & Eliasson, 2017). Hence, it is important to plan strategically based on knowledge about the people who live in, desire to live in and visit the area. There is a need to know what resources and aspects of the landscape that people and businesses desire and use in order to identify how the LNRs should be safeguarded to contribute to the survival and development of the local society.

3.3 Public spatial planning in theory and practice

As Friedmann (1987) states; "…there are many forms of planning and many specific applications…" (p. 47). Khakee (2005) has argued that there is no unanimous understanding about the development of planning theory but that a number of different positions in planning theory can be identified.

The basic purpose of planning is to connect knowledge and action. Therefore, planning can be characterised by, e.g., variations regarding connections between knowledge, decision making and action, or practice (Friedmann, 1987; Khakee, 2005; Paper III). With regards to knowledge, Friedmann (1987) has presented some critical questions concerning the value and sources of knowledge in planning. In short, these questions can be interpreted and summarized as - how can reliable, but yet useful, knowledge for planning of "the real world" be produced? The questions address the actual value of scientific, technical and practical knowledge and aim to assess whether there is a method of inquiry or source of knowledge that is better than any other. Practical knowledge in planning implies that there is a need for some kind of dialogue, but then, how should the dialogue be structured and by whom? These questions are hard, or even impossible, to answer in a definitive way, but they are indeed essential to consider in a planning process. With regards to knowledge as well as decision making, the concepts of top-down or bottom-up planning are commonly used to describe the organization of a planning process and the roles of planning authorities in relation to stakeholders in planning (Khakee, 1999; Faludi, 2000;

Nilsson, 2001; Paper III). Khakee (1999) has argued that there are primarily four theoretical positions in planning that state clear views of citizen involvement. These are rational planning and advocate planning with professional planners and a relatively low degree of citizen involvement and influence (i.e., top-down planning) and generative planning and communicative planning with a relatively high degree of citizen involvement (i.e., bottom-up planning). A more recent attempt to categorize spatial planning traditions was made by Ziafati Bafarasat (2015). He presented three schools of strategic spatial planning: the performance school, the school of innovative action and the school of transformative strategy formulation. Similarly to the planning positions highlighted by Khakee, the schools categorize planning based on the planning agent and level of stakeholder interaction and influence. However, stakeholder interaction is accompanied by policy integration and implementation as the three key features of spatial planning.

A classic article, linked to Friedmann's questions on the value of knowledge, on stakeholder participation and dialogue is Arnstein (1969), which analyses the actual level of citizen participation in planning as either non-participation, symbolic participation or citizen power[10]. In this thesis, top-down planning is interpreted as non-participatory planning and bottom-up planning as planning involving citizen power to some extent, while planning with informing, consultation and/or pacification is "in between" the top-down and bottom-up approaches. Arnstein favors a normative approach since a higher degree of participation is desired regardless of the context (cf. Fung, 2006). In this thesis, the concepts presented are primarily used to describe the level of participation in order to discuss its implication on the knowledge base in planning and the prospect of planning "for the real world" (Paper III).

To add to this background on planning positions and schools of spatial planning (with different levels of stakeholder participation and knowledge), Sporrong (2013) has argued that knowledge-building about and analysis of the landscape (defined as a socioecological system) in hand, are fundamental components of spatial planning. Landscape approaches are increasingly being promoted to handle the trade-off between conservation and development in order to be able to achieve a balance between ecological, social and economic

[10] According to Arnstein (1969), citizen participation in planning is organized in eight steps: manipulation, therapy, informing, consultation, pacification, partnership, delegated power and citizen control. With regards to the level of participation, manipulation and therapy can be defined as non-participation; informing, consultation and pacification can be defined as symbolic participation; and partnership, delegated power and citizen control represent different levels of citizen power.

sustainability in practice (Sayer, 2009; Andersson et al., 2013; Sayer et al., 2013; Plieninger et al., 2015).

Current Swedish MCP legislation includes a top-down rationale for spatial planning in the public sphere with reference to the municipal government's role in leading the planning process, valuation of knowledge and decision making. MCP also includes a bottom-up approach with regards to opportunities for communication and deliberation and to demands on consultation. The requirement for MCP to aim for SuD, by being coordinated with relevant national and regional goals, plans and policies aimed at SuD, is clearly stated in legislation. Furthermore, MCP is viewed as having great potential to be an important tool in visualizing relationships and contexts in a landscape perspective and for implementing the European Landscape Convention[11] (National Board of Housing, Building and Planning, 2017c).

In the following sections, an overview of relevant top-down and bottom-up positions in planning theory are presented to illustrate the wide planning rationale that characterizes MCP. Furthermore, the link between landscape approaches and spatial planning is discussed and the history and purpose of Swedish MCP is introduced. Finally, some basic features for successful stakeholder participation in planning in the pursuit of reliable and useful knowledge for planning are highlighted.

3.3.1 Top-down planning

Rational planning was the dominant form of planning in Europe from the end of the Second World War until the 1980s. This planning approach is based on the principle of representative democracy, with elected politicians, by which the plans achieve legitimacy. Politicians formulate goals to be met and then, professional planners design a plan to meet these goals. Scientific rationality can be seen as a central starting point for this type of planning as it is considered possible to gather sufficient scientific and technical knowledge to calculate and assess how to achieve maximum profit and best results in relation to the amount of funds used. Criticism against this form of planning is that it primarily exclude of citizen participation (cf. "non-participation" in Arnstein, 1969) or merely includes symbolic citizen participation, and therefore is not considered to meet people's needs (Khakee, 1999; Hermelin, 2013). Advocate planning includes

[11] The European Landscape Convention (ELC) aims at improving the protection, management and planning of landscapes in Europe. It also aims to promote cooperation on landscape issues in Europe and to strengthen the involvement of public and local societies in that work. The ELC includes all types of landscapes that people encounter in their daily lives and their spare time (Council of Europe, 2000).

citizens' opinions in the planning process to a slightly higher degree than rational planning. The basis of this theoretical planning position is the idea that society consists of a large number of interest groups, where resource-intensive groups are represented in the public sphere, while resource-poor groups are not. The role of the planner is to act as a representative and take into account the views of the resource-poor citizens in planning (Davidoff, 1965; Khakee, 1999). With regards to spatial planning, there is a similar top-down basis to Ziafati Bafarasat's (2015) performance school, according to which only organized interests should be involved in planning and consultative processes should merely ask for citizens' opinions about a predetermined set of options (cf. Faludi, 2000). To avoid tension between different interests, the objectives of the performance school are of high-level and endeavor for multi-level and multi-sectoral policy integration to outline spatial development in an area "by giving shape to the minds of those who subsequently act on the space…" (Ziafati Bafarasat, 2015: p. 135).

3.3.2 Bottom-up planning

Generative planning focuses on communication difficulties between planners and citizens caused by their different levels of knowledge and experience. The differences can be overcome by organizing society and planning in smaller entities where there is better opportunity for interaction between stakeholders in the planning process. With experience and knowledge about the issues of the plan, planners can support dialogue between different actors, who then can identify common interests and learn to respect and collaborate with each other. In this way, a holistic view of development is obtained (Khakee, 1999). Communicative planning challenges power structures in society, including representative democracy, since it is based on the idea that social structures are built up of many individual actions and that all actors' views and arguments should be treated equally in planning. Central to communicative planning is the need for fostering a dialogue based on knowledge, understanding, values and skills of all stakeholders (Khakee, 1999; Sandström et al., 2003; Hermelin, 2013; Sandström, 2015). This can be compared with Habermas' (1984) idea that there is a communicative sense in all societies and that man, through good conversation, can achieve mutual understanding. Ziafati Bafarasat's (2015) school of innovative action and the transformative strategy formulation are both strategic spatial planning approaches with a bottom up perspective that stress a high level of stakeholder participation (cf. Faludi, 2000). In the former, concrete deliberations within strategic projects, preferably with a focus on a few goals and places, help to ensure the most effective stakeholder involvement

(Albrechts, 2006; Oosterlynck et al., 2011). In the latter, spatial strategies with a multi-level and multi-sectorial approach to policy integration encourage efficient projects where grassroots are empowered in strategy making. However, in the school of transformative strategy formulation, the grassroots are excluded from the negotiation phase based on their wide mix of interests and their low technical and financial legitimacy. Furthermore, the amount of resources needed to involve a large variety of actors and to recognize their specific priorities are considerable (Ziafati Bafarasat, 2015). Further details on communication and collaborative processes are presented in Section 3.4.

3.3.3 Spatial planning with a landscape approach

As Sporrong (2013, p 62) has stated; "the landscape concept is hard to catch". In natural and technical science, landscape is a material and tangible area comprising mountains, forests, streams, buildings, etc. In geography, the concept is used to describe how man uses natural, cultural and societal resources in different ways. Anthropologically, the landscape encompasses experiences and interpretations of the surrounding environment. Landscape and landscape approaches in planning originate from conservation theory and handle the spatial as well as temporal links between habitats and structures on large geographic scales, i.e., the green infrastructure concept (Forman & Godron, 1986; Benedict & McMahon, 2006). However, use of the concept of landscape in planning has developed with recognition of the importance of the people who shape the landscape (Lawrence, 2010). "A 'landscape' is a socioecological system that consists of a mosaic of natural and/or human-modified ecosystems with a characteristic configuration of topography, vegetation, land use and settlements that is influenced by the ecological, historical, economic and cultural processes and activities of the area" (Scherr et al., 2013). According to Sporrong (2013), spatial planning should be based on a landscape analysis of local natural preconditions and LNRs as the game board where people act based on certain rules and preconditions set or caused by society on different levels (cf. Scherr et al., 2013). Understanding the current landscape and gaining knowledge about the historic use and perceived aesthetic values of the landscape should be the next step in the analysis and also an assessment of external as well as internal effects on the landscape from present-day events and decisions. The character-creating functions of the landscape have to be observed, i.e., natural and cultural characteristics, scenery, structures and traditions in the built environment etc., in order to assess if and how actions may preserve or change the landscape. Finally, an understanding of the specific preconditions for everyday life set by the landscape is central.

3.3.4 Municipal comprehensive planning (MCP)

In Europe in general, regional spatial planning led by the public sector is emphasized (European Commission, 1999; Healey, 2003; Council of Europe, 2011; Albrechts, 2004). However, local and practical examples are considered to be important to secure relevance in planning (Koschke et al., 2014). According to the theoretical perspectives presented so far, public led (top-down) local spatial planning with a landscape perspective but with a well-conducted participation process (bottom-up) could provide a path to SuD where ecological sustainability goes hand-in-hand with both social and economic sustainability. In Sweden, municipalities are the local authorities responsible for this type of planning, with a non-legally binding MCP as the base (Andersson et al., 2013; SFS 2010:900; Papers III & IV).

In short, the municipal government is the planning authority in MCP. As illustrated in Figure 8, the municipal government has to adopt or actualize political statements regarding the strategic development of land and water use within the municipal borders (for more details, see later) once every political election term of four years. These statements are called a municipal comprehensive plan (MCP) and are traditionally presented in a document, but as long as the statements and the preconditions used for evaluations, assessments and decisions are clear, there is no formal template for the plan[12]. Once the municipal government has evaluated a current plan and decided to actualize it or work out a new one, it then does not matter who actually performs the work (municipal planner, consultant, etc.) as long as the municipal government adopts the result as its own in the end. The municipalities are advised by the National Board of Housing, Building and Planning (*Boverket*) and the County Administrative Board, CAB, (*Länsstyrelsen*) to continuously consult with stakeholders and actors during the planning process (i.e., revisions of or new assessments and formulations of statements). However, mandatory consultation with stakeholders, i.e., stakeholder participation, only applies to a complete plan proposal (cf. the characteristics of rational and advocate planning traditions and the performance school). If the municipal government considers it necessary, the proposal is adjusted based on opinions received during consultation and the final plan proposal is exhibited. Provided that no major changes are made after the exhibition (which would demand a new exhibition), the plan is adopted by the municipal government.

[12] The National Board of Housing, Building and Planning provides a proposed model for municipalities to test. The intention is to create a flexible model that can be used for all types of municipalities and levels of spatial planning. The model is going to be developed gradually based on experience gained in practical use. The long-term purpose is to provide a model to serve as general advice (National Board of Housing, Building and Planning, 2017b).

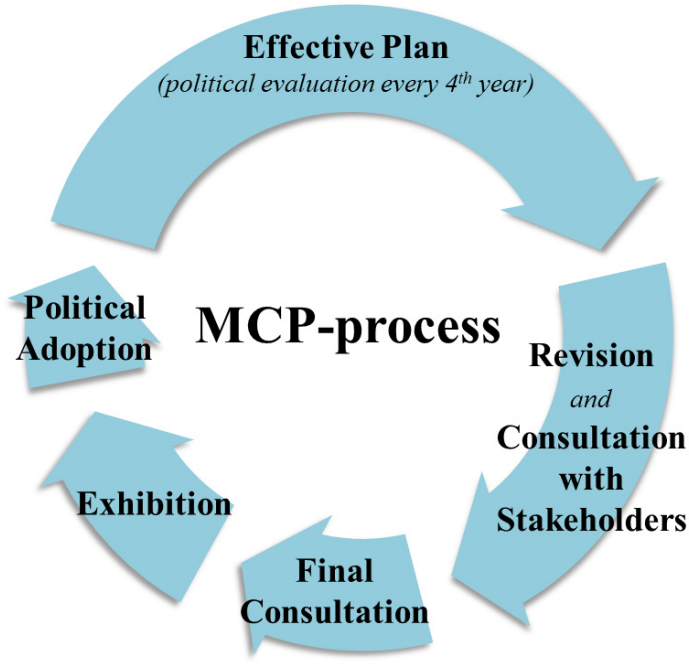


Figure 8. Simplified diagram of the intended continuous process of MCP, with a mandatory stakeholder participation process, in Sweden (developed based on National Board of Housing Building and Planning, 2017d).

Swedish MCP in its current form was developed as a result of two public investigations in the seventies (SOU 1971:75; SOU 1979:54; SOU 1979:55) and legally established with a new Planning and Building Act in 1987 as decision making regarding land use regulation was further decentralized to the municipalities[13]. The new legislation gave the municipalities the right to not only regulate land use through detailed land use regulating plans and building permits as before but to interpret public interests and devise ways to safeguard them. Even though not legally binding, the MCP was given the key position in the Swedish planning system. The municipal monopoly regarding spatial planning aiming for SuD is one of the "cornerstones" of local self-governance. It allows municipalities to shape their own path to SuD based on local preconditions and perspectives. At the same time, there are generally accepted demands that municipalities should take the interests of neighboring municipalities and the state into account in planning (Ehinger Berling, 2006; SFS 2010:900; National Board of Housing, Building and Planning, 2017e).

[13] For a thorough presentation of the history and development of the Swedish MCP, see Nilsson (2001) and Fredriksson (2011).

The concept of national interests arose in the early seventies as a means for the state to influence and monitor nationally valuable natural resources through spatial planning (SOU 1971:75, SOU 2015:99). Today, the regulations regarding national interests can be found in the Environmental Code (SFS 1998:808). As already stated (Section 1.1), areas of national interest with regards to industrial land use interests (mineral deposits, windpower, communication, waste management, etc.) and conservation interests (natural and cultural values, recreation, etc.) are appointed by the national government and national governmental agencies. However, geographical borders and value requests can be defined through MCP in dialogue with CABs. As stated before, this does not apply to forestry and agriculture, which are instead defined (in the Environmental Code) as nationally important sectors. Guidelines for safeguarding national interests and simultaneously sectors of national importance (i.e., forestry and agriculture) should be formulated in dialogue with the CAB as representing the state. Furthermore, the CAB's exhibition utterance should be added to the plan before political adoption to indicate if the municipal intentions could be implemented without the state intervening (Prop. 2009/10:170; SFS 2010:900; Engström, 2011). Notwithstanding this, in the 1987 legislation, the local level gained more power as the municipal planners were assigned the role of interpreters of public interest (although in dialogue with the state) and the local politicians became responsible for making informed decisions (Fog et al., 1989; Ödman, 1992). As stated, the municipalities were given the opportunity to take charge of development by both presenting the physical preconditions and by stating guidelines for future development. This also strengthened the communicative function of MCP by attempting to sustain a dialogue with citizens and negotiate with land use actors at different levels and solve problems regarding conflicting land use (Nyström & Tonell, 2012; Fog et al., 1989). However, critics of the new law argued that the municipal power impeded transparency and that stakeholder participation actually decreased due to the limited possibilities for individuals to influence decision making (Fog et al., 1989; Ödman, 1992). Obviously, it is not easy to place MCP in a single position in planning theory, because it formally has characteristics from all four positions presented in Sections 3.3.1 and 3.3.2. With reference to Ziafati Bafarasat's schools of thought on spatial planning, it could be argued that MCP is best described by the school of transformative strategy formulation, where, in short, grassroots are empowered in strategy making but excluded from negotiation (Paper IV).

With the new legislation, the continuous process in planning with political evaluation every 4th year (between political elections), was endorsed. This was further strengthened by a modification of the Planning and Building Act in 1995

(National Board of Housing, Building and Planning, 1996). Another important modification in 1995 was the integration between spatial planning and environmental politics (between SFS 1987:10 and SFS 1987:12) with regulations regarding national interests, which were incorporated in the Environmental Code (SFS 1998:808). However, the apparent focus on environmental and health/risk assessments eventually led to the most recent revision of the Planning and Building Act (SFS 2010:900). The major focus of that revision was to acknowledge a stronger position of private actors in development. It was thought that municipal attractiveness for businesses and residents could be improved by making planning and building more efficient and the MCP more strategic. Hence, the Planning and Building Act adopted in 2010 stresses the economic dimension of sustainability in relation to the ecological and social dimensions to further make spatial planning and MCP aim for a holistic view on SuD (Nyström & Tonell, 2012; SFS 2010:900; National Board of Housing, Building and Planning, 2017f).

According to the current legislation and National Board of Housing, Building and Planning (2017g), MCP should indicate the direction for long-term (i.e., around 20 years ahead of time) development of the physical environment across the entire municipal area. It should also guide concrete decisions on use, further development and preservation of land and water and the built environment. In summary, it should be both strategic and guiding. Key objectives of MCP should be as follows:

- To guide municipal decisions and decisions on other authority levels.
- To provide knowledge for exploiters and the general public.
- To be an instrument in the dialogue between state and municipality regarding delimitation and satisfaction of national interests according to the 3rd and 4th chapter in the Environmental Code.
- To present of how the municipality plans to satisfy national Environmental Quality Standards (EQSs)[14].
- To provide statements of how the municipality intends to satisfy long-term housing needs.
- To guide rural development in shoreline settings.

[14] EQS are a juridical instrument that was introduced in Sweden in 1999 to address the environmental impact of diffuse sources of emissions, such as those originating from traffic and agriculture. The basis for EQSs is scientific knowledge of and criteria for what man and Nature can withstand regardless of economic or technical circumstances. Therefore, the norm should reflect the least acceptable environmental quality or the desired environmental condition. An EQS should encompass a certain geographical area. Today, there are EQSs for water quality, outdoor air quality and noise (Swedish Agency for Marine and Water Management, 2017; SEPA, 2017).

- To provide a collective document that refers to other goals, policies and plans on different levels that are considered to be relevant for SuD within the municipality, e.g., The European Landscape Convention (ELC), national Environmental Quality Objectives (EQOs)[15], regional development strategies and the local economic strategy/budget.

In addition, MCP should contain a presentation of assessed consequences based on all three sustainability dimensions (ecological, social and economic) and possibly technical and juridical aspects, i.e., how the suggested development of the use of land and water could affect public interests, including national interests and environmental quality goals (SFS 2010:900). MCP should, in most cases, also contain an environmental assessment according to the Environmental Code with regards to potential environmental impacts from suggested activities and measures (SFS 1998:808).

The aspects that MCP has to consider correlate well with the assessed challenges for Sweden with regards to the Global SDGs (Table 3). However, the sectorial structure in society makes it challenging for municipalities to manage a holistic SuD-perspective and landscape approach in spatial planning. This is specifically emphasized regarding SDG 15, where it is stated that Sweden has to increase and improve multi-stakeholder collaboration to meet central national goals set for the achievement of SuD (Anon., 2017d).

[15] The Swedish national government has adopted 16 environmental quality objectives (EQOs) that indicate what qualities the environment should have for a specified target year, which for the vast majority of targets is 2020. The aim of the EQOs is to achieve environmentally sustainable development in the long term (Anon. 2017e).

Table 3. *Factors that need to be considered in MCP in relation to global SDGs. Own interpretation of phrasings by the National Board of Housing, Building and planning and the Swedish national government (National Board of Housing, Building and Planning, 2017g; Anon. 2017c).*

Factors that MCP has to consider	Global SDGs	Swedish SDG-challenges relevant to MCP
• Individual as well as public interests, including rights and responsibilities based on democracy and equality. • A good social environment that is accessible and useful to all societal groups.	**1. No poverty** **2. Zero hunger** **4. Quality education** **5. Gender equality** **10. Reduce inequalities** **16. Peace, justice and strong institutions**	• To ensure environmental sustainability and biodiversity in agriculture. • To strengthen all sustainability dimensions in the entire food chain. • To reduce disparities in income, health, education, work and housing. • To counteract and prevent discrimination. • To safeguard and further develop Swedish democracy and law. • To maintain respect for and observance of human rights.
• An appropriate structure and aesthetically appealing design of buildings, green areas and communications. • Prospects of preventing and minimizing noise disturbances.	**3. Good health and well-being**	• To reduce health disparities in and between groups in society*.
• Potential to structure and organize appropriate water supply, sewage systems and waste disposal.	**6. Clean water and sanitation**	• To increase protection of ground water resources, e.g., by reducing pollution due to chemicals, medicines and nutrients.
• Suitable and sustainable energy supply and rational use of energy.	**7. Affordable and clean energy**	• To increase measures to make the transport sector clean.
• Economic growth and effective competition.	**8. Decent work and economic growth**	*No expressed challenge that matches the MCP considerations*
• Prospects of preventing and minimizing air pollution and climate change. • Long-term, sustainable use of land, water resources and good environmental conditions. • Potential to structure and organize appropriate electronic communication.	**9. Industry, innovation and infrastructure**	• To reduce greenhouse gas emissions. • To continue the general development of more sustainable industry. • To secure general access to reliable, fast and user friendly broadband.

Factors that MCP has to consider	Global SDGs	Swedish SDG-challenges relevant to MCP
• Adequate housing and housing development. • Potential to structure and organize appropriate traffic. • Security for people, e.g., by preventing and minimizing risks of accidents, floods and erosion.	**11. Sustainable cities and communities**	• To ensure sustainable and secure urban development with adequate housing supply. • To expand environmental and environmentally friendly public transport. • To work preventively for risk reduction.
• Prospects of preventing and minimizing air pollution and climate change. • Prospects for climate change adaptation.	**13. Climate action**	• To find methods for strongly, effectively and quickly helping to reduce greenhouse gas emissions. • To take measures for climate change adaption.
• Long-term, sustainable use of land, water resources and good environmental conditions.	**12. Responsible consumption and production**	• To contribute to and achieve sustainable consumption and production
• Water conditions and prospects of minimizing and preventing water pollution. • Long-term and sustainable use of water resources and good environmental conditions.	**14. Life below water**	• To contribute to sustainable management and development of national and international fisheries. • To reduce additions of nitrogen and phosphorus to the sea. • To increase chemical status of Swedish coastal waters.
• Natural, cultural and economic values in the landscape. • Stakeholder opinions.	**15. Life on land**	• To increase and improve multi-stakeholder collaborations to live up to, e.g., the generation goal, national environmental quality objectives (EQOs) and employment goals.
• Relationships between municipalities and relationships on a regional level. • International, national, regional and local policies and plans relevant to sustainable development in the municipality.	**17. Partnerships for the goals**	• To consistently and tangibly realize and contribute to national and international policy coherence in implementation of the 2030 Agenda.

* e.g., with regards to vulnerable groups, such as children, people with disabilities, newly arrived immigrants, adults with scant incomes and between men and women.

MCP is defined as a 'key' and the 'base' for strategic spatial planning in Sweden. Nevertheless, MCPs usually play a marginal role in guiding decision making and legally binding plans today, particularly in geographically large municipalities with small populations (Fredriksson, 2011; Papers III & IV). In many such municipalities, an MCP document has been developed to fulfill the legislation but then becomes "a paper product" (Nyström & Tonell, 2012), "a dusty document" (Paper III) or "a book on the shelf" and not a tool used in practice (Paper IV). Municipalities can complement the current MCP with additions, i.e., geographically in depth plans for a limited area (such as a town) within the municipality or thematic plans for certain topics (such as windpower) (*geografiska fördjupningar och tematiska tillägg*). Provided that current MCP is up-to-date, such additions have the same status as the "main" MCP (SFS 2010:900; National Board of Housing, Building and Planning, 2017h; Paper IV). It is increasingly common that municipalities use the opportunity work with additions even though the current MCP might not be up-to date. Fredriksson and cited authors (Engström, 2011; Nyström & Tonell, 2012) as well as paper IV provide a number of potential explanations for this (Section 4.3). Furthermore, various studies and essays (e.g., Ehinger Berling, 2006; Fredriksson, 2011; SKL, 2014; Papers III & IV) indicate that there is a disparity between municipalities with regards to the level of activity in the work with and implementation of MCP, both with regards to the planning process and the application of adopted strategies and priorities. The type of organization that municipalities have adopted to fulfill the responsibility for spatial planning varies substantially between different municipalities. Specific spatial planning administrations are mostly found in large or urban, municipalities (Nyström & Tonell, 2012), whereas rural municipalities do not usually have sufficient resources to keep such administration, or as one municipal official put it, "We are playing in the lowest division" (Pålsson, pers. com., 2009). Therefore, rural municipalities tend to have older plans with a weaker link to both regional plans and policies and to other municipal plans and decisions (SKL, 2014; Lundgren, 2013; Paper IV).

3.3.4.1 Urban-oriented tradition in spatial planning

As stated in Section 3.2, rural is a concept traditionally and predominantly defined in relation to urban, with regards to denominators such as population density and distance. This definition is viewed as essentially obsolete in modern times/society. However, the fact remains that preconditions for societal service and societal and spatial planning in rural and urban areas are not the same (cf. Forsberg, 2013). With reference to Swedish municipalities this applies to individual rural and urban areas located within a specific municipality or to

entire municipalities that are defined as rural or urban. As already stated, this thesis focuses on the latter case, i.e., whole municipalities.

First, strategic spatial planning for extensive geographic municipalities with large amounts of natural resources (used but to a large extent not taxed for locally), small populations and limited financial resources can be challenging (Paper IV), unlike in urban municipalities, where the preconditions are usually the opposite (Berge & Adolfson, 2011). Second, there are obvious relationships between urban and rural municipalities with regards to, e.g., labor and labor market, permanent and second home residency and land (forest) ownership, which places stress on the rural municipal spatial planner because societal structures and the local socioeconomy is not in all cases favored in the relationships. Examples of unfavorable "effects" are seasonal residents demanding societal services without adding any tax revenues to the municipality and the uncertain effects on the landscape and the local socioeconomy of the increasing non-residency among forest owners (Keskitalo et al., 2017). A third challenge is the prevailing urban-oriented tradition of spatial planning. This tradition is manifested by the fact that 'urban planning' and 'regional planning' are concepts used as synonyms for spatial planning in Europe and Sweden (Healey, 2003; Ehinger Berling, 2006; Fredriksson, 2011). To clarify this, spatial planning predominantly deals with issues of space for development, i.e., where and how to build, e.g., homes, industrial constructions and roads and how to expand urban areas in an effective way without compromising with "other" public interests, existing natural and cultural values, etc. In the Swedish case, MCP legislation in various ways expresses an aim to develop the local society with safeguarded national interests and a preserved environment as primary preconditions. Municipalities should identify geographic areas and declare terms of development so that they do not compromise public interests (SFS 2010:900; National Board of Housing Building and Planning, 2017g). At the beginning of 2017, the Swedish national government launched a public investigation regarding MCP entiteled "A developed MCP" (*översiktsplaneutredningen; En utvecklad översiktsplanering*). The background for this investigation was a nationally identified need to increase effectiveness in housing construction, which added to the focus on urban development in spatial planning (Kommittédirektiv, 2017:6). This focus can be questioned in geographically large and sparsely populated municipalities where space is not a limiting factor, where national interest areas and formally protected areas cover a major part of the municipality and a crucial concern for survival of the local society is to attract more people and businesses (Section 1.).

Ehinger Berling (2006) has discussed the geography of urban and regional planning in our increasingly mobile lives. She concluded that regional planning

(in the sense of spatial planning over larger areas than a single municipality) could be advantageous in the southern parts of Sweden where municipalities, rural as well as urban, are geographically small, and therefore not able to handle territorial development, a large population and modern mobility in practice "on their own". A primary condition though is that democratic legitimacy has to be secured. In the northern parts of the country and particularly in the rural inland and mountain regions, municipalities are geographically very large with sparse populations. Even though there is a need to cooperate across municipality borders, Ehinger Berling argues that it would be difficult to handle such geographically large regions in planning.

Thus, the concepts 'urban' and 'regional' planning do not apply for spatial planning in geographically large, rural municipalities. Consequently, the extensive scope and urban-oriented guidelines for MCP does not really "fit". However, rural municipalities still need an effective tool to identify strategic priorities regarding land use and SuD and, hence, such municipalities need extensive knowledge about the LNRs, i.e., how they are used and by whom (Papers I & II). Even though there are identified concerns about the usefulness of MCP in its current form and in rural municipalities, there is scope for elements of MCP to be elaborated upon. One of these elements is the intended, but for different reasons often not fully accomplished, participatory process.

3.4 Sharing and producing knowledge in a participatory process

So far in this thesis, arguments have been presented, in various ways, regarding 1) Nature as essential for the local society and socioeconomy (Papers I & II); 2) the importance of knowledge-building and synthesis concerning the landscape at hand (i.e., balance between ecological, social and economic sustainability) as central in strategic spatial planning (Papers III, IV & V); and 3) the opportunities for stakeholder participation in spatial planning to form a broader knowledge base (Papers III, IV & V).

Dialogue and cooperation between stakeholders, or stakeholder participation, to some degree is considered to be essential in spatial planning (Arnstein, 1969; Friedmann, 1987; Papers III & IV). A relevant concept with connections to stakeholder participation in spatial planning for SuD, the principles of communicative planning and Ziafati Bafarasat's (2015) school of innovative action (Section 3.3.2) is that of collaborative governance (CG). CG has been defined by Emerson (2011, p. 2) as "processes and structures of public policy decision making and management that engage people constructively across the boundaries of public agencies, levels of government, and/or the public, private

and civic spheres in order to carry out a public purpose that could not otherwise be accomplished". Much of the literature concerning CG has focused on the input and factors affecting the process rather than SuD outcomes (Ulibarri, 2015; Scott, 2016; Bjärstig, 2017). However, partnerships and CG can be seen as crucial to SuD (Emerson et al., 2011; Glasbergen, 2011). In CG, functioning collaborative dynamics consisting of principled engagement (who should collaborate?), shared motivation (why collaborate?) and capacity for joint action (how to collaborate?) are essential (Emerson et al., 2011). Potential partners in different sectors often enter a collaborative process with different views of reality and preferences for development (Sandström, 2015; Carlsson, 2017). Even though interdependence and opportunities for added values of collaboration are important for the success of a partnership, the partners first need to have a readiness for collaboration. According to Glasbergen (2011), the basic mechanism for this readiness is trust and trust grows from a belief ("why collaborate?") in and a continuous reassurance of the good intentions and the competence and legitimacy (important for "how to collaborate?") of the partners.

Another relevant concept that strengthens the argumentation for a high value of stakeholder participation and cooperation in processes is interdependent science. Fortmann & Ballard (2009) have described research processes where conventional (i.e., "professional") and civil (i.e., "local people") scientists work together in an equal relationship to generate more grounded and applicable science. Such collaboration is not about professionals seasoning their work with local knowledge or locals waiting for research to be handed down. Rather, "Interdependent science acknowledges that all people create knowledge, respects the knowledge and expertise of different kinds and classes of people, recognizes that effective research often requires multiple methods with which to triangulate on better practice, and evaluates and tests both conventional and civil science with equal rigor" (Fortmann & Ballard, 2009, p. 470). The challenge, according to the authors, is that interdependent science most likely requires participatory methods and demands transdisciplinary approaches.

Common for the concepts highlighted here is that knowledge of different types (including traditional knowledge) is considered to be crucial in competence and legitimacy, i.e., the assembly, sharing and co-production of new knowledge. In turn, this knowledge-based legitimacy is important for successful participatory processes and for making informed assessments and decisions (Emerson et al., 2011; Sandström, 2015; Fortmann & Ballard, 2009). As stated in Section 3.3.3, knowledge about the landscape, as a socioecological system (e.g., defined local society) and the traditions and preconditions for the use of natural resources in society, is fundamental in spatial planning. Therefore, actors as well as spatial planners and decision makers need evidence-based and shared

knowledge about the use of natural resources within the municipality/landscape so that local spatial planning can be used as an effective tool in spatial planning with a holistic perspective on development, or spatial planning for SuD.

The sectorial structure of authorities and businesses and sector planning in Sweden (e.g., Nature protection, forestry, reindeer husbandry and mining) implies different perceptions and understanding of the same landscape or that different actors 'see' different landscapes. Communication and cooperation between sectors in planning are often underdeveloped (Carlsson, 2017; Stjernström et al., 2017). This can place heavy restraints on MCP as a tool for spatial planning for SuD, i.e., the larger the landscape and number of stakeholders, the harder it is to manage effective and productive communication and knowledge-sharing in the planning process (cf. the features of the school of innovative action and intentions behind generative planning; Paper III).

3.4.1 Spatial data and maps

As stated by Elg (2005), a well-presented, educational and informative map can be a valuable support in spatial planning when attempting to describe circumstances and relationships between spatial data. Geographic information systems (GIS) can be powerful digital tools for analyzing and presenting spatial data (Ólafsdóttir & Runnström, 2011; Sandström, 2015; Moore et al., 2017; Paper V). Furthermore, one of the advantages of using GIS in spatial planning is it can be used to support participatory processes and deliberations. Actors in a spatial planning process can show and share their maps in a common system. Maps and GIS offer a communicative tool in spatial planning, but there is a need to elaborate on this potential. GIS and its full potential are not used as frequently and extensively in planning as anticipated (Sandström, 2015). One of the main obstacles is that current data structures and data systems in different sectors, e.g., within municipalities and land use actors and authorities on different levels, make it hard to cooperate and exchange data (Andersson, 2011). GIS is also still mainly used as a database and seldom used for modeling and spatial analysis. Moreover, GIS staff and planning staff are often different persons with different chores and responsibilities (Göçmen & Ventura, 2010; Wei et al., 2011), i.e., GIS is mostly used by experts behind an office desk. This is unfortunate because GIS maps can be projected on a wall during meetings, and layers can be turned on and off as actors communicate different issues and perspectives in order to reach mutual understanding and even obtain new knowledge (cf. Sandström, 2015). To conclude, the potential of GIS for producing knowledge and broadening the knowledge base in spatial planning is great, but the will in society to do this is not yet strong enough.

4 Results and reflections

As indicated in Section 1.3, the three main objectives in this thesis are specifically addressed and linked to one or two of the five papers compiled herein. In this chapter, the results from and reflections on the papers are summarized based on each objective.

4.1 Summary of Papers I & II: Local natural resource dependency in rural boreal Sweden & Commercial activities in a local natural resource dependency perspective

Papers I & II present the results from my first case study in Vilhelmina and aim to highlight and describe the importance of LNRs for the local society and its development. Central conceptual departures in the two papers are the socioeconomic system, which highlights strong links between a (local) society and Nature, and the pursuit of SuD, where ecological, social and economic aspects of sustainability need to be balanced. The results clearly demonstrated the extent to which a municipality's dependence on LNRs was through local businesses. 78 % of the respondents representing local businesses in Vilhelmina Municipality indicated that they conducted one or (often) more than one activity where natural resources and access to these were of crucial importance. Nearly half of the respondents (45 %) stated that the main (or one of the main) activities was forest farming. Together, the LNR-dependent businesses provided a relatively large number of engagement opportunities (1922 or 65 %) in relation to the total number of engagement opportunities provided by businesses (2946) in Vilhelmina. The respondents also reported a strong and stable link to the municipality through personal relationships: many had chosen to establish their business in Vilhelmina because they lived there (50 %) and/or had inherited a

property (22 %) and most were planning to stay in business and in Vilhelmina (78 %) during the next five years at least.

A central observation from the study was the clear links between the wishes, needs and activities of local businesses and the people involved in them, and the boreal rural municipality's socioeconomics and traditions. In Paper I, this observation is discussed in relation to life mode theory[16]. Life mode theory is not elaborated further upon in this thesis. However, Paper I concluded that social and economic development of a society is closely linked to individual preferences with reference to the good life and how the good life is influenced by local culture, traditions and LNRs.

In Paper II, an attempt was made to cluster small businesses based on LNR-dependency. The result were not unambiguous, but a dominant business category was found in each of the seven clusters, or profiles, identified: trade, tourism, service and (in four of the profiles) forest farming.

Papers I & II present basic knowledge that is vital for assessing the importance of LNRs to Vilhelmina Municipality as an example of a local society. The prospects of obtaining this type of knowledge through official statistics in Sweden are currently limited. The information presented can be applied when developing methods to further build on a broad knowledge base regarding local land use. The primary theoretical contribution from the study was evidence of the need for a holistic perspective and comprehensive knowledge about LNR-dependency in local efforts for SuD as a base for global SuD.

4.2 Fulfillment of objective 1: Quantify and characterize the importance of local natural resources (LNRs), including forest resources, in a Swedish rural boreal municipal perspective (Papers I & II)

The question of whether and how the local land and water use in a boreal rural municipality (Vilhelmina) can be characterized and quantified to assess its significance for the local community was fundamental in Papers I, II & V. However, Paper V should be viewed as a development based on the results presented in Papers I & II, and consequently Paper V is discussed in relation to the specific research objective in Section 4.6.

[16] According to life mode theory, people live their everyday life in different cultures and socio-structural life modes with diverse preconditions, and hence they have different perspectives of a good everyday life and how to achieve it. Small businesses are characterized by a “non-capitalistic” rationality (Gillberg & Stenberg, 2002; Bergqvist, 2004).

Through the theoretical and contextual framing presented in Chapter 3, the roles and connections between the concepts of the socioecological system, landscape, local society and spatial planning for SuD were investigated. The importance of different types of knowledge about local conditions and the landscape at hand was stated. In a Swedish rural boreal municipality, the municipal government no longer has control over the large-scale extraction and use of LNRs or any directly gains from such activities. National legislation sets the primary rules for hydropower production as well as for mining and forestry (SFS 1979:429; SFS1991:45; SFS1998:808; SFS 1998:812). The same applies to reindeer husbandry, which has statutory rights based on tradition (SFS 1971:437). Furthermore, national legislation sets the rules for geographic areas of national interest (which have to be safeguarded) and formally protected areas (SFS 1998:808). In this sense, land use, as well as legislation and official statistics regarding land use, are nationally governed and structured "by sector". However, the municipal government is legally responsible for SuD at the local level, from which is developed global SuD. Hence, the municipal government is in need of a comprehensive overall view of the extent of LNR-dependency and use in a local society. Papers I & II demonstrate that the knowledge needed about the use of Nature, people using Nature and the link between use, traditions and human well-being cannot be obtained from official statistics. The papers show that a "local perspective" and applied methods are necessary to gain a more detailed view on how and by how much LNRs contribute and could contribute in the development of the local society.

As presented in Papers I & II, half of the small businesses in Vilhelmina Municipality, representing the local business community, could be categorized into trade, tourism, and service. The other half primarily represented forest farming, or NIPF. The geographic extent of forest land in a rural boreal municipality like Vilhelmina is vast. Furthermore, the large number of NIPF entrepreneurs/businesses, whom show similar characteristics and significance to the local socioeconomy as other types of entrepreneurs, is usually disregarded in official statistics on small businesses. Another example, although not within the scope of this thesis, is that there seems to be a gap in the research literature regarding the importance of reindeer husbandry to the local society (Section 3.2.1). This lack of information implies that the preconditions for MCP, as a knowledge-based spatial planning for positive development with balance between ecological, social and economic aspects, are limited. However, all local entrepreneurs, regardless of which sector they belong to, should and can be perceived as multi-engaged municipal citizens of the local society and/or the people/entrepreneurs who actually use the landscape. Therefore, they should be recognized in spatial planning efforts for SuD.

4.3 Summary of Papers III & IV: Is spatial planning a collaborative learning process? A case study from a rural–urban gradient in Sweden & Between protocol and reality – Swedish municipal comprehensive planning

The results from case studies conducted in the Swedish mountain region and the Bergslagen region about MCP as a tool in strategic spatial planning for SuD, are presented Papers III & IV. These papers initially discuss planning theory in general and then conditions for participation in the spatial planning process in particular. The papers demonstrate that possibilities of using MCP as a tool for landscape planning aiming for SuD are supported, both by legislation and the attitudes of municipal officials, but that the resources (finances, personnel and time) are scarce in relation to the planning effort that would be required. Many of the municipalities do not have a budget for MCP, nor designated and trained planners. Most mountain municipalities (Paper IV) have plans that have not been politically adopted or actualized within the last four years (or once between political elections) as is statutory. Some of the municipalities have very old plans (up to 25 years). Respondents that claim their municipality is working on a new plan estimate the work to extend to over three years. According to both Papers III & IV, resources seem to be an even bigger issue in geographically large, rural municipalities.

Legislation refers to SuD as a primary goal in spatial planning (SFS 2010:900) and a landscape approach is considered to be a precondition when planning for SuD (Council of Europe, 2000; Scherr, 2013; Sporrong, 2013). Municipal officials acknowledge the potential of having a comprehensive strategy that indicates the direction for further planning and decisions (Papers III & IV). However, in most cases, MCP is not the active, inclusive and communicative process referred to in the law and desired by stakeholders (Papers III & IV; Fredriksson, 2011; Nyström & Tonell, 2012). The challenge of dealing with a variety of complex issues and land uses guided by overlapping jurisdictions over a large geographical area (Chapter 1) makes it difficult for many municipalities to plan with an actual landscape perspective "The questions are big and hard to grasp" (Paper IV, p. 11). Many of the municipalities choose to develop thematic and/or geographic additions to the current MCP (e.g., for windpower development, rural development in shoreline settings and for community centers), in part because of external funding for such planning (which could also allow for/include hiring a consultant) but also because they are considered to be more useful and easier to handle with regards to the scope (Paper IV).

One important result in Papers III & IV was that the preconditions for successful planning, in the sense of making it useful as a tool, vary widely between different municipalities (Fredriksson, 2011; Nyström & Tonell, 2012). The preconditions appear to be better in the municipalities that can be characterized as urban to some extent. Another observation in Paper IV was that most municipality officials consider municipal planning material and information provided by the CAB to be sufficient. However, in addition to this, both municipality officials and stakeholders think that participation and communication between different stakeholders is crucial in making planning knowledge-based and meaningful. Yet, the municipal governments fail or only partially succeed in involving stakeholders in the way and extent they wish; "People are interested in details where they live and things that are important for them in everyday life. Usually only a few people become involved in the planning process" (Paper III, p. 275). However, both studies yielded results that indicated a higher level of perceived success and/or tangible results (to be incorporated in political priorities and statements) in participatory efforts focusing on limited issues or in specific stakeholder groups. Analyses made on the results in the study in Bergslagen showed that a few successful cases of stakeholder involvement could serve as starting points for long-term development of participatory processes.

An important conclusion was that in order to achieve stakeholder interest and participation in MCP, participatory methods need to be adapted and arenas for meeting need to be suitable for the specific stakeholder or group of stakeholders involved (cf. Velásquez, 2005; Khakee, 2006). Another conclusion was that further studies of the actual impact of planning on land and water use and social development are needed to determine how preconditions for effective MCP, i.e., landscape perspective and balance between economic, ecological and social sustainability, can be improved.

4.4 Fulfillment of objective 2: Examine, analyze and problematize MCP as a tool in strategic and participatory spatial planning for SuD (Papers III & IV)

One of the main contributions from Papers III & IV and the studies of MCP as a tool in participatory spatial planning for SuD was to highlight spatial planning with a landscape perspective in rural areas. This was done in relation to the statutory requirements and the expectations on MCP among land use actors and the CAB as the supervisory authority. Spatial planning, led by the public sector, on the local level and considerations of local conditions and needs are

internationally recognized as essential for achieving SuD (Section 3.1). Based on this and the formal requirements for Swedish MCP to consider the landscape perspective and SuD as overall goals, both Papers III & IV conclude that MCP has great potential as a tool. Within planning theory, both pros and cons of top-down and bottom-up approaches are highlighted with regards to efficiency and legitimacy in planning. Top-down in MCP originates because the municipal government acts as the planning agent and makes political priorities and formulates standpoints, in some respects in dialogue with the state. The MCP-process also has a statutory requirement for a bottom-up-related democratic acceptance through a minimum level of consultation and exhibition procedures (Section 3.3). Papers III & IV show the potential of MCP in these respects, but like other studies (e.g., Fredriksson, 2011; Nyström & Tonell, 2012), they also show that the tool is often not used optimally. This appears to be particularly problematic in sparsely populated natural resource-rich municipalities. The non-fitting structure and scope of spatial planning in rural municipalities was also highlighted by Alexandersson & Georgsson (1985). However, it does not seem to have been addressed in research or elsewhere since. Besides the legal demand, the connections between historic and current use of LNRs and socioeconomic development in rural municipalities suggest a need for MCP. However, resources for MCP in rural municipalities need to be increased because, as Paper IV indicates, restrictions on resources seem to be the key reason for the lack of planning efforts. One direct explanation for the shortage of resources is the strained economy in these geographically large but sparsely populated municipalities. Indirectly, it could be questioned whether perceived reasons for allocating resources are also lacking. In Paper IV and in Section 3.3.4.1, the urban-oriented tradition in spatial planning is highlighted as an obstacle to MCP in rural municipalities. It could be argued that urban-oriented tradition, at least to some extent, could cause such low incentive.

Owing to the limited resources, the actual top-down rationality in MCP in rural municipalities can be questioned. Rural municipalities rarely have spatial planning administrations but cover the most necessary planning needs by using personnel from different municipal departments to take on partsof, or the entire responsibility for MCP. In some cases, mainly when it comes to thematic and geographic attachment plans, (*tematiska tillägg och geografiska fördjupningar till ÖP*) the municipal government hires an external consultant (Paper IV). According to both Papers III & IV, a bottom-up perspective in MCP (by means of stakeholder involvement in planning) is considered important both by law and by stakeholders involved in MCP. Nevertheless, stakeholder participation, beyond what is required, in MCP is limited, such that MCP cannot be considered to function as a learning process where stakeholders share and produce

knowledge to improve preconditions for priorities and decision making regarding natural resource use and societal development. The effectiveness of participatory efforts is questionable even though there are good examples that have potential to be developed.

Ziafati Bafarasat's (2015) classification of spatial planning within the three schools of thought has provided a valuable complement to the theoretical positions in planning with regards to top-down and bottom-up organization. According to Ziafati Bafarasat (ibid.) stakeholder involvement is one of three key features in spatial planning, the other two being policy implication and implementation. Policy implication includes the width and level of which and whose interests are included in the planning. Here, effects of the vast scope of MCP become clear. One of the respondents in a mountain municipality stated that “the best [a wide focus and scope] is sometimes the enemy of the good, it can sometimes put a cane in the wheel when it comes to being able to get to a rolling MCP”. The MCP should contain "everything" but that is, ultimately, defined by the planner and local politicians and affected by access to information, resources, needs and reasons, etc. With non-functioning stakeholder participation in MCP, the municipalities rely heavily on the CABs to provide planning material/ information and knowledge. In addition to general advice from the National Board of Housing, Building and Planning and plan-specific utterances from the CABs (as representing the state and safeguarding public and national interests), it is up to planners and local politicians to decide how the plan should be structured and what it should contain. In Paper IV, implementation, as the third key feature in the schools of thought on spatial planning (Ziafati Bafarasat, ibid.), is referred to as the degree to which MCP is used as a tool in the mountain municipalities. Both Papers III & IV indicate, in agreement with other studies, e.g., Nyström & Tonell (2012) and Fredriksson (2011), that implementation of MCP does not work because MCP is primarily treated as a plan document that is completed and set aside. The absence of a planning administration, limited resources for enhanced participation in the planning processes and lack of comprehensive knowledge about local land use create poor conditions for MCP, and thus the prospect of using MCP as an effective tool in rural municipalities. In the worst case, MCP is arbitrary and random, with the primary aim of satisfying the legislator's minimum requirements or the needs of a developer.

4.5 Summary of Paper V: Visualizing the forest in a boreal forest landscape — the perspective of Swedish municipal comprehensive planning

In Paper V, Vilhelmina Municipality and the identified knowledge gap regarding the local businesses' dependence on and use of LNRs was once again given attention. The particular focus was on forests and how a knowledge base and communication about land use in the forest landscape can be incorporated into MCP for the benefit of both the public and individual interests. As mentioned before, half of Vilhelmina Municipality's area is covered with forest, and half of the large number of LNR-dependent activities in the municipality is dedicated to some kind of forestry and forest land use, i.e., forest enterprises. In Paper V, analyses were made for the entire municipality as well as for the focus study area in the east (Section 2.2). With regards to the entire municipality area, NIPF owners hold 38 % of the forest land, companies own 24 % and the state owns 23 %. The corresponding numbers for the focus study area are 45, 33 and 15 %, respectively. The rest of the forest land is owned by the municipality, a forest common, the church, foundations and unidentified owners (Lidestav et al., 2017).

Forest owners and forests beyond what can be defined as urban or urban fringe forests do not seem to have a natural place in MCP, even though MCP should aim for SuD with a landscape perspective. The structuring of society in various business sectors, property rights and the forest's special position as judicially stated to be of national importance, but not yet of national interest, demonstrate that the relationship between municipal spatial planning and forestry is complicated. Forestry related activities are well planned in the forest owners' forest management plan (FMP), but in MCP, there is a gap when it comes to considering forest land and the use of it. In Vilhelmina municipality, this gap represents 46 % of the land within the municipality and 64 % in the focus study area.

Even though normative, there are several arguments that forest use, forest companies and the dialogue between the municipality and forest owners should be part of MCP. On the one hand, the forest owners' choices and forest business activities affect the local society and landscape (Stjernström, 2013; Carlsson, 2017). Results from analysis of spatial data for the focus study area in the eastern half of Vilhelmina Municipality indicated that the condition of the forests, in terms of age, differs between categories of forest owner. NIPF owners hold about twice as much of the never final felled forest area as companies and the state. Non-residents own a larger area of final felled forests (51 %) than resident owners (45 %). Most forest areas with significant ecological, cultural/historical or recreational worth in Vilhelmina have not been subjected to final felling

(Lidestav et al., 2017). Thus, links between forest condition (indirectly the forest owner) and potential ecological and social values of the forest were apparent. On the other hand, the municipality's strategic statements regarding land and water use and urban development, with the purpose of safeguarding public interests, could influence how the single forest owner is able to use his/her forest land.

The main conclusion from the study was that, despite some difficulties, it is possible to collate a common knowledge base on forest land use for actors at different levels of society (landowners, entrepreneurs, developers, authorities, etc.) by using GIS to combine existing spatial data. GIS makes it possible to visualize and communicate the same knowledge base at different scales, e.g., from property level to national level. The approach presented in Paper V provides opportunities to view the individual forest owner and forest property in a landscape perspective. The information obtained from the analysis would be valuable to the stakeholders, but it also increases the opportunities for geographical analysis of forest land use in relation to other land use interests. The information provides a common starting point for dialogue between the municipality, forest owners and other stakeholders in MCP on "best possible land use", and perhaps even coordination for promoting a landscape perspective that would be beneficial to all parties.

4.6 Fulfillment of objective 3: Compile, analyze and communicate spatial data on forest ownership, forest condition and forest values to be integrated in MCP as a precondition for enabeling participatory spatial planning for SuD (Paper V)

The study, presented in Paper V, builds on results concerning the need for better knowledge about the use of LNRs, the large number of NIPF owners among small businesses in the boreal, rural municipality of Vilhelmina (Papers I & II) and the need for a holistic perspective and participatory efforts for knowledge-building in MCP (Papers III & IV). The extensive forest land and large number of forest owners are important for the socioeconomy and development of this boreal rural municipality. Still, forest ownership by itself is not regarded as an enterprise equal to other types of small businesses in official statistics (Papers I & II), and there is no substantial planning material regarding forest land use among the CAB's collected material (national and regional but also international) relevant for spatial planning. As a consequence, forest land use is marginally handled in MCP, both in planning itself and in any form of participatory process (Paper V).

Collaborative dynamics (Section 3.4) are inevitably stronger between the Swedish forest owner (as a producer of forest resources) and the forest industry (as a provider of a market for the forest resources) within the forest sector than the link between the forest owner (as a private land user) and the municipal government (as the provider of societal services and the planning agency regarding economic, social and environmental SuD in the municipal landscape) (cf. Glasbergen, 2011). Still, forest owners need societal services and infrastructure and the municipal government needs inhabitants and local businesses (Hytönen et al., 1995; Törnqvist, 1995; Thellbro, 2006). Hence, SuD of the municipal landscape would be beneficial to both parties. Further, it has been argued that governments in countries with a large share of private landowners need to find a way to cooperate with them in order to increase and maintain different forest resources, values or services (Frank & Muller, 2003; Wiersum et al., 2005; Prop. 2008/09:214; Mäntymaa et al., 2009; Raitio & Saarikoski, 2012; Widman & Bjärstig, 2017), such as timber products, wildlife, biodiversity, water quantity and quality, recreation and tourism, amenity, etc. (Hytönen., 1995; Cubbage et al., 2007; Sténs et al., 2016). Fortmann & Ballard (2009) have shown that the process of interdependent science (Section 3.4) can be used to form local research partnerships to update forest management in this manner, supposedly for the benefit of individual forest owners as well as the local society (Getz et al., 1999). However, the authors argue that this will require major changes in the education of professionals and scientists as well as of locals and that the locals must be able to actually impact decision making.

As argued in Chapter 3 and Papers III & IV, the importance of the local level for SuD, as well as the local need for conscious governance for positive development in rural boreal municipalities, should be seen as obvious reasons for developing MCP in the sense of local strategic spatial planning. The conclusions in Papers I-IV support the need for increasing the capacity and legitimacy of the municipal government in MCP by increasing its knowledge about land and water use within the municipality, including the use of forest landscapes. MCP has been identified as a valuable tool for bringing stakeholders together and broadening the knowledge base in spatial planning work. Related to this, maps can be considered to have an obvious place in strategic spatial planning. Since the introduction of GIS, the possibilities for using such systems in presentation, analysis and communication of geographic or spatial data has increased immensely (Section 3.4.1). Today, much of the planning material provided and/or referred to by the CAB or national authorities for MCP and other spatial planning is based on GIS. Nevertheless, the use of GIS in MCP is limited. As information on forests and forest land use is very marginal in such planning material, it provides an excellent example to study. The purpose of the study was

to test and illustrate the potential of GIS and provide an opportunity to increase knowledge about local use of forest land by means of the FoDAA. The FoDAA provides new knowledge based on merges and overlays of existing knowledge in a way that has not been done before. Therefore, such data has not been available on a municipal level. The purpose of the FoDAA is to improve preconditions for bringing together the forest sector and MCP by means of dialogue and collaboration. The quality of results from the FoDAA and the usefulness in MCP of the knowledge presented are yet to be tested and evaluated. Most likely, the FoDAA would benefit from supplementary information on, e.g., ownership history, and more in depth information on forest condition (in addition to age). However, as indicated in this thesis, there are also other issues to address with regards to the general enforcement of the participatory process in MCP and stakeholder influence in decision making.

5 Conclusions and recommendations

The overall goal of the work upon which this thesis is based was to improve the preconditions for Swedish MCP, and thereby encourace increased implementation of MCP and applicability of planning outcomes in rural boreal municipalities. In this chapter, suggestions regarding efforts needed to reach this goal are presented. Furthermore, some general conclusions are made regarding the placement of MCP in an interdisciplinary theoretical and contextual framework. Finally, prospective thoughts on further research are given.

5.1 Increasing implementation of MCP in rural boreal municipalities

MCP could be the ultimate local strategic spatial planning instrument for local politicians and decision makers. MCP has the potential to provide the knowledge base and deliberative forum that could satisfy the land use actors or any other stakeholders in spatial planning. Furthermore, MCP could be one important tool for Sweden to contribute in strategic work to achieve SuD in an international perspective (Table 1) since all the formal and informal institutional preconditions (Section 3.1) are in place, at least in principle. It could be argued that a sustainable landscape and SuD does not end at the municipality border (Ehinger Berling, 2006). Nevertheless, the theoretical and contextual framing of this thesis considers that SuD should originate at the local level, with spatial planning led by the public sector in the local society. However, MCP does not seem to function as intended and desired (Fredriksson, 2011; Nyström & Tonell, 2012; Kommittédirektiv, 2017:6). The studies included in this thesis indicated that the urban-oriented formal structure and scope of contemporary MCP is not fit for preconditions in large, natural resource-rich, rural boreal municipalities. Furthermore, sector structure and overlapping jurisdictions cause problems in spatial planning aimed at a landscape perspective on sustainable use of land and

water resources. Local culture and traditions, societal regulations and spatial planning can be viewed as essential informal and formal institutions affecting how natural resources are perceived and in what manner and extent they can be used. With this view, the urban-oriented tradition and sector structure impose obvious restraints. If successful outcomes in efforts for SuD are desired, local cultural and natural preconditions cannot be set aside in societal regulations of land use and in locally based spatial planning.

Today, there is no compulsory formal template for MCP. This is probably beneficial since municipalities across Sweden and their prerequisites and need for development differ in many ways. However, the scope of MCP is bound to follow the same guidelines regardless of the size and geographic location of the municipality, the extent of identified national interests within the municipality, land use demands and other features that might vary between municipalities and affect preconditions and needs with regards to spatial planning. The statutory requirement is to produce and adopt a non-legally binding plan that should be evaluated and possibly updated every four years (between public elections). As demonstrated in Papers III & IV, MCP in rural municipalities is generally not an ongoing process in practice. The main purpose of planning seems to be to fulfill planning obligations, but even that is usually not accomplished. MCP is rather a planning project with a beginning and an end that results in a paper product or possibly a digital document. Despite legislation, the plan is often left to age without evaluation or revision (this observation is supported by reports in, e.g. Fredriksson (2011), Nyström & Tonell (2012) and in Kommittédirektiv 2017:6). Furthermore, Papers III & IV indicate that priorities and statements made in the MCP document are sometimes not actually applied. It is suggested that this is because the plan is merely a desktop product that is not well grounded through, e.g., participatory efforts during the planning process. The low level of implementation of the plan could be a result of low level implementation of planning, or to put it in other words: The current plan being too old makes it irrelevant. The primary reason for this general lack of planning is stated to be lack of resources. With regards to planning efforts, political and democratic processes are slow. As indicated in Paper IV, a new MCP could easily take three to four years for a rural boreal municipality to complete for political adoption. This implies that revision should start directly after the following political election. Bearing in mind that the amounts of resources that MCP generally requires is often considered too high, the process could be interpreted as inefficient in a rural context its current state.

Based on this basic summary of preconditions and conditions related to MCP, it can be argued that it is time for the national as well as the local level to rethink of the purpose of MCP, i.e., what is being planned and for whom? In the

following, some suggestions will be made with regards to how a differentiated and developed planning process could improve the preconditions, primarily in rural municipalities, for active spatial planning.

In the light of the ongoing public investigation concerning MCP (*översiktsplaneutredningen*) (Kommittédirektiv, 2017:6), the weaknesses and opportunities in MCP are both timely and interesting to discuss. The main focus in the MCP investigation is effective and increased housing construction. However, in order to develop MCP, it is essential to consider local needs and rural development as well and that is generally not all about building new homes.

In rural boreal municipalities, access to land and water is abundant and the geographic areas of protected and formally identified resources and land use values (ecological, social and economic) are extensive. Balancing land use interests and planning for SuD is as important as in other types of municipal settings. However, the space available for construction and development of built environments are not major issues. It is unreasonable to assume that the urban-oriented focus on securing space for public interests in the current spatial planning system, and hence in MCP, is equally relevant in all municipalities. Likewise, the motivation and needs for increased municipal investments linked to housing construction, have to be assessed with regards to municipalities where the populations are shrinking and apartment houses are torn down because the tenants are too few. Therefore, it should also be assessed whether the system could be developed to allow for differentiation and/or more flexibility based on local relevance in relation to public interests.

MCP is required to present priorities and standpoints for development based on a vision and comprehensive presentation of land use within the municipality. Simultaneously, it should safeguard public and national interests. In a geographically large, rural municipality, this comprehensive presentation and the safeguarding of geographically wide-ranging interests as well as overlapping jurisdictions and land uses require extensive work. In the absence of sufficient trained personnel and financial resources, this work is challenging to manage and to follow through in every aspect. Consequently, MCP (could) fail, at least in part, at being a deliberative forum and support in decision making. Paper IV, along with Fredriksson (2011), indicates that municipalities, urban and rural, choose to focus on thematic and geographic additions to their current MCP. For different reasons, e.g., external funding, external demand, priority based on limited resources and local need for planning, municipalities choose to focus on smaller parts and different aspects of MCP rather than dealing with them all at once. Paper IV as well as the MCP investigation raises questions about how this affects the prospects for holistic spatial planning. Nevertheless, it could be argued that the potential in reshaping MCP structure to allow for continuous and

systematic, but structurally divided, MCP should be evaluated. One measure to address this, would be to help municipalities by structuring MCP in geographic and thematic parts, somewhat similar to, e.g., the structure in Norwegian planning (Anon., 2011; Anon., 2012a, b) and possibly also to appoint mandatory and optional parts of MCP. Taking this one step further, the non-binding status of Swedish MCP and its effect on a municipality's perceived reasons for planning as well as the effects on support in dialogue and on following legally binding plans and decisions regarding land use could be examined. In, e.g., Denmark, Norway, Finland and Iceland, the plans comparable to Swedish MCP have clear legal status (Anon., 1999). A legally binding MCP, or at least legally binding in part, would increase the municipalitys' reason to plan and make land use decisions more foreseeable (Kommittédirektiv, 2017:6). However, development toward binding MCP would require a thorough investigation of preferences in and needs for spatial planning on different levels and it would demand revision of a number of laws.

To succeed in coordinating and making well-informed standpoints regarding different land uses and interests, Papers I, II & V show that there is a need for different methods in order to collect and produce knowledge about who is using what, how and when. Furthermore, Papers III & IV affirm that land use has to be communicated. Municipal planners communicating with authorities and collaborating with different groups of land use actors and interests as well as local citizens in their villages or districts, geographic areas or fields of expertise is crucial in an MCP process (Khakee, 2006; Nyström & Tonell, 2012). Hence, the legally sanctioned, democratic process in MCP must be regarded as important to preserve and develop further, regardless of whether the MCP structure and process stays the same or is changed somehow (Papers III & IV; Kommittédirektiv, 2017:6). However, owing to limitations imposed by the sectorial structures in society, it can be argued that national and regional authorities should take on the important task of reinforcing municipal *capacity* for and *legitimacy* in MCP in general and in participatory processes in particular.

It could be argued that rural boreal municipalities, as local governments, are not capable of managing spatial planning with the extensive scope of MCP because they do not have monetary resources or sufficient personnel trained for this task (Papers III & IV). Reinforcing *capacity* could entail allocation of national resources (Kommittédirektiv, 2017:6) in order to improve preconditions for MCP in general and for participatory processes specifically. National funding of MCP is also motivated by the extensive external claim that, e.g., safeguarding national interests requires at the local level, particularly in large, rural municipalities. National funding would of course demand investigations of reasons, preferences and needs for MCP on different levels. However, there are

existing models for granting national funding in municipal activities (based on municipal size, need, etc.) with impact at a national level and beyond (e.g., municipal energy counseling), which could be developed (SFS, 2016:385). Here, *legitimacy* implies bringing sufficient knowledge and mandate to the participatory process in spatial planning for SuD (Papers I, II & V). As indicated in Papers I-V, the sectorial structure of authorities, businesses and data imposes serious restraints against municipalities carrying out spatial planning with a holistic perspective. Furthermore, with regards to national interests and sectors of national importance, such as forestry, the guidelines about what needs to be safeguarded and how are often vague. Consequently, searching for and compiling comprehensive information is time consuming, especially in rural boreal municipalities. In these municipalities, the focus of MCP should be redirected from presentation of land use to the formulation of visions and clear development strategies (Berge & Adolfson, 2011). This approach is promoted by the National Board of Housing, Building and Planning in their suggested MCP model (National Board of Housing, Building and Planning, 2017b) but this could be further expanded. Preferably, national and regional authorities should expand their responsibility for coordinating and presenting 'all' land use with the purpose of improving preconditions for a broad knowledge base in participatory efforts. Such national and regional aid in MCP would clarify national and regional intentions and priorities as well as offer a common ground for deliberations and co-production of new knowledge on municipal level. As presented and discussed in Paper V, spatial data could be merged, analyzed and presented in a GIS. Making it possible for municipalities to link to the compiled and merged knowledge and relate to it in MCP, not only in the participatory process, would help to make MCP more efficient. The FoDAA, introduced in Paper V, constitutes an example that highlights the possibilities for a municipality, or a regional or national authority, to coordinate and merge available knowledge and to produce important new knowledge about forest land use as a common ground for such collaborative processes. With regards to the tendency toward focusing MCP on thematic and geographically in depth additions, and potential in restructuring of MCP into something resembling such planning strategy, regional or national responsibility for the comprehensive presentation of land use might improve the prospect of maintaining the holistic perspective of SuD.

Some final suggestions that can be made concern the need to increase the level of activity with regards to keeping MCP up-to-date. Many municipalities have old MCP documents and avoid the statutory trial of actuality every four years. One measure that could be taken to limit the municipal "disobedience" in this matter would be to formally limit the period of validity for adopted plans

(Kommittédirektiv, 2017:6). However, more profound measures (with links to former suggestions regarding compilation and presentation of spatial data and a structurally divided and yet coordinated MCP) would be to allow for a more continuous adoption of different parts of MCP and/or to further develop a digital structure/platform for MCP that could support rural as well as urban municipal governments. As discussed in Section 3.4, digital technology and GIS offers great opportunities for combining, analyzing, sharing, communicating and presenting data. This implies that it is technically feasible to keep MCP updated by a continuing revision of knowledge and statements. In practice, this is currently problematic with regards to statutory requirements concerning formal adoption and a long-term perspective. A development toward more continuous adoption would require a profound transformation of MCP. Consistency in MCP is important and therefore, such transformation would demand thorough investigation and processing. However, once launched it would also most likely improve the efficiency and tangible outcomes of MCP.

5.2 Placing MCP in an interdisciplinary theoretical and contextual framework

The major scientific contribution of the work in this thesis is to highlight an applied planning instrument with a local base and a specific national context in the greater global SuD context. This is done by placing MCP in an interdisciplinary theoretical and contextual framework that articulates the role of local spatial participatory planning, led by the public sector, for global SuD with regards to ecological, social and economic sustainability dimensions. Hence, it is possible to examine and discuss the greater significance of the advantages and weaknesses of MCP as a practical tool that expresses local visions and goals and supports local actions. Results show that opportunities and needs for strengthening MCP as a tool have to be embraced locally as well as nationally and that the local conditions, ambitions and actions need to be recognized and appreciated to a greater extent than is currently the case.

The applied work and experiences from writing this thesis indicate that MCP has great potential for fulfilling the purposes of both the local land user and the municipal government, but also in a greater perspective. The efforts presented in this thesis show the existing needs in this regard, as well as practical and theoretically and/or conceptually based opportunities. There are shortcomings in MCP regarding knowledge and considerations of different land uses (e.g., forest land use). These shortcomings could have major implications for spatial planning in geographically large municipalities with large undeveloped land and water areas where many interests coexist. There are needs and opportunities to

develop a contemporary, relevant and comprehensive knowledge base on land and water use within a municipality. It is clear that planning efforts and the participatory process in MCP, primarily in rural municipalities, is underdeveloped for several reasons, such as lack of resources for MCP, lack of perceived reason and commitment both within and outside the municipal administration and in current participatory approaches. By merging the research fields and traditions of forest and planning, specifically public spatial planning, it could be argued that the efforts underlying this thesis have provided new approaches, in addition to new knowledge with regards to local land use, applicable in spatial planning. Moreover, the work gives an increased understanding of MCP and could add to improved preconditions for developing the MCP process. In summary, approaches and results presented in this thesis chould be of use in efforts for strengthening and developing MCP as a tool. However, measures could also be taken to optimize MCP in rural municipalities with regards to scope, structure, municipal reasons and resources for planning in order to develop MCP into a more effective spatial planning process. Such development is important for increasing the clarity of political intentions, consistency in planning and predictability of local land use decisions, which in turn are crucial for MCP to be appointed the key tool for achieving SuD (Section 1.1 and 3.3.4). In particular, MCP has the potential to provide a sufficient knowledge base, effective collaborative process and useful manual outlining tangible efforts for SuD, specifically in a rural boreal context.

5.3 Further research

A lot of work still has to be carried out to find and describe models to obtain a broader knowledge base in the MCP process. These models must be resource-efficient and possible to implement within the framework of preconditions for MCP in large, sparsely populated and natural resource-rich municipalities. Throughout this thesis, it has been suggested that such studies are necessary to increase knowledge regarding different types of land use and its implications for the local society. In connection to the suggestions for development of the MCP process and structure, there is an extensive need for investigations of, e.g., local and national purposes of MCP, informal and formal institutions affecting MCP and the opportunities to differentiate and to make MCP more effective.

To concretize the identified needs for further research reported in Paper V and the relationship between forest ownership and the condition of the forest, ownership history can be considered to be an important aspect. For a municipal government to understand how the forest landscape can develop, it is important to know who did what and at what stage earlier in history and to be able to view

this knowledge in a landscapeperspective. It would also be important to know, and to see, how the state of the forest is affected by the development of non-resident ownership (forest owner living off the property, perhaps outside the municipality) over time, i.e., if there is any difference in attitudes, behavior and levels of activity between the first generation of non-residents and, e.g., the third generation. Initially, the work could focus on supplementing the FoDAA for Vilhelmina Municipality with more in depth knowledge about the forest condition and changes in ownership structure over the last two decades. Shifts in ownership could be placed, "on the map", in time and in relation to forestry activity with the aim of getting an indication of how different types of preconditions and forest owners' decisions affect how ownership conditions and the state of the forest changes.

Another implication for further development with regards to the purpose of the FoDAA would be to examine the social benefits arising from forest land use. In the light of the fact that "old-growth forests" seem to be ecologically, socially and economically most valuable, it would be a vital contribution to the forest sector, in addition to public spatial planning, to assess how forest land use should be prioritized in general and in different geographical areas.

Development of the collaborative process in MCP is an important aspect in the project entiteled "Green planning - Vilhelmina as a testbed for innovative land use planning in the mountain region". Within this project, focus group meetings have been carried out to broaden the knowledge base in MCP and the basis for decision making and to increase participation in MCP in practice. Within the project, there are thoughts of a more in depth study concerning institutional constraints on and the application of political priorities and statements in MCP. The purpose of such a study would be to assess MCP with regards to which types of issues that are considered essential and prosperous to deal with in MCP according to different stakeholders and how MCP could potentially serve as a functioning tool. Such information would be useful in further investigations concerning development of the MCP structure and process.

Postscript

Now, as a researcher on the land user's chair with the municipal planner's pen, I have to ask myself if I have achieved my goal and accomplished something as a researcher to facilitate the work of the rural practitioners.

As demonstrated by my thesis, the practical pursuit of local SuD, and thus also SuD at an overall level, through MCP in a Swedish, natural resource-rich rural municipal landscape is challenging. The case studies presented in my five papers all highlight needs as well as challenges and opportunities in efforts aiming for SuD. Statutory requirements on MCP support the use of MCP as a tool for spatial planning with a landscape perspective. However, the focus and requirements of current MCP are largely based on the needs and issues in densely populated areas, and should therefore have to be developed with regards rural conditions and perspectives. Scientific theories and concepts regarding participatory and collaborative processes highlight important aspects that should be taken into account in order to achieve effective participation in MCP. For example, the relationship between forest land use and forest owners, among other types of land users, has a large effect on the landscape by affecting the physical environment, cultural expression and economic situation in the local society, predominantly in rural areas. However, it is generally not considered in MCP. In addition, GIS is currently a neglected tool in MCP, both for combining and analyzing spatial data to form a knowledge base and as support for communication and collaboration in the participatory process.

My conclusion is that a lot of work still remains to be done by researchers and planners as well as stakeholders in MCP, at all different levels of society. We all have to make a contribution to improve preconditions for planning and for communication, mutual understanding and collaboration on land use issues and development from different viewpoints. Both time and efforts are needed to develop the MCP structure and process but also to broaden the knowledge base on land and water use. Only then, can MCP be adapted to become an effective tool for spatial planning in a rural landscape and for achieving a balance between

ecological, social and economic sustainability. The results presented and suggestions made in this thesis could inspire and contribute to continuing work, locally as well as nationally. However, only time will tell whether there will be any influence on applied work. These conclusions are those of a researcher - but with regards to my goal to contribute in facilitating the work of the rural practitioners - I think they are conclusions that the land user and municipal planner could agree in.

Sammanfattning

De första stegen i detta avhandlingsarbete togs redan 2002. Målsättningen var att lyfta och beskriva betydelsen av den boreala skogens naturresurser för lokalsamhället och dess utveckling. Den svenska, norrländska landsbygds-kommunen utgjorde ett gott exempel på ett naturresursberoende lokalsamhälle och en administrativ enhet med direkt ansvar för människor och natur inom kommunens gränser och för samhällsutvecklingen. Vilhelmina kommun i södra Lappland blev fallstudieområde. Vilhelmina är ett typiskt fall av de till ytan stora och allt mer glest befolkade kommunerna i Norrlands inland. Skogen täcker halva kommunens yta; i öster i en blandning av skog, myr och vattendrag, i väster begränsas utbredningen av fjällandskapets höjd och klimat. Det fanns människor i området redan för 10 000 år sedan och det finns därför en lång historia av olika typer av markanvändning; jakt, fiske, renskötsel, jordbruk, skogsbruk, mineralbrytning, energiproduktion, naturupplevelser och rekreation etc. I det tusenåriga perspektivet har markanvändningen ändrat både karaktär och typ, men den har varit, och är fortfarande, en förutsättning för samhällets utveckling på såväl nationell som lokal nivå och den har bidragit och bidrar ännu till människors och samhällets identitet.

Ett mått på ett lokalsamhälles, i detta fall en kommuns, beroende av lokala naturresurser bedömdes vara hur kommersiella verksamheter använder och värderar naturresurser inom kommunen. Officiell statistik är långt ifrån utformad för att kunna besvara denna fråga på ett bra sätt. Därför togs en enkät riktad till registrerade arbetsställen i Vilhelmina kommun (i praktiken småföretag med vanligtvis 1-4 sysselsatta) fram. Svaren inhämtades genom en enkät som besvarades via telefon. Enkäten innehöll främst frågor om vilka verksamheter som bedrevs vid arbetsstället, verksamheternas koppling till Vilhelmina kommun och i hur stor utsträckning representanten för arbetsstället ansåg att verksamheterna var beroende av tillgång till någon form av lokal naturresurs.

Resultaten presenteras i artiklarna I & II och visar tydligt på hur omfattande en kommuns beroende av de lokala naturresurserna kan vara genom sina lokala företag. Åtta av tio företagare i studien angav att de bedrev en eller (ofta) fler verksamheter där naturresurser och tillgång till dessa hade mycket stor betydelse. Närmare hälften av företagarna uppgav att den huvudsakliga verksamheten var skogsbruk. Tillsammans sysselsatte företagen ett relativt stort antal människor i förhållande till antalet arbetsföra Vilhelminabor. Företagen uppvisade också en stark och stabil koppling till Vilhelmina kommun genom företagarnas personliga relation till kommunen; att de valt att etablera företaget i Vilhelmina för att de bodde där eller genom arv av en fastighet. En central iakttagelse från studien är alltså de tydliga kopplingar som finns mellan önskemål, behov och verksamheter bland de lokala företagen och människorna involverade i dessa och den boreala landsbygdskommunens socioekonomi och traditioner. Mot bakgrund av att den lokala nivån anses utgöra grunden för skapandet av positiv samhällsutveckling och välmående ekosystem; d.v.s. hållbar ekologisk, social och ekonomisk utveckling, är en viktig slutsats därför att kunskap om lokala företag, företagare och deras naturresursanvändning är en grundläggande förutsättning i strävan mot hållbar utveckling på lokal nivå såväl som på övergripande nationell nivå. Centrala teoretiska utgångspunkter i dessa två artiklar är det lokala socioekologiska systemet med naturen som bas och hållbar utveckling där ekologiska, sociala och ekonomiska aspekter av hållbarhet ska balanseras. Det teoretiska bidraget från studien är främst påvisande av behovet av en utvecklad helhetsbild när det gäller att mäta och beskriva omfattningen av naturresursberoendet på den lokala nivån. Detta är i sin tur är en förutsättning för strategiskt beslutsfattande/planering för hållbar utveckling.

Efter denna inledande studie ägnades sju år till praktiskt arbete med kommunal ÖP och med markanvändningsfrågor ur ett landsbygdsperspektiv på den lokala nivån. Detta bidrog till en fördjupad förståelse för olika utmaningar som mark- och vattenanvändare ställs inför. Utmaningar och möjligheter med kommunal fysisk planering och ÖP som grundläggande demokratisk planeringsprocess blev också tydligare; främst i geografiskt stora, men befolkningsmässigt små, naturresursrika kommuner. Fler och tydligare forskningsfrågor tog form. Hur fungerar egentligen ÖP som verktyg? Kunskap och kommunikation om mark- och vattenanvändningen inom kommunen är utan tvivel en förutsättning för framgångsrik ÖP, men vilka luckor finns och hur fyller man dem? Skogen som täcker en så stor del av Sveriges landyta; var finns den i den kommunala ÖP?

Avhandlingsarbetet återupptogs och svar på frågorna kring ÖP som verktyg i planering för hållbar utveckling med ett landskapsperspektiv söktes med hjälp

av två olika fallstudier. I den ena studien intervjuades olika intressenter (Länsstyrelserepresentanter, kommuntjänstemän, kommunpolitiker och större markägare i kommunen) i nio kommuners ÖP-processer ”ansikte mot ansikte”. Kommunerna är alla belägna i Bergslagsregionen där naturresurser historiskt sett utgjort basen för samhällsutvecklingen genom främst industriell utvinning och förädlingsverksamhet. Både urbana och mer eller mindre rurala kommuner fanns representerade. I den andra studien undersöktes förutsättningar för och arbetet med ÖP i ett landsbygdssammanhang genom en e-postenkät till planeringsansvariga tjänstemän i Sveriges femton fjällkommuner. Fjällkommunerna är alla mycket glest befolkade, geografiskt stora landskap med många och vidsträckta områden där höga natur- och kulturvärden identifierats. Teoretiskt sett tar dessa artiklar avstamp i planeringsteori i allmänhet och förutsättningar för deltagande i planeringsprocessen i synnerhet. Ett av de främsta bidragen är att lyfta ett landskapsperspektiv i planeringen i ett landsbygdssammanhang i relation till de lagstadgade krav och de förväntningar som finns på kommunal ÖP hos olika markanvändningsaktörer och hos länsstyrelsen som tillsynsmyndighet.

Resultaten från studierna presenteras i artikel III & IV. Dessa visar att möjligheterna att använda ÖP som verktyg för landskapsplanering med hållbar utveckling som mål stöds av såväl lagstiftning som inblandande aktörer, men att resurserna är för knappa i förhållande till den planeringsinsats som skulle krävas. ÖP blir i de flesta fall inte den levande och dynamiska, inkluderande och kommunicerande process som avses i lagen och som önskas av aktörerna. Resursbristen och utmaningen det innebär att hantera en mängd komplexa frågeställningar över en stor geografisk yta gör att många kommuner har svårt att planera med ett verkligt landskapsperspektiv. En iakttagelse från studierna är att förutsättningarna för att lyckas med planeringen, med avsikten att göra den användbar som verktyg, varierar mycket mellan olika kommuner och förefaller vara bättre i de kommuner som kan karaktäriseras som urbana. En annan observation är att fastän de flesta kommunerna anser att deltagande och kommunikation mellan intressenter och aktörer är avgörande för att göra planeringen meningsfull så lyckas de inte, eller endast delvis, involvera intressenter på det sätt och i den utsträckning de själva önskar. En viktig slutsats är att mötesplatser och sättet att närma sig frågor i deltagandeansatser måste passa och anpassas till intressenter och aktörer som möts. Detta kan öka möjligheten att utveckla intressenternas engagemang för, och delaktighet i, kommunal ÖP. En annan slutsats är att det behövs ytterligare studier av ÖPs faktiska effekter på mark- och vattenanvändning och samhällsutveckling. Först med resultat från sådana studier kan det bli det möjligt att avgöra hur förutsättningarna för effektiv ÖP; med landskapsperspektiv och välgrundade avvägningar mellan ekonomisk, ekologisk och social hållbarhet, kan förbättras.

I artikel V vänds blicken åter till Vilhelmina kommun och kunskapsluckan kring de lokala företagens beroende och användning av de lokala naturresurserna. I artikeln läggs särskilt fokus på skogen som resurs och på skogsägarna. Frågeställningen är om det är möjligt att skapa ett geografiskt baserat kunskapsunderlag och en utgångspunkt för kommunikation om markanvändning i skogslandskapet som skulle kunna lyftas in i kommunal ÖP. Motiveringen till att skapa ett sådant underlag är att forskare, markanvändningsaktörer och medborgare har nytta av varandras kunskaper och behöver kommunicera och förstå varandra. Kunskap, tillit och kommunikation är en förutsättning för att ”bästa möjliga resultat” ska kunna uppnås i olika processer som rör frågor om miljö och om mark- och vattenanvändning. Som tidigare nämnts, så täcks hälften av Vilhelmina kommuns yta av skogsmark, och hälften av det stora antalet naturresursberoende verksamheterna i kommunen ägnar sig åt någon form av skogsbruk. I den kommunala planeringen, som ska hantera hållbar utveckling med ett landskapsperspektiv, förefaller dock skogen och skogsägarna/-företagarna, utöver det som kan räknas som tätortsnära skogar, inte ha någon naturlig plats. Samhällets strukturer kring olika verksamhetssektorer, äganderätten och skogens särställning som näring av nationell betydelse (enligt miljöbalk 1998:808) medför att relationen mellan kommunal fysisk planering och skogsbruket är komplicerad. Skogens användning för virkesbruk styrs av skogsvårdslag 1979:429 och finns väl planerad i skogsägarens skogsbruksplan, men i den kommunala planeringen finns ett ”hål” när det kommer till skogsmark och användningen av denna. Inte helt obetydliga beröringspunkter finns dock mellan skogsägarens verksamhet och den kommunala översiktsplaneringen. Å ena sidan påverkar skogsägarens val och skogsföretagarens verksamheter lokalsamhället och landskapet. Resultat från analyser av geografiska data med hjälp av GIS-verktyg (Geografiska InformationsSystem) indikerar också att skogens tillstånd och förändring över tid skiljer sig åt mellan olika ägarkategorier. Kopplingarna mellan skogens tillstånd, alltså indirekt även skogsägaren, och förekomsten av olika ekologiska och sociala värden i skogen är också uppenbara. Å andra sidan kan kommunens ställningstaganden i ÖP, kring mark- och vattenanvändning och bebyggelseutveckling, i syfte att värna det allmänna intresset även påverka hur den enskilde skogsägaren har möjlighet att använda sin mark.

Den huvudsakliga slutsatsen från studien är att det, trots vissa svårigheter som har kopplingar till hur skogligt relaterade data produceras och struktureras inom olika samhällssektorer, är fullt möjligt att kombinera befintliga data för att skapa ett tydligt och, för aktörer på olika nivåer i samhället (markägare, entreprenörer, exploatörer, myndigheter m.fl.), gemensamt kunskapsunderlag om skogen från fastighetsnivå till nationell nivå. Underlaget skulle kunna ge

aktörerna värdefull information i sig och även ökade möjligheter till geografiska analyser av användning av skogsmark i relation till andra markanvändnings-intressen. Underlaget skulle även kunna utgöra en gemensam utgångspunkt för dialog mellan kommunen, skogsägare och andra intressenter i ÖP-processen, om ”bästa möjliga markanvändning” och kanske även om samordning mellan parterna för att främja ett landskapsperspektiv, som skulle vara fördelaktig för alla parter.

Sammanfattningsvis visar resultaten från detta avhandlingsarbete på behov som finns när det gäller att utveckla ÖP. De påvisar brister, främst i en landsbygdskontext, som behöver åtgärdas gällande planeringsunderlag kring hur mark (exempelvis skogsmark) och vatten används och får användas inom olika sektorer i en kommun. Resultaten gör också klart att deltagandeprocessen i översiktsplaneringen av flera olika anledningar fungerar mindre bra. Exempel på sådana anledningar är resursbrist i den kommunala planeringen, bristande engagemang och motivation både i och utanför den kommunala organisationen samt i förekommande angreppssätt som syftar till att få till stånd deltagande.

Arbetet med denna avhandling har inte enbart genererat direkt användbar, ny kunskap och metoder för utveckling av ÖP, den ger även en ökad förståelse för olika förutsättningar för och perspektiv i planeringen. Både kunskapen och förståelsen kan och bör användas i konkret och riktat arbete med att utveckla ÖP till det verktyg det har potential att vara, särskilt i en landsbygdskommun.

Efterord

Som en forskare; på markanvänandarens stol, med den kommunala planerarens penna, måste jag nu fråga mig själv om jag har nått mitt mål och utfört något som kan underlätta för landsbygdspraktikernas arbete?

Strävan efter lokal hållbar utveckling, och därigenom även hållbar utveckling på övergripande nivå, genom ÖP i en svensk, naturresursrik och till ytan stor landsbygdskommun är utmanande både teoretiskt och praktiskt vilket framgår av denna avhandling. De fallstudier som presenteras belyser alla såväl utmaningar som potential med ÖP som basen i det svenska planeringssystemet. Resultaten visar även på såväl teoretiska som praktiska möjligheter. De formella krav som finns på ÖP stöder användningen av ÖP som verktyg för fysisk planering med ett landskapsperspektiv. Fokus och krav idag utgår dock mer från de behov och problem som finns i tätbefolkade, urbana, områden och bör utvecklas med avseende på landsbygdsförhållanden och landsbygdsperspektiv. Vetenskapliga teorier och koncept kring deltagande- och samverkansprocesser presenterar viktiga aspekter som det i högre utsträckning än idag bör tas hänsyn till för att uppnå ett verkligt deltagande av olika markanvändningsaktörer och intressenter i ÖP. Relationen mellan skoglig markanvändning och skogsägare, bland andra typer av markanvändare (inklusive andra typer av naturresursberoende företag), är ett exempel på en relation som är påtaglig och som påverkar landskapet; den påverkar den fysiska miljön, det kulturella uttrycket och den ekonomiska situationen i lokalsamhället, främst på landsbygden. GIS är i dagsläget ett förbisett verktyg i ÖP både när det gäller att kombinera och analysera geografiska data för att bygga upp kunskapsbasen och som stöd för kommunikation i deltagandeprocesser som involverar olika aktörer och intressenter.

Mycket arbete återstår ännu för att forskare, planerare och berörda aktörer i ÖP-processen - på alla nivåer i samhället - bättre ska kunna kommunicera markanvändningsfrågor och utveckling effektivt och konstruktivt i syfte att nå ökad förståelse för varandras olika synsätt. Det behövs mer tid och en

omfattande fortsatt gemensam arbetsinsats för att utveckla den kunskapsbas, om mark- och vattenanvändning, och de former av kommunikation och samverkan som behövs för att utveckla ÖP till ett innovativt planeriungsverktyg; med landskapsperspektiv, i ett landsbygdssammanhang. Det är först med en bredare kunskap och ökad samverkan som ÖP kan bli ett verkligt instrument i arbetet med att uppnå balans mellan ekologisk, social och ekonomisk hållbarhet. De result och förslag som avhandlingen presenterar med avseende på utveckling av ÖP kan förhoppningsvis inspirera och bidra i det fortsatta arbetet, så väl lokalt som nationellt. Om och när några effekter kan skönjas i det praktiska arbetet återstår att se. Dessa slutsatser är forskarens, men beträffande mitt mål - att bidra med något som kan underlätta landsbygdspraktikernas arbete - så ser jag dem ändå som något även markanvändaren och den kommunala planeraren kan instämma i.

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And now: the shortest of words with the deepest of meanings…

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THANK YOU ALL!

Åkerlandet, October 2017

Appendix 1.

Telephone survey regarding dependency on LNRs among business representatives in Vilhelmina Municipality (Paper I & II). In Swedish.

Available in English in: Thellbro, C. (2006). *Local Natural Recourse Dependency in a Swedish Boreal Municipally Context.* Licentiate thesis. Faculty of Forest Sciences, Department of Forest Resource Management and Geomatics, Swedish University of Agricultural Sciences, Umeå, Sweden.

Ditt företag – en del av framtiden i Vilhelmina kommun!

I många avseenden vet vi idag alltför lite om företagande i norra Sveriges inlands- och fjällkommuner. Officiella uppgifter som oftast används för att presentera företagandet, innehåller begränsad information om företagens faktiska verksamheter. Någon regelmässig uppdatering av dessa uppgifter görs heller inte.

Denna enkät har tagits fram vid Sveriges Lantbruksuniversitet (SLU) för att förbättra kunskapen om företagandet i inlands- och fjällkommunerna. Med hjälp av den och Dina svar hoppas vi kunna få fram en bra bild av olika typer av företag samt kombinationer av företagande och verksamheter inom företag. Framförallt är vi intresserade av om och på vilket sätt verksamheter är kopplade till natur, kultur, kommunikation och andra förhållanden inom kommunen.

Resultatet kommer att ge värdefull faktabakgrund till framtida, lokalt förankrade beslutsunderlag. De vunna kunskaperna ska förbättra möjligheter till planering och ställningstagande på kommunal nivå - för kommunens invånare i deras olika roller som medborgare, företagare, medlemmar i föreningar o.s.v.

Du och Ditt företag/arbetsställe har slumpmässigt valts ur Statistiska Centralbyråns (SCB) så kallade företags- och arbetsställeregister. Genom att besvara enkäten, kan Du bidra till att öka kunskapen om hur verkligheten ser ut i sin helhet när det gäller företagandet!

Inom de närmaste veckorna kommer Du att bli uppringd för att, med papperskopian som stöd, besvara de 31 frågorna per telefon. Du ska alltså **inte skicka in enkäten**. På detta sätt har Du möjlighet att exempelvis ställa frågor direkt vid eventuella oklarheter. Naturligtvis får Du gärna fylla i enkäten i förväg. Du är då bättre förberedd och intervjun går snabbare.

Svaren i denna enkätstudie kommer att sammanställas på sådant sätt att Du garanteras anonymitet och så att inga enskilda svar kan härledas. Resultaten ska ingå som delresultat i en kommande forskningsavhandling vid SLU. De kommer även att presenteras i tidningsartiklar samt via Vilhelmina kommuns hemsida.

Har Du redan nu frågor eller kommentarer gällande undersökningen är Du välkommen att höra av dig!

Med vänliga hälsningar

Camilla Thellbro, forskarstuderande

Kontakt:

adress: Camilla Thellbro, box 8, 912 21 VILHELMINA
e-post: camilla.thellbro@vilhelmina.se
telefon: 0951-120 00 (Mattias, Johan, Tina eller Camilla)

OM Du *fått en enkät fastän Du inte ser Dig själv som företagare* kan det bero på att Du äger/är delägare i en eller flera skogsfastigheter. Du räknas då som företagare och *Dina svar är lika viktiga och väger lika tungt som alla andra svar*!

OM Du fått *fler än en* enkät beror det på att Du har flera företag registrerade. Du behöver givetvis *endast besvara en enkät*!

OM Du *fått en enkät fastän Du inte ser Dig själv som företagare* kan det bero på att Du äger/är delägare i en eller flera skogsfastigheter. Du räknas då som företagare och *Dina svar är lika viktiga och väger lika tungt som alla andra svar*!

OM Du fått *fler än en* enkät beror det på att Du har flera företag registrerade. Du behöver givetvis *endast besvara en enkät*!

Frågor till Dig som FÖRETAGSREPRESENTANT

1. Vilken roll har Du i det företag/på det arbetsställe som denna enkät adresserats till? *(Markera med **ett** kryss)*

- ☐ Egen företagare, **ensam ägare** *(gå till fråga 2)*
- ☐ Egen företagare, **delägare** av totalt _____ st. delägare *(gå till fråga 2)*
- ☐ Verksamhets-/platsansvarig *(gå till fråga 3)*
- ☐ Annan *(ange vilken)*_____

2. OM Du angivit att Du är EGEN FÖRETAGARE/ÄGARE i detta företag:

Vilka av följande påstående stämmer bäst överens med vad Du anser vara de **huvudsakliga** orsakerna till att Du valde att bli egen företagare?
*(Läs igenom alla alternativ innan du svarar och markera **maximalt tre** alternativ)*

- ☐ Jag ville själv kunna **styra över Mitt arbete**
- ☐ Jag ville **prova på något nytt/utvecklas som person**
- ☐ Jag hade alltid **velat/ville starta eget**
- ☐ Jag var **mycket intresserad av just denna typ av verksamhet**
- ☐ Jag ansåg mig ha en **bra företags-/affärsidé**
- ☐ Jag såg en möjlighet till **bra inkomst**
- ☐ Jag **övertog företaget/verksamheten från en förälder/släkting**
- ☐ Det finns en **företagartradition i Min familj/släkt**
- ☐ Det finns en **kunskaps-/företagartradition inom detta verksamhetsområde i min familj/släkt**
- ☐ Jag **övertog företaget som Jag tidigare varit anställd i**
- ☐ Det fanns **inte något annat intressant** arbete att få
- ☐ ”Starta eget” var det **bästa alternativet till arbetslöshet**
- ☐ ”Starta eget” var det **bästa alternativet till flytt**
- ☐ ”Starta eget” var det **bästa alternativet till arbetspendling**
- ☐ Annat *(ange vad)*_____

3. OM Du angivit att Du är VERKSAMHETS-/PLATSANSVARIG på detta arbetsställe:

Vilka av följande påstående stämmer bäst överens med vad Du anser vara de **huvudsakliga** orsakerna till att Du valde att bli verksamhets-/platsansvarig?
*(Läs igenom alla alternativ innan du svarar och markera **maximalt tre** alternativ)*

- ☐ Jag ville arbeta med den **verksamhet Jag är intresserad av**
- ☐ Jag ville **prova på något nytt/utvecklas som person**
- ☐ Jag ville **göra karriär inom företaget Jag arbetade i**
- ☐ Jag ville ha en **ledande befattning inom denna bransch**
- ☐ Jag ville ha en **ledande befattning oavsett bransch**
- ☐ Jag såg en möjlighet till **bra inkomst**
- ☐ Tjänsten var det **bästa alternativet till arbetslöshet**
- ☐ Tjänsten var det **bästa alternativet till flytt**
- ☐ Tjänsten var det **bästa alternativet till arbetspendling**
- ☐ Jag tog befattningen eftersom **ingen annan ville ha den**
- ☐ Jag tog befattningen eftersom **ingen annan kompetent person fanns att tillgå**
- ☐ Annat *(ange vad)*_____

4. Hur länge har Du varit ”företagare” alternativt verksamhets-/platsansvarig eller liknande **i detta företag/på detta arbetsställe**?

- ☐ mindre än 1 år
- ☐ 1-2 år
- ☐ 3-5 år
- ☐ 6-10 år
- ☐ mer än 10 år

5. Vilken betydelse har Ditt engagemang i detta företag/i detta arbetsställe för Dig? *(Markera med **ett** kryss)*

- ☐ Sysselsättningen i företaget/på arbetsstället är **Min heltidssysselsättning**
- ☐ Sysselsättningen i företaget/på arbetsstället är **Min enda deltidssysselsättning**
- ☐ Sysselsättningen i företaget/på arbetsstället är **en av Mina deltidssysselsättningar**
- ☐ Företaget är **Min hobby**
- ☐ Annat *(ange vad)*_____

Frågor om
FÖRETAGET OCH DESS VERKSAMHET

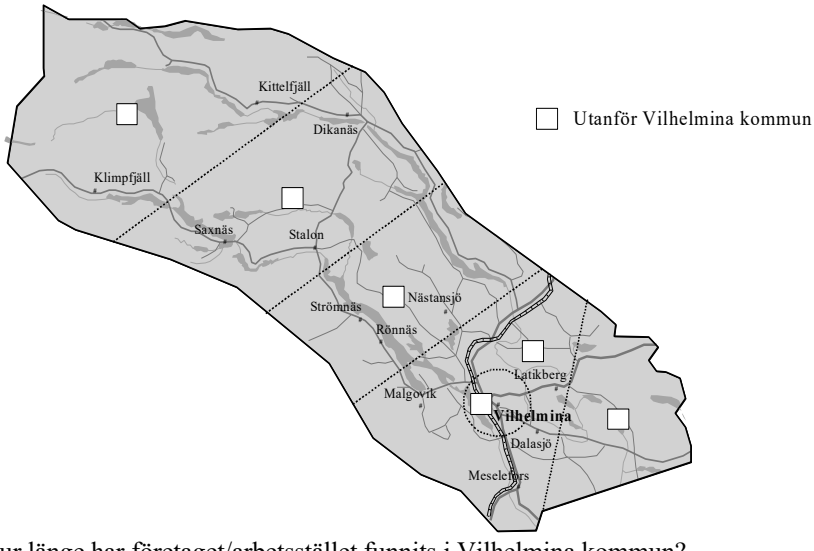
6. Vilken juridisk form har företaget/arbetsstället?

- ☐ Fysisk person (enskild näringsidkare)
- ☐ Enkelt bolag
- ☐ Ekonomisk förening
- ☐ Handelsbolag/Kommanditbolag
- ☐ Aktiebolag
- ☐ Annat *(ange vad)* _____

7. Var ligger företagets huvudkontor?
(Med "norra Sverige" menas de fem norrlandslänen; Norrbotten, Västerbotten, Jämtland, Västernorrland och Gävleborg)

- ☐ I Vilhelmina kommun
- ☐ I någon av Vilhelminas angränsande kommuner
- ☐ I norra Sveriges inland/fjällregion
- ☐ I norra Sveriges kustregion
- ☐ I södra Sverige
- ☐ Utomlands

8. Var bedrivs i huvudsak företagets/arbetsställets **egen** verksamhet?
*(Ange område med kryss i **lämpligt antal** rutor i kartbilden nedan)*



9. Hur länge har företaget/arbetsstället funnits i Vilhelmina kommun?

- ☐ mindre än 1 år
- ☐ 1-2 år
- ☐ 3-5 år
- ☐ 6-10 år
- ☐ mer än 10 år

10. Är verksamheten vid företaget/arbetsstället säsongsbunden?

☐ Nej
☐ Ja

11. Hur många har arbetat i företaget/på arbetsstället under de senaste 12 månaderna? *(Ange antal i respektive kategori i tabellen nedan!)*

	Året runt-anställda				Säsongsanställda/med **tidsbegränsad** anställning			
	På heltid		På deltid		På heltid		På deltid	
	Bor i Vilhelmina kommun	Inpendlare	Bor i Vilhelmina kommun	Inpendlare	Bor i Vilhelmina kommun	Inpendlare	Bor i Vilhelmina kommun	Inpendlare
Kvinnor								
Män								

12. Varför etablerades företaget/arbetsstället inom just Vilhelmina kommun?
(*Läs igenom alla alternativ innan Du svarar och **rangordna de tre främsta orsakerna från 1 till 3** där 1 = främsta orsak.)*

___ På grund av tillgång till **material/råvaror**
___ På grund av tillgång till **"miljöer"** (mark, natur-/kulturmiljöer o.s.v.) att bygga verksamheten på
___ På grund av att det fanns/finns en **marknad/kunder i Vilhelmina kommun**
___ På grund av att det fanns/finns **billiga lokaler i Vilhelmina kommun**
___ På grund av **ekonomiska stödmöjligheter**
___ På grund av närhet till **företagspartners**
___ På grund av tillgång på **arbetskraft**
___ På grund av tillgång på **kompetent/kvalificerad arbetskraft**
___ På grund av att **Jag har en fastighet i Vilhelmina kommun**
___ På grund av att **Jag/Min familj bodde i Vilhelmina kommun**
___ På grund av att **Jag/Min familj ville bo i Vilhelmina kommun**
___ På grund av att **Jag/Min familj ville bo i en kommun liknande Vilhelmina kommun**
___ Annat *(ange vad)*_____

13. Vilken är den **huvudsakliga** verksamheten som bedrivs vid företaget/arbetsstället?
(Beskriv så utförligt som möjligt – tänk på att övergripande begrepp såsom "tillverkning", "transport" eller "turistservice" dåligt beskriver vad företaget faktiskt gör…

Bra exempel: "Företaget köper upp rundvirke av privata skogsägare för att sedan kapa, klyva, paketera och sälja brännfärdig ved till sommargäster.")

_____
_____
_____
_____
_____

14. Bedriver företaget/arbetsstället några andra former av verksamheter än den Du angivit i föregående fråga?

- ☐ Nej *(gå till fråga 16)*
- ☐ Ja *(gå till fråga 15)*

15. OM Du svarade ”JA” på föregående fråga:

Vilken/vilka **ytterligare** verksamheter bedrivs vid företaget/arbetsstället?
(Beskriv så utförligt som möjligt – tänk på att övergripande begrepp såsom ”tillverkning”, ”transport” eller ”turistservice” dåligt beskriver vad företaget faktiskt gör…

Bra exempel (förutom vedförsäljningen i fråga 14): Kottplockning för leverans och försäljning till plantskolor samt internetbaserad försäljning av egenproducerade tavlor med lokala motiv)

_____
_____
_____
_____
_____

Frågor om
FÖRETAGET OCH DESS KOPPLING TILL FÖRHÅLLANDEN INOM VILHELMINA KOMMUN

16. Var finns **i huvudsak efterfrågan** på (kunder till) företagets/arbetsställets **produkter/tjänster**?
(Val av flera alternativ är tillåtet!.

Med "norra Sverige" menas de fem norrlandslänen; Norrbotten, Västerbotten, Jämtland, Västernorrland och Gävleborg.)

- ☐ I Vilhelmina kommun
- ☐ I angränsande kommuner till Vilhelmina kommun
- ☐ I hela norra Sveriges inland/fjällregion
- ☐ I norra Sveriges kustregion
- ☐ I södra Sverige
- ☐ Utomlands *(ange huvudsakligt land/huvudsakliga länder)*_____

_____

17. OM företagets/arbetsställets EGEN verksamhet bygger på någon form av fysiska råvaror och/eller specifika miljöer:

Var finns **i huvudsak** de **fysiska råvaror/miljöer** som företagets/arbetsställets verksamhet i grunden bygger på?
(Val av flera alternativ är tillåtet!.

Med "norra Sverige" menas de fem norrlandslänen; Norrbotten, Västerbotten, Jämtland, Västernorrland och Gävleborg.)

- ☐ I Vilhelmina kommun
- ☐ I angränsande kommuner till Vilhelmina kommun
- ☐ I hela norra Sveriges inland/fjällregion
- ☐ I norra Sveriges kustregion
- ☐ I södra Sverige
- ☐ Utomlands *(ange huvudsakligt land/huvudsakliga länder)*_____

_____

Nedanstående frågor rör alla vilken betydelse olika **faktorer och förhållanden inom Vilhelmina kommun** har för verksamheten, **produktion OCH/ELLER marknadsföring/ försäljning**, vid företaget/arbetsstället.

- *Läs gärna igenom listorna med faktorer och förhållanden innan du börjar besvara frågorna!*
- *Tänk på att något kan ha både **direkt** och **indirekt** betydelse!*
  Exempel: virkesproduktion kan vara av direkt betydelse för verksamheten vid ett sågverk och av indirekt betydelse för en redovisningsbyrå, detta genom att virkesproduktion kan vara av direkt betydelse för redovisningsbyråns kunder…
- *Tänk på att flera faktorer/förhållanden kan förefalla likartade och/eller nära kopplade och därmed vara av "lika stor" betydelse!*

18. I vilken utsträckning anser Du att företagets/arbetsställets verksamhet, **produktion OCH/ELLER marknadsföring/försäljning, bygger på** var och en av följande faktorer/förhållanden, gällande **fungerande KOMMUNIKATION tillgänglig inom Vilhelmina kommun**?
(4 = fullständigt, 0 = inte alls)

Tillgänglighet till:	**4**	**3**	**2**	**1**	**0**
Regionalt vägnät *(ex. riksväg 45, länsväg 1067)*	☐	☐	☐	☐	☐
Lokalt vägnät *(ex. kommunalt, enskilt)*	☐	☐	☐	☐	☐
Varutransport med lastbil	☐	☐	☐	☐	☐
Varutransport med linjebuss	☐	☐	☐	☐	☐
Persontransport med linjebuss	☐	☐	☐	☐	☐
Varutransport på järnväg	☐	☐	☐	☐	☐
Persontransport på järnväg	☐	☐	☐	☐	☐
Varutransport med reguljärflyg	☐	☐	☐	☐	☐
Persontransport med reguljärflyg	☐	☐	☐	☐	☐
Internetkommunikation	☐	☐	☐	☐	☐
Telefonkommunikation	☐	☐	☐	☐	☐
Postgång	☐	☐	☐	☐	☐
Annan viktig kommunikation *(ange vilken)*_____	☐	☐	☐	☐	☐

19. I vilken utsträckning anser Du att företagets/arbetsställets verksamhet, **produktion OCH/ELLER marknadsföring/försäljning, bygger på** var och en av följande faktorer/förhållanden, gällande **befintlig KULTUR tillgänglig inom Vilhelmina kommun**?
(4 = fullständigt, 0 = inte alls)

Tillgänglighet till:	**4**	**3**	**2**	**1**	**0**
Spår av fornhistorisk kultur	☐	☐	☐	☐	☐
Spår av nybyggarkultur	☐	☐	☐	☐	☐
Spår av historisk samekultur	☐	☐	☐	☐	☐
Nutida samisk kultur	☐	☐	☐	☐	☐
Övr. nutida lokal kultur *(ex. skoterkultur, lokal konst)*	☐	☐	☐	☐	☐
Nutida allmän kultur *(ex. musik, film, teater)*	☐	☐	☐	☐	☐
Annan kulturföreteelse/-faktor *(ange vilken)*_____	☐	☐	☐	☐	☐

20. I vilken utsträckning anser Du att företagets/arbetsställets verksamhet, **produktion OCH/ELLER marknadsföring/försäljning, bygger på** var och en av följande faktorer/förhållanden, gällande **befintlig NATUR tillgänglig inom Vilhelmina kommun**?

A) I vilken utsträckning bygger verksamheten/marknadsföringen på **LANDSKAPSTYP/LANDSKAPETS UTSEENDE (natur) inom Vilhelmina kommun***? (4 = fullständigt, 0 = inte alls)*

	4	**3**	**2**	**1**	**0**
Kommunens fjällområde, snö	☐	☐	☐	☐	☐
Kommunens skogsland, snö	☐	☐	☐	☐	☐
Kommunens helhet, snö	☐	☐	☐	☐	☐
Kommunens fjällområde, barmark	☐	☐	☐	☐	☐
Kommunens skogsland, barmark	☐	☐	☐	☐	☐
Kommunens helhet, barmark	☐	☐	☐	☐	☐
Annat *(ange vad)*_____	☐	☐	☐	☐	☐

B) I vilken utsträckning bygger verksamheten/marknadsföringen på **”ORÖRDHET” (natur) inom Vilhelmina kommun***? (4 = fullständigt, 0 = inte alls)*

	4	**3**	**2**	**1**	**0**
Kommunens fjällområde, snö	☐	☐	☐	☐	☐
Kommunens skogsland, snö	☐	☐	☐	☐	☐
Kommunens helhet, snö	☐	☐	☐	☐	☐
Kommunens fjällområde, barmark	☐	☐	☐	☐	☐
Kommunens skogsland, barmark	☐	☐	☐	☐	☐
Kommunens helhet, barmark	☐	☐	☐	☐	☐
Natur i naturreservat	☐	☐	☐	☐	☐
Unik natur i naturreservat	☐	☐	☐	☐	☐
Växter i naturreservat	☐	☐	☐	☐	☐
Unika växter i naturreservat	☐	☐	☐	☐	☐
Djur i naturreservat	☐	☐	☐	☐	☐
Unika djur i naturreservat	☐	☐	☐	☐	☐
Annat *(ange vad)*_____	☐	☐	☐	☐	☐

C) I vilken utsträckning bygger verksamheten/marknadsföringen på **FYSISKA RESURSER OCH RÅVARUPRODUKTION (natur) inom Vilhelmina kommun***? (4 = fullständigt, 0 = inte alls)*

	4	**3**	**2**	**1**	**0**
Växter *(ange gärna vilka)*_____	☐	☐	☐	☐	☐
Djur *(ange gärna vilka)*_____	☐	☐	☐	☐	☐
Timmer-/massavedproduktion	☐	☐	☐	☐	☐
Vedproduktion	☐	☐	☐	☐	☐
Annan ”träråvaru”-produktion *(ange vilken)*_____	☐	☐	☐	☐	☐
Naturlig svampproduktion	☐	☐	☐	☐	☐
Naturlig bärproduktion	☐	☐	☐	☐	☐
Naturlig lavproduktion	☐	☐	☐	☐	☐
Annat *(ange vad)*_____	☐	☐	☐	☐	☐

D) I vilken utsträckning bygger verksamheten på **MARK-/MARKANVANDNINGSTYPER (natur) inom Vilhelmina kommun***? (4 = fullständigt, 0 = inte alls)*

	4	**3**	**2**	**1**	**0**
Mark för odling *(även av skog och liknande)*	☐	☐	☐	☐	☐
Mark för bete	☐	☐	☐	☐	☐
Naturliga grustäkter	☐	☐	☐	☐	☐
Fast berg av viss typ	☐	☐	☐	☐	☐
Fast berg av viss kvalitet	☐	☐	☐	☐	☐
Myrmarker	☐	☐	☐	☐	☐
Sjöar och vattendrag	☐	☐	☐	☐	☐
Grundvatten	☐	☐	☐	☐	☐
Vatten för energiproduktion	☐	☐	☐	☐	☐
Naturliga fiskevatten	☐	☐	☐	☐	☐
Vatten för fiskodling och liknande	☐	☐	☐	☐	☐
Vind för energiproduktion	☐	☐	☐	☐	☐
Snötäckt mark	☐	☐	☐	☐	☐
Tjälad mark	☐	☐	☐	☐	☐
Jaktmarker med avseende på småvilt	☐	☐	☐	☐	☐
Jaktmarker med avseende på högvilt	☐	☐	☐	☐	☐
Annat *(ange vad)*_____	☐	☐	☐	☐	☐

E) I vilken utsträckning bygger verksamheten på **ÄGANDE-/NYTTJANDERÄTT (natur) inom Vilhelmina kommun***? (4 = fullständigt, 0 = inte alls)*

	4	**3**	**2**	**1**	**0**
Egen mark	☐	☐	☐	☐	☐
Eget vatten	☐	☐	☐	☐	☐
Markarrende eller liknande	☐	☐	☐	☐	☐
Vattenarrende eller liknande	☐	☐	☐	☐	☐
Urminnes hävd	☐	☐	☐	☐	☐
Allemansrätten	☐	☐	☐	☐	☐
Annat *(ange vad)*_____	☐	☐	☐	☐	☐

Eventuella kommentar/tillägg till föregående frågor (18-20):

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Frågor om
FÖRETAGET OCH DESS FRAMTID I VILHELMINA KOMMUN

21. OM Du tidigare angivit att företaget/arbetsstället bedriver verksamhet inom Vilhelmina kommun (fråga 8):

Finns funderingar på att flytta företagets/arbetsställets verksamhet från Vilhelmina kommun alternativt upphöra med verksamheten?

☐ Nej *(gå till fråga 22)*

☐ Ja, **flytt** är aktuell på grund av att _____

_____

_____ *(gå till fråga 23)*

☐ Ja, **upphörande** är aktuellt på grund av att _____

_____

_____ *(gå till fråga 23)*

22. OM Du svarade ”NEJ” på föregående fråga:

Hur bedömer Du företagets/arbetsställets **utvecklings**möjligheter **i Vilhelmina kommun** sett över en 5-årsperiod?

A) När det gäller företagets/arbetsställets **befintliga** verksamheter **i Vilhelmina kommun**?

Mycket goda	Goda	Dåliga	Mycket dåliga	Vet ej
☐	☐	☐	☐	☐

Motivera!
(Vad gör förutsättningarna för utveckling av verksamheten vid Ditt företag/arbetsställe bra/dåliga? Hur skulle förutsättningarna för utveckling av verksamheten vid Ditt företag/arbetsställe kunna bli bättre?)

_____

_____

_____

B) När det gäller **nya** verksamheter inom företaget/arbetsstället **i Vilhelmina kommun**?

Mycket goda	Goda	Dåliga	Mycket dåliga	Vet ej
☐	☐	☐	☐	☐

Motivera!
(Vad gör förutsättningarna för utveckling av nya verksamheter vid Ditt företag/arbetsställe bra/dåliga? Hur skulle förutsättningarna för utveckling av nya verksamheter vid Ditt företag/arbetsställe kunna bli bättre?)

_____

_____

_____

Frågor om
DIG SOM SVARAR

23. Vilket år är Du född? 19 ____

24. Av vilket kön är Du?

- ☐ Kvinna
- ☐ Man

25. Vilket av följande påståenden stämmer bäst in på Din egen koppling till Vilhelmina kommun?
*(Ange **ett** av alternativen)*

- ☐ Jag **arbetspendlar** till kommunen
- ☐ Jag är **infödd** i Vilhelmina kommun
- ☐ Jag har **flyttat till Vilhelmina kommun under de senaste FEM åren** och hade då någon form av ”fast” **koppling till kommunen sedan tidigare** (hade bott i kommunen tidigare, hade släkt, fritidsbostad i kommunen eller liknande)
- ☐ Jag har **flyttat till Vilhelmina kommun under de senaste FEM åren UTAN någon tidigare koppling** till kommunen.
- ☐ Jag har **bott i Vilhelmina kommun i mer än FEM år** och hade vid inflyttandet **tidigare koppling** till kommunen
- ☐ Jag har **bott i Vilhelmina kommun i mer än FEM år**, men hade vid inflyttandet **INGEN tidigare koppling** till kommunen
- ☐ Annat *(ange vad)*_____

26. Vilken är Din ”högsta” genomgångna utbildning?
*(Ange **ett** av alternativen)*

- ☐ Folkskola *(gå till fråga 28)*
- ☐ Grundskola (årskurs 1-9) *(gå till fråga 28)*
- ☐ Yrkesinriktad gymnasial utbildning eller motsvarande (komvux, folkhögskola m.m.) *(gå till fråga 27)*
- ☐ Studieförberedande gymnasial utbildning eller motsvarande (komvux, folkhögskola m.m.) *(gå till fråga 27)*
- ☐ Universitet-/högskolekurser *(gå till fråga 27)*
- ☐ Universitet-/högskoleexamen *(gå till fråga 27)*
- ☐ Forskarutbildning *(gå till fråga 27)*

27. OM Du i föregående fråga angivit GYMNASIAL, UNIVERSITETS-/HÖGSKOLE- ELLER FORSKARUTBILDNING:

Vilken inriktning har din utbildning?

- ☐ Undervisning
- ☐ Vård
- ☐ Estetisk utbildning
- ☐ Lant- eller skogsbruk
- ☐ Humaniora eller teologi
- ☐ Samhällsvetenskap/ekonomi eller juridik
- ☐ Medicin eller odontologi
- ☐ Teknik eller naturvetenskap
- ☐ Annat *(ange vad)* _____

28. Vilken annan utbildning/erfarenhet har Du som Du anser vara väsentlig för Din roll i verksamheten vid det företag/arbetsställe som denna enkät adresserats till?

- ☐ Jag har ingen sådan utbildning/erfarenhet
- ☐ Jag har utbildning/erfarenhet i form av_____

_____
_____
_____

29. Hur länge har Du **totalt** varit egen företagare i någon form alternativt varit verksamhets-/platsansvarig eller liknande vid något arbetsställe?

- ☐ mindre än 1 år
- ☐ 1-2 år
- ☐ 3-5 år
- ☐ 6-10 år
- ☐ mer än 10 år

30. Driver/leder Du **idag** något företag utöver det företag/arbetsställe som denna enkät adresserats till?

- ☐ Nej
- ☐ Ja – **inom** Vilhelmina kommun *(gå till fråga 31)*
- ☐ Ja – **utanför** Vilhelmina kommun *(gå till fråga 31)*
- ☐ Ja – **både inom och utanför** Vilhelmina kommun *(gå till fråga 31)*

31. OM Du svarade ”JA” på föregående fråga:

A) Hur många andra företag? ____

B) Vilken/vilka verksamheter bedrivs vid detta/dessa företag?

Inom Vilhelmina kommun: _____
_____
_____
_____

Utanför Vilhelmina kommun: _____
_____
_____
_____

Här kan Du lämna **övriga synpunkter** på denna enkät, gällande andra frågeställningar som Du anser viktiga eller någonting annat!

TACK FÖR DIN MEDVERKAN!

Appendix 2.

Semistructured, face-to-face interview with central stakeholders in MCP in the Bergslagen region (Paper III). Translated from Swedish.

I. Interview manual (municipalities and CAB representatives)

Planning process

1. Who has the main responsibility to design a comprehensive plan?
2. What are the main steps in a planning process to make a plan?
3. What policies/legislation are considered in the planning process?
4. Do you think or consider sustainability in the planning process?
5. Who (specialists, departments, etc.) is involved in the different steps in the municipality?
6. What are the main issues that are considered in the plan? How are these issues decided or negotiated?
7. Do the planners have the same power for the different dimensions to include their issues in the plan?
8. Do different planners/ politicians write their part of the plan?
9. How often has revision of the plan been made? Who decides about a revision?
10. Why was the decision taken to revisit the comprehensive plan in your municipality?
11. Does the municipality cooperate in the planning process with other municipalities?
12. With county?
13. With other stakeholders?
14. What is the role of dialogue in the planning process?
15. What is an ideal planning process?
16. Is the budget considered in the plan?
17. Do physical plans correlate with the comprehensive plan?

Data and analysis

18. What information/data is used?
19. How are the data collected/gathered?
20. How were the analyses done? Modeling? Modern software?
21. Who does the analysis?

22. Does the municipality have GIS specialists? What is their responsibility in the planning process?

Outcomes

23. Does the plan integrate all dimensions of sustainability?
24. Does the municipality have a green infrastructure plan?
25. Does the plan contain any issues related to climate change?
26. Does the plan contain any issues related to water use?
27. How is the plan used by different departments?
28. Do you have any operational or/and tactical plans?

II. Interview manual (landowners)

Planning process

1. Do you know about the comprehensive plan that has been developed (or in is in preparation) by the municipality?
2. Have you been invited to participate in the planning process?
3. If yes, who invited you? What was your contribution to the comprehensive plan?
4. Does the municipality have the legal right to plan on your territory?
5. If yes, what does the municipality plan to do on your territory?
6. What about the area of national interests? Does the government have the right to plan on your territory?
7. Do you cooperate with the municipality in ecological, economic or socio-cultural issues?
8. If yes, what are the areas of cooperation?
9. How often do you meet with the representatives of the municipality?
10. If not at all, why do you not cooperate?
11. Is this cooperation needed for you? For the municipality?
12. Do you see any opportunities for cooperation with the municipality? Any challenges?
13. What is you ideal version of cooperation with the municipality? On what issues?

Appendix 3.

E-mail survey among municipal officials responsible for MCP in the 15 mountain municipalities of Sweden (Paper IV). Translated from Swedish.

Municipal Comprehensive Planning in the Swedish mountain municipalities

Your background

1. What is your professional title and in which municipality?

I am _____in_____municipality.

2. For how long have you had this title in this municipality?

- ❑ Less than 1 year
- ❑ 1-2 years
- ❑ 3-5 years
- ❑ 6-10 years
- ❑ More than 10 years

Municipal Comprehensive Planning (MCP)

3. Are you updating the MCP of your municipality at the moment?

- ❑ Yes, the work began in year_____. The work will be finished in year_____.
- ❑ No
- ❑ I don't know

Note!
The questions in this questionnaire concern the EFFECTIVE MCP of your municipality. If you would like to, you can comment on an ongoing work with MCP AT THE END of the questionnaire, where you also can comment if there is no/not enough room next to a specific question.

4. Which year was the effective MCP of your municipality adopted?

year_____

- ❑ I don't know

5. Who has the EXECUTIVE (not political) responsibility for MCP in your municipality?

Office(s)/section(s)_____

Title(s)

_____

_____

6. How much money OR how much time is allocated, in total, for MCP in your municipality today?

Allocated means of _____SEK/year.

OR

- ❑ No time
- ❑ Less than one full time employment
- ❑ One full time employment
- ❑ Two full time employments
- ❑ More than two full time employments

- ❑ I don't know

7. How is MCP followed up in your municipality today?

- ❑ Examination of actuality every political four year term WITH previous systematic evaluation
- ❑ Examination of actuality every political four year term WITHOUT previous systematic evaluation
- ❑ After urging from the CAB (as the supervising authority)
- ❑ The municipality does not have a strategy for MCP follow up.
- ❑ I don't know

8. How was the effective MCP of your municipality developed?
Multiple answers are allowed.

- ❑ By municipal officials
- ❑ By political working group(s) *(political decisions not included)*
- ❑ In cooperation with residents, land use/societal interest groups and such
- ❑ By consultant(s)
- ❑ Other_____
- ❑ I don't know

9. How were the residents involved in the planning process concerning the effective MCP of your municipality? *Multiple answers are allowed.*

- ❑ During the legally required consultation and exhibition of the MCP
- ❑ During working group sessions/meetings or such
- ❑ Through surveys, Web fora or such
- ❑ Other _____
- ❑ I don't know

Comments

_____

_____

_____

10. **How were various societal and land use interests involved in the planning process concerning the effective MCP of your municipality?** *Multiple answers are allowed.*

- ❑ During the legally required consultation and exhibition of the MCP
- ❑ During working group sessions/meetings or such
- ❑ Through surveys, web fora or such
- ❑ Other _____
- ❑ I don't know

Comments

_____

_____

_____

11. **In your experience, to what extent have the legally required consultation and/or exhibition affected the effective MCP of your municipality?**

- ❑ Not at all
- ❑ To a minor extent
- ❑ To some extent
- ❑ To a rather large extent
- ❑ To a great extent
- ❑ I don't know

IF the LEGALLY REQUIRED CONSULTATION AND/OR EXHIBITION has affected the final MCP; please state how (at least examples):

_____

_____

_____

12. **In your experience, to what extent have other types of collaboration** *(collaboration beyond the legally required consultation and/or exhibition; se question 9 and 10)* **affected the effective MCP of your municipality?**

- ❑ Not at all
- ❑ To a minor extent
- ❑ To some extent
- ❑ To a rather large extent
- ❑ To a great extent
- ❑ I don't know

IF OTHER COLLABORATION (beyond the legally required consultation and/or exhibition) has affected the final MCP; please state how (at least examples):

_____

_____

_____

13. Do you experience any difficulties with the MCP work in your municipality?

Multiple answers are allowed.

- ❑ I do not experience any specific difficulties
- ❑ Lack of financial resources
- ❑ Lack of available personnel
- ❑ Lack of competence
- ❑ Lack of organization/structure for MCP work
- ❑ Lack of essential information for planning from the CAB

*What/how?*_____

_____

_____

- ❑ Lack of essential information for planning from my own municipality

What/how? _____

_____

_____

- ❑ Difficulties with engaging residents

State if there is any specific categories that are particularly difficult to engage and why

_____

_____

- ❑ Difficulties with engaging various societal and land use interests in the municipality

State if there is any specific categories that are particularly difficult to engage and why

_____

_____

- ❑ Other, *namely*

_____

_____

Content of the MCP

14. In your opinion, are the legal requirements regarding the content in a MCP relevant to your municipality?

- ❑ Yes
- ❑ Partly
- ❑ No
- ❑ I don't know

Please state which requirements you do not consider to be relevant

_____

_____

_____

_____

15. Do you have any thematic supplements or in depth MCPs in/attached to the MCP of your municipality?

- ❑ Yes, *namely*

  _____

  _____

- ❑ No
- ❑ I don't know

16. What is the reason for the choice of working with thematic supplements and/or in depth MCPs in your municipality?

_____

_____

_____

_____

_____

_____

_____

17. In your opinion, which themes/issues are most important for the MCP to handle for your municipality?

(Legally required in MCP or not.)

_____

_____

_____

_____

_____

_____

_____

18. Questions concerning land use data/maps in MCP

In MCP, it is important to have access to different types of landscape data and maps for various purposes; information, analysis and communication. Below you can find a table with various types and groups of landscape data. *Is these data/maps are important in MCP? Are data/maps needed in high or low detail resolution, or both? Are they needed for larger geographical scale; even outside the municipality borders? Are they needed for change detection analysis (e.g. analysis of how climate change affects the landscape/land use)?*

Put an 'X' for <u>all</u> alternatives you consider to be accurate based on YOUR EXPEPRIENCE.

You will have the opportunity to comment on your answers 'below' the table.

	This type of data is NOT important	**This type of data is important…**			
		…in HIGH reso-lution	**…in LOW reso-lution**	**…in a larger geographi cal scale**	**…for change detection analysis**
Large scale infrastructure roads, power lines, broadband, cellular networks, railroads etc.	❑	❑	❑	❑	❑
Small scale infrastructure bridges crossing streams, road culverts etc.	❑	❑	❑	❑	❑
'Natural' infrastructure trails, paths, streams etc.	❑	❑	❑	❑	❑
EXISTING land use (e.g. forestry, hydro power, wind power, mining, reindeer husbandry, agriculture etc.)	❑	❑	❑	❑	❑
PLANED land use (e.g. wind power, mining etc.)	❑	❑	❑	❑	❑
EXISTING built environment incl. industry	❑	❑	❑	❑	❑
PLANED built environment incl. industry	❑	❑	❑	❑	❑
LIS-areas (rural development in shore line areas)	❑	❑	❑	❑	❑
Overall map of areas with HIGH concentration of various types of land use	❑	❑	❑	❑	❑
Overall map of areas with LOW concentration of various types of land use	❑	❑	❑	❑	❑
Vegetation	❑	❑	❑	❑	❑
Geology bedrock incl. radon	❑	❑	❑	❑	❑
Water supplies	❑	❑	❑	❑	❑
National interests (Swedish Environmental Act, chapters 3 and 4)	❑	❑	❑	❑	❑
Legally protected natural areas (e.g. reserves, national parks, Natura 2000, water protection areas, biotope protection areas etc.)	❑	❑	❑	❑	❑
Legally protected cultural areas (e.g. reserves, archaeological heritage etc.)	❑	❑	❑	❑	❑

Continuing question no 18:

	This type of data is NOT important	This type of data is important… …in HIGH reso-lution	…in HIGH reso-lution	…in a larger geographical scale	…for change detection analysis
Green infrastructure (cohesive areas with important habitats and structures, e.g. protected forests along streams, recreational passages etc.)	❑	❑	❑	❑	❑
Administrative borders (land owners, border for regeneration felling etc.)	❑	❑	❑	❑	❑
Natural borders (alpine tree line)	❑	❑	❑	❑	❑
Areas with risks for negative impacts on society (e.g. erosion, flooding, noise, radiation, contaminated areas etc.)	❑	❑	❑	❑	❑
Climate stations, water level stations	❑	❑	❑	❑	❑
Specific buildings and places (e.g. reindeer bridge, local cultural areas, natural viewpoints, silent areas etc.)	❑	❑	❑	❑	❑

Below you can state…

…OTHER TYPES of land use data/maps that you think should be included in MCP:

_____

_____

_____

...SENSITIVE land use data/maps (from the table above or other) which is important for MCP, but should not be of public access:

_____

_____

_____

…other comments concerning this question:

_____

_____

_____

MCP as a tool

19. In your opinion, are there obvious links between the MCP of your municipality and regional/national plans and policies?

- ❑ Yes
- ❑ To some extent
- ❑ No
- ❑ I don't know

20. In your opinion, are there obvious links between the MCP of your municipality, detailed plans, building permits and/or other municipal legally binding decisions?

- ❑ Yes, *state which and how*

_____

_____

_____

- ❑ To some extent
- ❑ No
- ❑ I don't know

21. Do you use MCP actively in your work?

- ❑ Yes, daily
- ❑ Yes, weekly
- ❑ Yes, monthly
- ❑ Yes, yearly
- ❑ No

IF you use MCP in your work – how do you use it?

_____

_____

_____

_____

22. In your experience, do other actors consider the MCP of your municipality in their work?

	Yes	No	I don't know
The CAB	❑	❑	❑
Other governmental agencies	❑	❑	❑
Other municipalities	❑	❑	❑
Developers	❑	❑	❑
Other_____	❑	❑	❑

23. In your opinion, are there opportunities/gains for your municipality to work with MCP?

- ❑ No, I do not experience any specific opportunities and/or gains
- ❑ Yes, I experience these opportunities and/or gains:

_____

_____

_____

MORE/OTHER COMMENTS

_____

_____

_____

_____

_____

_____

_____

_____

_____

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THANK YOU FOR YOUR PARTICIPATION!