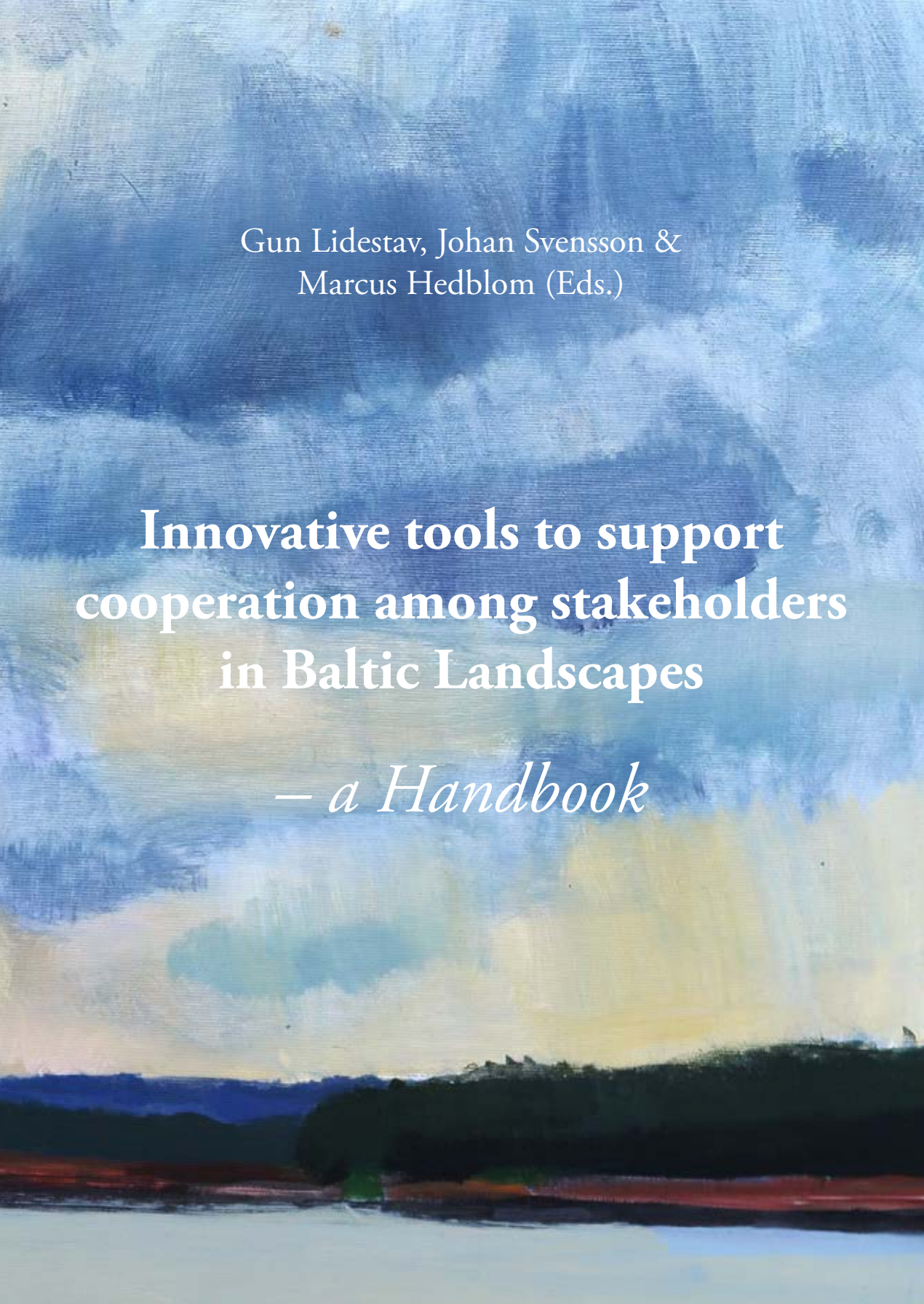
Gun Lidestav, Johan Svensson &
Marcus Hedblom (Eds.)

Innovative tools to support cooperation among stakeholders in Baltic Landscapes

– a Handbook



Innovative tools to support cooperation among stakeholders in Baltic Landscapes – a Handbook

Editors: Gun Lidestav, Johan Svensson and Marcus Hedblom

BALTIC LANDSCAPE

Front cover illustration: "*Jezioro*" by Jakub Michalski which is an outcome of the "How I understand a Mazurian landscape" workshop organized by the project partner Regional Directorate of the State Forest in Olsztyn, Poland.

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PREFACE

In present planning of landscapes there are large gaps between international Conventions and on the ground implementations. With this handbook, the Baltic Landscape project aim to share major experiences and knowledge gained during the years 2012-2015 to support stakeholder cooperation, integrated planning, and sustainable landscape management. A network of seven landscape sites in Belarus, Finland, Poland and Sweden were established and in line with the project objectives — a multiplicity of tools and approaches was developed and applied. In some cases, existing tools have been used in new contexts. In other cases, we have found new ways of combining old and new techniques to create engagement, interaction and co-production of knowledge between stakeholders. Thereby, we hope that this real-case based compilation of tools and approaches will help reducing local conflicts around natural resources in landscape planning and support the work to meet objectives of EU Conventions on sustainability.

The first part of the handbook provides an overall project context, introducing the concepts of "landscape", "sustainable forest management", the European Landscape Convention and the Water Framework Directive, whereupon the importance of integrated and participatory approaches is emphasized. The second part of the handbook includes 29 different tools and approaches that have been used in one or more of the seven landscapes. The different tools and experiences are further ordered in five major groups: i) Identifying problems in the landscapes and identify potential stakeholder's (chapter 2.1 – 2.5) ii) Analyzing the identified problems (chapter 2.6 – 2.9) iii) How to communicate with stakeholders (chapter 2.10 – 2.17) iv) agreeing and solving of problems and conflicts (chapter 2.18 – 2.20) v) Disseminating experience (chapter 2.21 -2.29). The first and second parts are followed by some conclusions and recommendations. Last but not least we provide a list of corresponding reports to the projects provided and mentioned in the chapters where the reader can get more in-depth description of the use of tools and approaches.

A large number of project participants from all the seven Baltic Landscape sites representing five different work packages have provided to the text in the chapters. Before publishing, each chapter have been reviewed and edited by the team of editors.

Gun Lidestav, Johan Svensson and Marcus Hedblom

Team of Editors

Contents

Chapter 1

INTRODUCTION

"Sunset" by Izabela Siembida (Photo: Urszula Dyl-Nadolna)

The Baltic Landscape project

Gun Lidestav, Swedish University of Agricultural Sciences

New land use strategies and demands, climate change, globalizing natural resource markets, etc., poses unknown premises and new challenges for sustainable landscape management and governance. Traditional land-use such as forestry and agriculture are meeting increased demands from recreation, tourism, nature conservation, carbon management and bio-economy that directly influence strategic and operational planning. These demands are often diverging and cause conflicts among land use interests and landscape stakeholders. Tools and knowledge on how to handle such conflicts are often missing, as well as tools that emphasize multi-objective, integrated and balanced land use where different uses and users as well as geographic scales and land-cover types are regarded. An obstacle is that there is a lack of integration in planning on landscape scale, and that planning is based on various types of data, and sometimes even missing or incomplete data on the landscape and its natural resources. Moreover, forest, agriculture, water etc. sector policies, national as well as EU-policies, are not harmonized and furthermore not developed in participation with the local population and land users.

Within the Baltic Landscape project a network of seven landscape sites has been established, gradually building local partnership for sustainable development. The partnership activities highlights and sometimes challenge top-down and sectorial approaches and planning in the landscape. Thus, the project is developing proposals for integrated approach to landscape planning based on bottom-up approaches that can be scaled up to national and pan-national levels. The conceptual platform is the international Model Forest Network principles and attributes and on more than 10 years of experiences in working with the Model Forest concept in northern Europe.

A Model Forest can be characterized by (1) a landscape large enough to address an area's diverse forest uses and values, (2) an inclusive and representative partnership, (3) a commitment to sustainability, (4) a governance system that is representative, transparent, and accountable, (5) a program of activities that reflects the values, needs, and management challenges of the partners, in the local community, and on regional to national levels, and (6) a commitment to knowledge sharing, capacity building, and networking, from local to international levels.

Baltic Landscape partnership and network of landscape sites (see fig. 1) includes: Bergslagen BL, central Sweden with the Säfsen Forest Foundation as the acting partner. Helge å BL, southern Sweden with the Swedish Forest Agency as the acting partner. Ilomantsi BL, southeastern Finland with the University of Eastern Finland as the acting partner. Mazury BL, northeastern Poland with the Regional Directorate of the State Forest in Olsztyn and the Marshal Office of the Warminsko-Mazurskie Voivodeship in Olsztyn as acting partners. Neman BL, central Belarus with Belarusian State Technological University, Republican Forest Inventory Enterprise

Belgosles and Novogrudoc Forestry Enterprise as acting partners. Vilhelmina BL, northwestern Sweden with the Swedish University of Agricultural Sciences and the Swedish Forest Agency as acting partners. Warta BL, western Poland with the Regional Directorate of the State Forests in Poznan and the Poznan University of Life Sciences as acting partners.

Three dissemination partners participated as well (these partners participated in workshops, field visits and conferences but not with their own budget as for establishing a Model Forest) ; From Norway the Hedmark University College, from Estonia the Estonian University of Life Sciences, and from Latvia the Latvia State Forest. Cooperating Model Forests in Northwest Russia include Komi Model Forest, Pskov Model Forest and Kovdozerskiy Model Forest.

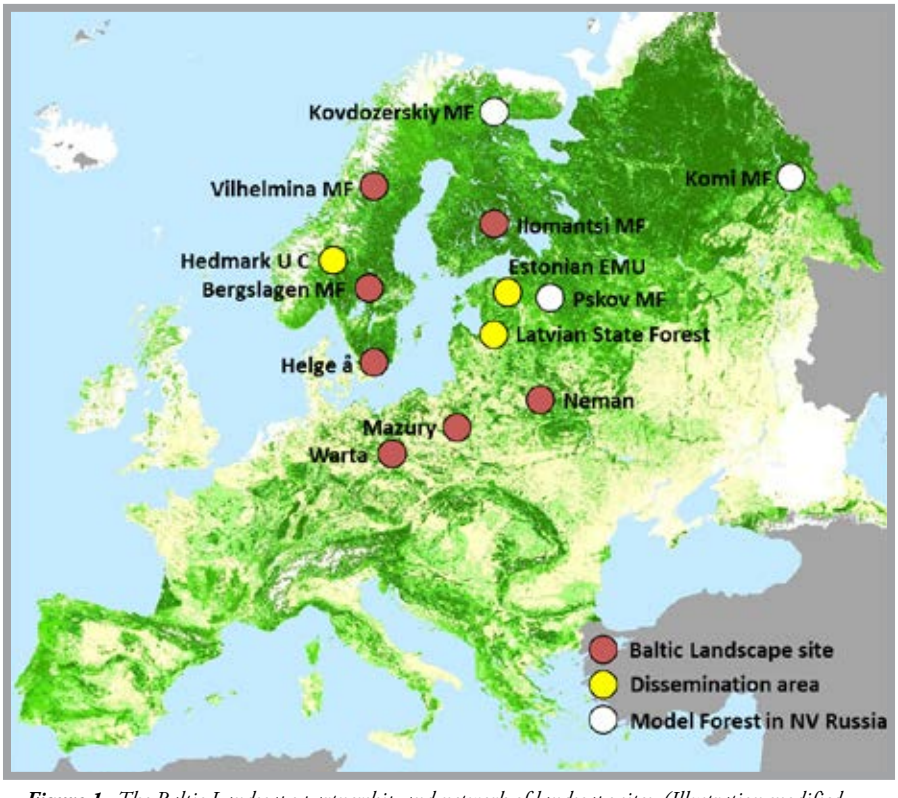


Figure 1. *The Baltic Landscape partnership and network of landscape sites. (Illustration modified from the Baltic Landscape Report No. 37)*

What is landscape?

Marcus Hedblom and Johan Svensson, Swedish University of Agricultural Sciences

The term 'landscape' is complex and has many different dimensions and applications. Different people have different experiences, different disciplines and sectors form their standards, and sometimes a landscape can be as vague as "in the eye of the beholder". At the same time there are in-common valuations of a landscape as an entity and context. Art, literature, film, environmentalism and the tourism influences the perspectives and throughout history there has been different and changing guiding norms; appealing or non-appealing, chaotic or ordered, manageable or not. Landscapes have been described in different ways, for example:

- ✓ The view we are looking at or considering. This is mirrored in the term 'landscape view', and originates historically in landscape painting.
- ✓ an ecological entity that through ecological processes can be demarcated from neighbouring entities, or an entity that can be regarded and measured in terms of species composition, supply of food, wood, carbon or energy. This is the ecological view.
- ✓ an area accountable with respect to house holding, ownership or other economic parameters and where physical planning takes place. This is the management view. In a wider perspective the policy and governance can be included.
- ✓ a 'totality ' that unites humans and their environment. People using or benefitting from the landscape is part of the landscape in a socio-ecological entity. The landscape we behold is the outcome of the biophysical conditions and the result of the interaction between these and/or humans in the present and the past. This wider understanding of the term "landscape" is used in the European Landscape Convention and implemented in the Baltic Landscape project.

In the Baltic landscape project, the landscape is framed by the geographical definition of a Baltic landscape site, and indirectly by the principles embedded in the Model Forest concept; a large-scale, forest-based landscape that encompasses a variety of land uses and values, resource management administrations and land ownership. The extension of the landscape is determined by the questions asked and approaches made to addressing sustainable land use and governance with a focus on local perspectives.

In Vilhelmina, the landscape was defined with three different areas; one area was based on an already existing official border of Vilhelmina Municipality equal to the area of the Vilhelmina Model Forest, a second was based on the total area of the three reindeer herding community that to some part exists within the first area,

and the third area was based on the catchment area of river Ångermanälven that originates in the mountains of Vilhelmina Municipality bordering Norway (see figure 2).

1.2

Bergslagen has no official geographical definition. The Bergslagen region in south-central Sweden was of great historical importance to the entire country and for centuries its mineral resources was the base of Swedish economy. To delimit the Bergslagen region several approaches can be used. A historic approach is to use data from old documents about the parishes subject to the special legislation of the mining and the metallurgic industry. A second approach is to look at the use of the word Bergslagen in the names of private businesses. Using parishes as minimum mapping units it was possible to map 22 different geographically explicit definitions of Bergslagen.

Helge å has decided to delineate the landscape within the catchment area of the river Helge å, from its origin in the hemi boreal coniferous landscape to its mouth in the nemoral, agriculture-dominated and highly populated southernmost Sweden. The catchment area includes three Counties and twelve Municipalities.

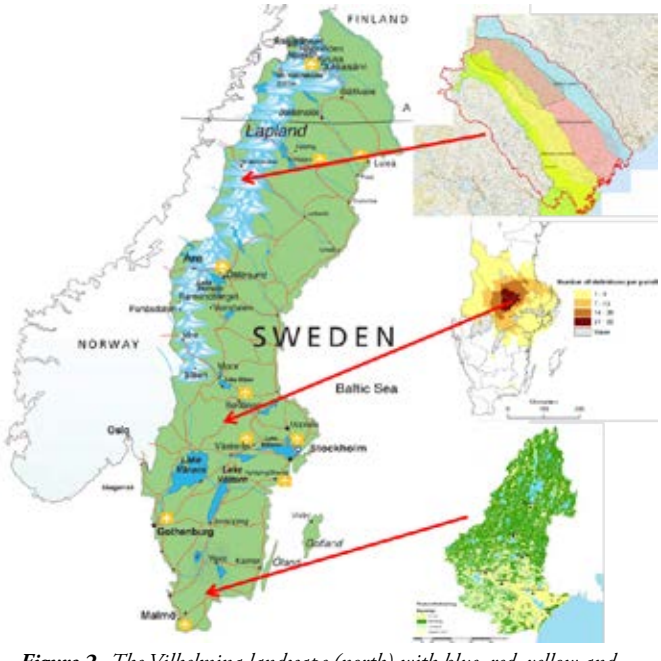


Figure 2. *The Vilhelmina landscape (north) with blue, red, yellow and green shows the three reindeer husbandry districts that have stationary land in the Municipality area of Vilhelmina (in black striped lines). The red line also includes the catchment area of Ångermanälven River. The Bergslagen landscape (middle) based on 22 different definitions of the region of Bergslagen with the brown color indicating a core area. The Helge å landscape (south) encompasses the entire river catchment area. (Illustration: Marcus Hedblom)*

Sustainable Landscape Management

Johan Svensson, Swedish University of Agricultural Sciences

It is evident that the complex nature and function of landscapes has to be regarded in any form of landscape planning that acknowledges the concept of sustainability. Accordingly, spatial as well as temporal perspectives on landscape configuration and land use have to be applied. This is particularly true under changing premises caused by climate change, new land use policies or changing demands on natural resources. From a biophysical point of view, the landscape is a continuum of land cover types, (e.g., forest, agriculture land and water bodies) and the transitions between them. The current land cover type or land use on any point in a landscape is a temporary phase that will change over time in response to natural changes or anthropogenic influence.

With reference to sustainable forest management (SFM) concept, a trend towards sustainable landscape management (SLM) is evident in landscape-oriented concepts such as Model Forests, UNESCO MAB (Man and Biosphere) and LTER sites (Long Term Ecological Research). It can thus be understood that forests and all other land cover types in a landscape – agricultural land, wetlands, water bodies, built-up infrastructure, etc. – are regarded, having the SFM concept otherwise not disputed or altered. This approach makes it possible to include all the terrestrial and aquatic biophysical components of the landscape as well as the natural changes and interaction by people, communities, land users and institutions. It is also possible to consider policies and various levels and for various sectors. The SLM approach can also be implemented for more specific components or aspects in the landscape, such as biodiversity where biodiversity per se and the processes affecting biodiversity can be considered across land cover types and not specifically, for example, for forests. The implementation in practice of SLM is a planning exercise where different land use interests are combined and balanced in a spatiotemporal context across the biophysical and geographical extension of the focal landscape. The temporal context – past, present and future – is essential to acknowledge to encompass changes in land use and premises for land use over time.

As global changes are predicted, the concept of sustainability needs to be adjustable *per se*, allowing (a) top-down input to secure territorial overview; (b) bottom-up input to secure local participation; (c) networking and sharing of relevant knowledge; and (d) balancing the different dimensions of sustainability in land use planning. Currently there is a need for functional examples of sustainable development producing sustainability in practice, locally, and in real landscapes. To achieve this we need a range of innovative and valid tools and approaches for dissemination and for scaling up good examples. This has been a central component in the construction of the Baltic Landscape project, where the seven Baltic landscapes are the examples

of real landscapes. We also need the infrastructure and communication routines to deliver the process and its outcomes in an understandable and appreciated way to land use actors, decision makers and the public.

Figure 3. *The landscape in northern Sweden consists to a large degree of wetlands that strongly influence the nature of the landscapes as well as the sustainable management principles on landscape scale. The wetlands are integral parts that are linked to adjacent ecosystems and provide, e.g., transport of wood on ice roads during wintertime. (Photo: Saskia Sandring, SLU, 2010, at the eastern fringe of Stöttingfjället area, Västerbotten, Sweden)*

European Landscape Convention

Gun Lidestav, Swedish University of Agricultural Sciences

The European Landscape Convention (ELC) is part of the Council of Europe's work on natural and cultural heritage, spatial planning, environment, and local self-government. In Florence, October 2000, the ELC became accepted as an international agreement and has now become ratified by most States in Europe. ELC aims to fill the gap between the other EU conventions and legalizations in order to establish a framework for a holistic view of the landscape as a concept, considering its profound and diverse importance for the European identity. Therefore, ELC includes all kinds of landscapes that people meet in their everyday life. The range of related issues is broad and varying, depending on what the individual sees and appreciates in his or her day-to-day landscape.

The ELC also aims at supporting cooperation on landscape issues at different levels within Europe. At the same time, the purpose of the convention is to strengthen the contribution from and influence by the general public and the local community in the implementation of the ELC. How this bottom-up implementation should be managed is not specified in the convention, however, but according to the explanatory report the public should be encouraged to take an active part in planning and management; from the guidelines we learn that "Participation should be a feature of all the different phases ..." (Council of Europe 2008). As being a convention, not a directive, it is up to each State to carry out the intentions of the convention and to suggested measures for how it should be carried out, including how to secure public participation. Therefore, additional initiatives and instruments with similar visions and objectives may be needed.

Similar to ELC, the Model Forest concept recognize that public participation is an important ingredient in successful implementation of different policies to accomplish sustainable development. In particular, the Model Forest approach implies that local stakeholders form the foundation in the planning and operations in the landscape. Hence, that the landscape is a venue for meetings, dialogue and local democracy where citizens can become co-creators in matters that concern sustainable use of the landscape and its resources. By applying the Model Forest concept, the Baltic Landscape project is gradually building local partnership for sustainable development in seven landscape case studies around The Baltic Sea. The partnership sometimes complete and sometimes challenge existing top-down and sectorial approaches and planning by horizontal cooperation and actions. The partnerships in the Baltic Landscapes cover state agencies, private sector, self-government, representatives of local population, non-government organizations (NGOs), schools and research organizations, and thereby facilitate the important process of deepened dialogue and participation of interested parties in governance and planning.

Figure 4. *River Neman in Belarus. (Photo: Marcus Hedblom)*

Figure 5. *Lakes as basins for overflooded forests in Mazury. (Photo: Marcus Hedblom)*

Figure 6. *Production forests in Vihelmina. (Photo: Marcus Hedblom)*

Figure 7. *Fields in Belarus effected by Wild Boars. (Photo: Marcus Hedblom)*

The European Water Framework Directive and the importance of local participation

Erik Ederlöf, Swedish Forest Agency

The Water Framework Directive establishes a legal framework to protect and restore clean water across Europe and ensure its long-term sustainable use. The directive establishes an innovative approach for water management based on river basins, the natural geographical and hydrological units and sets specific deadlines for Member States to protect aquatic ecosystems. The directive addresses inland surface waters, transitional waters, coastal waters and groundwater. It establishes several innovative principles for water management, including public participation in planning and the integration of economic approaches, including the recovery of the cost of water services.

Encouraging local participation is one of the cornerstones of river basin management. There are two main reasons for a higher level of public participation. The first is that the decisions on the most appropriate measures to achieve the objectives in the river basin management plan will involve balancing the interests of various interest groups. The economic analysis requirement is intended to provide a rational basis for this, but it is essential that the process is open to opinions from those who will be directly affected. The second reason concerns enforceability of the Directive. The greater the transparency in the establishment of objectives, the imposition of measures, and the reporting of standards, the greater the care that Member States will take to implement the legislation in good faith, and the greater the power of the citizens to influence the direction of environmental protection, whether through consultation or if disagreement persists through the legal procedures and processes.

Caring for Europe's waters will require more involvement of citizens, interested parties and non-governmental organizations (NGOs). To that end the Water Framework Directive will require information and consultation when river basin management plans are established: the river basin management plan must be issued in draft, and the background documentation on which the decisions are based must be made accessible. Furthermore a biannual conference in order to provide for a regular exchange of views and experiences in implementation will be organized. Too often in the past implementation has been left unexamined until it is too late and the Member States are far behind schedule and out of compliance. The Framework Directive, by establishing very early a network for the exchange of information and experience between water professionals throughout the Community, will ensure that this does not happen.

The European Water Framework Directive has been highlighted as one of the basic frameworks that have been addressed in the Baltic Landscape project. Several local projects have been conducted where possibilities and barriers in the implementation of the WFD have been approached.

Figure 9. *Restoring natural configuration of Laxbäcken creek, (Photo: Mikael Strömberg, Vilhelmina Model Forest).*

Figure 8. *Sacred spring. Neman BL area. (Photo: Marcus Hedblom)*

Figure 10. *Beaver impact in Mazury BL area. (Photo: Przemyslaw Majewski)*

Integrated and participatory approaches

Przemyslaw Majewski and Johan Svensson, Swedish University of Agricultural Sciences

In a sustainability context it is justified to consider more than one type of land use at any spatial scale and at any habitat, stand or point in a landscape, as well as to consider past, present and future land use actors and actions. This requires a holistic and participatory approach based on basic principles, such as:

- ✓ The landscape is a result of past and present influence of people, where local people have the strongest direct influence in a historical perspective
- ✓ The type of land use has changed through history, as have the land cover and available natural resources, and they will continue to change in the future
- ✓ External forces, outside the local perspective, such as the market and the demand of natural resources has, is and will change
- ✓ Availability and opportunity of more than one type of land use is a risk management strategy
- ✓ Different land users have different needs with different strategies and directions which leads to conflicts
- ✓ An integrated approach that at an early stage considers different needs and interests in land use, mitigate conflicts
- ✓ The public interest in land use decisions, thus the social aspect, is increasing

In policy and practice sectorial planning is often performed per land use type, e.g. for the forest or the agriculture land but not for both sectors integrated. Limited participation of interested local parties and a top down approach is common. Sectorial landscape planning should be based on landscape scale and local circumstances. Current planning system, within sectorial land use and management should be completed by larger and holistic landscape scale approaches. In the Baltic Landscape project the approach was to gradually develop landscape and sustainable development needs based on local circumstances for more optimal land use strategies and planning. The project developed strategic plans for selected landscapes, by thematic group meetings, and by evaluation of barriers and potential of implementation of European conventions.

A participatory approach requires a neutral platform. Participatory planning is declared quite frequently, but it is usually limited to superficial consultation of final plans that often are presented in professional language which, frequently, is not understandable for local stakeholders. The Baltic Landscape project is developing proposals for gradual improvement by applying the principle of neutral platform (non-sectorial) that is embedded in the Model Forest concept and that allows to

put the consultation in the beginning of the planning process instead of at the end. This approach provides opportunities for cross-sectorial consultation and, over the long-term, cooperation on landscape level. Moreover, proposals are also developing for functional communication of professional knowledge with sector-representatives and local population. The partnership principle within the Model Forest concept also relies on the establishment of a credible council or steering group, which is developing in each of the seven Baltic Landscape sites and acting jointly on sustainability issues.

Participation in reality relies on a "from-the-ground-up" perspective on democracy and common sense-based local knowledge as an alternative to a more common top-down process based on external knowledge. The top-down perspective is challenging and time consuming, and sometimes include a balancing act between narrow perspectives based on limited knowledge and sufficient expert perspectives. The Baltic Landscape Project apply to learn the situation in each landscape, to enable to make comparison of applied planning systems, to evaluate potential of shared strategies, to propose direction of potential solutions and to demonstrate new approaches on the ground.

Communication and sharing of information on land use among the actors is central. The Baltic Landscape project started a gradual development of map sets which opens the sectorial competence to a larger audience. The maps, situated in accessible sites and with data that has been approved for official display, can stimulate comments and participatory approach.

Figure 11. *The Vilhelmina Model Forest office in the old church town in Vilhelmina provides meeting facilities for public participation and communication. (Photos: Nanna Hjertkvist, SLU)*

Chapter 2

TOOLS USED TO SUPPORT INTEGRATION AND COOPERATION

(Photo: Ursula Neussel)

Problem identification

Przemyslaw Majewski

Problem identification as an exercise to create a structured approach to a group working method.

In the context of the Baltic Landscape project problem identification is applied as a method to establish a structured action plan for handling those sustainability and management challenges that are identified by the land-use stakeholders. Usually, however, the method is used as a short-term search for feedback and framing of a specific problem or to create examples of precise logistic overall planning, and hence not used to its full capacity.

The first step is to define the challenges. The challenges are often complex and covers several aspects of sustainability, different land cover types, various policy frameworks, etc., and hence may be understood differently by different stakeholders. One specific stakeholder often sees only part of the problem and the symptoms or effects of the problem, without an analysis of the roots of the problem. Each stakeholder has their own prescriptions and do not know about or consider other stakeholder's situation and solutions. As a consequence, the result of activities to mitigate the problem the solutions, are short-term and/or only covers part of the problem. In this situation many landscape issues are addressed in a fragmented way without an integrated approach and accordingly with a discouraging net result.

In the case of landscapes and Model Forest, involved stakeholders have very different background and experiences but are over the long term acting in the same landscape. They have often different and sometimes contradicting interests. A central task in developing problem solving into a more general tool to deal with landscape sustainability issues is to provide an opportunity for all stakeholders to understand the full complexity of the issue and to stimulate work together on cooperative solutions. As an additional outcome, the involved stakeholders will understand more deeply not only their side of the problem but also other stakeholder's visions, opportunities and limitations.

One illustrative example in the Baltic Landscape project is about the beaver problem in Mazury Baltic Landscape. The beaver was almost extinct in Poland in the 1960s and large effort has been made to restore its population, including reintroduction and strong protection. The efforts have in this regard been successful. Very quickly the population of beaver increased dramatically in some parts of Poland, including the Mazury area. The effects on the landscape scale were both negative and positive, agriculture fields as well as forest areas were flooded owing to beavers dams, roads and bridges were affected, and habitats changed in a positive way with respect to biodiversity. In a societal and institutional context, however, the problems emerged when farmers were demanding compensation for loss of forest

Figure 12. *Identify potential problems in the landscape using maps in Belarus and stakeholders from many sectors. (Photo: Marcus Hedblom)*

or agriculture production, or even argued for eradication of beavers, and further when road construction workers did not know how to handle beaver drilling in their constructions.

The Mazury Baltic Landscape group gathered stakeholders during several sessions, where two sessions were allocated specifically for problem identification and logic frame planning. During these sessions stakeholders listed all issues concerning the beavers including its positive role as provider of habitat for biodiversity and helping to sustain water in the forest (which is an important issue for forestry in Poland). Stakeholders included farmers, local authorities, foresters, water management agency, self-government, researchers and NGOs. Facilitated discussion helped to share different opinions without extreme argumentation, starting from a private farmers complains and working towards a landscape scale analysis. The fact that beaver is a protected species framed the discussions. During the discussion some important overall issues were identified; such as a lack of a concept of beaver population management (strict protection models do not apply to the current situation), a lack of a systematic inventory which is conditional for rational population management, and a lack of an overall evaluation of the role of the beaver in a given landscape with its economic, ecological and socio-cultural circumstances. Increasing beaver

population creates on the one hand damages in forest- and farmland and drainage construction, but on the other hand saves investments in reconstruction of water retention and habitats important for biodiversity.

The results of this activity are promising. It was possible to establish a logic frame that allowed stakeholders to agree within the group on objectives and priorities. Every stakeholder could view both their own and the other stakeholders perspectives. Such a logic frame can form the basis for project development, project partner composition, needed expertise and competence, and needed project organization and funding. Problem statements, objectives and activities on short- and long-term could be identified and defined. This type of forming a planning process opens up for adaptation emerging from expected or unexpected circumstances and directions. The developed logic frame was based on a detailed analysis presented in a clear matrix with drawings or tables, and included both strategic and very local objectives as well as agreed priorities. The problem identification and proposed solutions were described and presented in such a way that all stakeholders felt involved and understood the context. Rigorous logic and precision, often demanded in logistic planning, can be counterproductive in situations like this. Instead, each stakeholder needs to be able to follow the analysis including those aspects that are negative or disturb their own perspectives. Then, each stakeholder can understand or at least learn the positions of other stakeholders. Moreover, several and sometimes frequent meetings create the necessary fundaments for a functional informal network that itself facilitate coordination, exchange of experiences and accelerated processing of problem solutions.

2.1

Stakeholder analysis

Marine Elbakidze & Per Angelstam, Bergslagen Model Forest & Säfsen Forest Foundation

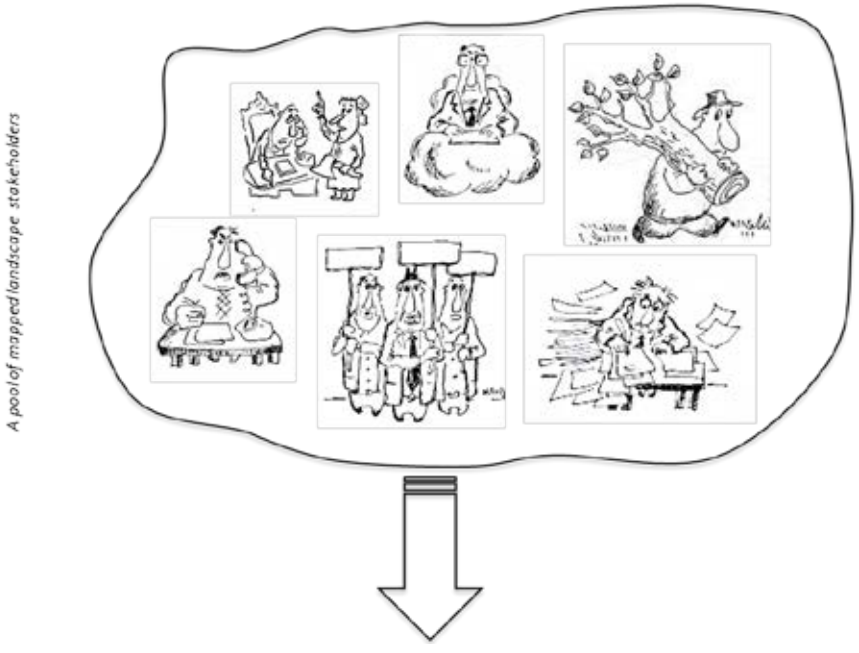
Understanding a social landscape is a basis for a successful development process towards sustainability on the ground.

Key approaches in the Baltic Landscape project are to develop innovations and test new ideas on how sustainability issues are defined by the needs, interests and problems of a local partnership and to identify those who use, manage or govern natural resources.

The Bergslagen case study includes different approaches. First of all, we mapped a social landscape of Bergslagen. Using open-ended interviews face to face or by phone with stakeholders that manage, use and govern different kind of natural resources, we identified a role of each stakeholder in management and decision-making processes related to local and regional development based on landscape's values, services and products. Second, the interviews were complemented by analyses of published information such as regional newspapers, journals, and magazines on economic, ecological and socio-cultural development in Bergslagen in order to check if any landscape's stakeholder was missing. As a result a "pool" of stakeholders was created (figure 13)

All mapped stakeholders were classified according to two variables such as: (1) a societal sector that they represent, and (2) a level of stakeholder's activity. Considering the societal sector, we defined three group of stakeholders: (i) the civil sector, comprising a broad range of organizations outside of government, including civil associations, non-profit organizations, churches, and neighborhood clubs that contributed to the public good, (ii) the private sector, made up of businesses controlled or owned by private individuals, directly or through stock ownership, and (iii) the public sector, which was formed by stakeholders representing public interests through governmental agencies and local government units (figure 13). According to the level of stakeholders' activity there were four groups: local and operational (e.g., municipality in Sweden), regional and collective (e.g., counties in Sweden), national and constitutional (country of Sweden), and international levels.

The stakeholder analysis is a very useful tool to reflect values and needs of all landscape stakeholders in Bergslagen and to create a foundation for sustainable development process towards sustainability on the ground.



	Civil	Private	Public
International	_	_	_
National	_	_	_
Regional	_	_	_
Local	_	_	_

Figure 13. *The mapped landscape stakeholders are organised in a matrix according to the societal sector that they represent and the level of stakeholders' activities. (Illustration: Leonid Kovriga)*

Focus group discussions

Robert Axelsson, Bergslagen Model Forest & Säfsen Forest Foundation

To address landscape sustainability with a participatory approach it is required that the stakeholders' opinions, values and interests are known and understood.

More and more policies from EU and the national level describe stakeholder participation as an important part of both the sustainable development process and the goal of sustainability. For this the Bergslagen group see two needs, 1) to learn how to collaborate with stakeholders, and 2) to learn about stakeholders' opinions, values and interests. The use of focus group discussions is an effort to do the second. This will be a base for our collaboration and sustainable development process. The information gained during our focus group discussions will be openly available to anyone interested. When we contact new stakeholders and present our ideas about collaboration for sustainability in the Bergslagen landscape they often think this sounds vague. To put this kind of information on the table often helps the discussion and makes it less abstract.

A focus group consists of 4-10 persons that are invited to discuss a specific topic or a more general issue, introduced and supported by a facilitator. In our case we focused on our place, Bergslagen, and any topic that was of interest to the participants. One topic was the history and development over time in the Bergslagen area. We used a large paper where we took notes about positive and negative things in the past, present and future. This was done so that all participants could see it, correct it and add aspects if needed. In addition, we had a list of questions ready to stimulate the discussion and steer towards the specific interests of the Baltic Landscape project, namely water, planning and collaboration.

Two watersheds in Bergslagen, the river Hedströmmen and the river Svartälven, representing different landscapes and eco-regions, were selected. We sought to make our focus groups homogenous, including stakeholders that shared an interest, worked in the same field or were members of the same group. We started by looking at municipal home pages, searching for voluntary groups and businesses. We located someone with a good local knowledge and asked about groups that were active in the area. In both places the first groups included municipality officials that we expected had good local knowledge. One of our last questions during all focus group discussion was always to ask if the participants could recommend some other groups for us to meet and talk to. For the analysis we sorted the information as different kinds of ecosystem services based on the stories that people told us.

To start with a focus group discussion was also a very good way to introduce the partnership Sustainable Bergslagen and make stakeholders interested in collaboration and learning about sustainability (figure 14). We argue that focus group discussions also could contribute to increased social capital in rural areas, as a very interesting synergistic effect.

Figure 14. *A focus group discussion with a local heritage group in a Bergslagen municipality. (Photo: Skinnskattebergs Hembygdsförening)*

Study circles

David Göransson, Swedish Forest Agency

Expert supported peer-learning as a way of embracing local stakeholders' interest

In the Model Forest concept it is crucial to embrace and use initiatives coming from stakeholders and others active in the region. One way to do that is to organize expert supported peer- learning, so called study circles, which is a well-known educational concept in Sweden. If a certain topic engaging people, but there is no arena to discuss and learn more, one way to gathering people could be a Study circle.

In the area of Helge River a hot topic is forest managing system with selective cutting instead of clear cutting. There are not that many foresters applying these selective methods despite a large and increasing interest. One problem is that people think that it is a very complicated forestry system that requires expert-level knowledge. Another problem is the lack of contractors who can do the job.

The solution was to organizing a study circle. The initiative came from a landowner, who wanted a more diverse forest situation in his holding, both in species and age distribution. Inspired by some nearby holdings which are managed with selective systems for decades, he asked other landowners and contractors if they were interested in learning more. He also invited some students and representatives from one of the large forestry companies in Sweden.

The person to person invitation was successful. The result was that a large number of people attended the course, all active somehow in the forestry sector either as landowners or as contractors. In the first meeting all the participants were able to express what they expected and what they wanted to learn. Quite soon it was also obvious that there were lot of knowledge gathered among the participants. The following meetings were either organized as excursions in nearby forest area with someone of the participants as a guide, or as lecture with an external expert.

The most important result of this study circle is the establishment of a network of landowners, students, forest practitioners and contractors who all want to learn from each other on how to manage their forests without clear cutting. The network is active even if the study circle has been completed.

Figure 15. *Study circle excursion to one of the participants' forest (Photo: David Göransson)*

Figure 16. *Forest owners and contractors Helge å BL learning about the theory of selective cutting by the expert Bo Larssen, University of Copenhagen. (Photo: David Göransson)*

Questionnaire

Joanna Zamorska and Jaroslaw Bator, Regional Directorate of the State Forests in Poznan

Questionnaires are written inquiries that can be used for collection of various kinds of data, like opinion polls, evaluations of implemented activities, and knowledge about specific issues

In Warta, one main issue is to secure that the development of tourism and recreation is consistent with social expectations and preservation of multi-functionality, biodiversity and sustainable development of Polish forests. In recent years the number of educational paths, forest parking areas, vantage points, horse riding, hiking and many other routes have been growing rapidly. The State Forest Districts constantly develop new approaches to reach out and spread the forest management visions to the public. However, do all those smaller- and larger-scale new projects really meet the people's needs? This question was addressed in a questioner based survey carried out among inhabitants of the Leszno County to in total 1305 respondents. In addition an interactive map portal was created and made available to all users on the web sites of the State Forest organization and of local government organisations.

One of the questions in the survey was concerning what type of forest management decisions that should be taken in consultation with the public society. The most frequent replies were:

- ✓ Deforestation for the purpose of building motorways, roads and housing estates
- ✓ Building of tourism related forest infrastructure
- ✓ Designation of cycling and hiking routes
- ✓ All decisions should be agreed with the society.

The respondents also answered to which recreational elements that was missing in the forest. Answers included for example: Places for relaxation (811 replies); Places for camping (652); Vantage points (638); Fitness trails (608), and; Educational boards (460).

Social expectations concerning forest tourism as well as forest management in general were high and quite precise. The respondents provided their views on shortages and ways of improvement. The awareness and knowledge of possibilities and limitations in using forest areas is constantly increasing. People want to make use of the benefits from the forest, participate in the decision making about the use of forests and how the forests should look like; they are also prepared to take care of

the nature and accept the rules and restrictions. There is a common belief that by designating horse riding, hiking, cycling or off-road driving routes, everyone will have a chance to enjoy the beauty of Polish forests safely and comfortably.

The results of the survey have been published on the State Forests' web sites. Without a need to force an already open door, using the effects of our work, our fellow foresters across the country may use our new knowledge about the expectations of the public society and apply it in their own districts. The questionnaire has also generated data that can be used in research by the University of Life Sciences in Poznan.

Figure 17. *Showing an information brochure about social expectations concerning the development of forestry and tourism.*

Landscape inventory and analysis

Marcus Hedblom, Swedish University of Agricultural Sciences

A land use analysis requires information about as many land uses as possible and their spatial distribution across the landscape

A prerequisite for any landscape analysis is on the one hand available and relevant landscape data, and on the other hand a specific identified direction for the analysis; what is the purpose of the analysis and for whom or in what context will it be used? The Baltic Landscape starting point is land use, and thus landscape data that indicate the premises for land use.

The Vilhelmina Model Forest represents a large landscape, about 870.000 ha, in the transition from boreal, coniferous-dominated forests to high altitude alpine environments. It is a landscape that is used for various purposes, e.g., forest management, reindeer husbandry by native indigenous Sámi people, wind mills and hydro-electrical installation for energy production, and tourism, reflecting the multiple resources for sustainable management and governance. A land use analysis requires information about all these types of land uses and their spatial distribution across the landscape. To be applicable a land use analysis need to reflect the local perspectives based on practical experiences and knowledge that allows weighting and ranking of the various land uses, given the assumption that each land use actor give different priorities to different parts of the landscape. The forest manager, for example, gives higher priority to sites that have higher biomass production capacity and/or have better accessibility to existing infrastructure. Through participation in the production of landscape analyses, a better basis is provided and a better knowledge basis is achieved.

Three activities in Vilhelmina Model Forest are illustrated here. One activity was a complete land use mapping for the whole landscape (fig. 16). With data available from various public databases, it was possible to create a GIS-based map with the frequency of land uses interests indicated in a raster. The raster consisted of 500x500 m pixels. For each pixel the number of land uses was counted in six categories (forestry, mining, wind milling, reindeer husbandry, recreation and tourism). This analysis made it possible to identify areas where there are potential land-use conflicts and areas where one type of land use is single dominating. As background information this allows possibilities to assist land users with relevant information on strategic planning, and also allows a more public display of the present situation for transparency and participation possibilities. Meaning, more land-use categories at the same spot, potentially larger conflicts.

The second activity was a test of a novel method for documenting landscape configuration and vegetation characteristics as background information for landscape planning and analyses, and for testing new methods for detailed aerial

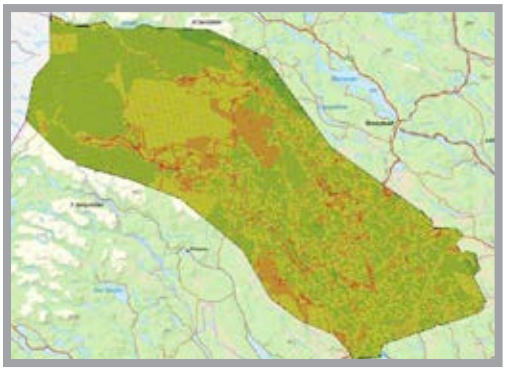


Figure 18. *Holistic map. The colors indicate different grades of conflicting interests with green colors showing only one conflict and red color showing five land use conflicts. The grid is showed in 500 square meters. (Illustration: Liselott Nilsson)*

mapping in monitoring schemes. A model airplane equipped with digital camera,GPS positioning and autopilot, was used for high resolution photography of an area in the northwestern, alpine part of the Vilhelmina Model Forest landscape. This area is extensively used for reindeer herding, reindeer gathering and marking. Thus, the vegetation and barren surfaces are exposed to intensive management. In a landscape analyses context this remote sensing method provides exquisite data that allows for fine-tuned developing of inventory and monitoring routines, modeling of changed land use intensity and scenario development.

The third activity in the Baltic Landscape project was to develop inventory protocols for forest, alpine and mire habitats for the Reindeer Husbandry plans (see figure 19). The objective was to improve the existing reindeer husbandry monitoring protocol for forest land. Inventory variables and methods should, as far as possible, be compatible with NILS (see chapter 2.7)) variables to allow extrapolation and quality assurance, which in turn creates better consultation premises. The Baltic Landscape project has delivered new protocols for open, alpine environments and for open mire environments, respectively. The protocols have been developed in full cooperation with the main stakeholders – the reindeer herders.

Figure 19. *Testing of reindeer husbandry monitoring variables is open mire and alpine habitats. (Photo: Marcus Hedblom, Vilhelmina Model Forest)*

Landscape monitoring

Johan Svensson, Swedish University of Agricultural Sciences

In a societal context the use of monitoring data becomes more diversified; e.g., as baseline information for policy and governance, for strategic scenario/impact analyses of land use, or for large-scale landscape planning modules

Although environmental monitoring exists in many countries, there is a growing need for monitoring infrastructures that allow for broader applications covering economic, ecological and socio-cultural dimensions on landscape scale. Moreover, to deliver on-demand data concerning current problems and challenges in landscape management, monitoring must allow for inclusion of new or supplementary variables.

The Swedish national landscape biodiversity monitoring program, NILS (National Inventory of Landscapes in Sweden), is developed to monitor conditions and changes in landscape biodiversity and land use, as basic input to national and international environmental policy and frameworks and to applied research (see figure 20). The program is funded by the Swedish Environmental Protection Agency and operated by the Swedish University of Agricultural Sciences (SLU). NILS has been in operation since 2003 with two parallel and integrated inventory routes, field inventory and interpretation of color infrared aerial photos, both using quantitative variables in a context-dependent flow that captures spatial information on species, habitats, structures and processes. The design is a stratified grid of 631 permanent 5x5 km squares covering all terrestrial habitats in Sweden; alpine areas, forests, wetlands and peatlands, agriculture land and urbanized areas. The data are recorded without pre-classification and at several geographic scales (0.25 m^2 to 25 km^2). In 2007 the final set of squares in the first 5-year inventory rotation was completed and a full national set of data was compiled. In 2012 the final set of squares in the second 5-year inventory rotation was completed which opens up for possibilities to perform change-detection analyses. Analyses and results are continuously being produced to support high quality management and governance of the Swedish natural and cultural landscape.

New data stakeholders appear and new types of data are demanded, which calls for a need to secure flexibility and capacity to add new variables and inventories on top of the core, long term monitoring protocol. In a societal context it is also obvious that the use of monitoring data becomes more diversified; e.g., as baseline information for policy and governance, for strategic scenario/impact analyses of land use, and for large-scale landscape planning modules. This also implies a need for effective and immediate cause-and-effect analyses and, hence, a close cooperation with the research community. Experiences indicate that the NILS infrastructure allows for inclusion of parallel and supplementary inventories and projects on national and

sub-national scale. In a pan-national perspective it is also evident that there is a need to harmonize existing environmental monitoring programs and create common monitoring protocols and analyses and reporting procedures.

The connection between national-scale monitoring and landscape planning is largely un-developed. The main underlying obstacles are the geographic scale, the resolution of data and analyses, and the lack of linkages between planning and monitoring experts. Whereas landscape planning is performed on territorial or smaller geographic scales, monitoring is performed on national or sub-national scale, and whereas landscape planning requires high resolution and precision in data, monitoring normally only can deliver broader-scale landscape information on general level rather than on specific parameters. Furthermore, routes yet have to be identified and developed on how to communicate obstacles and possibilities in including critical landscape planning aspects into monitoring protocols. Approaches have been made within the Baltic Landscape project, however, on landscape data coverage limitations in the Helge River and Vilhelmina Model Forest landscapes. For Vilhelmina, approaches have been made both towards land use mapping as input to large-landscape overview, and specifically for developing better management plans. In the latter sense the approach is the Reindeer Husbandry Plans that now exists for most Sámi districts in Sweden and that covers more than 50% of the Swedish land base.

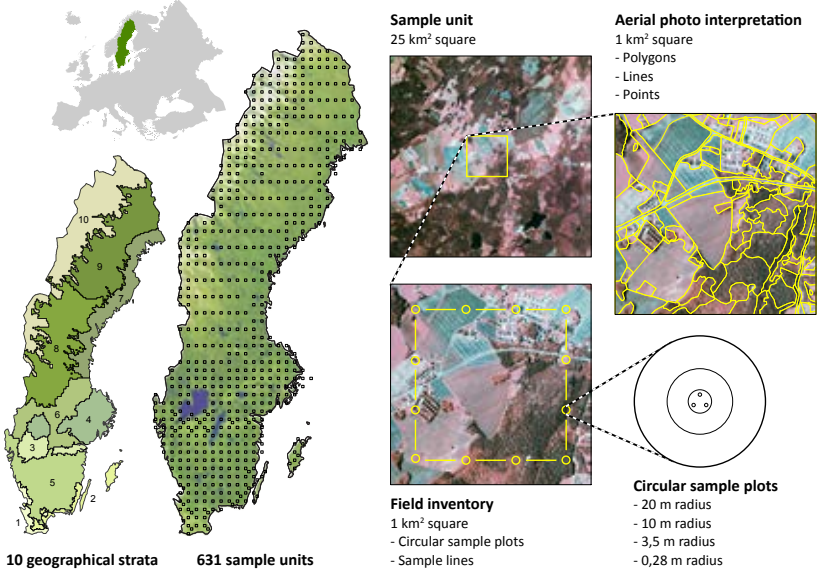


Figure 20. *The NILS national monitoring design – for more information see Ståhl et al 2011 (National Inventory of Landscapes in Sweden (NILS) - Scope, design, and experiences from establishing a multi-scale biodiversity monitoring system. Ecological Monitoring and Assessment 173: 579-595).(Illustration: Erik Cronvall)*

Model Forest GIS

Per Sandström & Johan Svensson, Swedish University of Agricultural Sciences

GIS with up-to-date information is becoming an increasingly important tool for communication of land use issues and planning

Vilhelmina Model Forest has since its establishment in 2004 focused work on advancing the participation of local stakeholders in decision making processes and strategic planning with a certain emphasis on Sámi people traditional land use. The indigenous Sámi people carry out semi-nomadic reindeer husbandry in boreal and mountainous biomes in Fennoscandia. In Sweden, the reindeer husbandry area covers 55% (230 000 km^2) of the land base, and used simultaneously with other land uses (such as, e.g., forest management) regardless of land ownership. Reindeer move over vast areas, sometimes covering 600 to 800 km distances every year. The Swedish Forest act and the FSC has made consultation between forest sector and affected reindeer herding communities mandatory. A constructive consultation process requires timely, accurate and understandable landscape data and, thus, a GIS-based system incorporating information about reindeer husbandry named RenGIS and other land uses, real time GPS - positions from reindeer, etc., have been developed in close cooperation with the reindeer herders.

On the basis of RenGIS, the Model Forest GIS was developed for Vilhelmina Model Forest and launched within the Baltic Landscape project. Geographic data which is usually under legal control by different responsible agencies have now been made available to the involved stakeholders. The system has led to improved transparency into planning and management processes. Through the developed process it is also possible for each data provider to select data that should not be publically available, but restricted to a certain group of GIS-users. Moreover, since the goal is to provide both a GIS platform and make interesting and relevant landscape and land-use data available for the Baltic Landscape network, there need to be a demand or incentive for sharing that type of data, e.g., as background data for comparative pan-national scenario development on conditions and changes in land use premises.

Central prerequisites for the Model Forest GIS are: 1) user friendly, free and publically available software that works well for non-IT experts; 2) on-line as well as off-line possibilities; 3) databases and GIS-layers which can be used as outreach from the Model Forest to its stakeholders; 4) information and results which can be shared between Model Forests – also beyond the Baltic Landscape network; 5) the ability to facilitate applied projects and activities, practical- or research-oriented; and 6) functions to provide a natural node for extensive networking and sharing of experiences and knowledge.

So far the Model Forest GIS and the RenGIS have attracted significant interest internationally. Connections have been established with Model Forests in South East Asia, South America and North America. We have now produced an English version of Model Forest GIS and have received requests to produce a Cree, a Sami and a French version.

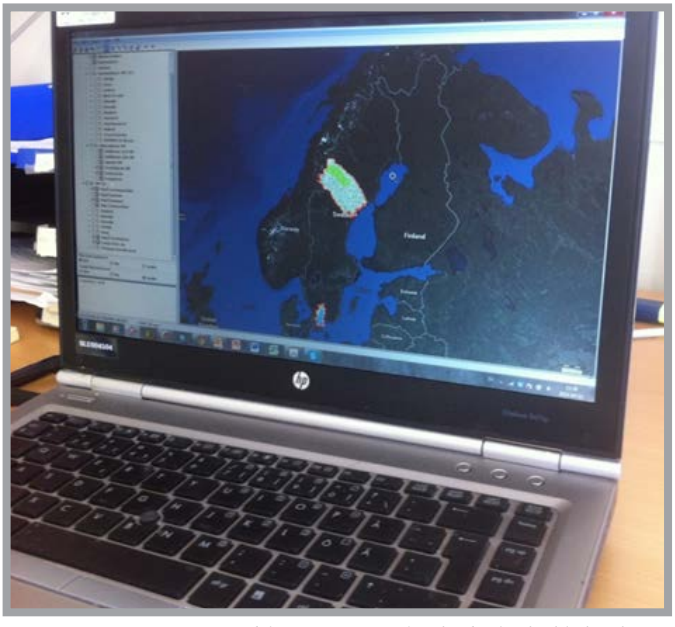


Figure 21. *Ongoing Model Forest GIS-work. The display highlights the great Vilhelmina Model Forest area and Helge River Baltic Landscape area (bottom). (Photo:Vilhelmina Model Forest)*

Local climate change adaptation guides

Robyn Hooper & Johan Svensson, Swedish University of Agricultural Sciences

Providing local people with structured information on climate change is used to initiate dialogue.

A guide on 'Learning about Vilhelmina Municipality Climate, Impacts and Adaptation' was prepared due to local interest by members of the Vilhelmina Model Forest and Vilhelmina municipality in understanding more about the climate in their region. The objective of this project was to provide preliminary information on climate change that may be used for initiating the dialogue on this issue in the region. This work may in turn serve as a template for other model forests or communities in the International Model Forest Network and the Baltic Landscape Project. For Baltic Landscape the work in particular elevate aspects on how climate change influence biophysical landscape conditions and how this may affect land use actors, land governance and landscape planning. It is acknowledged that there remain significant gaps in information and extensive research and monitoring are needed in order to fully understand this complex and important issue. Local inhabitants of Vilhelmina are encouraged to think about these findings, and talk with their families and with others in their communities and in their places of work about what can be done individually and together to live safely, reduce vulnerabilities and risks, and take advantage of opportunities created by new climate conditions.

Some of the expected general changes in 2100 are increased temperature by several degrees (especially in winter; in the inland by 5-7 and in the mountains by 3-4 degrees) with increased precipitation (10-50% by 2100) and more extreme precipitation events, that the last spring frost will occur 20 days earlier and ice thaw 20-30 days earlier, that the snow cover will be 60 to 80 days shorter and that the growing season will be 30-50 days longer. The physical changes in climate that are being experienced, as well as the predicted changes, consequently affect the local inhabitants. For example, warmer winters may make some outdoor activities more comfortable, but perhaps worsen ice conditions creating unsafe lake and river travel. A longer growing season and warmer temperatures may also increase forest and agriculture production opportunities.

There is uncertainty around future climate, but discussing these potential impacts and preparing adaptation measures will increase opportunities and decrease vulnerability of the local ecosystem and local people, the major land use sectors including community planning, tourism and outdoor recreation, local businesses, forestry and agriculture, land and water resources, and reindeer husbandry/traditional knowledge. Interviews were conducted with local representatives from each sector in the Vilhelmina Model Forest steering group to gain some local perspectives, and combined with information from national and international reports. As an example

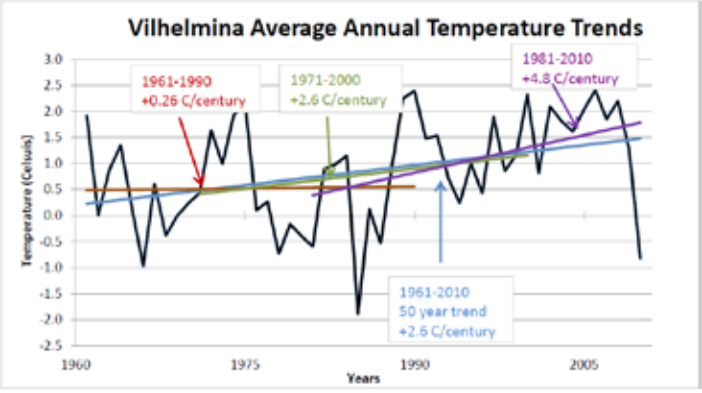


Figure 22. *Temperature change trends 1961 to 2010 in Vilhelmina based on raw data from the Swedish Meteorological and Hydrological Institute. (from Hooper, R, 2012. Learning about Vilhelmina Kommun climate, impacts, and adaptation – A Vilhelmina Model Forest project. Baltic Landscape report no. 2)*

from the interviews, the local representative in community planning stated that: "It is most important to start talking about what climate change is. Every sector can come with information and ideas for their particular area. In planning work an overall strategy can be produced for how to solve problems, seize opportunities, and set priorities."

This work has concluded that climate in Vilhelmina is changing, with some effects already being seen by local inhabitants and the various sectors (figure 22). Interviews with local representatives concluded that there is an interest in learning more about the climate and adapting together. This project provides a first analysis of climate and climate impacts for the municipality, but it is by no means complete and should be continually updated as new information develops. As the municipality looks towards creating a new community plan, it is strongly recommended that climate change should be mainstreamed into all decisions and ideas for future planning, as well as in discussion with local inhabitants. In addition, further communication with state organizations (e.g. Rural Development Program in the Swedish Forest Agency), researchers, and the Swedish Meteorological and Hydrological Institute is needed to continue to compile climate information on impacts and adaptation strategies. Adapting to a new, uncertain climate future requires creativity and innovation, and working together to adapt is the way forward.

Workshops in dialogue form

Marine Elbakidze & Lucas Dawson, Bergslagen Model Forest & Säfsen Forest Foundation

Conceptual group modelling is a stakeholder-based tool whereby a group of stakeholders analyse a complex reality into which they as individuals often have limited insight

Contemporary European Union and Pan-European policies stress the importance of spatial planning for the long-term sustainability of regions. Public sector led spatial planning is an important tool for the holistic integration of economic, environmental, cultural and social policy agendas; and for re-scaling issues from international and national levels to regional and local levels. Sweden is often described as an example of a European country where strategic spatial planning includes developed participatory mechanisms grounded in its long democratic traditions. In Sweden municipalities carry the main responsibility for strategic spatial planning, supported by citizens and politicians, in the form of a comprehensive plan, which is not legally binding. Each municipality should prepare an up-to-date comprehensive plan, covering the entire municipality, which should provide guidance for decisions related to the use of land and water areas, and the built environment, for a period of 20-30 years.

In Bergslagen we analysed to what extent the comprehensive planning process was characterised as a collaborative learning process through analysis of the main attributes of public-led strategic spatial planning. The main questions were: Is municipal spatial planning a collaborative learning process among actors and stakeholders or a technical project in Bergslagen? What are the main drivers for collaborative learning in spatial planning?

The results of the investigation were presented at the conceptual group- modelling workshop to stakeholders dealing with strategic spatial planning that represented 7 municipalities in Bergslagen. Conceptual group modelling is a stakeholder-based tool whereby a group of stakeholders analyse a complex reality into which they as individuals often have limited insight outside of their immediate experience and together develop a joint systems-based understanding of the problem, suitable for decision-making. The dialogue during the workshop was focused on the following questions: What causes some people to become involved in the comprehensive planning and not others? Why are some groups consistently underrepresented in this process? What can municipalities do to encourage more citizens to participate? What do municipalities have to gain from the greater and broader participation of citizens in spatial planning? The participants were introduced to system analysis and Causal Loop Diagram (CLD) notation (figure 23). With the researchers as facilitators, the participants assessed, discussed and developed the CLD during the workshop (figure below).

A draft of the resulting CLD was distributed by e-mail to the workshop's participants for final validation and review. When the CLD was approved by stakeholders, the results of workshop was presented as a popular style publication and sent to all interested stakeholders in Bergslagen.

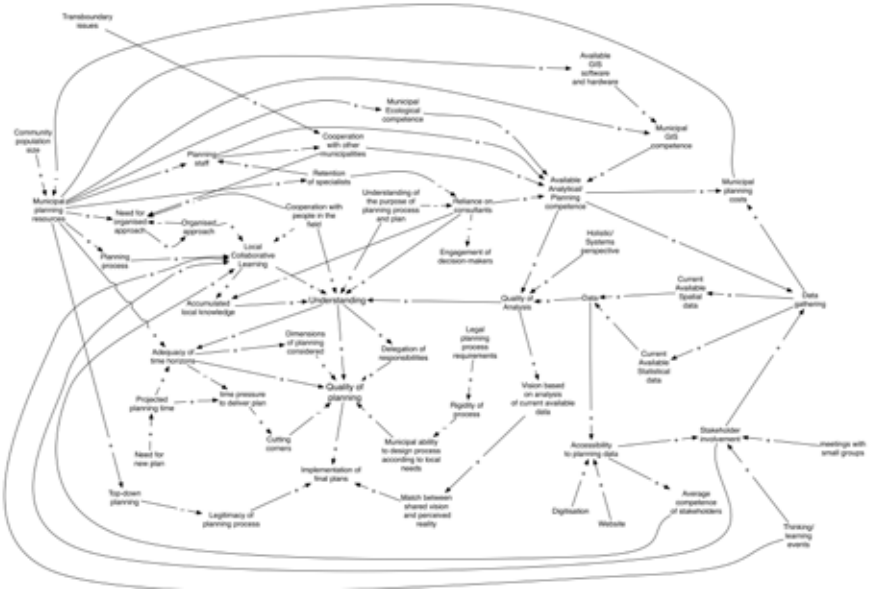


Figure 23. *The figure illustrates how a Causal Loop Diagram can look like. See report 13 (Integrated spatial planning for regional development in Bergslagen: How could stakeholder participation be developed in urban and rural landscapes) for in detail information. (Illustration: Lucas Dawson)*

Meetings and questioner based Dialogue

Andrei Roukach, Belarusian State Technological University

The present complex system of hunting and management of animals could be improved through regular dialogues and directed questions

There is a problem concerning the hunting management and the hunting needs of local people in Belarus. Belarus has a very complex system of hunting management where the hunting sector is operating on a commercial basis and this adversely affects the interests of the local population. Various governmental bodies often exercise overlapping functions that results in irrational use of the public budget, to in-efficient bureaucracy and to low efficiency of hunting resource management. Most hunters do not develop a sustainable attitude to game resources and lack sufficient knowledge of their rational use. To a large extent this is due to lack of involvement in problem-solving related to protection and restoration of game populations. The populations of main game animals are not large, which calls for a well-developed hunting strategy.

Creating favorable conditions for increased concern about rational hunting resource management among active hunters is needed to reach a more functional and sustainable hunting management system. This can be achieved by setting-up independent hunters' associations and provide them with certain rights and responsibilities. One solution to the problem has been explored in the Baltic Landscape project. First, the Baltic Landscape Neman group identified some representative stakeholders, in this case a group of ten local hunters from Olkhovka village, a group of 20 hunters from Naliboki village, and a group of 15 hunters from Noviny village. The legal bodies involved were the Novogrudok district office of the Belarusian Organisation of Hunters and Fishers and the Novogrudok Forestry Enterprise.

In August 2013, experts O. Bakhur and P. Geshtovt held meetings with the three groups of hunters. In those meetings the hunters were interviewed about the existing hunting rules, game animals and current conflicts. They were also asked to provide their ideas about future development of hunting management and on their opinions about creating independent hunters' associations each controlling certain hunting ground area. All the three groups approved direct allocation of certain areas to such associations. Representatives from the legal bodies supported this decision and obliged to create necessary conditions for this construction. In this construction the hunters will become customers within the hunting sector and active within hunting resource management.

This construction will be evaluated continually to study if this leads to a more sustainable and rational situation and it is expected that two to three years will be needed for the evaluation. To secure improved hunting resource management in the

allocated areas it is recommended to introduce a system based on adaptive hunting resource management. The hunters will be involved in the evaluation results and take part in the improvement process.

The meetings also provided information about the hunting preferences. The interviews also showed that 81% of the respondent hunters see hunting for hoofed animals as being the most attractive, whereof 52% practice that type of hunting regularly. Only 14% show no interest in hunting for hoofed animals. A majority of the hunters, 95%, hunt for wild boar, 76% for roe deer, 47% for elk, and 5% for deer.

This example also indicates that it is needed to introduce a hunting register that makes it easier to approve applications for hunting hoofed animals. There should be an open access to this register. This procedure will also prevent illegal hunting. To resolve conflicts which may arise due to the restricted hoofed hunting, it is necessary to continually organize meetings with local hunters. Such meetings could serve as a platform for an open discussion about economic delivery of the hunting lands, allow for analysis and pattern of earnings, and establish quota limits for domestic and incoming hunters. Such meetings and open dialogue will also take better account of the interest from local hunters and of the efficiency of hunting resource management as a whole.

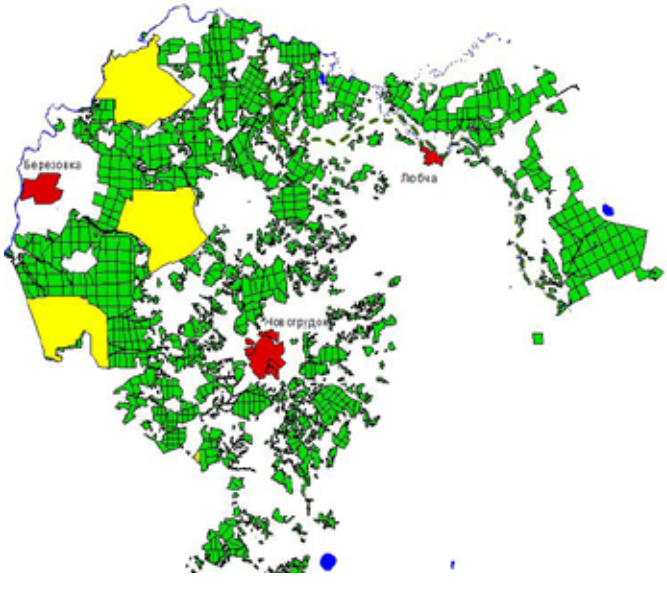


Figure 24. *Hunting grounds to be allocated to future hunters associations. (Illustration: Andrei Roukach)*

Discussion fora on the Internet

Eugene Lopatin, University of Eastern Finland

Online GIS platform integrated with social media stakeholders can expressed their opinion on landscape issues

Internet is generally seen as a tool that improves research by providing access to resources and facilitating sharing of files, data, but there is also a huge potential for using social media for networking. Social networking sites such as Facebook, Twitter, and contact have become powerful marketing and communication tools. These channels can help to communicate with partners and as these websites offer a wide range of services for accommodation of information, open access for all stakeholders, and the opportunity to discuss issues in real time.

In Ilomantsi Baltic Landscape, the online GIS was linked to the social media allowing stakeholders to leave comments on the maps. The users could visit the website with the relevant plans and maps published using the ArcGIS Online platform. Users were asked about their opinion on certain plans on possible development alternatives (for example figure 25). The users could then make answers and comments directly on the map by logging into the system with their accounts in social networks.

This approach was developed as an alternative to the face-to-face stakeholder's meetings. During the meetings it was realized that not all of the interested stakeholders could attend the meeting. Some of the stakeholders were living outside of the Ilomantsi Baltic Landscapes and some of the forest owners were living outside Finland. They showed the interest to participate in the development process. To get their involvement via the website the email messages were sent to the interested stakeholders, introducing the new opportunity and asking to express their opinion.

Totally 34 stakeholders expressed their opinion via online GIS platform integrated with the social media. The system was open to everybody interested. Analysis of the comments and users profiles in the social networks allowed to identify the relevance of the comments to Ilomantsi Baltic Landscape.

The biggest advantage of the online GIS discussion platform was the exact geospatial reference of the comments, all the comments were in digital format and suitable for further processing and analysis, the role and relevance of the stakeholders was then automatically identified using their profiles in the social networks. The limitations of using this approach are tradition and access to the computer. For older generation it is more common to come for conventional meeting and discuss the issues face to face.

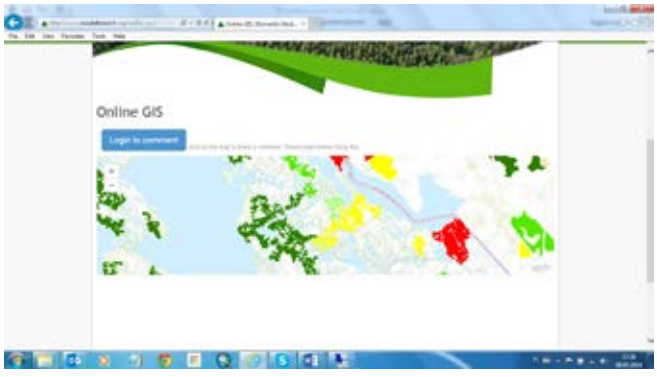


Figure 25. *Online GIS based on combination of ArcGIS online and social networks (*Source: *Modelforest.fi)*

Figure 26. *Login into the system using the social networks accounts (*Source: *Modelforest.fi)*

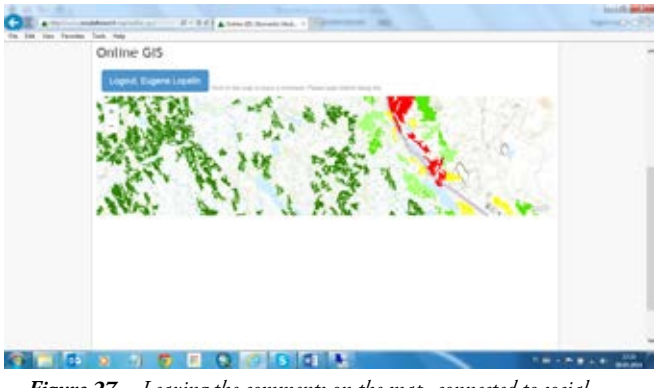


Figure 27. *Leaving the comments on the map, connected to social networks (*Source: *Modelforest.fi)*

GeoPanel

Patryk Kaczyński, Regional Directorate of the State Forest in Olsztyn

GeoPanel web platform is a good example of a bottom-up initiative to share knowledge and communicate issues of interest

In times of growing interest in the society of the plans of local governments that concern the management of a given geographical area with various tourism initiatives, there has been a need for a quick method of visualizing the information. A perfect solution provided by modern technology is to use a map websites with the necessary tools for serving their "customers".

The aims of the interactive online platform of information exchange as a part of the Baltic Landscape project were to share information and communication with the society via the Internet, to provide visualization maps of the existing tourism infrastructure, to provide possibilities to present ideas and projects concerning development of the area of the Regional Directorate of State Forests (RDSF) in Olsztyn, and to provide a forum the share opinions on these topics.

The basic function of the Platform is an interactive map (two types to choose from: a topographic one or one made of satellite pictures) that helps to efficiently browse the area of RDSF in Olsztyn. These maps contain additional elements such as the forest districts area division, the state administrative area division, some forms of the nature preservation (the Natura 2000 network, landscape parks, nature reserves) and elements related to communication and tourism infrastructure which have been implemented in the area (see figure 28). Information is divided into three topics: tourism, nature preservation and communication.

An additional function of the Platform is a possibility for users who are logged in to input information and opinions, for example ideas on a bike, horse or other trails or on how to enhance the communication that could increase the attractiveness of the nearest surroundings. The mechanism of data input has been designed in such a way that the introduced ideas can be viewed and commented by other users via an internet forum. This allows sharing of information and, at the same time, possibilities to post ideas and prospects on the Platform. Another element that enables the flow of information is the newsletters. Every registered user can sign in to receive information on new posts of their interests, for example on a specific horse trail or on tourism in general. Moreover, the administrator of the Platform is able to provide email addresses to State administrative institutions that operate within a particular area. This also opens up possibilities to specifically address those institutions that deal with that specific matter. This GeoPanel web platform is a good example of a bottom-up initiative to share knowledge and communicate issues of interest.

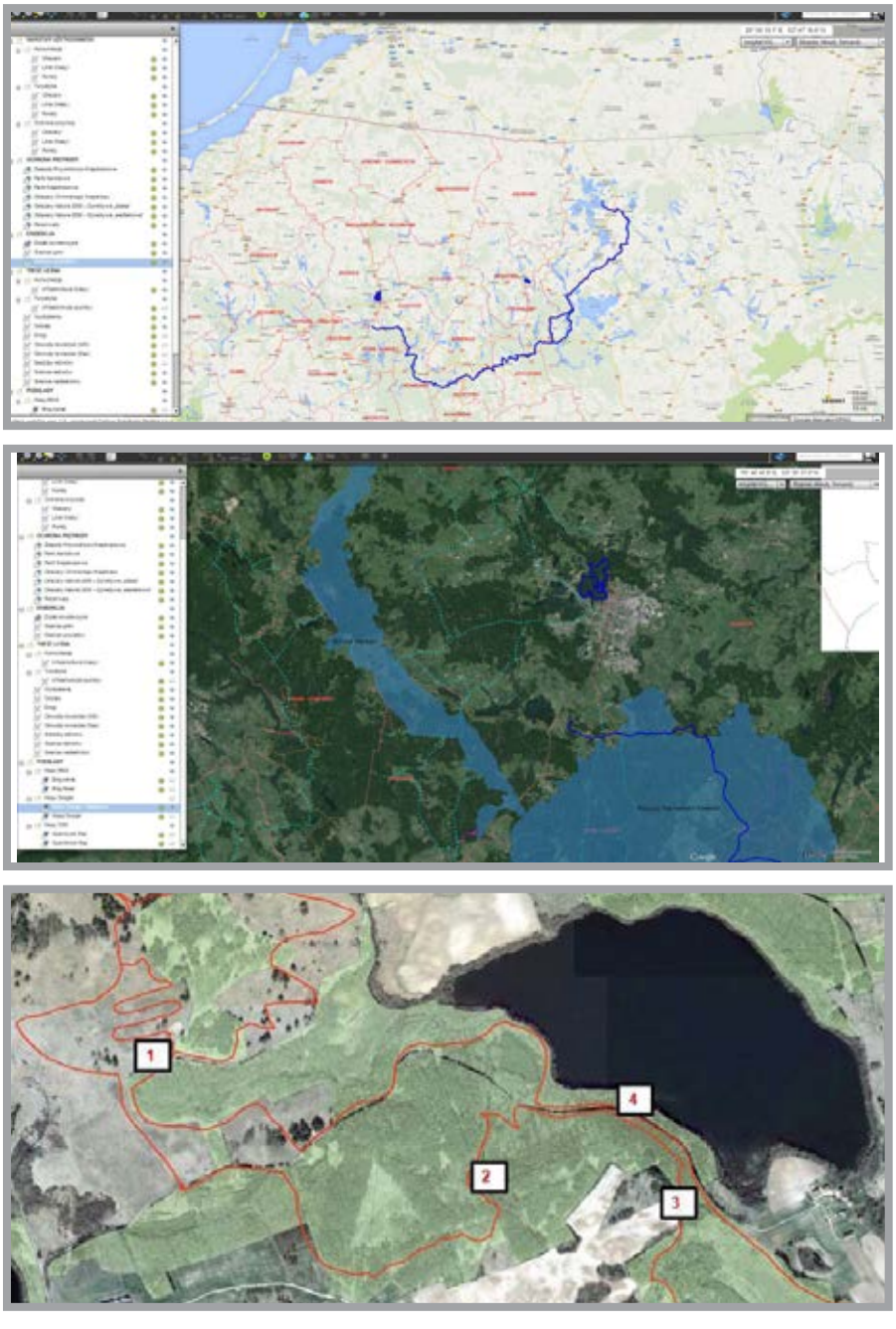


Figure 28. *A number of interactive maps in the State Forest in Olsztyn (Illustrations: Patryk Kaczyński)*

Local stories

Leif Jougda, Swedish Forest Agency

A good story serves as a door opener and requires no technical equipment

Research indicates that we listen and understand better if a subject is introduced or told as a story that we somehow can relate to. Thus, it does not need to be ha something remarkable, but should make participants willing to add information from their own experience of the area or just to increase reflections. Stories are easier to assimilate than technical terminology, project descriptions or statistics, and works without modern technical equipment.

- *Come as you are and we will arrange all the practical issues*, said the residents of a small village just outside Vilhelmina when they prepared an autumn meeting. They wanted the Forest Agency to visit a newly built hut of larger size. I prepared my presentations and packed down computer, etc. and headed there. Bearing on the technical equipment I was greeted by flaming fires outside the entrance. By the open doors I was stranded for a while and greeted people who welcomed me and all the arriving participants. There was however one major problem concerning my prepared presentation, there was no electricity drawn to the hut. Since the equipment did not work and the participants were expecting me to talk I luckily had a number of large maps and I opened up for discussions by telling a story instead of using my prepared material.

"Kalle in the small village of Djupdal had shot a big bull moose, a 24-antler. A Russian delegation who visited him later on admired the golden antler from the moose in Kalle´s barn. He was asked how much the moose weighed:
- *I have no idea*, Kalle said, but the printed photo paper card that was taken by a fellow moose hunter weighed 2.5 kilogram"

The story set the stage and after a while with coffee that was boiled over an open fire discussions and talking was flourishing. Afterwards, I noted that the meeting went well, just as good as if I had used technical equipment dependent on electricity due to that I was able to talk more informal about my presentation. The purpose of initiate discussion about the landscape was accomplished. And in addition, several good hunting stories were told.

Figure 29. *The pictures illustrate Leif Jougda initiating discussions of landscape issues in different situations. (Photos and illustrations: Camilla Thellbro & Ursula Neussel)*

Painting as a tool to recognize the meaning of landscapes

Urszula Dyl-Nadolna, Regional Directorate of the State Forest in Olsztyn

Outdoor painting a tool to explore the meanings of landscapes and create basis for dialog with decision-makers

To enable a sustainable development of any landscape, a comprehensive view of its diverse values as perceived by its many uses is demanded. In line with the European Landscape Convention, the Baltic Landscape project aimed to direct development towards a richer life context where everyone can take part and have an influence on the landscape. To make this work in the best possible way a close cooperation between authorities, organizations, corporations and individuals was demanded. Cooperation and transparency also aid a more wide-ranging participation in decisions concerning the landscape, locally as well as regionally. Based on this understanding the Mazurian Baltic Landscape have developed a concept where outdoor painting is introduced as a tool to explore the meanings of landscape and a platform for dialog with decision-makers.

Figure 30. *Illustrates some of meetings and workshops of outdoor painting in the Mazurian Landscape of Poland.*

In the summer of 2012 and 2013, a group of artists were invited to a workshop. The theme of workshop was ”How I understand a Mazurian landscape”, and the

aim was to define various elements and values of the landscape as seen in the eyes of artists with different interests and using specific painting and artist techniques. The workshop was open to all participants. Participants applied on the Internet and those who finally took part in the workshops came from different creative environments.

During a workshop in Spychowo 16-20 artists attended. The participants were making the paintings and all materials were provided by the organizer. Some artists kept their paintings but most of paintings were left to the organizers as a collection to be shown on different exhibitions.

The idea of this event is to join many different groups of people and let art meet nature. Every year students and lecturers from then academy of fine art, professional painters and beginners who treat painting as a hobby are welcomed. The participants teach each other and exchange ideas and experiences.

The paintings were exhibited at the end of each workshop in Spychowo and later in galleries in the cities of Szczytno and Olsztyn. A more official exhibition also provides possibilities to share visions with landscape decision makers and stakeholders.

Figure 31. *An official exhibition of paintings of the Mazurian landscape.*

The photographic method

Eugene Lopatin, University of Eastern Finland

Photography and film increase the engagement among the participants by capturing their image of a real landscape situation and hence allows better bottom-up and multiple perspectives

Using photography and film to document and analyze the physical conditions in a landscape, as well as management and land use alternatives etc., is one of several possible tools to improve knowledge sharing and communication and hence to enhance processes of participation. Photography and film increase the engagement among participants by capturing their image of a real landscape situation and hence allows better bottom-up and multiple perspectives, a broader discussion on barriers and possibilities, and an improved dialogue. In this context aerial photos have a clear potential since they cover larger geographical areas and an oversight view. Hence, aerial photos have been used in several ways in the Baltic Landscape project.

An UAV (Unmanned Aerial Vehicle) is a flying device which can fly a pre-set course with the help of an autopilot and GPS coordinates (see Figure 32). The device also has normal radio controls; it can be piloted manually in case of a fault or a dangerous situation. Sometimes the term UAV is used to refer to the complete system, including ground stations and video systems.

An UAV is well suited for landscape photography and detailed photography of small areas, and also video recording at low altitudes. It is easy and quick to take photos in the right weather and when the sun is shining from the right angle. The plane or helicopter can be transported in the trunk of a car (even a normal sedan type of car) which makes it is easy to take it to a suitable starting place. The low weight also makes it possible to reach remote areas if needed.

The resolution of aerial pictures taken by an UAV is 1 to 4 cm/pixel, and that is why they are best suited for research and measurements (Figure 33). Big areas must be merged together into a mosaic from several small pictures. Previously this was a complicated and laborious task sometimes. Recent technology, however, includes programs installed on laptops that both prepare coordinates and the flying route, and further produce a mosaic of photos into larger maps.

High resolution photos taken by an UAV are also used for studying the characteristics of evergreen forests, such as gaps, layering and dead wood. Once they are identified, similar characteristics can be sought from aerial and satellite pictures. UAVs have also been used for counting the number of nesting birds. As the plane is at an altitude of 140 meters or more, it does not disturb the birds; they stay on the ground, and the amount of birds and nests can be counted from the photos.

Figure 32. *Picture of an Unmanned Aerial Vehicle (UAV). (Photo: Alpo Hassinen)*

UAVs have been used for counting chip pile (bioenergy) volumes and measuring open pits and sand pits, among others. The area is flown over several times in parallel lines, and a special software is used for calculating a three dimensional model based on these pictures. The model, in turn, can be used for calculating areas and volumes. Results are obtained at a lower cost than when using traditional measuring methods.

An UAV is not suitable for mapping larger areas because of the limitations in battery life time and in the aviation rules stating that the UAV must be seen by the driver at all times and stay below an altitude of 150 meters. Only 20 to 100 hectares can be photographed from one place.

Figure 33. *The picture is created from 120 UAV photos by the Pix4D service, and with a flying altitude of 146 meters. (Photo: Alpo Hassinen)*

Study tours

Per Samuelsson Sundin, Swedish Forest Agency & Simen Pedersen, Hedmark University College

A study tour can engage stakeholders and facilitate participatory planning

One of the fundamental ideas in the European Landscape Convention (ELC) is that it strives to facilitate participatory planning. A study tour is a tool that can be used in that process as it can introduce new knowledge to stakeholders in order to facilitate the planning process but also function as an arena for them to exchange/share knowledge and experiences. A study tour can engage stakeholders in issues that concern them, by visiting sites in the landscape that exemplifies such issues. It can also be used to introduce new participants as well as being the logical next step in the process (after initial meetings). A bus tour is ideal as the participants completely can focus on the content, impressions and messages, and allows activities and discussions on the bus between the different locations.

Organizer perspective

The invitation: The invitation can be directed to each stakeholder or the group of stakeholders depending on the aim of the tour. Invest time with the invitation since the first impression is important regardless if they decide to participate or not. The invitation is for something that is a "must see" – create a demand. The "must see" can be the chosen subjects or issues, the locations, events or the lecturers.

The number of stops and lecturers: Too often a tour program is too ambitious. Stops and points are just added because there is so much information one wants to share. When arranging a study tour the phrase "less is more" is very appropriate. In order to avoid a situation where you barely have time to leave the bus before you have to get back on again, stops and points needs to be carefully selected and enough lag time included. If not there is a risk that there is hardly any time for the participants to reflect and interact in a pleasant and balanced way.

Stops and lecturers: What is it that we want to show and discuss? This question is the starting point of the planning, and also evidently a question that includes an identification of the target group. There are a few things that always should be included in a tour in order to make it appealing and rewarding. Local stories are one such thing. A lecturer with a personal connection to the site, with own experiences from that specific place, create confidence and reality anchorage. A straight forward language without too much technical terms opens up for questions, discussions and involvement. Participants with different experiences, views and knowledge should also be represented among the lecturers.

Figure 34. *At the Helge å BL a study tour was held involving a number of different stakeholders. The aim was to allow the participants to meet people with different background and views, to network, discuss the future of the river, and share their knowledge, worries, hopes and ideas. It also gave us the chance to inform them of our inventory results from our Chub project and have a discussion on participatory planning and what the challenges and opportunities concerning such an undertaking would be. (Photos: Per Samuelsson Sundin & Mikael Svensson)*

Time management: Utilizing the time effectively allows for a more pleasant experience on a study tour as it allows the participants not to feel rushed and have time to reflect and discuss. Therefore, in the planning process one has to check travel time between sites and ad a buffer just in case. As the host, it is also your responsibility to see to that you stay with the schedule and rounding of discussions if needed. Enough time for discussions is essential, however. Sometimes too detailed discussions or isolated debates between a few participants need to be avoided, to be continued later on the bus or when there is a time gap in the program.

Visitors' perspective

During a week in October 2013, two lecturers and 12 forestry students from Department of Forestry and Wildlife Management, Hedmark University College, Evenstad, Norway attended a study trip to Vilhelmina Model Forest in Sweden (Figure 35). The students were second and third year's forestry Bachelor students.

The forestry education at Hedmark University College has a strong focus on forestry planning, forest resource efficiency and economy. No one of the students had heard about the Model Forest concept prior to the study tour. The schedule for the study tour contained visits to several demonstration sites (se chapter 2.21 and report 11,

18, 35) including examples of river restoration, forestry in proximity to rivers, forest management alternatives to clear felling, forest management in mountain forest, as well as indoor lectures given by scientists, forest managers and landscape planners.

Study tours to Model Forests are an additional supplement to traditional forestry study tours. In Vilhelmina Model Forest the students were exposed to alternatives to traditional forest management, especially how forestry may be planned in order to ensure multiple sustainable landscape use. The demonstration sites that were visited were generally sites where forestry was planned according to forest connectivity, reindeer husbandry and watershed management, with various alternatives to clear felling. One of the main challenges pointed out by the students was how to make this alternative forestry management economically and technically feasible.

Figure 35. *Participants of the Vilhelmina Study tour in October 2013. Apart from seeing the actual forest landscape, the students also benefited from learning about the integrated planning of these landscapes, i.e. how the different stakeholders like reindeer herders, cabin owners, forest managers and politicians are involved in the forestry and landscape planning process. (Photo: Simen Pedersen)*

2.17

Developing Reindeer Husbandry Plans

Per Sandström and Hanna Vestman, Swedish University of Agricultural Sciences

Much knowledge already existed, but was not compiled or available for consultation and management decisions. The development of Reindeer Husbandry plans became the platform for that.

Initiatives to mitigate the conflict situation between reindeer husbandry and forestry – the two most extensive land use forms in northern Sweden - were taken decades ago. Throughout numerous processes, the goal has been to find forms for an impartial and effective consultation procedure. Attempts to initiate processes to improve consultations through efforts to document land uses in reindeer husbandry and to map and inventory the grazing resource have been made. But the outcome on the process was not improved. The Sami reindeer herders felt that the consultations were mostly limited to notifications about management decisions that were already made. Hence, the reindeer herders had no way to express their concerns, partly because of a communication venue that appeared to be unidirectional with the forest sector holding and presenting all information. Furthermore, the reindeer herders felt they did not have access to tools for sharing and communicating their knowledge about their land use needs.

Inspired by the concept of forest management plans, some Sami reindeer herders began to develop corresponding reindeer husbandry plans. Ideas and attempts came from several places and persons. The issues at stake are complex and involve many different stakeholders with varied plans and goals, but a basic component and core activity has been to document the reindeer herders' detailed knowledge of the land and of how their reindeer use the land. Thus, tools for compiling old and new knowledge and information had to be developed as well as tools to visualize, analyze other ongoing land use forms and to propose better land use solutions. The development and use of a toolbox, a custom made participatory GIS (termed RenGIS), played a major role in this process (see also Chapter 2.8). This toolbox represents the hub for co-production of knowledge, data assembly, data visualization, and data analysis towards improved land use dialogue (see figure 37).

Evaluations of the process we have co-produced clearly indicate that the uses of digital maps in the communication between reindeer husbandry and forestry have contributed to a more open, transparent and knowledge based planning process. The toolbox RenGIS has improved the reindeer herding communities' preparations for consultations and thereby also the mutual understanding of how the two sectors affect each other. Within the reindeer herding communities, participants perceived that the process led to more inclusive planning as it spread the knowledge wider within their communities. Also those reindeer herders who initially were considered

to hold most of the knowledge claimed to have increased that knowledge due to cooperating with the others.

Reindeer herding communities' use of their reindeer husbandry plans and their RenGIS is currently a well-established component in land use dialogue and consultation. There are also numerous examples of the implementation of the process of developing reindeer husbandry plans and the toolbox pGIS in other settings and applications. For example, the role of reindeer husbandry planning process and associated results is realized in numerous governmental and non-governmental reports and strategies.

Figure 36. *The process of developing reindeer husbandry plans, ongoing since 2000, forms the backbone for the communication process. Step 1 consists of compilation and mapping of all land uses. In step 2 the concept of Reindeer Husbandry Planning was established, which when realized can support adaptive management and planning (above). In step 3 all information is used for improved dialog, sustainable landscape planning and adaptive management. (Illustrations: Hanna Vestman)*

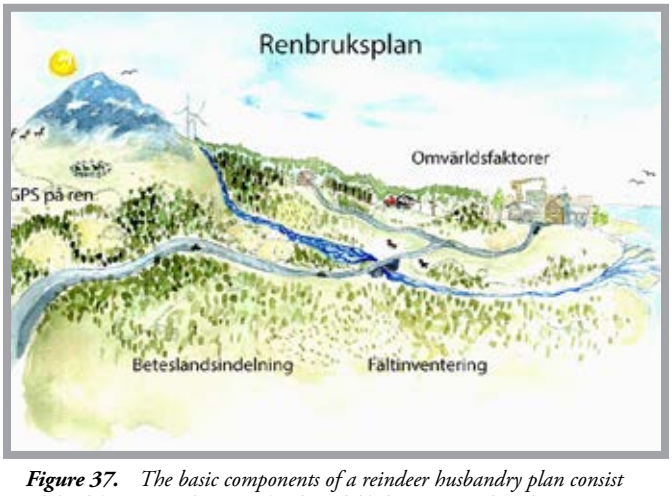


Figure 37. *The basic components of a reindeer husbandry plan consist of the delineation of grazing lands and filed inventory, data from GPS equipped reindeer and a compilation of other land users.*

Integrated planning through demonstration trails

Paulina Adamska, Regional Directorate of the State Forest in Olsztyn

By applying a participatory approach in the planning, a constructive dialog between authorities, landowners and local enterprises can be established

Working with landscape perspective, demonstration areas may in some cases not be sufficient to show how to solve a problem of conflicting interests. The Mazury landscape has become increasingly attractive for horse-riding tourism and the need for integrated planning have become apparent due to the undesired impact on forest roads. By applying a participatory approach in the planning of a long-distance horse-riding trail, a constructive dialog between State Forest, communities, local tourist enterprises and the horse-riders was established. The outcome of this dialog is a concept where on one hand horse-riding is routed to forest roads more suitable for this purpose and at the same time of lesser economic importance for forestry. A key factor in this process has been the link to the history of a prominent person of the region, Marion Döhoff who during WW2 fled on horseback, and later on became the promoter and symbol of reconciliation between the people of Poland and Germany (see figure 38)

There were many aims and goals for working on the long-distance horse-riding trail. One of them was to preserve the history and people of Mazury and balancing interests of different parties having diverse expectations from one landscape. The other was to increase the cooperation between stables, agrotourism farms, municipalities and forest districts, to enable to tear down artificial administrative boundaries. Moreover, the goal was to create an interesting tourist attraction of the region and propose a new form of the promotion of State Forests. With the help of a trial concept, the partnership was promoted as a tool of easing quarrels and balancing interests of many parties. This idea was further to offer to prolong the tourist season in Warmia and Mazury and to promote natural forms of recreation, free from noise and exhausts. An important goal of the concept was to channeling horse traffic to roads and paths with lesser economic importance. Finding roots in the history of Warmia and Mazury turned out to be a perfect tool to simplify dialogue and increase the understanding between particular partners.

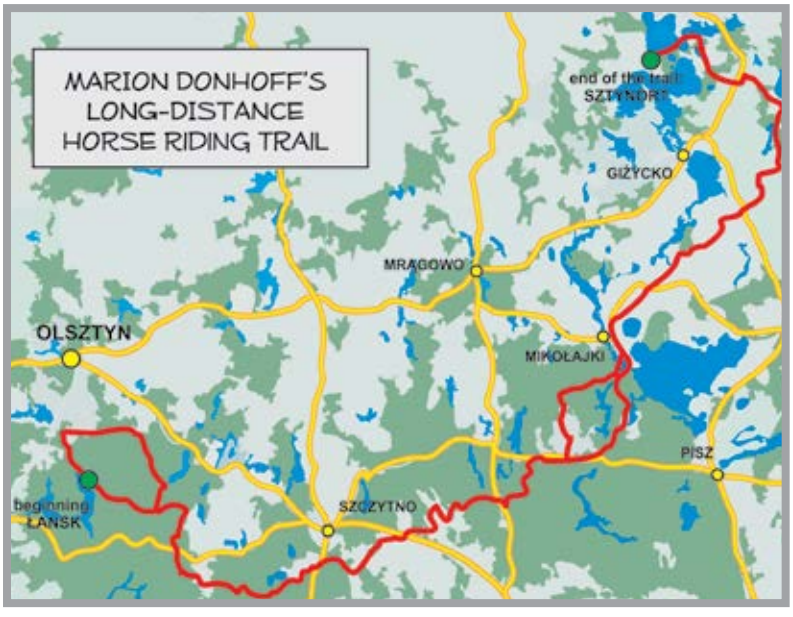


Figure 38. *Route of the Marion Dönhoff 300 km long-distance equestrian trail (Photo: Urszula Dyl-Nadolna)*

Figure 39. *"Horses" by Ewa Borys-Krupska, (photo: Urszula Dyl-Nadolna)*

Thematic groups

Camilla Thellbro, Vilhelmina municipality and Ursula Neussel, Swedish Forest Agency

When local experience and engagement meet external knowledge there will be both "talk" and "action".

The stakeholders in a large-scale landscape are often many and some have broad interests, while others have more limited ones. Some issues are tangible and perceived by many as more or less urgent to deal with. There are also matters that many think is important, but no one really knows how to deal with them. In the quest for sustainable use of the landscape and all its values there are many advantages to develop and interact in a large and diverse network. However, it is not realistic to think that everyone should be willing and able to work with everything and also not that a few should keep all the strings in motion.

In a so far promising attempt to concretize, enhance and make the work on prioritized themes and issues regarding sustainable use of the landscape efficient, the Vilhelmina Model Forest has initiated activities in working groups, or more precisely; *thematic groups* (to date within six different themes). The work is entirely voluntary and participants should be able to come and go over time. With support from VMF's administration, dedicated individuals from the network (often with different perspectives) gather to jointly develop and carry out work toward a common goal within a specific theme. A group leader or "landscape pilot" is chosen for each thematic group.

The following questions have been shown to be important for a successful start:
What theme or subject and which questions do the stakeholders in the landscape wish to work with? It is advisable to try to find a way to identify the issues that many of the stakeholders in the landscape consider to be important. The VMF has a steering committee with representatives of various interests. The Steering Committee discusses and determines what issues are current in the VMF and therefore should be prioritized.

Are there people, and if so; who are they that want to and can provide local knowledge, external knowledge and engagement? Although participation in the thematic group is voluntary and also likely to change over time, there must be some people, preferably with diverse backgrounds and perspectives, who know enough commitment to initiate, design and build a process of all what is required in terms of structuring, finance etc.

What are the goals of the thematic group and how can and does the group want to work in order to reach the goals? What scope (geographic, temporal, financial, etc.) should the work have and what would be the result? The landscape perspective is central, but for

work on a voluntary basis to succeed, the group itself has to be allowed to formulate and define the scope and objectives based on conditions and opportunities which the participants themselves see and experience.

So far, none of the thematic groups within VMF has crossed the goal line. Most groups have just begun their journey. Some groups have taken on in areas where much has already been done within the VMF while other groups are beginning new chapters. However, after only about six months of efforts within VMF it was obvious that when forces are brought together as concretely as in thematic groups, then things started to happen.

Examples of thematic groups in Vilhelmina Model Forest (figure 40):
VMF **Thematic Group Water** continues the work with the so-called Ångermanälven model, a step-by-step process developed within the VMF, where local and external forces are acting together to take environmentally adapted actions in regulated rivers. The aim is to perform further investigations and initiate practical work in the Ångermanälven basin - a project in the 4-million SEK class. Within the VMF **Thematic Group Climate** the plan includes developing a local climate guide where local interests, based on own experiences as well as theory, will design a practical tool to assist the local community in managing and exploiting potential effects from climate change. The group will also work to increase local awareness and knowledge of climate and climate change through for example seminars with knowledgeable speakers and film production in collaboration with Canadian Model Forests. Locals in Vilhelmina know that forestry not always is easy to combine with other interests.
VMF **Thematic Group Social Values** is working to define the social values of a, by locals frequently used area adjacent to a small village (Dalasjö). The group will, in dialogue with authorities and landowners etc., try to find a solution on how the area can be managed so that everyone involved will be satisfied.

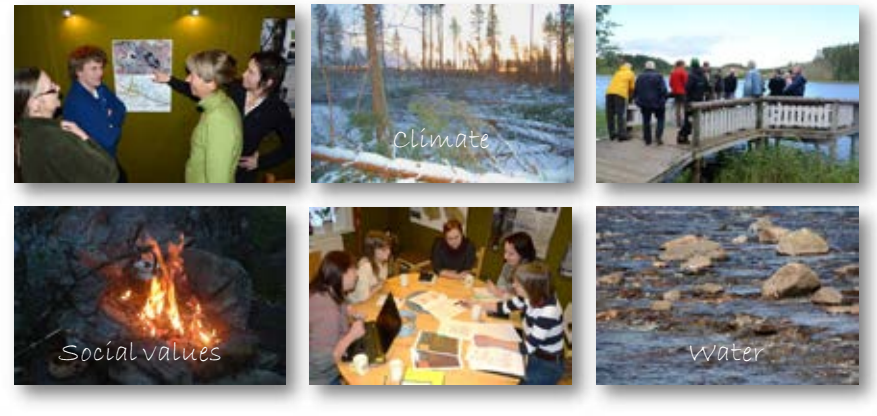


Figure 40. *The members of the Vilhelmina Model Forest network interact through activities within thematic groups that are defined by their common interests. (Photos and illustrations: Camilla Thellbro & Ursula Neussel)*

Demonstration areas

Camilla Thellbro, Vilhelmina municipality and Ursula Neussel, Swedish Forest Agency

Where to discuss and learn more about the landscape if not in the landscape?

If you want to inform and/or work with issues regarding sustainable use of the landscape in a way that all those affected or interested can actually be involved, it is often a great advantage to have the opportunity to visit the landscape together. To be able to practically test methods in a real landscape, and also be able to demonstrate, follow, and involve various stakeholders in these experiments, is another big win in the sustainability efforts. Within most of the Baltic Landscape sited these thoughts have resulted in the creation of so-called "demonstration areas". Such an area is a smaller, representative section of the landscape, prepared for organized visits. It is a "classroom" where landscape types can be displayed and where different methods, conditions and effects can be tested and discussed. The development of a demonstration area may also in itself be part of the joint work between various stakeholders to achieve sustainable use (figure 41)

Experiences from Vilhelmina Model Forest show that it is crucial to determine what the purpose of the creation of demonstration areas should be. In addition, there are several questions to answer:

- ✓ *Are you creating a single area or will more than one be developed?* In the latter case, it is suitable to formulate an overall strategy for the activity - some kind of criteria for the choice of areas, and how the areas will be designed and managed.
- ✓ *What could/should the area display - what's the "theme"* - something typical about the landscape, ongoing efforts/activities in sustainability work or something else?
- ✓ *How large should the area be? Who owns the land and how to determine how the area can be used?*
- ✓ *Will the demonstration area exist only for a limited period of time or "until further notice"?*
- ✓ *Who should be able to visit the area* - what is required in terms of permits, infrastructure and information material as signs and brochures, etc.? Should it be available to the general public, tourists and adapted for the disabled or should it address specific target groups and/or organized, guided group visits?
- ✓ *Who is responsible for developing and, in the longer run, maintenance, updating of information material, etc.?*

Figure 41. *Vilhelmina Model Forest demonstration areas (Photos and illustrations: Camilla Thellbro & Ursula Neussel)*

From experience, the answer to this question is one of the most difficult to secure. It is therefore important to set up detailed action plans for each area, at an early state, where objectives, activities, actors and responsibilities are clearly stated.

It may seem complicated and demanding to work with demonstration areas, but experience from Vilhelmina Model Forest shows that the efforts give back many times over. The opportunity to spread both general knowledge and the word about local work on sustainable landscape use to different groups in society considerably improves. In addition, the interest from various players to invest in the work grows and the local involvement increases significantly.

Vilhelmina Model Forest has several well-established demonstration areas and work is underway with the development of several more. One well-developed demonstration area is ”Laxbäcken” with the main theme ”Riverside Forestry.” Based on local knowledge and experience, the issue of restoration of the creek; to its condition prior to water regulation and timber floating, was brought up. Local organizations, enthusiasts and contractors worked together with scientists and experts to survey the history, formulate an action plan, seek permissions and perform actions. The work is still in progress. The aim is to promote the ecological health in general and fish migration in particular. At the same time government agencies, forestry companies and private forest owners work together to test various, more or less proven, types of riverside forestry. The goal is to use measures that are beneficial for both forest growth and ecosystems of the area. With support from the municipality, among others, local organizations and dedicated individuals also operates together to make the site a pleasant place to visit. Today there are nice roads and paths, sites to visit with other themes, such as Sami cultural sites, comfortable picnic areas and signs and brochures that make the area accessible and attractive to the general public.

For more details see http://www.vilhelminamodelforest.se/

Breakfast lectures by video conference

Lars Gavelin, Vilhelmina Municipality and Gun Lidestav, Swedish University of Agricultural Sciences

By a system of video conference facilities and a familiar setting, and a new audience can be reached

In Sweden, municipal learning centers have emerged in the 2000th, often equipped with videoconferencing and digital platforms to meet the needs of people living far out in the countryside. Teachers and researchers from colleges and universities can hereby reach a new interested audience, that may never have visited a University or institute campus, but who are eager to learn about the latest findings or new technology that matters to them. To summon to the video conference is an alternative to computer-based platforms with each participant having their own computer. Participants need not worry about insufficient technical knowledge but can focus on the content. Also for other reasons participants may be more comfortable sitting among peers in a conference room, and it may encourage discussions among themselves.

In Vilhelmina, the lectures have been organized as breakfast meetings, with a local host that responsible for serving a light breakfast, and providing the technology equipment. Each lecture was set to a 40-45 minutes talk and with 15 minutes for questions. The lectures were announced with an appealing title and had a general and interesting message that was relevant to all participants. They were marketed in local add sheets, by e-mail, at the Vilhelmina Model Forest web-site or as direct mailings to a specific target group.

Figure 42. *The Swedish University of Agricultural Sciences (SLU) is one of the universities who have been using the municipal learning centers communication channels to reach out with their research. SLU is also a main partner in the Vilhelmina Model Forest with several major research projects that concerns both general and forest owners in the area. A series of test video conferences were organized during the winter of 2013/14. The transmission was from SLU in Umeå to Vilhelmina Learning Centre in Vilhelmina and to Saxnas and Dikanäs schools. Available videoconferencing system was essential in order to reach the people living far from the main town. (Photos and illustrations: Camilla Thellbro & Ursula Neussel)*

Nature Classroom

Oriana Pfister, Swedish Forest Agency

Nature Classroom will be a place for stakeholders of all ages to work together towards the same goals of knowledge, understanding, respect and correct use of nature and natural resources.

The European Water Framework Directive aims to achieve good status in all waters by the year 2015. Water is a heritage that has to be defended to ensure its long-term sustainable use. It means that many efforts have to put in educating different generations in why and how to do that.

The Baltic Landscape project in Helgeå has built a partnership with Osby Naturbruksgymnasiet (Figure 43) aiming to spread knowledge on forest practices connected to water issues. This collaboration has led to the identification of areas suitable as demonstrations sites. Beside that Baltic Landscape project is contributing to the renovation of a barn that will be used as Nature Classroom. The aim is to have a meeting place indoors close to nature and demonstration areas, easily accessible and attractive to stakeholders of different ages.

The barn is still under renovation but when ready it will be an important tool to bring people close to nature.

The nature classroom is situated in the hearth of the Helgeå watershed, near the town of Osby. Easy to reach by bike or car; it is equipped with a large parking place for cars and busses. From the parking place it is easy to get to different demonstrations areas on foot.

Although the collaboration had forestry and water issues as its starting point the idea of Osby Naturbruksgymnasiet is to use the classroom for many different initiatives including lectures, meetings to raise awareness on environmental issues, environmental education and summer camps for children. Of course the classroom will be available also for activities carried on by private or public stakeholders. In a few words the Nature Classroom will be a place for stakeholders of all ages to work together towards the same goals of knowledge, understanding, respect and correct use of nature and natural resources.

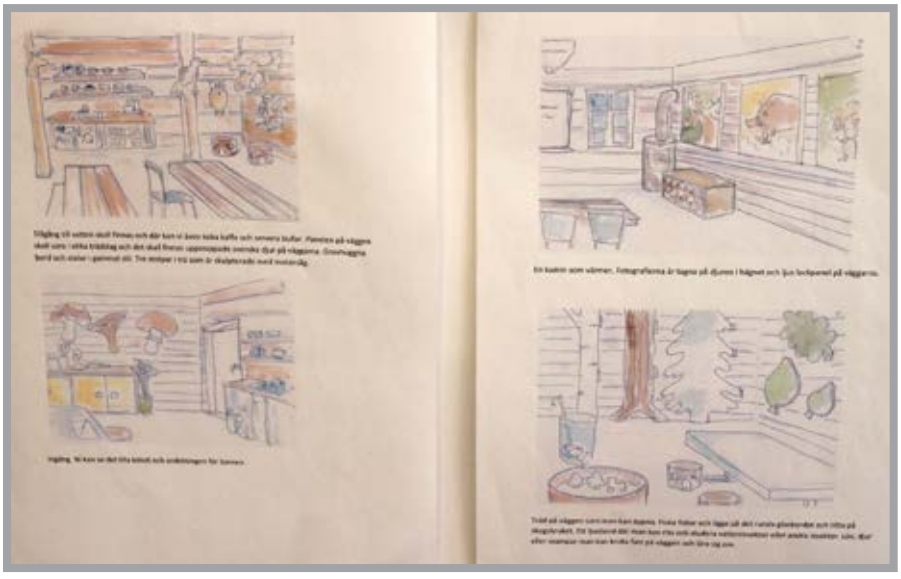


Figure 43. *A barn will become a nature classroom, drawing by Sofia Hillbertz. About 90 m² large classroom, with a small kitchen, tables and benches, projector and "nature" on walls.*

Children as cross generation teachers

Andrei Roukach, Belarusian State Technological University

Teaching sustainable development issues to school children is a vital socially-minded problem which connects the environment, economy and community.

In 2005 a school children's team "Forestry School" was founded in the Mir secondary school (located in the BL Neman area). The forester Vassily Chura was inspired by this initiative. The "Forestry School" is a team of school children, whose out-of-school activities are focused on developing careful attitude towards forests and nature, adding to their knowledge of biology, ecology, nature protection, forest planting and protection skills. The "School Forestry" also develops environmental friendliness and care of forest resources by children and further inspire them in their future profession.

What they do in "Forestry School"?

They learn about forest resources, get acquainted with what foresters do, plant young trees and seedlings, make bird boxes, watch the nature, and clean the forests. 15 school children make up the team. There is a special indoor classroom with herbaria, collections of insects, pictures about foresters' work. The classroom has a special 'forester's corner' featuring presentations: "Main things about felling", "Ways of fighting forest fires", "Forest pest and fungi control".

The museum of the Mir forest station houses exhibits dedicated to the history of local silviculture as well as stuffed forest animals and birds. The museum often welcomes guests with school children.

There is also an outdoor classroom which is an arboretum with more than 30 trees and shrub species in it. While working in the arboretum the school children can watch the life of trees, get more knowledge about botany and general biology and learn how to grow plants.

BSTU researchers in collaboration with foresters of Novogrudok forestry enterprise developed an educational ecological trail "The Neman River Valley" within the Baltic Landscape project. The ecological trail runs through the territory of "School Forestry" and a picturesque area of the Neman River valley. The trail is an ecological route with all necessary on-site facilities. It represents different natural landscapes, forest types, information boards, pavilions, viewing points. The length of the trail is 3 km and equipped with 14 information boards.

Volunteer activities are popular with school children. They actively participate in environmental events which have already become traditional: "Clean forest", "Bird feeder", "Pine cone", "Bird box", "Ant-hill", "Plant a tree!".

Figure 44. *Pictures show engagement of children in Belarusian "forestry school". (Photos: Andrei Roukach)*

Every spring school children take part in forest planting. Many school graduates became inspired by school forestry and entered the university programs of forestry. A lot of them are successful forestry program graduates and have become genuine professionals.

For the years of their work, young foresters have done a lot of good acts to conserve and enrich forest resources. Every year, especially in hot summers, the school children protect forests from fires. In springs it's time to clean forests from garbage and windfall, to plant young trees and to feed forest birds. The "Forestry School" teachers start to involve school children in their team when they go into the fourth grade.

Forestry workers help school children to acquire practical skills

The experience of "Forestry School" is a very valuable tool as it adds much too lifelong environmental education. The children become more environmentally conscious, more kind-hearted, they develop a careful attitude to nature. -Of course, not all "School Forestry" children will be employed in the forestry sector, but what is more important, they all get a good dose of love to nature", says Vassily Chura, the initiator of "School Forestry" team.

Printed information

Gun Lidestav, Swedish University of Agricultural Sciences

Reports, fact sheets, posters and brochures can provide a clear message but must be well-adapted to the target group and the purpose

In spite of homepages and other channels on the internet, printed information is preferable in many cases. Since people tend to pick up information in different ways, depending on the circumstances, their interest and involvement in a particular issue, several different formats should be used. While a report will provide comprehensive background information, details on data collection and analysis, as well as full results and conclusions, the fact sheet is basically condensed version for a broader audience. A fact sheet can also be a proper way of giving feed-back to those who have provided data as respondents to a survey. By that they will not only become informed about the issue as such, the general view among their peers, but also find that their opinion counts. If it is an issue of interest beyond the local community, a fact sheet is useful when informing policy makers at different levels. An even more condensed version can be given by a brochure, and this format will be appropriate if combined with oral information e.g. at excursion or if the objective is just to raise interest. The small format also makes it possible to produce copies in several languages.

Figure 45. *In all of our Baltic Landscapes printed information of different formats and on different issues have been used systematically. (Photo: Gun Lidestav)*

Figure 46. *Information on a bridge over Neman river in Belarus. (Photo: Marcus Hedblom).*

Figure 47. *Information about additive effects of initiated discussions between agriculture and forestry in Belarus. (Photo: Marcus Hedblom).*

Newsletter

Camilla Thellbro, Vilhelmina municipality and Ursula Neussel, Swedish Forest Agency

A newsletter can serve both as a comprehensive progress report and an appetizer.

The landscape perspective is in many ways a broad perspective. Sustainability efforts with a landscape perspective almost certainly have to embrace many different topics, issues, perceptions and work strategies. To provide and disseminate comprehensive information on such work, which still is distinct and easy to grasp, is not completely straightforward.

Today most people have Internet access to websites, online communities, etc. However, many people still prefer concise information on paper. Printed material, such as brochures, posters, etc., has many advantages, but can be costly to produce and distribute. A newsletter, for example, in pdf-format, which can be sent via email, downloaded from a website and/or printed if required is a convenient and relatively inexpensive supplement. Vilhelmina Model Forest is using such a newsletter to keep both its network of nearly 200 stakeholders and cooperation partners as well as external contacts informed and updated about the most essential of the work in progress.

However, one should consider what the newsletter should communicate; what has happened, what will happen, both or is there something else you want it to say? How often should it be produced? Often enough to keep the information up to date and for the letter to be at an appropriate length, but you also have to maintain certain continuity in the release.

For the newsletter to work optimally, it is of course important that it is appealing to the readers it aims to address, both in terms of content and layout. For practical reasons as well as for ”recognition”, it is apt to put some effort into a well thought out layout template. The target audience for Vilhelmina Model Forest newsletter consists of people and organizations in a variety of societal categories and the focus on a concise and well-illustrated newsletter with informal language has functioned well. The newsletter does not tell everything about everything but just enough to keep the reader to feel updated and maybe even curious to know more (It is therefore also important that there are references to where to turn to for more information: contacts, website addresses, etc.)

For more details see http://www.modelforest.se/

Figure 48. *If you succeed, with a well-thought-out newsletter, chances are good that it both attracts and retains the recipient's interest in issues addressed and activities carried out. Experience from Vilhelmina Model Forest shows that the newsletter may even be something people are waiting for. (Illustration: Camilla Thellbro)*

Homepage

Camilla Thellbro, Vilhelmina municipality and Ursula Neussel, Swedish Forest Agency

A website is an effective way to disseminate information about a lot to many.

Inherently, sustainability from a landscape perspective is a complex issue to work with. In addition, if the work is based on, for example, the Model Forest concept, where participation is a fundamental cornerstone, it is important to have some type of easily available information node. Today most people have Internet access. Therefore, a website is a quick and handy tool to collect, organize and present information. Different topics, facts, issues, ongoing activities and achievements can be presented in an accessible way. Working models and practical tools to use in the sustainability work can be shared. The website can also be used as a ”digital arena” for direct communication through forums, chats, etc.

With a website you can be more visible and reachable in different contexts in that there is ”something more” to refer to, and that it is possible to link to your own page from other websites (e.g. partners') etc.

Generally, it is important to decide on the purpose with a website. It is also important that the information is easy to find, up to date and preferably concise. To attract and retain visitors' interest over time, it is very important that the content and site layout can be continuously renewed in a professional manner. Experience from working with Vilhelmina Model Forest website and the determination to present facts as well as ongoing sustainability efforts, however, shows that the following questions are crucial:

- ✓ *Whose/what types of perspectives can and should be presented on the website?* Is merely ”objective facts” to be presented or could various special interests get their place? There are many possibilities, but it has also been proven that it can become problematic if one special interest is particularly strong and another does not wish to be seen in the context. In such a situation, it may be difficult or even inappropriate to deal with the subject on the website.
- ✓ *Who does the website turn to and how should information be presented to appeal to the visitor?* Are there specific groups to target; researchers, businesses, government, the public, etc., or should ”anyone” feel at home?

Visitors should experience getting interesting, relevant and useful information directly, information that entertain or awaken the desire for involvement in the ongoing sustainability efforts.

For more details see http://www.modelforest.se/

Figure 49. *The Vilhelmina Model Forests network (consisting of almost 200 contacts) and its many external stakeholders represent a diverse audience for the website. Target range from elementary school students and locals to national authorities and international organizations. Vilhelmina Model Forest will exist, and its homepage should therefore live, as long as there is commitment within the network. With these prerequisites, the experience is that it is important that the website's visitors are welcomed by continuous reports from current events, pictures, movies and short stories from known environments, tangible results, etc. (Illustration: Camilla Thellbro)*

Video on the web

Joanna Zamorska and Jaroslaw Bator, Regional Directorate of the State Forests in Poznan

Short films on internet is an efficient way of reaching a large audience

Promotion in the Internet may be done in a number of ways which may considerably differ from each other. A widely practised method is presenting information in a form of graphics or short films appearing on frequently visited web sites. When implementing the "Baltic Landscape" project we tried to make use of various ways of communication and promotion, so that the project concept, activities undertaken by us and their effects could reach the biggest possible number of landscape users.

At the 3rd Annual Baltic Landscape a film crew accompanied us during an all-day field trip. They recorded interesting presentations devoted to our experience in cooperation with local partners, landscape related problems, proposed solutions, progress in our activities and, what is most important, they managed to catch the field situation in reality. The camera was also on during the official conference day. The film is divided into thematic sections: Innovative Approach to the Landscape, Sustainable Development and Conference.

The members of the Baltic Landscape project team presented, in an easily understandable way, the idea of building partnership through joint meetings of representatives of various organisations. The aim of talks held at a round table, at which each participant was treated equally, was to work out common solutions for problems occurring in the landscape. In the film we can listen to various presentations.

In addition to our local partners, also foreign participants of the convention were interviewed, making comparison of landscape management and planning in Poland and in Sweden. The Model Forest concept proved successful in Sweden, so why shouldn't it work in Poland either?

The whole of the film is, in a way, clipped together by a presentation by Piotr Grygier, the Head of the Regional Directorate of the State Forests in Poznań, who in the years 2005-2013 performed the function of the vice-president of the Union of European Foresters. Having gained a wider international perspective on the issue of reasonable landscape management, he fully understands the Model Forest concept.

This short, 12-minute film, placed on YouTube, is available not only to Polish-speaking users (figure 50). Thanks to English subtitles a wider group of people interested in this topic may get acquainted with our activities. The shot footage has been edited in a way that makes it easily intelligible even for people who encounter the subject of the Baltic Landscape project for the first time.

The film is shown during numerous meetings. It is a great tool for promoting the project and acquiring new partners.

Figure 50. *Shorter You Tube film as an effective way of reaching a wider audience. Look at this specific film at https://www.youtube.com/watch?v=nY6sjoXrIvk (Copyright: Regional Directorate of the State Forests in Poznan)*

University-level applied courses

Johan Svensson, Swedish University of Agricultural Sciences

Building knowledge is an important part of creating sustainable landscapes in practice

One approach in the Baltic Landscape project has been to organize education on higher academic levels to introduce forest science and life science masters level students to the Model Forest concept and how it is applied. In this case the education was arranged within a regular course on 'Sustainable Management of Boreal Forests' that is within the curricula for the University of Agricultural Sciences (SLU), Faculty of Forest Sciences in Umeå, Sweden. The course scope includes with questions such as: What does sustainable management of boreal forests mean? What characterizes forest management that is practiced in a sustainable manner? How can we be sure that the management practiced is sustainable? For 2012, 2013 and 2014, one whole day has been allocated to Model Forest.

The May 23, 2012, agenda included a first presentation on "The Model Forest concept, developing the Model Forest concept in northern Europe, Vilhelmina Model Forest, experiences from the Baltic Forest project and introducing the Baltic Landscape project". The second presentation was given using distance-conference techniques with Komi Model Forest Silver Taiga Foundation, Russia, on "Forestry and Sustainable forest management in Russia". This was followed by a group exercise where the students searched and reviewed information available on internet from Eastern Ontario MF, Prince Albert MF, Manitoba MF and Foothills MF in Canada. The final step included distance-based participation from the International Model Forest Network Secretariat in Ottawa, with a presentation on "Research in Canadian Model Forests". The final step was group reporting and discussions with the students.

The May 6, 2013, agenda was entitled "Model Forests – the beacon of sustainable forest management" with presentation on Model Forest projects in Sweden and Russia. The group exercise consisted of four groups on four pre-defined topics where articles and reports from various Model Forests internationally were made available: 1) Criteria and indicators of sustainable forest management; 2) Certification in practice; 3) Rural community sustainability; and 4) Traditional knowledge. Lecturers from attended on distance and presented "The IMFNS and its role, SFM examples from around the world, strategic directions, research in Model Forest" and "Canadian MFN and some SFM examples from central Canada and Prince Albert Model Forest.

The May 6, 2014, agenda also included presentations from Sweden and Canada (on distance), but with a slightly stronger focus on research components, and in combination with a second course day on the implementation of the Swedish forest

policy in practice with a lecturer from the Swedish Forest Agency. The group exercise was entitled "Build your own Model Forest". The following instructions were given: 1) Study the IMFN *Principles and attributes* of Model Forests; 2) Imagine that you will create a Model Forest that will become the next Northern Europe IMFN-member site; 3) Pick any *landscape* in Fennoscandia and justify your choice; 4) Identify flagship issue and other issues (*program of activities*); 5) Select organizations and/or persons that you need to have engaged in your partnership; 6) Define your approach (*commitment to) sustainability*; 7) How will you deal with the governance of the Model Forest?; and 8) How will you network, communicate and develop *(knowledge-sharing, capacity building and networking)*.

Ten to 15 students attended each course. Although the Model Forest concept generally was not known by them beforehand (the first lecture usually started with the question: How many of you have heard about Model Forest? And only two students, in total for the three years, raised their hand), it makes sense to forest- and environmental-oriented students. As a conclusion the Model Forest concept certainly adds perspectives and tools for participation and extension of sustainability issues, or as expressed by the students themselves in their course evaluation:

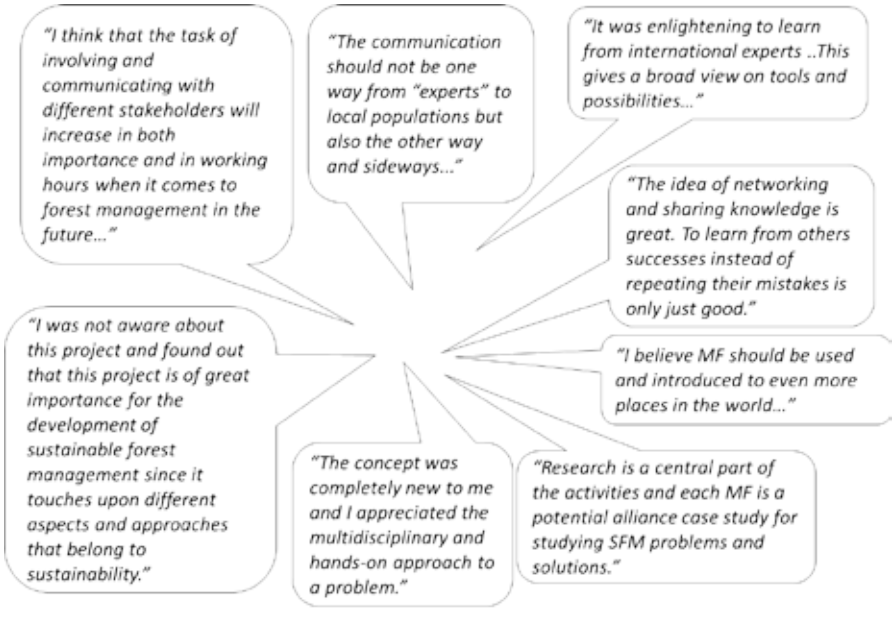


Figure 51. *Some students' comments on the course evaluation concerning the Model Forest. (Illustration: Johan Svensson)*

Chapter 3

CONCLUSIONS AND RECOMMENDATIONS

Marcus Hedblom, Przemyslaw Majewski, Johan Svensson
and Gun Lidestav
Swedish University of Agricultural Sciences

Saxnäs village and surrounding landscape (Photo: Vilhelmina Municipality)

The Baltic Landscape handbook approach to sustainability

The Baltic Landscape project addresses sustainability issues such as landscape perspective, involvement of many and different stakeholders, participation and knowledge co-production processes, dialogue and communication, top down and bottom up perspectives, institutional frameworks, policies on various levels, and more. One main experience from the project is that landscape sustainability is arduous to realize on the ground in local landscapes. But following on this that examples of measures, tools and approaches from local landscapes provide interesting and very useful options and solutions on complex sustainability issues – that taken together in a structured way may be applicable in other local landscapes as well as on regional, national and pan-national levels. Baltic Landscape has, despite the relatively short project time of three years, gathered a number of such examples. Here in this handbook we illustrate some of these, implemented, tested and evaluated in seven different landscape sites across northern Europe; three in Sweden, two in Poland, one in Belarus and one in Finland. Interestingly and noticeably, several of these examples arises from independently developed responses to local circumstances and needs in the different sites, that under the common scope of the Baltic Landscape amalgamated into a series of practical landscape sustainability tools and approaches.

Defining and addressing a landscape

A landscape is not easily defined; "the landscape and how it is appreciated and understood is in the eye of the beholder". By using art, landscapes in Poland were painted as an illustration on how people may perceive a landscape. Nevertheless, most people have an opinion and some idea about what "their" landscape is. In working with landscape issues and including people with different social and professional backgrounds there is, however, a clear need to define a landscape, at least to some extent in order to secure progress in dialogue and problem solving on sustainable issues. In a disciplinary context it is fully possible to, for example, from an ecological perspective define a specific landscape area using species distribution for a focal species. But this is not always logical with respect to sustainability issues having in mind different land cover types and land-use systems as well as how these changes over time. In the Baltic Landscape project, some landscape sites used existing administrative borders such as a municipality border or physical borders such as a river catchment area to define the landscape. One site, Bergslagen in Sweden, applied a historical reconstruction assessment of the name Bargslagen and identified a geographical area that was connected historically, and through this identified a landscape. Yet another site defined the landscape out of present usage of a species and land-use system that requires vast geographic areas; i.e. reindeer and reindeer herding in Vilhelmina, Sweden. Also, some Baltic Landscape sites applied a landscape definition based on the geographic area needed to address a specific sustainability issue or potential problem that was raised as a locally relevant in the project.

People – stakeholders – are part of the landscape

A landscape is commonly viewed as a socio-ecological system. The people living and acting within an area – the stakeholders – with their different and sometimes conflicting interests and needs, have finite natural resources and space to share. Our experiences clearly show that there are several obstacles that hinder the gathering people around issues that are of concern to many stakeholders.

Problem identification: The challenges in a landscape are often complex and covers several aspects of sustainability, different land cover types, various policy frameworks, etc., and hence may be understood differently by different stakeholders. One specific stakeholder often sees only part of the problem and the symptoms or effects of the problem, without an overview of and insights in the roots of the problem. Hence, there is a need to establish holistic and comprehensive perspectives for coherent understanding. Each stakeholder has their own prescriptions and do not know about or consider other stakeholder's situation and solution. A central task in developing problem solving into a more general tool is to provide an opportunity for all stakeholders to understand the full complexity of the issue and to stimulate interaction and work together on cooperative solutions. By inviting many different stakeholders to the same meeting and bring up the various issues that are linked to the landscape, the obstacles can be identified and comprehensively elucidated. As an additional outcome, the involved stakeholders will understand more deeply not only their view of the problem but also other stakeholder's interest, visions, opportunities and limitations. Problem identification done in this way leads to transparency and forms a platform for developing solutions.

Problem solving may start with *Focus group discussion* where a number of people, maybe 4-10 people, are invited for a meeting to discuss certain issues, known beforehand by all involved, in the landscape. This is a way to learn about stakeholders' opinions, values and interests.

Umbrella landscape species: Ecosystems, ecological processes and species are not limited by estate, sectorial and governmental borders and hence a focus on umbrella species or indicator species offers opportunities to open up for discussions on conflicts and solutions that go across such borders. This does not limit the issues to species-specific natural conservation concern, but rather opens up a possibility to address broader landscape issues and discussions. In Poland the beaver (*Castor fiber*), in Sweden the fish Färna (*Squalius cephalus)* and the reindeer (*Rangifer tarandus*) were used as such umbrella landscape species.

Participatory GIS: Creating a GIS that is developed together with stakeholders and/or a GIS that anyone could get access to, provides possibilities for broad participatory processes. Here, anyone interested in their local or regional landscape could get access to the information or add and share new information that they think is relevant and of importance, and through this increase general knowledge and promote discussions about sustainable use and management of the landscape.

Examples of essential components in the participatory GIS are to secure a custom-made design and content, to involve the stakeholders early in the development process, and to make sure that the relevant GIS-information is available for the stakeholders.

Holistic maps: Today much information is digitally available but not merged into comprehensive GIS-maps that simultaneously show not only relevant biophysical landscape premises and natural and cultural values, but also data such as different land-users priorities and plans. For holistic governance and management on landscape scale these types of GIS-based digital maps allow possibilities to, in reality, reach a common and coherent understanding of the landscape as a common resource. By combining different layers in the map, areas of potential conflicting interests in the landscape can be more easily detected and thus conflicts may be solved already at a consultation phase.

To promote integrated planning

Planning has by tradition been done separately for different sectors, land uses and land users, Agriculture land and forest land, for example, has been treated differently. As well, the water in a landscape has been treated differently from the land. A common understanding in the Baltic Landscape sites and among the involved stakeholders is that the level of integration in planning has to increase to, in reality, reach a sustainable landscape management and governance situation. Integrated landscape planning is needed; in Poland in fact often stated as "much needed". This is not easily achieved, however. Some obstacles identified in the Baltic Landscape project are:

Barriers related to legal frameworks: Sectorial legal and jurisdictional division of the ownership rights and responsibilities, land-cover types (water – land, forest – agriculture, etc.) and different administration units as well as institutional competence, occurs on any larger landscape area. Forest land, for example, may be privately owned or publicly owned, subject to public rights and access or not, etc. Commonly, there are separate policies for water, forest and agricultural land. All this hinders integrated planning on landscape scale. Arguments for a higher level and degree of integration can be built by making local landscape sustainability examples visible, where those examples have been worked out by different people and sectors. An in-common landscape policy that replaces the existing sector policies can be seen as a long-term goal.

Strict and soft integrated planning: Strict legal and administrative rules dominate the landscape planning in Poland and Belarus. Strict rules are top-down and manifested through identical or very similar management systems independent of the intrinsic qualities of local landscapes and ecosystems on all publically owned land. Private rights and responsibilities connected with private ownership as in the Scandinavian countries, on the other hand, require more inclusive and soft rules. A strong and conservative private-dominated land-owner rights system may polarize a landscape

as any privately-owned estate may be managed differently without any tactics or strategy that combines neighboring estates. The "soft approach" depends on organized cooperation of stakeholders and self-governance in dialogue with other private sectors or the government. This soft approach is well known and established in Scandinavia with forest owners associations, forest commons and forest contractors that offers services and operate according to certification rules or other environmental frameworks. Thereby conditions for a landscape approach exist and may be reached across many different estates if implemented. However, with strong private ownership rights any restrictions of private property rights for common good needs to be justified. The soft approach is in its very initial stages in Poland, but almost unknown in Belarus. In practice there are advantages and disadvantages in both strict and soft integrated planning. The lessons learned in landscape planning in the Baltic Landscape sites may have slightly different implementation possibilities depending on the national premises. In approaching soft integrated planning, the experiences in the Baltic Landscape project show that initiatives taken by local and regional stakeholders with regards to their local landscape in fact represent locally relevant sustainability issues in other local landscapes and also generally. Examples of soft tools, presented in this handbook, should primarily concentrate on obvious questions such risk for flooding and hence on an issue on cooperation along a defined object such as a river. It should be build up step wise, starting from inclusive meeting of stakeholders, identification of key problems, a program for cooperation, exchange of data, and how to coordinate and fund the cooperation work. In later stages an establishment of a landscape governance body and a coordinator can be initiated.

Small private owners and local population: These groups are often defined as the most difficult partners to cooperate with, according to decision makers and planners. Our experience from this project is that this to a noticeable degree depends on limited trust on top-down initiatives. The situation can however change substantially if local trust and cooperation is established between decision-makers and planners on local level as suggested by numerous tools in this handbook. It takes time to gain the trust between partners and a solid base for reasonable and integrated planning in the landscape.

Decision making in integrated planning: To what extent can democracy be applied in landscape planning? And to what extent does expertise have a stronger say? In democratic systems it is well established that parts of municipalities or other self-governing organs have a leading role in landscape planning. Three main questions arose during our project according to integrated landscape planning: 1) How can local representatives be equipped and supported by expertise knowledge so that they can take sound decisions in landscape planning? Some of the discussions on this question concerned the need for better knowledge exchange generally, including the buildup of GIS-support systems. 2) How can local representatives be supported through knowledge about sustainable development and which "body" should carry

the main responsibility concerning sustainable development? Here, some of the discussions concerned the need to establish more direct links to researchers and generally more applied research and action research. Also arguments were put forward on that there should be a sustainability council for a given landscape or that municipalities provide a platform for local representatives, researchers and representatives of state agencies with a mandatory to develop vision of sustainable development and that they are allowed to be responsible for argumentation in decision making process. 3) What role should external experts have in the process, and how should one balance the expert advice role versus local representatives? Generally it was concluded that more attention should be given to the experts' role as knowledge provider for local stakeholders.

Some final recommendations based on the outputs in this handbook

Be aware of the lack of cross-sectorial thinking on landscape scale. The sectorial thinking is between agencies, within agencies and municipals, between private and commonly owned lands and also top-down bottom up. A landscape approach to sustainability requires a broader and more coherent policy, strategy, tactics and planning

Dialogue is a key tool when it comes to landscape planning. A problem needs to be defined and located. A transparent process need to be conducted, with as many relevant stakeholder's presents as possible. This leads to a more holistic understanding of barriers and possibilities for solutions, and at the same time paves the way for reduced conflicts.

Define possible and reasonable geographic borders of the landscape. This is needed to frame the situation and make the focal issue visible and allows a constructive dialogue. This is also needed to realize the many different and sometimes not comparable vision of what is the landscape, each vision as valid since a landscape for many belongs to all.

There are many different measures, tools and approaches available and tested that can be used to move the landscape sustainability issues forwards. Here, the experienced gained in the Baltic Landscape sites offers a platform of knowledge.

Chapter 4

READ MORE

Saxnäs village and surrounding landscape (Photo: Vilhelmina Municipality)

To get a more in-depth understanding of how the tools described in in the previous chapters have been developed and applied, the Baltic Landscape project have published a large number of reports that can be accessed and downloaded from the project website:

http://www.skogsstyrelsen.se/en/Projektwebbar/Baltic-Landscape/Documentation/

In addition to the reports listed below, each of the involved Baltic landscapes has their own website (linked to the project website), where more specific and local contact information can be accessed.

Reports

Report No. 42, 2014. Torun Bergman, Henrik Hedenås, Johan Svensson. "Land Use and Ecosystem Services in a Boreal - Alpine Landscape Gradient: Vilhelmina Model Forest."

Report No. 41. Bernard Okonski. "Best practices concerning drainage and water retention in the forest areas. Literature review."

Report No.40, 2014. Maciej Gabka, Emilia Jakubas. "Diagnosis of the environmental conditions in the Natura 2000 area of Welna River Valley with practical recommendations for implementation."

Report No. 38, 2014. Tomasz Jarczyk. "Geographical space management problems in the area of Promotional Forest Complex Lasy Mazurskie, analysis and possible solutions."

Report No.37, 2014. Editor: Johan Svensson, "The Baltic Landscape project - Summary of project experiences.

This report elevates some of the main activities performed by the partner organizations within the Baltic Landscape project. As a reader you will find a palette of relevant approaches to sustainability problems and solutions in a landscape perspective.

Report No.36, 2014. Gun Lidestav and Przemek Majewski. "Eight essays on Forest Governance on Landscape scale".

Report No.35, 2014. Per Angelstam, Johan Törnblom, Erik Dagerman, Robert Axelsson. "Demonstration sites for learning about river restoration and catchment rehabilitation in Bergslagen".

Report No. 34. 2014. Paulina Adamska. "Development of equestrian tourism in Masurian Forest".

Report No.33, 2013. G.V. Dudko. "Data collection and analysis of the territorial segment of the Baltic Landscape Neman: Novogrudok and Korelichi districts."

Report No. 32, 2013. V.I.Kvakin. ”Data collection and analysis of beaver habitats. Their influence on water regime and state of forests.”

Report No.31, 2013. V.V.Stepanchik. ”Data collection and analysis of hydroamelioration influence on water regime.”

Report No.30, 2013. E.I.Sharang, ”Data collection and analysis of land hydroamelioration results and its influence of forest resources.”

Report No. 29, 2013, L.N. Rozhkov. ”Analysis of state and use of wetland forests.”

Report No. 28, 2013. V.Kravsovsky, N.Karaban, M.Zubko. ”Analysis of the state of forest resources and proposals for their management”

Report No. 27. 2014. Marcus Hedblom, Henrik Hedenås, Anna Allard, Johan Svensson and Leif Jougda. ”Methods and possibilities to apply NILS data for applied and integrated landscape planning: Reindeer Husbandry Plans, UAV low altitude aerial photos and dialogue.” (In Swedish)

Report No. 26. 2014. Marcus Hedblom, Gun Lidestav, Per Samuelsson-Sundin, Eugene Lopatin. ”Similarities and dissimilarities in Nordic applied forest landscape planning systems: Suggested data compilation and methods for integrated landscape planning in Vilhelmina MF, Helge River BL and Ilomantsi MF.” (In English)

Report No. 25. Eugene Lopatin, Alpo Hassinen, May 2014. ”Application of unmanned aerial vehicles (UAV) for landscape inventory.”

Report No. 24.2014. Hanna Vestman. ”Renbruksplaner - från tanke till verklighet./ Reindeer Husbandry Plans-From Vision to Reality” (pdf). (In Swedish)

Report No. 23. Per Angelstam, Johan Törnblom, Erik Degerman, Kjell Andersson, Robert Axelsson, Marine Elbakidze. ” Integrated governance and management for river basins: learning based on gap analyses of social and ecological systems at multiple scales”.

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Fact sheets

Fact sheet - Vilhelmina Model Forest: Sustainable forest management

Reference landscapes and performance targets for good ecological status of river basins

In planning on landscape scale and perspectives there are presently large gaps between international conventions and on the ground implementations. With this handbook, the Baltic Landscape project aim to share some major experiences and knowledge gained during the years 2012-2015 to support stakeholder cooperation, integrated planning, and sustainable landscape management. The first part of the handbook provides an overall project context, introducing the concepts of ”landscape“, ”sustainable forest management“, the European Landscape Convention and the Water Framework Directive, whereupon the importance of integrated and participatory approaches is emphasized. The second part of the handbook includes 29 different tools and approaches that have been used in one or more of the seven landscape sites.

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