

Nature Conservation as a Base for Sustainable Regional Development

An investigation of Swedish successful projects

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Anna Törner, Lund, 2003

Abstract

Protected areas serve the purposes of protecting nature and providing possibilities for outdoor recreation. In an area with natural assets, protected or not, different interests are interacting.

The aim of this study was to investigate whether nature conservation could enhance environmental benefits as well as provide economic and social benefits to a region. Another aim was to investigate the determinant factors important for the success of projects related to nature conservation in Sweden. Seven successful projects were selected and assessed using a qualitative methodology involving 37 semi-structured interviews with different stakeholders.

The study concluded that nature conservation could contribute to sustainable regional development, i.e. by providing positive economic, environmental and social effects to a region. The identified determinant factors for the success of projects related to nature conservation were local support, networks, knowledge development, tourism strategies, commitment of external and internal actors, a holistic vision, potential existence of conflicts, new working methods, enthusiastic project leaders, visible results, national/international recognition and funding.

Further research and recommendations for decision-makers concerning the practical utilisation of the results were suggested, e.g. an advisory forum where best practices could be benchmarked.

Executive Summary

One way to protect natural assets from human impacts is to establish protected areas. The number of protected areas has increased significantly during the last decades. Although protected areas are primarily established to protect nature they also aim to provide possibilities for out-door recreation. The double purpose of protected areas is thus a conflict between the protection of nature from human impacts and the protection of nature for human use. In Sweden, people have a long tradition of the *right of common access*, which implies freedom to visit nature with the obligation not to destroy or disturb the nature. When establishing protected areas there are restrictions of what people are allowed to do, which might lead to less acceptance towards protected areas.

The environment may be valued economically or for its environmental and social functions. These values influence the interests and interactions of different stakeholders. If stakeholders' interests are largely conflicting, a deadlock situation may occur, resulting in little or no development in the region. It might thus be difficult for a nature conservation initiative to provide economic, environmental and social benefits in this situation. On the other hand, if stakeholders' interests are largely mutual, the chances of attaining sustainable regional development increase significantly.

Nature conservation is considered as one activity, which takes place in protected or non-protected areas, with the aim to conserve natural assets. Projects related to nature conservation aim to provide environmental benefits. The focus in previous research has mainly been on how protected areas might improve the environmental dimension of sustainable development. This thesis has taken a different perspective however, by addressing how initiatives, such as projects related to nature conservation, could provide not only environmental benefits but also economic and social benefits to a region. An added interesting perspective was given by the Swedish circumstances, which are specific due to the *right of common access*.

The aim of this study was two-fold; first, to investigate if nature conservation could enhance sustainable regional development and secondly, to identify the determinants of successful projects related to nature conservation.

In order to understand and describe nature conservation in a Swedish context a qualitative methodology was chosen. Seven selected cases, mentioned as successful projects in Swedish literature, were studied. Background data concerning determinant factors for successful projects related to nature conservation was obtained from a literature study, from which emerged a pattern that was subsequently used to construct a descriptive model of interlinking concepts. Empirical data was obtained from 37 semi-structured interviews with different stakeholders from the selected cases. The aim of these interviews was to obtain information about the projects and to investigate which factors would influence their success. The seven cases investigated included:

1. Vasikkavuoma hay-mire
2. Emå river project
3. Kungsör municipality
4. The rich wetlands of Kristianstad (Kristianstad Vattenrike)
5. Grövelsjön mountain lodge
6. Vindel River's natural pastures

7. Fulufjället National Park.

The key stakeholders targeted were project management, authorities and local inhabitants.

The findings show that projects related to nature conservation could actually enhance environmental benefits as well as economic and social positive effects in a region. The conclusion of this thesis indicates that projects related to nature conservation could contribute to all three dimensions of the sustainability concept. An interesting finding is that projects related to nature conservation often lead to further protection of nature in the form of new protected areas.

The results of the investigation into the determinants of successful nature conservation projects revealed that eight of the ten factors identified in the literature were significant for the selected cases. Four other factors were identified from the interviews, implying that the twelve factors listed below are determinants for the success of projects related to nature conservation:

- Local support
- Network of key stakeholders
- Knowledge development
- Tourism strategies
- Commitment of external and internal actors
- A holistic vision
- Potential existence of conflicts
- New working methods or new techniques
- Local enthusiasts/project leaders
- Visible results
- National/international recognition
- Funding

This investigation concerns projects related to nature conservation in Sweden but the results might also be applicable in other Nordic countries, where nature conservation has a long tradition and *the right of common access* exists. The geographical spread of projects investigated implies that the results have relevance for projects both in northern and southern parts of Sweden as well as in rural and urban areas.

Based on these findings, it is recommended that decision-makers and managers of projects consider the factors here identified when planning for and implementing nature conservation projects and that they create an advisory forum, where stakeholders related to projects can exchange ideas. Further research in this field should be complemented by including users; by incorporating both successful and failed projects; and by studying how much and what type of funding is necessary for the success of these types of projects. The use of quantitative methods like surveys, in order to measure sustainability effects, could also give additional knowledge.

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1. Introduction

1.1 Background

The number of protected areas has increased significantly during the last decades due to increased awareness about declining biodiversity (i.e. the variability of life in all its forms, levels and combinations) and environmental threats in sensitive areas. Threats could be of local character, e.g. infrastructure development and increasing demands for land and water resources, as well as of global character, e.g. air pollution and climate change. Areas with biodiversity value in Sweden, as in many other countries, can be protected by declaring them as national parks, nature reserves, nature management areas or wildlife sanctuaries. Protected areas are established to protect the environment but they also aim at providing possibilities for people to enjoy nature. The double purposes are therefore opposing between the protection of areas from human impacts and the protection of areas for human use, which in principal always generates impacts on nature.¹

Natural assets in protected areas are often attracting visitors, which might create opportunities of new employment both for managing the area, e.g. by maintaining visitor tracks, as well as for surrounding activities, e.g. guiding tourists. Careful use of protected areas could create economic, environmental and social benefits and thus contribute to sustainable regional development.

1.1.1 Use versus protection

In Sweden, approximately 10 % of the land is protected due to measures taken by the Swedish Government.² As the first Parliament in Europe, the Swedish *Riksdag* authorized the formation of ten national parks in 1909.³ The two principal reasons for protection in Sweden are to secure the longevity of species (flora and fauna) and to promote out-door life.⁴

Nordic countries differ from their international counterparts by having *the right of common access*, a law that gives people the right to use nature even in protected areas, but with certain obligations. The tradition of *the right of common access* started as early as in the Middle Ages, but was not institutionalised until the 1940s and incorporated in the Swedish Constitution in 1994.⁵ The right of common access is described in the law of *Environmental Code*, chapter 7, paragraph 1 as [translation from Swedish]: *Each and everyone that uses the right of common access or otherwise stays in nature should show due consideration and carefulness*. One consequence of this

¹ Sandell, K. (2001). *Några aspekter på svenska reservatdilemmans förutsättningar. Arbetsrapport om allemansrätt, naturvård och landskapsperspektiv inför fördjupade studier i forskningsprogrammet FjällMistra om fjälllandskapets tillgänglighet*. Karlstad: Karlstads universitet, p. 6.

² Statistics Sweden. (2001c). *Summary protected nature*. http://www.scb.se/sm/MI41SM0201_inEnglish.asp [2003, September 10].

³ Tilton, T. (1998). *What is the future of Swedish national parks?* http://www.sweden.se/templates/Article_2265.asp [2003, September 10].

⁴ Statistics Sweden. (2001a). *Main reasons for protection*. http://www.scb.se/sm/MI41SM0201_inEnglish.asp [2003, September 10].

⁵ Swedish Environmental Protection Agency. (2003). *Allemansrätten*. <http://www.naturvardsverket.se> [2003, September 10].

tradition is that people might have reservations about protection of nature since it restricts their activities.

Natural assets as public goods

According to economic theory, natural assets are “owned” by no one and thus considered as *public goods*. Since nobody owns or can claim rights on them, they cannot be traded. The marginal cost of using natural assets is zero, i.e. when the use increases it does not involve any extra cost for the user since that person does not have to buy the assets from an initial owner. People can use natural assets with no constraints, which could lead to unregulated use.

Over consumption is closely connected to *the tragedy of the commons*, a concept founded by the American biologist Garrett Hardin, to describe and explain the abusive exploitation of natural assets induced by the absence of positive or punitive incentives. Consequently, users of a common resource stock have little incentive for the conservation of that resource. Hardin uses the example of a common grazing ground in which each cattle owner will tend to add to his herd as long as doing so increases his income. The problem arises when all herders do the same, leading to over consumption of the natural resource, land degradation and decreasing economic profit of all herders.⁶ In general, people use natural resources with focus on their individual benefits, implying their aggregated use could lead to over consumption.

Lack of ownership or of punitive measures on public land might thus lead to over consumption. Public areas and natural assets (with no official owner) need protection, otherwise they could be irreversibly destroyed or damaged by the over use by people and/or the negative *external effects* of their activities.

Interactions of stakeholders of nature protection

In order to understand how protection of nature could be a base for sustainable regional development there is a need to investigate the dynamics between stakeholders' interests and how projects could contribute to sustainable development. The stakeholders are regional or national authorities, local inhabitants and visitors. These stakeholders and their power structures and dynamics are influencing the planning and the use of an area. If stakeholders' interests are opposing to a large extent there could be a deadlock situation with no or only little development.

Preliminary investigations and observations generated the initial assumption that economic, social and environmental interests are conflicting in protected areas but if mutual interests are found, synergy effects could be created thus leading to sustainable regional development. However, experience shows that some initiatives in protected areas aiming at all three dimensions in sustainable regional development have difficulties to attend these goals. One objective of the thesis emerged as the need to identify what makes initiatives in protected areas successful.

⁶ Clark, C.W. (2001). Economic biases against sustainable development. In R. Costanza, *Ecological Economics: The Science and Management of Sustainability*. New York: Columbia University Press, p. 321.

1.1.2 Nature protection in relation to sustainable regional development

Earlier studies have shown how protected areas, with focus on the area itself, could generate environmental benefits, which is one dimension of sustainable development.⁷ However, few research investigations are done so far to demonstrate how nature conservation could generate all three dimensions of sustainable development. Another emerged objective is therefore to investigate how projects related to nature conservation could generate not only environmental benefits but also economic and social ones.

1.1.3 Swedish circumstances of nature protection

Sweden has large areas of protected nature per capita compared to other European countries.⁸ The total share in Sweden is however less than in other countries, which, in spite of greater population density, have protected a greater percentage of their territories. Due to its size Sweden has a great possibility to enlarge the areas protected by law.

Specific circumstances of nature protection in Sweden, e.g. a long tradition of nature protection and *the right of common access*, was another argument for carrying out a thorough investigation of how nature conservation could lead to sustainable regional development. A few projects of nature conservation are mentioned as “good” or “successful” examples, but these have been “nominated” by various authorities, e.g. municipalities and county administrative boards, implying that no independent analysis of their “successfulness” have been done. Therefore this study developed an independent way of evaluating projects.

1.2 Problem definition

People in Sweden are accustomed to being allowed to enjoy nature freely, due to the long tradition of *the right of common access*. Environmental protection legislation is limiting people’s traditional free access, which could lead to conflicts between “protection” and “use”. Thus, it can be said that in Sweden, initiatives protecting natural assets come in conflicts not only with economic interests, but also with people’s traditional perception that they can access nature for their enjoyment exclusively. The problem is that stakeholders have different, often opposing, interests in an area with natural assets⁹, which could lead to conflicts decreasing the likeliness of creating synergy effects and consequently sustainable regional development.

1.3 Aims and objectives

The aim of this study is to understand and describe how nature conservation in the Swedish context could contribute to all three, i.e. economic, environmental and social, dimensions of sustainable regional development. The main research questions are:

⁷ IUCN. (1999). Parks for biodiversity – policy guidance based on experience in ACP countries; Shafer, Craig L. (1999). National park and reserve planning to protect biological diversity: Some basic elements. *Landscape and Urban Planning*, 44; and Nilsson, C. and Götmark, F. (1992). Protected areas in Sweden: Is natural variety adequately represented? *Conservation Biology*, 6.

⁸ Statistics Sweden. (2001b). *Protected nature in some countries 1999*. http://www.scb.se/sm/MI41SM0201_tabeller28.asp [2003, September 10].

⁹ For Swedish readers: “Natural assets” is understood as natural resources in this thesis. “Nature values” however are assets with values. These both terms are often referred to as “naturvärden” in Swedish.

- **Does nature conservation enhance sustainable regional development in all three, i.e. economic, environmental and social, dimensions?**
- **What factors determine the success of projects related to nature conservation in Sweden?**

In order to answer the main questions the following research objectives were attended to during the study:

1. To identify stakeholders' interests in using natural assets and their potential interactions
2. To identify determinant factors influencing the success of projects related to nature conservation
3. To investigate selected Swedish projects related to nature conservation and examine their direct economic, environmental and social positive contributions to sustainable regional development
4. To identify the most important factors, which determined the success of the selected projects

This descriptive and exploratory study will provide thorough knowledge of the investigated cases and the results could indicate valuable understanding for other existing Swedish projects (and eventually in a Nordic context) as well as for future ones. These results will be particularly useful for the Swedish EPA and regional decision-makers when establishing projects related to nature conservation.

1.4 Working definitions

Nature conservation is understood as an action that aims at conserving natural assets. The main aim of conservation is to create conditions in which populations of flora and fauna are self-sustaining.¹⁰ Nature conservation is considered as one action of the broader goal of nature protection, which is often related to protected areas.

A project generally has specific goals, time limits and concerns a particular area. A project related to nature conservation has the goal of conserving nature per definition. The project could however have other goals, which is not related to the environment. A project could start at any time, i.e. either when somebody takes an initiative to conserve unique natural assets or when the area is already protected. The geographical boundaries could vary as seen in Figure 1. The dashed lines show how small/large the projects are and what types, i.e. protected or non-protected, of areas are concerned.

¹⁰ Widera, B. (2001). *Environmental values as development and marketing factor: A case study of "Environmental strategy" of the municipality of Kungsör*. Stockholm: Royal Institute of Technology, p. 14.

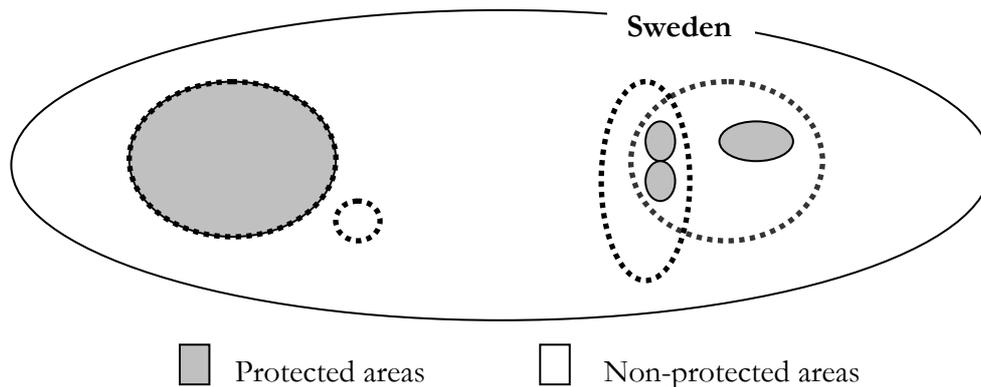


Figure 1: Differences of projects related to nature conservation

A **project related to nature conservation** is understood as *an initiative with the purpose of conserving natural assets*.

Regional development is problematic to characterise due to different definitions of geographical boundaries. EU defines a region as the largest territorial/administrative unit within a national state, with defined borders, implying that the 21 Swedish counties are regions.¹¹ Figure 1 shows that projects could vary in size to a large extent, which is why they have to be evaluated from their own context. **Regions** will thus be considered as *the surrounding areas of a project*. “Development” generally refers to economic growth, i.e. one dimension of sustainability.

In 1987, the World Commission of Environment and Development defined **sustainable development** in the Brundtland report as “*the development that meets the needs of the present without compromising the ability of future generations to meet their own needs.*”¹² Sustainable regional development is perceived by the author as creation of economic, environmental and social positive effects to a region.

A project generating these three effects is considered successful. A **successful project** is therefore understood as: “*an initiative with the purpose of conserving natural assets, which generates economic, environmental and social positive effects.*” Important to note is that the selected projects did often not become successful immediately and some were rather close to failure before an action or measure changed the negative development.

Protected areas are defined by the World Conservation Union (IUCN) as: “*An area of land and/or sea especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means.*”¹³ This definition is often referred to internationally and it will also be used in this thesis.

Stakeholders have different interests in both protected areas and projects related to nature conservation. The interactions between stakeholders are initiated by their different interests

¹¹ Lindeborg, L. (1994). *Regioner är framtiden!* <http://www.aftonbladet.se/kultur/9.94/ART71.html> [2003, September 10].

¹² WCED. (1987). *Our common future*. Oxford: Oxford University Press, p. 8.

¹³ IUCN. (n.d.). *About protected areas*. <http://www.iucn.org/themes/wcpa/wcpa/protectedareas.htm> [2003, September 10].

in using natural assets for different purposes. One person, e.g. an entrepreneur, might want to harvest natural resources, while another, e.g. an authority, has an interest in protecting the nature. Stakeholders are here defined as persons or groups that claim ownership, rights, or interests in an area or a project and its past, present and future activities.¹⁴ Stakeholders could be divided into primary and secondary stakeholders. A primary stakeholder is one without whose continuing participation the project cannot survive.¹⁵ A secondary stakeholder influences, or is influenced, by the project, but is not essential for its survival.¹⁶ Stakeholders are divided into different stakeholder groups. The main stakeholder groups investigated in this thesis are project management and authorities.

Stakeholders' interactions could lead to conflicts or synergy effects. A simple definition of conflict is etymological: the word conflict comes from the Latin word *conflictus*, which means collision, opposition – a struggle between different forces.¹⁷ A **conflict** is thus defined as: “*an opposition of different interests*”.¹⁸ It could therefore be seen as a form of interaction. However, if conflicts are solved or mutual interests are attained, they could lead to synergy effects, which are here defined as: “*the working together of two interests to produce an effect greater than the sum of their individual effects.*” Both these definitions will be used when describing the complex interactions of stakeholders in protected areas and in projects related to nature conservation.

1.5 Methodology

1.5.1 Qualitative inductive research

Because the aim of this study was to understand projects related to nature conservation, a qualitative methodology was used. In order to provide insights of the problem and to gain understanding about nature conservation in the Swedish context, stakeholders were asked about their opinions concerning the development of projects related to nature conservation. The inductive research aimed at identifying and developing, by observations of a small number of selected cases, indications of how and why projects related to nature conservation become successful.

1.5.2 Literature study

The first academic topics investigated were protection of nature, protected areas and nature conservation in order to establish their internal relationships as well as to define projects related to nature conservation. Background about the development of protected areas in both an international and Swedish context was needed in order to understand how the stakeholders' interests interact, which was the next explored academic topic. Stakeholders' interests relate to economic, environmental and social values on nature. In order to investigate these values it was also needed to review the literature on economic theory and

¹⁴ Clarkson, M.B.E. (1995). A stakeholder framework for analysing and evaluating corporate social performance. *Academy of management review*, 20, p. 106.

¹⁵ Clarkson, M.B.E. (1995). A stakeholder framework for analysing and evaluating corporate social performance, p. 106.

¹⁶ Clarkson, M.B.E. (1995). A stakeholder framework for analysing and evaluating corporate social performance, p. 107.

¹⁷ Lennéer Axelsson B. & Thylefors, I. (1996). Om konflikter- hemma och på jobbet. Quoted in Hallgren, L. (2003). *I djupet av ett vattendrag: Om konflikt och sambverkan vid naturresurs hantering*, p. 6

¹⁸ Lennéer Axelsson B. & Thylefors I. (1996). Om konflikter- hemma och på jobbet. Quoted in Hallgren, L. (2003). *I djupet av ett vattendrag: Om konflikt och sambverkan vid naturresurs hantering*, p. 6

economic values. Connected to values is the literature on tourism and ecotourism in protected areas, which also have been investigated. Another topic reviewed was the conflicts in protected areas; why and how they arise. Determinant factors for projects related to nature protection was another important topic to look into. From the literature study, a pattern, i.e. a descriptive model, emerged illustrating how concepts interlink (chapter 7).

1.5.3 Sources of data collection

The primary sources used are interviews with relevant stakeholders of investigated cases. The stakeholders are listed in Table 1. The secondary sources used are articles, web pages of national and international organisations, e.g. Swedish EPA and World Conservation Union (IUCN), books on economic theories, e.g. *Ecological Economics*, and various reports, e.g. annual reports of the projects.

The following information sources were used for the selection of the investigated cases: the Swedish Institute for Ecological Sustainability, the Swedish EPA, the Swedish Association of Local Authorities, the Swedish National Rural Development Agency, the Federation of Swedish Farmers, Nature's Best – Approved Swedish Ecotourism, WWF – Protected Area Network Parks, the European Tourism Research Institute (ETOUR) and the Association for Agenda 21 and Sustainable Development in Sweden. These sources, discussed with both representatives of the Swedish EPA and the IIIIEE, were considered credible and gave information about 44 projects related to nature conservation.

1.5.4 Selection of cases

The selection of cases for detailed investigation started by collecting information of projects mentioned under positive circumstances as a good example (meaning it has attained relevant objectives successfully).

The criteria used by the author in order to select a manageable number of projects for deeper investigation from the initial 44 cases were:

- if the project has had special recognition from relevant organisations, authorities etc (criterion one)
- if the project has been mentioned in positive terms at least twice in the above-listed sources (criterion two)

If the project has gained recognition among credible actors, it could be considered as more successful than projects not recognized. The same argument applies to the second criterion; it is assumable that if projects are mentioned in positive terms in several public sources, they are more likely to be successful projects than if only mentioned once.

Projects fulfilling the two criteria were chosen for further description and investigation. Applying this selection process, eight cases were identified. One of these was not further investigated due to practical reasons. The remaining seven projects, listed below, vary significantly in size, which was considered as a benefit when expanding the range of investigation. The projects and their sources are found in Appendix 2: Table of selected projects.

1. Vasikkavuoma hay-mire
2. Emå river project
3. Kungsör Municipality
4. The rich wetlands of Kristianstad (Kristianstad Vattenrike)
5. Grövelsjön mountain lodge
6. Vindel River's natural pastures
7. Fulufjället National Park

1.5.5 Interviews

Semi-structured interviews were conducted in order to investigate the selected projects. Interviewing is a method capable of producing data of great depth and with which most participants feel comfortable, which is important in order to obtain as much information as possible.¹⁹ The aim of the interviews was to obtain information about the effects of the projects and to see which factors would influence their success and why.

It was imperative to interview persons holding different interests in projects related to nature conservation, which would give a diversified picture of the projects' success. This was seen as especially important in cases, in which there are or had been major conflicts. In a few cases, there are less people interviewed mainly depending on that some projects are smaller than others but also the availability of persons to be interviewed.

The primary stakeholder groups chosen for collecting data were the project management (PM), entrepreneurs (E), users (U), landowners (L), local associations (LA) and authorities (A) since they influence the projects to the largest extent (see Table 1). The project leaders were seen as key interviewees since they are likely to know the most about the projects due to their responsibility. They are also the ones deciding about the development of the projects together with regional/national authorities.

The rich wetlands of Kristianstad was the first project to be investigated due to practical reasons (availability of key persons) and was seen as a pilot interview, after which modifications to the questionnaire were done in order to better suit the development of the purpose of this thesis. The interviews with the administration of the rich wetlands of Kristianstad were made on site with the author including staff from the Swedish EPA and the IIIEE. Due to the changed structure of questionnaire, contact was taken a second time with the project leader of the rich wetlands of Kristianstad in order to complement the first given information.

¹⁹ King, N. (1994). The Qualitative Research Interview. In C. Cassell and G. & Symon, *Qualitative methods in organisational research*, London: Sage, p. 14.

Table 1: Interviews

Project	Interviewees	Stakeholder group
Vasikkavuoma hay-mire	Former project leader Responsible for MEJA Village Development Association Principal cultivator of the hay-mire Initiator of the project Administrator at the county administrative board	PM PM PM L A
Emå river project	Project leader Environmental manager at Kalmar County administration board Member of the municipal council and the board of the Emå project Former chairman of a local nature protection association Chairman of a local nature protection association Swedish EPA	PM A A/PM LA LA A
Kungsör Municipality	Former head ecologists at Kungsör municipality/project leader Nature conservation coordinator Administrative director at Kungsör municipality Labor market department at Kungsör municipality Marketing director at Kungsör municipality	PM PM A/PM A/PM A/PM
The rich wetlands of Kristianstad	Project leader of the Ecomuseum and biosphere candidate office (Interviewed twice) Tourism manager in Kristianstad municipality Information manager of the Ecomuseum, responsible for Nature school Nature conservation coordinator Fishing coordinator Entrepreneur in boat sightseeing Farmer, cultivator and landowner	PM A PM PM/A A E L/PM
Grövelsjön mountain lodge	Manager of the mountain lodge	PM
Vindel River's natural pastures	Project leader Administrator at Västerbotten county administrative board Consult working for WWF	PM A PM
Fulufjället National Park	First project leader <i>The Surroundings of Fulufjället</i> Second project leader <i>The Surroundings of Fulufjället</i> Responsible for Naturrum and PAN parks Swedish EPA Chairman of Fulufjällsringen, an association of entrepreneurs Author of " <i>Boken om Fulufjället</i> ", nature conservator Nature conservation director at Dalarna County administrative board Chairman of local hunting association Mountain administration at the Dalarna County administrative board	PM PM A/PM A E PM A LA A/PM

The abbreviations stand for: project management (PM), entrepreneurs (E), users (U), landowners (L), local associations (LA) and authorities (A).

The interviews, carried out during June 4 to August 27, 2003, were in five cases made by telephone and in two cases on site (the rich wetlands of Kristianstad and Kungsör municipality).

The questionnaires were sent a couple of days beforehand to the interviewees in order to secure the completeness of answers. The questionnaire for the project leaders was more extensive compared to the ones sent to other stakeholders, e.g. entrepreneurs, users, landowners and authorities, which were supposed to know less about the projects. The questionnaires are found in Appendix 1: Questionnaires.

All interviews were transcribed immediately afterwards in order to capture all information. A draft of the thesis was sent to the project leaders in order for them to be able to correct irregularities in the interview material or in the facts about the projects.

1.6 Scope and limitations

The timetable for the thesis was 17 weeks (May 21 to September 17, 2003).

1.6.1 Length of projects

Generally projects are time bound, which brings up the question what results can be assessed. The projects investigated in this thesis are relatively recent projects (most of them are carried out in the 1990s) but some have also become more of a permanent character, i.e. that their activities have lasted even when the project has officially ended (which is often determined by the termination of financial means).

1.6.2 Financing of projects

Even if funding might be an important factor for the success of a project, a full financial investigation of the projects will not be given here. The financial background of a project is often very complex with many sponsors involved. However, the costs and revenues of each project will be briefly discussed with the aim to give the reader an understanding of the financial implications of these types of projects.

1.6.3 Protected areas

The focus in this thesis will be put on national parks and nature reserves because these are the two most common types of nature protection in Sweden implying that the results could be more widely applied. In addition, other forms of protection are also considered, e.g. *biosphere reserve areas* as well as *Natura 2000* since they have influenced the development of certain regions where projects related to nature conservation have been carried out.

Nature conservation is mainly carried out on land, which is why land biomes were in focus, thus leaving out of scope strictly marine (i.e. open seas) protected areas. However, protection related to rivers is included, since some projects are connected to this type of nature, e.g. the rich wetlands of Kristianstad and the Emå river project.

1.6.4 Interviewed stakeholders

Nature conservation brings together numerous stakeholders. One stakeholder group, which has not been interviewed here are the users, e.g. tourists and local inhabitants, in the areas where the nature conservation is carried out. However, many of the persons interviewed live in this area or nearby but they have then been interviewed for their involvement in the project from other perspectives, e.g. a local inhabitant could be the project leader or working in the responsible regional authority.

1.6.5 Successful projects

Only projects that were mentioned in “positive” circumstances or already mentioned as “good examples” have been chosen as cases for this study. Projects considered as failures were thus not included in the study. Important to note is that the selected projects often did not become successful right away and some were rather close to failure before an action or measure changed the negative development.

1.6.6 Direct effects of projects

A project related to nature conservation could generate both direct and indirect effects. The former are results that have clear links to the project while the latter are results that might have been caused by the project but where the links are more difficult to establish. The focus of this thesis was put on the direct effects that projects related to nature conservation create. Indirect effects will not be investigated. Some indirect effects were briefly described since information about them was provided by the interviewees. The reasons for leaving out indirect effects in the investigation are the difficulties to establish secured links between indirect effects and the project.

1.6.7 Geographical spread

The focus of the thesis is the Swedish context but the results could be valid for other Nordic countries. The projects’ locations are showed in the map in Appendix 4: Geographical spreading of projects.

1.7 Validity of results

Since the study is of a qualitative character, the research is not about finding absolute truths but to see if the author’s interpretations could be considered credible. The most important choices made by the author were the selection of the projects, interviewees and success factors. Being made according to the author’s knowledge and judgement, these choices introduce an element of subjectivity in the results and their reproducibility to other cases.

Selection of investigated projects was made with the attentiveness of the Swedish EPA. The two criteria used for limiting the large number of initial projects could be questioned as well as the sources where the information about the initial projects were found. The investigation made in this thesis is valid for projects related to nature conservation in Sweden. Other effects or factors might be relevant for other countries. The projects described have a large geographical spread implying that the results are valid for projects both in northern and southern parts of Sweden as well as in rural and urban areas. The focus of this thesis was on successful projects. However, much could be learned from studying projects where things went wrong. With a broader investigation (i.e. including more projects) it would also be

possible to increase the relevance of the factors to a larger extent and thus improve the generalisation of the findings.

The question of accuracy of data gathered was handled by sending a draft to the interviewees (project leaders) to have a quality check of the content. Different numbers of people were interviewed for each project, implying that some projects will be based on more information than others. The choice of interviewees was in many cases dependent on practical reasons, e.g. availability of interviewees, and a fully strategic method could not be used in the selection process. However, certain flexibility was needed since the projects are different and thus have different stakeholders involved.

The identification of determinant factors has been made by the author's best judgement based on existing literature and research. The idea was to choose a few alleged determinant factors, which have already been proved to be important. The question is if there are other factors that are better suited to be included in a study like this. However, the interviewees had the possibility of rejecting every factor and to mention more suitable ones.

1.8 Outline

Protected areas in Sweden are described in chapter 2. Different values of nature are described in chapter 3. Chapter 4 investigates stakeholders' interests and dynamics in protected areas while chapter 5 explains the concept of sustainable regional development. Chapter 6 identifies and discuss determinant factors of success. The descriptive model is presented in chapter 7. The effects and determinant factors of the projects are investigated in chapter 8 and 9. In chapter 10 the conclusions of the results are made and recommendations suggested.

2. Protected areas in Sweden

This chapter describes the development of protected areas in the Swedish context.

Protected areas are often the cornerstones of national and international conservation strategies since they act as refuges for species and ecosystems that cannot survive in intensely used environments.²⁰ Today there are more than 100 000 designated protected areas listed by the UNEP – World Conservation Monitoring Centre, covering almost 13 % of the earth's land surface.²¹ However, important to recognise is that many parks are so-called paper-parks, i.e. they have not been legally established and/or have insufficient management capacity.

As mentioned in the introduction, the World Conservation Union (IUCN) defines a protected area as: “*An area of land and/or sea especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means.*”²²

The World Conservation Union has categorised protected areas by management objective and has identified six distinct categories of protected areas, showed in Table 2.

Table 2: Categories of protected areas

Category	Description
I	<i>Strict Nature Reserve/Wilderness Area:</i> Protected area managed mainly for science of wilderness protection.
II	<i>National Park:</i> Protected area managed mainly for ecosystem protection and recreation.
III	<i>Natural Monument:</i> Protected area managed mainly for conservation of specific natural features.
IV	<i>Habitat/Species Management Area:</i> Protected area managed mainly for conservation through management intervention.
V	<i>Protected Landscape/Seascape:</i> Protected area managed mainly for landscape /seascape protection and recreation.
VI	<i>Managed Resource Protected Area:</i> Protected area managed mainly for the sustainable use of natural ecosystems.

Source: IUCN. (n.d).

Most of the protected areas also serve a range of secondary management objectives, e.g. scientific research, tourism and education etc.²³

²⁰ World Wide Fund for Nature. (n.d.a). *Protected areas position paper*. <http://www.panda.org/downloads/policy/protectedareaspositionpaperwpc2003.pdf> [2003, September 10].

²¹ WWF. (n.d.a).

²² IUCN. (n.d.).

²³ IUCN. (1994). *Guidelines for protected areas management categories*. Gland: IUCN, p. 7.

The Nordic countries have large areas of protected nature per capita compared to other European countries.²⁴ Per 1000 inhabitants, Denmark has 260 ha (i.e. 10 000 m²) protected areas, Finland 362 ha and Sweden 411 ha.²⁵ If, on the other hand, the protected nature as a share of total area is considered, many other European countries have protected a greater percentage of their territories, in spite of greater population density.²⁶ Due to its size, Sweden has a great possibility to enlarge the areas protected by law.

2.1 History

The Swedish Riksdag authorized the formation of ten national parks in 1909 as the first Parliament in Europe.²⁷ Nine of these national parks were established the following year. This innovative and new type of legislation, both in a Swedish and European context, was part of a larger nature protection package aiming at extending the protection to smaller natural sites. Instead of creating a national park service, the administration of the parks was delegated to the *Royal Swedish Academy of Sciences*. The government did not provide any funding thus letting the Academy work as a voluntary organisation. The Academy focused on scientific issues adopting a passive management strategy of “leaving the new parks to nature”.²⁸ This resulted in changed flora of the parks; weeds taking places over the flowers that the park was suppose to protect.²⁹ It took decades and shifting administrative responsibility to imply a more efficient nature protection strategy. In the 1960s there was a change in the political environmental discussions, i.e. focus was moved from nature protection to nature conservation. Sweden’s rapid industrialisation and exploitation of natural resources lead to the formation of the State Environmental Protection Board in 1963 and its successor, the Swedish Environmental Protection Agency, in 1967, which obtained the formal responsibility for the administration of the natural parks in 1976.³⁰

2.2 Current status

National parks (NP), nature reserves (NR), nature management areas (NMA) and wildlife sanctuaries (WS) encompass 4.09 million hectares of land representing 10% of Sweden's land surface.³¹ Areas with protected status are unevenly distributed in the country. About 81% of the total area of national parks and nature reserves is to be found in the three northernmost counties (in the mountains or along the edge of the mountain chain).³²

There are several reasons for protecting an area but the two main reasons in Sweden are to protect flora and fauna for research purposes and outdoor recreation. A list of main reasons for protection is provided in Appendix 3: Reasons for protection in Sweden.

²⁴ Statistics Sweden. (2001b).

²⁵ Statistics Sweden. (2001b).

²⁶ Statistics Sweden. (2001c).

²⁷ Tilton, T. (1998).

²⁸ Tilton, T. (1998).

²⁹ Tilton, T. (1998).

³⁰ Tilton, T. (1998).

³¹ Statistics Sweden. (2001c).

³² Statistics Sweden. (2001c).

Coniferous forest is the predominant type of nature found in national parks, nature reserves and nature management areas. Deciduous forest, mixed forest, mires, heaths, meadows and shrub land are also well represented. Today, seven marine reserves have been established.³³ Sweden also has one National City Park, in the vicinity of Stockholm, but others are in the process of being created.

National parks and nature reserves are focussed on in this thesis since they are the most common forms of protection. The area protected as nature reserves is much larger than areas protected as national parks.

National parks: There are 28 national parks in Sweden today. The national parks have tailor-made regulations, i.e. what is allowed to do vary. The main rule is that it is generally forbidden to disturb or destroy nature. However, this rule applies in all Swedish nature according to *the right of common access*. In several parks it is forbidden to light a fire, camp or have dogs unleashed. Stones and plants are not to be collected but it is allowed to pick mushrooms and berries. National parks have an almost full protection from exploitation.³⁴

Nature reserves: The *Act on the Management of Natural Resources* instituted in 1964 made it possible to establish nature reserves. Today, this form of protection is most commonly used in Sweden. Nature reserves imply small or large restrictions of use since each nature reserve has its own tailor-made regulations. The purpose is to protect biodiversity; to conserve, maintain and protect valuable nature environments; to provide areas for outdoor life as well as to protect, restore or create environment for protected species.³⁵ The regulations, i.e. what is allowed to do in the area, depend to a large extent on the purposes of the nature reserve. In some reserves economic use of nature is forbidden while others, which have the primary purpose of outdoor recreation, permit agriculture and forestry.³⁶

Other forms of protection are nature conservation areas, which are no longer possible to establish since the *Environmental Code* came into force. Old nature conservation areas are thus now considered as nature reserves. The aim of wildlife sanctuaries is to protect rare or sensitive flora and fauna but normally there are no restrictions concerning cultivating and using the land. There are also cultural reserves, which aims to conserve landscapes with unique cultural aspects.

2.3 Legislation

The Swedish EPA, county administrative boards and municipalities play important roles in promoting and conserving protected areas both in implementing and monitoring legislation as well as funding of different projects within these areas. The development of national parks and nature reserves are also depending on the political agenda and its priorities.

The central environmental legislation in Sweden is collected under the *Environmental Code* (Miljöbalken), which came into force on 1 January 1999. The *Environmental Code* is

³³ Statistics Sweden. (2001c).

³⁴ Swedish Environmental Protection Agency. (2003e). *Skyddad natur*.
<http://www.naturvardsverket.se/index.php3?main=/dokument/natur/natur.htm> [September 10].

³⁵ Swedish EPA. (2003e).

³⁶ Swedish EPA. (2003e).

summarising regulations from previous laws, of which one was the main legislative provision for nature protection (the *Act on the Management of Natural Resources*).³⁷ The *Environmental Code* has a general validity, which means it is valid in correlation with other legislation unless something else applies. The *Environmental Code* includes some novelties such as general rules of consideration and norms for environmental quality. The five cornerstones of the *Environmental Code* are: human health and environment should be protected against impacts; areas with natural and cultural assets should be protected and conserved; biodiversity should be protected; land and water should be used in a sustainable way; and re-use and re-cycling should be promoted.

The second (of a total of seven) section in the *Environmental Code* concerns protection of nature and protection of flora and fauna. The first paragraph describes *the right of common access*, which is a sort of *common law* (sedvanerätt). *The right of common access* does not apply to private plots, parks and cultivated land.

The Swedish EPA decides about the management of the national parks in Sweden and they also propose new parks.³⁸ It is through the decisions of the Swedish Riksdag that state-owned land is allocated for national parks.³⁹ Nature reserves on the other hand include both state-owned land and private property. The county administrative boards or the municipality may decide about the creation of new nature reserves.⁴⁰ The authority then acquires the land area concerned or pays infringement compensation to the landowners. The authority could force the landowner to accept this according to legislation.⁴¹ The same two authorities could previously create nature conservation areas but this possibility was removed with the *Environmental Code*.

2.3.1 International conventions

International conventions, ratified by Sweden, have influence on determining natural initiatives for nature conservation. International conventions are not *per se* binding legal document but the ratifying parties are supposed to incorporate the decisions of the convention into their national legislation in order for the purpose of the convention to be fulfilled.⁴² These conventions are important for this study since some of them directly apply to the selected projects, as in the case of *the Convention of Wetlands* and the rich wetlands of Kristianstad.

The Convention on Biological Diversity, the first global agreement on conservation and sustainable use of biological diversity, was signed at the United Nations Conference on Environment and Development in Rio de Janeiro in 1992. Over 150 governments signed the document at the Rio conference, and since then more than 175 countries have ratified the agreement.⁴³

³⁷ Statistics Sweden. (2001c).

³⁸ Swedish EPA. (2003f). *Sveriges nationalparker*. <http://www.naturvardsverket.se> [2003, September 10].

³⁹ Swedish EPA. (2003f).

⁴⁰ Federation of Swedish Farmers. (2003). *Naturresevat*. http://www.lrf.se/data/internal/data/35/1051186005072/naturresevat_info.doc [2003, September 10].

⁴¹ Federation of Swedish Farmers. (2003).

⁴² Swedish EPA. (2002c). *Litet ABC om internationella miljökonventioner*. <http://www.naturvardsverket.se/index.php3?main=/dokument/lagar/lagar.htm> [2003, September, 10].

⁴³ Secretariat of the Convention on Biological Diversity. (2002). *Convention on Biological Diversity*. <http://www.biodiv.org/doc/publications/guide.asp?id=action> [2003, September 10].

The Convention has three main goals: the conservation of biodiversity; sustainable use of the components of biodiversity; and sharing the benefits arising from the commercial and other utilization of genetic resources in a fair and equitable way.⁴⁴ The Convention is considered as a landmark in international law since it recognizes that the conservation of biological diversity is “a common concern of humankind” and is an integral part of the development process.⁴⁵ The agreement covers all ecosystems, species, and genetic resources and it links traditional conservation efforts to the economic goal of using biological resources in a sustainable way.

The Convention concerning the Protection of the World Cultural and Natural Heritage is an international agreement, signed to date by more than 175 States, which was adopted by the General Conference of UNESCO in 1972.⁴⁶ Its primary mission is to define and conserve the World’s heritage, by identifying sites of outstanding values that should be preserved for all humanity. Sites will then be preserved for future generations and thus become a responsibility shared by the international community as a whole.

The Convention on Wetlands, signed in Ramsar (Iran) in 1971, is an intergovernmental treaty, which provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources. There are presently 136 Contracting Parties to the Convention.⁴⁷ Ramsar is the first global intergovernmental treaty on conservation and wise use of natural resources. Its original emphasis was on the conservation and wise use of wetlands primarily to provide habitat for water birds. However, over the years the Convention has broadened its scope to cover all aspects of wetland conservation and wise use, recognizing wetlands as ecosystems that are important for conservation of biodiversity and for the well being of humans.

2.3.2 Programs for nature conservation

Some other concepts are also important for nature conservation since they influence the national policy. Two of them are discussed briefly here: *Natura 2000* and *biosphere reserves*. These programs are relevant for some of the investigated projects, e.g. the Emå river project is part of the *Natura 2000* network.

Natura 2000 is a cooperation between the member states in the European Union and aims to build a network of valuable nature areas, which are of special concerns from the perspective of nature conservation.⁴⁸ The purpose is to protect certain types of nature, species and habitats, which are of special common interests within the EU. The network is a strong contribution for preserving the biodiversity in Europe. *Natura 2000* has been established with support of the habitats directive and bird directives, which now are incorporated in the Swedish *Environmental Code*. The network will be completed in the year 2004.

⁴⁴ Secretariat of the Convention on Biological Diversity (2002).

⁴⁵ Secretariat of the Convention on Biological Diversity (2002).

⁴⁶ UNESCO World Heritage Centre. (2003). *Defining our heritage*. <http://whc.unesco.org/nwhc/pages/doc/main.htm> [2003, September 10].

⁴⁷ Ramsar Convention Bureau. (2003). *The Ramsar info pack*. http://www.ramsar.org/about_infopack_2c.htm [2003, September 10].

⁴⁸ Swedish Environmental Protection Agency. (2003b). *Natura 2000*. <http://www.naturvardsverket.se/index.php3?main=/dokument/natur/n2000/n2000.html> [2003, September 10].

Biosphere reserves are areas of ecosystems promoting solutions to merge conservation of biodiversity with sustainable use. The areas are internationally recognized, nominated by national governments (remaining under their sovereign jurisdiction). Each *biosphere reserve* is intended to fulfil three basic functions, which are complementary and mutually reinforcing:⁴⁹

- A conservation function - to contribute to the conservation of landscapes, ecosystems, species and genetic variation
- A development function - to foster economic and human development which is socio-culturally and ecologically sustainable
- A logistic function - to provide support for research, monitoring, education and information exchange related to local, national and global issues of conservation and development.

Biosphere reserves are administrated under the United Nations Educational, Scientific and Cultural Organisation (UNESCO).

⁴⁹ UNESCO. (n.d.). *Frequently asked questions about biosphere reserves*. <http://www.unesco.org/mab/nutshell.htm> [2003, September 10].

3. People's values of nature

This chapter presents people's values of nature, i.e. economic, environmental and social values.

The economic, environmental and social values, steering the stakeholders' interests in protected areas, will here be discussed. The framework of *total economic value* includes not only economic values but also environmental and social values. The framework is today a well-established and useful tool for identifying values associated to protected areas.⁵⁰ The *use values* and *non-use values* are the two main parts in the total economic value. Figure 2 shows the division of the *total economic value*.

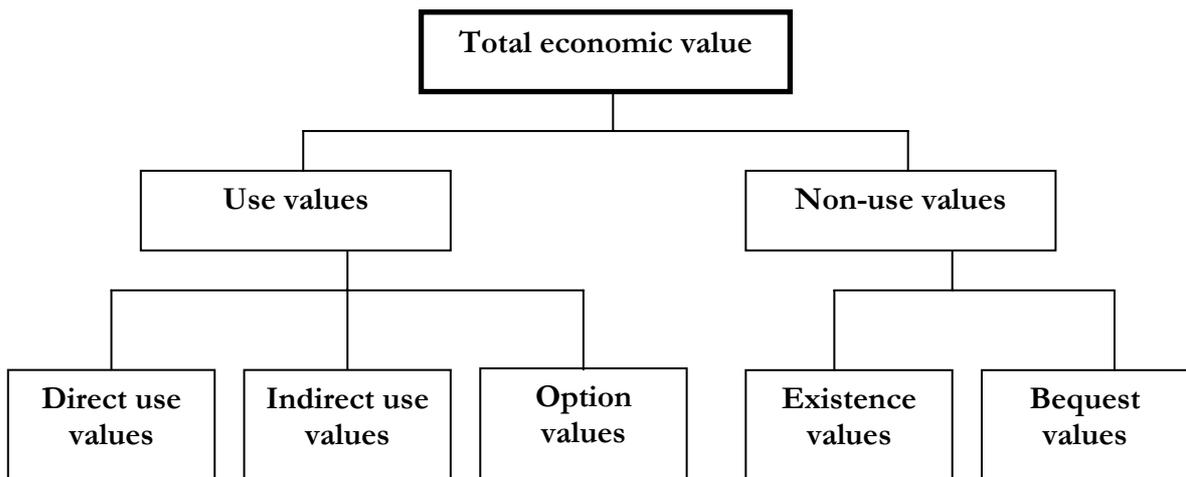


Figure 2: Total economic value

Source: IUCN. (1998), p. 11

The *use values* are the total of the direct and indirect use values and the option values. The *direct use values* are values derived from the direct use of the protected area, e.g. tourism, natural resource harvesting, hunting and education. These activities could be both commercial, i.e. they can be traded with on a market, or non-commercial. The *indirect use values* comprise to a large extent of the protected area's ecological functions, e.g. watershed protection and breeding habitat for certain species. The *option values* concern the option of using the protected area sometime in the future. The *non-use values* are values that are not linked to the use of the area. *Bequest values* relate to the benefits of knowing that others benefit or will benefit from the area, e.g. future generations. The *existence value* relates to the benefit of knowing that the protected area exists even if no one is visiting it or using it. Some examples of different types of values in protected areas are provided in Table 3. As showed, there are also environmental, e.g. biodiversity, and social values, e.g. culture, incorporated in the framework.

⁵⁰ IUCN. (1998). *Economic values of protected areas: Guidelines for protected area managers*. Gland: IUCN, p. 11.

Table 3: Examples of values in protected areas

USE VALUES			NON-USE VALUES	
Direct use values	Indirect use values	Option values	Bequest values	Existence values
Recreation	Ecosystem services	Future information	Use and non-use values for legacy	Biodiversity
Agriculture	Habitats	Future uses		Culture, heritage
Fuel-wood	Flood control			Community values
Education	Nutrient retention			Landscape

Source: IUCN. (1998), p. 13 (adopted from Barbier et al. (1997).)

Important to underline is that the *total economic values* are anthropogenic, i.e. the values are seen from a human perspective. The framework does not for example take into consideration possible intrinsic values of biodiversity.

There are also likely to be conflicting values within the framework, e.g. fuel-wood versus biodiversity (according to the logic that if trees are harvested the biodiversity decreases since the amount of habitats are reduced). Another example is that one stakeholder might value the viewing of a moose in its natural habitat while another values hunting. When calculating the total economic values there are thus problems of missing values, conflicting values and also double-counting of values.⁵¹ This has consequences on people's behaviour.

3.1 Economic values of nature

Nature conservation is one of the most important measures for maintaining biodiversity.⁵² Biodiversity has to a large extent the characteristics of *public good*, which cannot be traded in a market system due to a lack of owner.⁵³ Pure *public goods* are both *nonrival*, i.e. the same unit of good can be consumed by more than one person, and *nonexcludable*, i.e. inability to prevent anyone from consuming the good once it is produced. People could refuse to pay (or understate their willingness to pay) for the good since they know that they can consume it anyway.⁵⁴ Failure in property rights could lead to over consumption. *Public goods* could also imply short time horizons since harvesters of natural resources know that if they do not harvest today, someone else will, leading to rapid harvesting. Thus, stakeholders who

⁵¹ IUCN. (1998). *Economic values of protected areas: Guidelines for protected area managers*. Gland: IUCN, p. 13.

⁵² Kächele, H. and Dabbert, S. (2002). An economic approach for a better understanding of conflicts between farmers and nature conservationists: An application of the decision support system MODAM to the Lower Odra Valley National Park. *Agricultural Systems*, 74, p. 241.

⁵³ Kächele, H. and Dabbert, S. (2002). An economic approach for a better understanding of conflicts between farmers and nature conservationists: An application of the decision support system MODAM to the Lower Odra Valley National Park, p. 243.

⁵⁴ Turner, R. W. (2002). *Market failure and the rationale for national parks*. <http://www.indiana.edu/~econed/pdffiles/fall02/turner.pdf> [2003, September 10].

prioritise economic profit often have short-term goals compared to those who favour social and environmental goals.⁵⁵

A major problem is how to value economically the environment and natural assets and to put a price on the damages made by humans, which is needed in order to avoid over consumption. Human activities always cause positive and negative *external effects*. Values of negative *external effects* are often not taken into consideration when deploying activities, e.g. mining, which means that the actual costs of a project could exceed the benefits. Except from lack of an economic evaluation, legislation necessary for protection and the issue of monitoring and compliance are often insufficient or even missing, which further can increase the harmful use of natural assets.⁵⁶ Conservation of protected areas also has positive *external effects*, e.g. curing wetlands could decrease the eutrophication since they act as natural water treatment plants by taking up fertilising substances from farming activities and counteracting the eutrophication in the seas.⁵⁷ If a project in a protected area aims to cure or restore wetland areas it could provide significant benefits in terms of decreased costs of eutrophication. This is however difficult to measure since many factors and their interactions are involved. This fact is also relevant for other types of ecosystem services, e.g. other eco-cycles.

To value conservation measures and natural assets is important in order to take adequate and appropriate measures or actions in an area. If values are not correctly set, it could lead to over use of natural assets. Since the environment is lacking owner who can defend it or sell it, people might have the careless attitude that it “does not count” and therefore could be used freely. Except from making accurate economic calculations (including costs for negative *external effects*), it is important to put a value of eventual damages of an activity or a project.

In order to establish the optimal use, an evaluation of the *marginal benefit* and *marginal damages* of using a natural asset is necessary (see Figure 3). The marginal benefit of using an environmental asset decreases with the use. Marginal damage rises with the use of the environmental assets, e.g. the more we exploit the environment the less are the marginal damages (but the greater are the total damages). Efficiency will be met where the marginal benefit and marginal damage cross, see figure. In order to know the marginal benefit and the marginal damages and to find an economically optimal use it is necessary to have a value on natural assets. However, the efficiency point, which is connected to economic values, does not have to be optimal for the land itself (which might be better off not used at all).

⁵⁵ Ioannides, D. (2001). Sustainable development and shifting attitudes of tourism stakeholders: Towards a dynamic framework. In S.F. McCool and R.N. Moisey. *Tourism, recreation and sustainability: Linking culture and the environment*, p. 57.

⁵⁶ World Wide Fund for Nature. (n.d.a).

⁵⁷ Swedish Society for Nature Conservation. (n.d.). *Våtmarker: Naturens egna reningsverk*. <http://www.snf.se/verksamhet/djur-natur/vatmarker.htm> [2003, September 10].

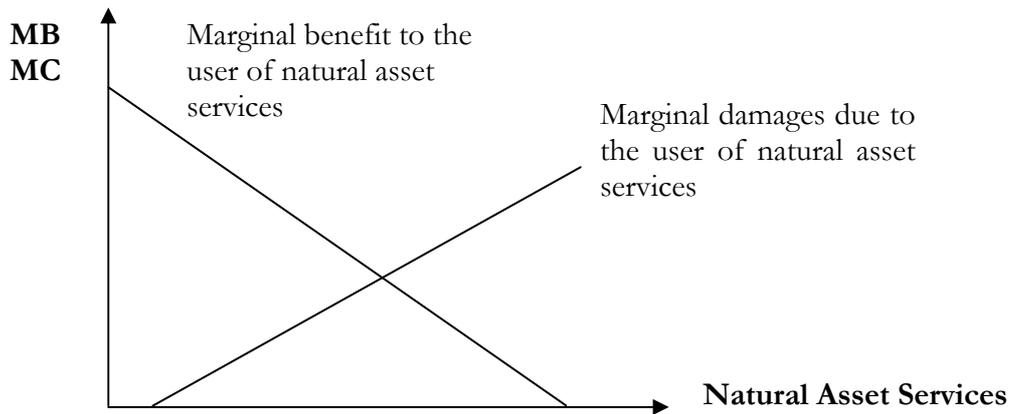


Figure 3: Marginal benefits and marginal damages of environmental asset services

Source: Peskin, H.M. (2001), p. 182.

Economic factors influencing how a resource is used or managed are *discount rates*, *time preferences*, *opportunity costs* and *governmental economic policies*.⁵⁸ *Governmental policies* could also contain other means of control than economic ones. Another factor that could influence the use of natural assets is *ethics*. However, when actors consider the usage of public goods, the economic profit is the factor that mainly influences the decisions (but these might be influenced by discount rates or economic policies).

The *discount rate* is an estimate of a resource's future economic value compared to its present value. In a world with no market failures, the discount rate is equal to the rate of interest or return on capital investment. At a zero discount rate a forest worth 1 million SEK would still be worth 1 million SEK 50 years from now. However, if an annual discount rate is used, e.g. 10% for the simplicity of the calculation (normally a lower percentage is used), the forest will only be worth 10 000 SEK in 50 years. With such a discount rate it makes economic sense to cut down the trees and use the land for more profitable alternatives. High discount rates could therefore be criticised since they encourage rapid exploitation of natural resources.

Time preference concerns how willing one is to postpone some current income for the possibility of increasing that income in the future. The cost from not investing in something that could give a higher yield is called *opportunity cost*. Protection of nature have often low yields on investments, which is why other investments might seem more interesting from an economic point of view, consequently leading to a more extended use of natural resources.

Governmental policies could steer the use of resources by using *taxes* or *subsidies*. The environmental effects of a policy might be more complex than the economic ones. Since many policies are striving for simplicity, they may favour the economic effects over the environmental ones simply because of the latter are more difficult to measure.⁵⁹ Institutions may for example be ignorant of the direct or indirect effects of policies on sustainability since there are many scientific uncertainties about environmental consequences of human actions.

⁵⁸ Miller, T. G. (2002). *Living in the environment: Principles, connections and solutions*. Stamford: Thomson Learning, p. 702.

⁵⁹ Farber, S. (2001). Local and Global Incentives for Sustainability: Failures in Economic Systems. In C. Richard *Ecological Economics – The Science and Management of Sustainability*. Columbia University Press: New York, pp. 344-345.

3.2 Environmental values of nature

Humans depend on nature, which provides us with ecosystem services, e.g. air and water resources, soil formation, waste removal and detoxification, climate control, recycling of vital chemicals, renewable and non-renewable energy sources, etc. Protected areas provide many of the above-mentioned values, e.g. conserving biodiversity, protecting watersheds and coastlines, ameliorating local climates and sequestering carbon.⁶⁰

Conservationists and ecologists believe that the best way to preserve biodiversity is through a worldwide network of reserves, parks, wildlife sanctuaries and other protected areas.⁶¹ They view protected areas as islands of biodiversity that are vital parts of the earth's natural resources that sustain all life and that they are centres of evolution. Some conservation biologists claim that in order to keep the biodiversity from degrading, a minimum of 10 % of the earth's land surface should be strictly protected. Today many reserves are too small to provide any real protection or they receive insufficient protection, which could lead to illegally extraction or exploitation. Many environmentalists argue that the environment has an intrinsic value, i.e. the value of a resource unto itself, regardless of its value to humans; often considered the ethical value of a resource, or the right of the resource to exist.⁶² The environment also has a value for flora and fauna and not only for humans.

3.3 Social values of nature

The social values lie in the right of people to use nature for leisure and relaxation, which is necessary for human health. A particular case is for example shown in *the right of common access*, where people have the right to access nature for outdoor recreation. Like mentioned previously, there could be a conflict between the social value of protecting and using nature. The social values of a protected area could also be seen in the framework for total economic value, mainly in the existence values, e.g. in culture and community values.

One dimension of the social value is how to protect natural assets for future generations, i.e. *inter-generational* equity. The Brundtland definition from the World Commission of Environment and Development 1987 defined sustainable development as “*the development that meets the needs of the present without compromising the ability of future generations to meet their own needs*”.⁶³ The value of natural assets for future generations could be questionable to price since who are we, today's generation, to determine the quantity and/or quality of natural assets. How the rights of future generations are handled today depends on *time preferences*, i.e. how willing one is to postpone some current income for the possibility of increasing that income in the future. In many developing countries people might be forced to (over-) use natural resources in order to survive. It is thus a problematic balance between meeting today's need and the future one. Both *inter-generational* and *intra-generational* considerations are needed but the time frame complicates the values: How far into the future is it appropriate to consider? Who should set the time frame and why?

⁶⁰ IUCN. (1999). *Parks for biodiversity: Policy guidance based on experience in ACP countries*. Gland: IUCN, p. 3.

⁶¹ Miller, T. G. (2002). *Living in the environment: Principles, connections and solutions*, p. 702.

⁶² Environmental Science. (2003). *Interactive glossary definition of 'intrinsic value'*. http://environment.jpup.com/mckinney/interactive_glossary_showterm.cfm?term=intrinsic%20value%20 [2003, September 10].

⁶³ WCED. (1987). *Our common future*, p. 8.

Social values of nature are often considered by people in general as less important than economic values. This could be a consequence of distorted power structures in today's society. Many indigenous people suffer for example when more industrialised countries are benefiting from cheap labour and weak environmental legislations. As with environmental values it could be difficult to put a price on social values, e.g. culture.

4. Stakeholders' interests and dynamics in protected areas

This chapter identifies stakeholders' interests and dynamics in protected areas and in natural assets.

Numerous stakeholders benefit from protected areas, e.g. the public sector, the commercial sector, non-governmental organisations, research institutions and local communities. However, the challenge for protected area managers is to create relationships with stakeholders in order to build the political and economic support needed to maintain the conservation status without degrading its natural assets.⁶⁴ Without for example political acceptance it might be difficult to maintain the quality of the conservation. These relationships could be built by providing benefits to different stakeholders, e.g. allowing tourism in the area that benefits local tourist-entrepreneurs or provide sufficient protection so that the area could be used for research purposes.

Stakeholders have different interests in both protected areas and projects related to nature conservation. Primary stakeholders are necessary for the development of an area (or a project) while secondary stakeholders also influence but are less involved. Stakeholder groups have internal individual stakeholders, e.g. the individual stakeholder "project leader" is included in the stakeholder group "project management". Stakeholder groups could have specific or combined interests, e.g. aiming to generate economic and social benefits in an area. Below follows Figure 4 showing some of the most important stakeholder groups in protected areas.

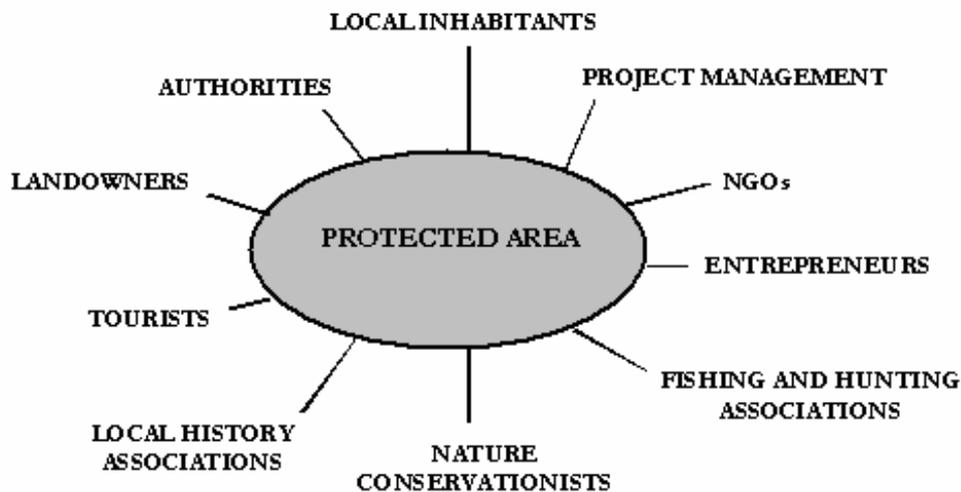


Figure 4: Main stakeholder groups in protected areas

Entrepreneurs have an economic interest in using the natural assets of an area, e.g. harvesting timber or guide tourists. **NGOs** play important roles mainly for the protection of the environment. This is also the main interest of the **nature conservationists**. **Fishing and hunting associations** have an interest in the fauna of the area. They may also protect

⁶⁴ IUCN. (1999). *Parks for biodiversity: Policy guidance based on experience in ACP countries*, p. 3.

traditions and cultural practices in the areas. **Local history associations** are often also protecting the cultural heritage in an area. **Landowners'** concerns are generally to have a rate of return on the land, meaning that they have an economic interest. **Tourists** come to protected areas to experience scenery and beautiful nature.

In this thesis focus will be put on three main stakeholder groups, i.e. **project management**, **local inhabitants** and **authorities** (see Figure 5). The reason for focusing on these three stakeholder groups is because of their duties and involvement in initiatives of nature conservation. The project management (with the project leader as the main individual stakeholder) is assumed to know the most about the project, which facilitates data collection. The main role of the project management is to make the project fulfil its goals.

The local inhabitants live in or nearby the protected area or where the projects are carried out and they are therefore the ones that are mostly influenced by the effects. However, this stakeholder group was not specifically interviewed (but many of the interviewees living in the area gave information about the aspect of local inhabitants as well).

The authorities, both on a regional and national level, were chosen since they have great decisional powers over the projects. The most important regional authorities are the county administrative boards (in some cases the municipalities), which are administrating the project. The general role of county administrative boards is to make sure that decisions taken by the Government and Riksdag (Swedish Parliament) will attain as good effects as possible in the county.⁶⁵ Their main responsibility is to ensure the provision of medical and dental care, but they are often involved in other sectors as public transport, culture, higher and upper-secondary education, tourism, environmental issues, promotion of business and industry, and regional development.⁶⁶ Some of the responsibilities of municipalities are education, social services, physical planning and building, technical services, certain environmental tasks and rescue services.⁶⁷ The most important national authority is the Swedish EPA, which works under the Government as a central environmental authority. Its main responsibilities are to co-ordinate and promote environmental work on both a national and international level.⁶⁸

These stakeholder groups have different interests in the area but often there are several goals or values combined. Authorities are concerned with both nature conservation but also with generated social effects. Local people are interested in the economic benefits (income) but they also have social and environmental interests (people do not want the natural assets in their neighbourhood to be destroyed).

⁶⁵ Länsstyrelsen. (n.d.). *Länsstyrelserna: Vad vi gör och för vem*. <http://www.lst.se/lst.pdf> [2003, September 10].

⁶⁶ Swedish Government. (2003). *How the country is run*. http://www.sweden.gov.se/systemofgov/system_howcountry.htm [2003, September 10].

⁶⁷ Swedish Government. (2003).

⁶⁸ Swedish EPA. (n.d.). *Swedish Environmental Protection Agency*. <http://www.internat.naturvardsverket.se/> [2003, September 10].

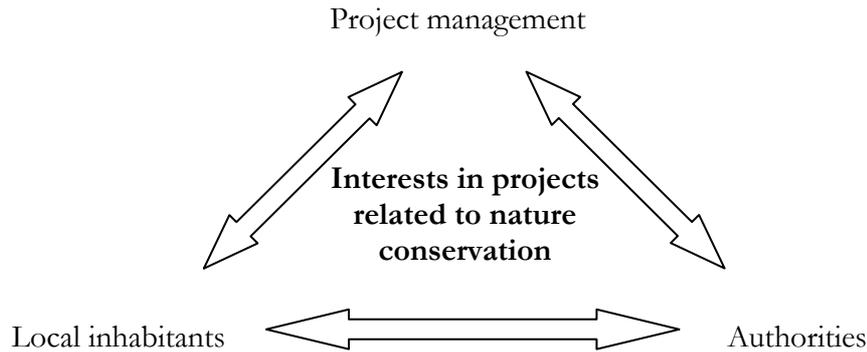


Figure 5: Main stakeholder groups in projects related to nature conservation

If mutual interests between different stakeholders are found there are greater chances that the project will develop positively. However, if conflicts arise it could imply a slower development or even a deadlock situation. Conflicts are further complicated by the fact that the *power structures* differ depending on how the area is protected, e.g. in some cases the landowners have more power than in others.

4.1 Environmental and social conflicts

Even though protected areas were established to protect the environment, they also aim at providing possibility for people to enjoy nature. The double purposes are opposing between the protection of areas from human impacts and the protection of areas for human use, which in principal always generates impacts on nature.⁶⁹ Aubrey underlines that there are many issues concerning the management of protected areas since people's recreational activities may come into conflict with the primary purpose of these parks, which is the conservation of nature.⁷⁰ The same is indicated by Kaltenborn and Williams who have investigated conflicts concerning the balance between preservation and utilisation. They claim that conflicts in, e.g. nature tourism, forest policies and protected area management have traditionally been explained by opposing values, attitudes and goals between urban and rural interests. However, they further state that these historical differences are no longer clear-cut or predictable.⁷¹ Today, there might thus be a more complex situation in protected areas than previously due to increased number of stakeholders, greater economic values and imposed legislation etc.

Another conflict between societal need to access nature and need to protect the environment concerns the accessibility/inaccessibility of protected areas, which is further accentuated in Swedish circumstances due to *the right of common access*. The more land is protected and accessibility is restricted, the less "value" it provides to people (whose leisure possibilities are limited). Some national parks and nature reserves are protected to an extent, which complicate visiting. On the other hand, the less protection, the higher possibilities for over

⁶⁹ Sandell, K. (2001). *Några aspekter på svenska reservatdilemmas förutsättningar. Arbetsrapport om allemansrätt, naturvård och landskapsperspektiv inför fördjupade studier i forskningsprogrammet FjällMistra om fjällandskapets tillgänglighet*, p. 6

⁷⁰ Aubrey, T. (n.d.). *Mobility as a right in relation to roads and tracks through Ku-ring-gai Chase National Park*. <http://www.eng.uts.edu.au/~tima/48210/study.PDF> [2003, September 10].

⁷¹ Kaltenborn, B. and Williams D. (2002). The meaning of place: Attachments to Femundsmarka National Park, Norway, among tourists and locals. *Norwegian Journal of Geography*, 56, p. 189.

consumption and exploitation, e.g. heavy tourism for example could damage the landscape thus spoiling its initial attractive natural assets. Tourism activities damages the natural assets by construction (altering ecosystems), erosion in well-visited sites (soil degradation), infrastructure (cutting down of vegetation), increased demand for fresh water by tourists, pollution from transportation, damaged wildlife due to hunting and fishing.⁷² In the Swedish mountain areas, especially in Lapponia, there are cases of degradation of natural assets by too intense tourism.⁷³ According to Bäck, one consequence of heavy exploitation of natural assets is often lowered attraction, which in its turn decreases the profits generated by activities of out-door recreation.⁷⁴

Environmental and social conflicts could hinder sustainable development if they are not solved or if no mutual interests are found.

4.2 Environmental and economic conflicts

The economic interests are often dominating in areas with natural assets. Restrictions of economic activities by establishing protected areas imply less profit, which is considered as a high priority. The factors that are mainly influencing the use of natural assets are generally the economic ones, e.g. *discount rates*, *time preferences* and *opportunity costs*.

Tourism as one example of an economic activity in protected areas could be seen as a double-edged sword, bringing many opportunities for both nature and mankind but also great dangers (mainly for nature).⁷⁵ There is a lot of literature about how tourism could destroy tourism, e.g. tourism based on natural heritage could negatively influence the resources the industry is built upon.⁷⁶ Grainger shows in his investigation of Southern Sinai that recent development pressure, mainly induced from tourism, has resulted in an overexploitation of the natural resource base and degradation of the intrinsic value in the protected area.⁷⁷ Over consumption limits the economic development by destroying the natural assets that produce profit. A stagnating economic growth could further reduce the income generation into the area, which then is caught in a vicious circle with regional deprivation as a result.

The income resulted from tourism may be used for other development tools, i.e. nature conservation measures.⁷⁸ However, the level, type and management of tourism have to be appropriate and the *carrying capacity* of the area respected.⁷⁹ *Carrying capacity* is a concept

⁷² IUCN. (2002). *Sustainable tourism in protected areas: Guidelines for planning and management*, Gland: IUCN, p. 33.

⁷³ Swedish Society for Nature Conservation. (2000). *Framtidens miljö – Allas vårt ansvar!* <http://www.snf.se/snf/remissvar/remissvar2000-10-11.htm> [2003, September 10].

⁷⁴ Bäck, L. (2000). Intressekonflikt i norra Lapplandsfjällen, *Biodiverse.*, 5, pp. 12-13.

⁷⁵ IUCN. (1999). *Parks for biodiversity: Policy guidance based on experience in ACP countries*. Gland: IUCN, p. 81.

⁷⁶ McCool, S.F. and Moisey, R.N. (2001). Introduction: Pathways and pitfalls in the search for sustainable tourism. In S.F. McCool and R.N. Moisey. *Tourism, recreation and sustainability: Linking culture and the environment*. Oxon: Cabi publishing, p. 8.

⁷⁷ Grainger, J. (2003). 'People and living in the park'. Linking biodiversity conservation to community development in the Middle East region: a case study from the Saint Katherine Protectorate, Southern Sinai. *Journal of Arid Environments*, 54, p. 33.

⁷⁸ McCool, S.F. and Moisey, R.N. (2001). Introduction: Pathways and pitfalls in the search for sustainable tourism, p. 8.

⁷⁹ UNEP. (1992). *Guidelines: Development of National Parks and Protected Areas for Tourism*. Madrid: Norte Grafico, p. i.

relating to attaining sustainable levels of use, i.e. the level of visitor use an area can accommodate with high levels of satisfaction for visitors and few impacts on resources.⁸⁰ It could minimise the social and economic conflicts in an area. The concept has however been criticized for its limitation.⁸¹ Important to recognise is that any kind of development will result in some changes of the social and natural environment implying that tourism deals with trade-offs, i.e. a constraint that implies giving up one thing to obtain another.⁸²

Tourism does not always create conflicts between environmental and economic interests but it could also lead to synergy effects. One common opinion concept among scientists is that *ecotourism*⁸³, pursuing some economic interests, could benefit biodiversity conservation in three ways; by generating money to manage and protect habitats and species; by enabling local people to gain economically, therefore, encouraging their support of protection of the protected area; and also by offering means by which people's awareness of the importance of conservation can be raised.⁸⁴ Ecotourism could thus be viewed as a tool of social and economic development and as a method of protecting natural heritage.⁸⁵

One problem however, is that the economic profits from tourism may leave the region. This is rather an impact of a process (in this case, tourism development) than a conflict itself. However, it could lead to new or strengthen old conflicts in an area. One example of this is described by Goodwin and Roe, who show that tourism could improve local livelihood but that in some cases local people benefit very little from tourism revenues.⁸⁶ Their initial hypothesis was that financial returns from tourism would decrease the dependency of local communities on resources of protected areas. However, evidence shows that this hypothesis does not work in practice due to bad economic viability of tourist-based enterprises, barriers to community participation in tourism and dependency on several sources of income.⁸⁷ One of the aims with a national park in Greece was to improve the economic status of local people by promoting ecotourism but results show that approximately half of the population had had unchanged economic status and more than one fourth of the population claimed that it had worsened.⁸⁸ This thus implies that the financial gains have leaked out from the region.

⁸⁰ UNEP. (1992). *Guidelines: Development of National Parks and Protected Areas for Tourism*. Madrid: Norte Grafico, p. 18.

⁸¹ McCool, S.F. and Moisey, R.N. (2001). Introduction: Pathways and pitfalls in the search for sustainable tourism, p. 10.

⁸² McCool, S.F. and Moisey, R.N. (2001). Introduction: Pathways and pitfalls in the search for sustainable tourism, p. 9.

⁸³ Defined by the International Ecotourism Society (1991) as: "Purposeful travel to natural areas to understand the culture and natural history of the environment; taking care not to alter the integrity of the ecosystem; producing economic opportunities that make the conservation of natural resources beneficial to local people."

⁸⁴ Goodwin, H. (1996) In pursuit of ecotourism. Quoted in López-Espinosa De Los Monteros, R. (2001). Evaluating ecotourism in natural protected areas of La Paz Bay, Baja California Sur, México: ecotourism or nature-based tourism?, *Biodiversity and Conservation*, 11, p. 1539.

⁸⁵ Moisey, R.N. and McCool, S.F. (2001). Sustainable tourism in the 21st century: Lessons from the past; Challenges to address. In S.F. McCool and R.N. Moisey. *Tourism, recreation and sustainability: Linking culture and the environment*. Oxon: Cabi publishing, p. 352.

⁸⁶ Goodwin, H. and Roe, D. (2001). Tourism, livelihoods and protected areas: opportunities for fair-trade tourism in and around national parks. *International Journal Tourism Research*, 3, p. 377.

⁸⁷ Goodwin, H. and Roe, D. (2001). Tourism, livelihoods and protected areas: opportunities for fair-trade tourism in and around national parks. p. 378.

⁸⁸ Trakolis, D. (2001). Local people's perceptions of planning and management issues in Prespes Lakes National Park, Greece. *Journal of Environmental Management*, 61, p. 228.

The right of common access could reduce the regional growth since older regulations of national parks forbid commercial activities in the area. Nowadays there is a shift from prohibition to control of commercial activities in newly implemented parks. Due to *the right of common access*, it is not possible to charge tourists entering the parks, and therefore possible sources of income to the region are lost. The general director at the Swedish EPA, Lars-Erik Liljelund, means that if the state should be able to charge tourist for entering public land, how could they then stop private landowners from doing the same.⁸⁹ On the other hand, *the right of common access* could also be seen as providing *inter-generational equity* since everybody can enjoy nature without paying for it.

It is not only tourism that competes for the use of natural assets in or around protected areas. Other economic interests could come from direct use of the resources instead of protection them, e.g. by cutting down timber, hunting, cultivating the land, building dams, mining activities, etc. The land itself could be used for hosting factories or living areas. These examples are closely related to the *opportunity cost* of protection, i.e. other activities might be more profitable than protection and thus more interesting from an economic point of view. *Opportunity cost* mostly relates to what to do with a piece of land, i.e. before the establishment of a protected area. In most protected area in Sweden there are restrictions on harvesting and use of natural resources. There are however unexploited possibilities of having economic activities that are not related to consumption of physical material, e.g. guiding, nature pedagogy, nature conversation etc.

4.3 Economic and social conflicts

Conflicts between economic and social interests could be exemplified by the concept of *time preference*, which concerns the willingness to postpone current income for the possibility of preserving the assets for future income. It thus relates to the economic profits of today versus the right of future generations, i.e. the *inter-generational equity*.

Another economic and social conflict is generated by the distribution effect in today's society, i.e. the *intra-generational equity*. Industrialised countries are often taking advantage of the developing countries' natural resources, thus increasing their own economic profits while degrading the environment in the developing countries.

Another type of conflict between the economic and social interests concerns the local inhabitants in and around a protected area. Local inhabitants are often the ones whose activities are the most restricted since they live in or close by the area. Unsolved conflicts of local people and of the managers of protected areas could lead to regional problems in the long run, threatening the future of protected areas and the long-term well-being of local communities.⁹⁰ Carroll for example claims that the design of protected areas near human settlements has created a potential for significant conflicts between resource management agencies and local residents.⁹¹ Wells and Sharma show the same type of problem in Nepal in which the future of the protected areas depends on initiatives to mitigate conflicts of

⁸⁹ Bergmark, K. (2000). Lokalt inflytande över Lapponia. *Norbottens-Kurirern*. [2000, January 15].

⁹⁰ Glavovic, B. (1996). Resolving People-Park Conflicts through Negotiation: reflections on the Richtersveld Experience. *Journal of Environmental Planning and Management*, 39, p. 483.

⁹¹ Carroll, M.S. and Hendrix W.G. (1992). Federally protected rivers: The need for effective local involvement. *Journal of the American Planning Association*, 58, p. 346.

interests between protected areas and their neighbouring communities.⁹² Hiedanpää examined the reception of *Natura 2000* network in a protected area in Finland claiming that the landowners were the ones standing up in defence of their rights (which were to be restricted by the *Natura 2000* network).⁹³ The same resistance have been seen in Sweden. Some members in the local unit of the *Federation of Swedish farmers* (LRF) consider the plans of implementing nature reserves as a threat towards the right of ownership, which in some cases lead to conflicts with the county administrative board.⁹⁴ Some farmers also perceive the protection form of *Natura 2000* as a sort of confiscation “on the sly” since the farmers do not receive any compensation for not being able to use the land (and thus obtain an income) in the same way as before.⁹⁵

If people depend economically on the natural resources in the area they would oppose a too heavy restriction. However, people would accept restrictions if the biodiversity and natural assets (e.g. wetlands) were in danger due to overexploitation, which is an example of a synergy effect.⁹⁶ This is confirmed by Kühn, who investigated biosphere reserves: “Only when local people can see the economic and social advantages provided by biosphere reserves will the strategy of integrating protection and the land use be acceptable.”⁹⁷

In Sweden, farming practices have disappeared rapidly during recent years, especially in the northern parts. This has caused abandon pastures and meadows, which have become overgrown, thus leading to a less diverse landscape and decreased biodiversity.⁹⁸ Nature conservation with the aim of increasing the biodiversity could however be considered as a contradiction according to the logic that if nature would be left alone, many wetlands, hay-mires, meadows and pastures would be overgrown with the result of reduced biodiversity. However, it could be argued that meadows and pastures have developed in a unison combination of humans, animals and nature during many thousands of years. People value this type of nature, which is why they are important to restore and conserve.

⁹² Wells, M.P. and Sharma U.R. (1998). Socio-economic and political aspects of biodiversity conservation in Nepal. *International Journal of Social Economics*, 25, p. 226.

⁹³ Hiedanpää, J. (2002). European-wide conservation versus local well-being: The reception of the *Natura 2000* Reserve Network in Karvia, SW-Finland. *Landscape and Urban Planning*, 61, pp. 113-114.

⁹⁴ Henrikson, I. (2001). Samlad LRF-aktion mot naturreservat. *Hallandsposten*. [2001, June 15].

⁹⁵ Henrikson, I. (2001). Samlad LRF-aktion mot naturreservat.

⁹⁶ Trakolis, D. (2001). Local people's perceptions of planning and management issues in Prespes Lakes National Park, Greece, p. 228.

⁹⁷ Kühn, M. (2000). Policy and practice. Biosphere reserves as planning models for sustainable regional development: Schorfheide-Chorin, Germany. *Journal of Planning and Management*, 43, p. 904.

⁹⁸ Enviroreport. (2001). *Nature tourism sensitive to local needs*. http://www.environ.se/enviroreport/enviro_frameset7.html [2003, September 10].

5. Sustainable regional development

This chapter explains sustainable regional development and effects of projects related to nature conservation.

Stakeholders' interests are translated into various actions. When the economic, environmental and social interests are combined, synergy effects could be found leading to sustainable development in the long run. The economic benefit alone could not enhance sustainable development neither could environmental or social benefits. Effects from all three dimensions must be generated. One example of how these three interests are combined in a protected area could be that there are economic gains from nature-based tourism, social benefits are attained through users' satisfaction and the environmental interest increase due to the actual protection of the area.

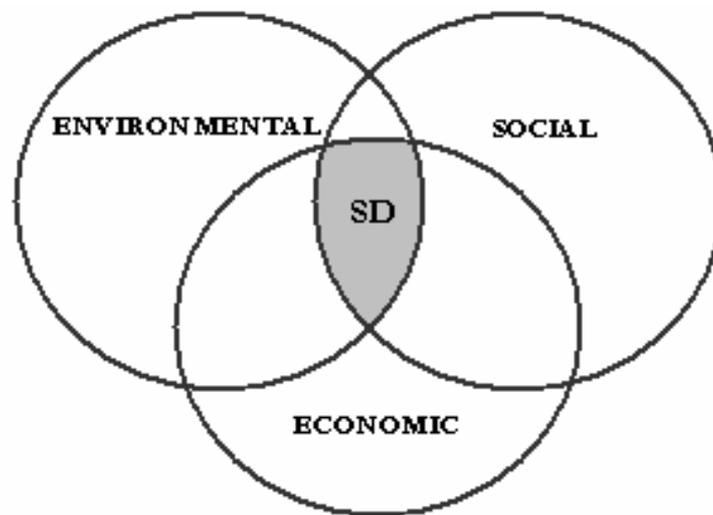


Figure 6: The sustainability concept

Sustainable development implies, according to the Brundtland definition, that the natural resources should be used in such a way to ensure that both the generation of today and of tomorrow could meet their needs. By changing from a purely economic focus to a combined one, including environmental and social aspects as well, it might be possible for natural resources to be less degraded by human use. The fundamental idea of sustainable development relates to the need for prudence in the use of finite resources.⁹⁹ It could also be said to provide a solution for conflicts, since it emphasizes that all three dimensions have to be considered when using nature. However, in practice, the difficulties in combining all three interests could lead to conflicts. A conflict could thus prevent or hinder the reaching of sustainable development while a mutual interests could enhance it.

⁹⁹ Evans, S. Community forestry: Countering excess visitor demands in England's national parks. In S.F. McCool and R.N. Moisey. *Tourism, recreation and sustainability: Linking culture and the environment*. Oxon: Cabi publishing, p. 84.

5.1 Theme indicator framework

The Commission on Sustainable Development (CSD) at the United Nations has developed theme indicator framework, which divides the sustainability concept into themes. The themes show which aspects that are important in respective dimension (see Table 4). The theme indicator framework was developed in order to assist decision-makers and policy-makers for monitoring progress towards sustainable development.

Table 4: CSD theme indicator framework

Dimensions of sustainability	Themes (aspects to be considered when applying sustainable development)
Social	Equity, health, education, housing, security, population
Environmental	Atmosphere, land, oceans, fresh water, biodiversity
Economic	Economic structure, consumption and production patterns

Source: UN. (2003).

5.2 Effects of projects related to nature conservation

The themes in the CSD framework could be said to reflect the outcomes, i.e. the effects of the selected projects. However, not every theme is relevant for projects related to nature conservation, which is why only a few themes will be investigated. The rest are considered as out of the scope of this thesis. The themes that will be discussed are presented in Table 5.

Table 5: Themes in the three dimensions of sustainability

Social	Environmental	Economic
<ul style="list-style-type: none"> • Equity • Health • Education 	<ul style="list-style-type: none"> • Land • Biodiversity 	<ul style="list-style-type: none"> • Economic structure • Consumption and production patterns

Equity, seen from the perspective of this thesis, concerns accessibility of areas, conserving for future generations and creation of new working opportunities etc. The social effects generated by the selected projects in this thesis could thus be creation of new working opportunities, e.g. through nature conservation and tourism, which is within the theme of equity. Health issues relate to out-door recreation and education to conservation matters and natural assets (for example by spreading knowledge of natural values that are attained by nature conservation).

In the environmental dimensions, there are two interesting themes (for the purpose of this thesis) to be investigated further; protection of land and biodiversity. Land refers to agriculture, e.g. the amount of arable land, use of fertilisers and pesticides. Land also reflects wood harvesting in forests and urbanisation. Biodiversity concerns areas of selected key ecosystems, protected areas and abundance of selected key species. Environmental effects of a project could be increased biodiversity, which is thus seen as one theme describing the environmental dimension of sustainability.

The economic dimensions have two themes that relates to the selected projects; economic structure and, to a more limited extent, consumption and production patterns. Economic structure refers to economic performance of a project (i.e. the economic effects), e.g. increases of income to a region. A full financial investigation of the projects will not be given here but the costs and revenues of each project will be briefly discussed with the aim to give the reader an understanding of the financial implications of these types of projects. Costs could for example include maintenance of the area while revenues could be generated from for example selling fishing cards. The consumption and production patterns relate to the material consumption, energy use and transportation. Consumption could also relate to tourism, e.g. ecotourism or nature-based tourism. One project could for example plan tourism strolls well and thus minimise the impacts on natural assets.

Except from the environmental effects that are induced by the conservation itself, projects related to nature conservation could also generate economic and social positive effects for the region. Therefore, in this study, if a project attains economic, environmental and social effects, it is considered successful and contributing to sustainable regional development.

The effects of a project could be **direct effects**, i.e. effects that are clear results of the projects, and **indirect effects**, which linkages to the projects are more vague. The direct effects will be of focus of this thesis. However, if indirect effects have been mentioned by the interviewees they will be described but not further investigated.

Direct effects could for example be revenues¹⁰⁰ from fishing cards (economic effect), increased biodiversity (environmental effect), e.g. storks nesting in the area (nature conservation), and recreation strolls for tourists (social effect). The indirect effects could be increases of bed and breakfast businesses (economic effects), new work opportunities in guiding (social effect) and efforts to cure the wetlands could improve the water quality in the nearby rivers (environmental effect).

No quantitative indicators for measuring the effects have been used in this thesis, which makes an evaluation of the effects difficult. Could for example a project contributing to 100 jobs be compared to one that is only creating 2 jobs? The reason for not using detailed quantitative indicators was that there are large differences between the projects investigated, implying that they have to be evaluated in their own context.

Interviews and secondary data will be used to describe the effects of the projects, which are discussed in chapter 8. The themes, all related to one of the dimensions of the sustainability concept, that will be discussed (if relevant for the cases) are:

¹⁰⁰ Other types of revenues could be: concessions, licences, donations, foundations, recreation service fees, special events and special services, accommodation, equipment rental, food sales, parking and souvenirs.

- Accessibility of areas
- Conserving for future generations
- Creation of new working opportunities
- Health issues relates to out-door recreation
- Education
- Use of land
- Agriculture, use of fertilisers and pesticides
- Wood harvesting in forests
- Urbanisation
- Biodiversity
- Economic performance
- Material consumption
- Energy use and transportation

6. Determinant factors for success of projects

This chapter identifies and discusses determinant factors for successful projects related to nature conservation.

A successful project has been defined in this thesis as an activity conserving natural assets generating economic, environmental and social positive effects. Some factors seem to be important to reach these three effects and consequently sustainable regional development. The identified factors based on the literature study are:

1. Potential existence of conflicts (a form of interaction)
2. Local support
3. Network of key actors
4. Knowledge development and increased awareness
5. Strategies to deal with tourism peaks and over-consumption
6. Commitment of authorities, project leaders and project workers
7. A holistic vision
8. Coherence with regional political goals
9. Cooperation between academics and practitioners
10. New working methods or new techniques

The determinant factors are those that are drastically influencing the success of an initiative in nature conservation.

Figure 7 illustrates the relationship between the factors and the project. The dynamics of the project include the interactions between stakeholders' different interests. Mutual interests could lead to synergy, while opposing interests could lead to conflicts. The determinant factors influence the stakeholders' dynamics and the effects of a project.

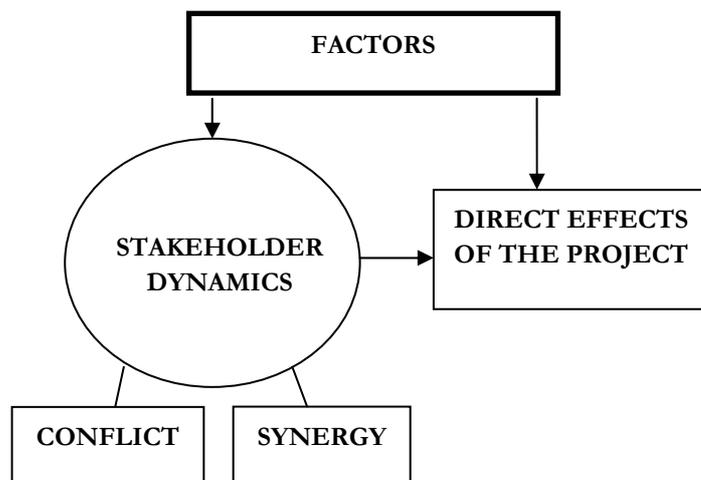


Figure 7: Factors influencing the stakeholder dynamics

6.1 Potential existence of conflicts

The first factor to be investigated is the potential existence of conflicts. There are many examples of conflicts in protected areas in literature, and conflicts are seen as a form of interaction that could change the dynamics of a project.¹⁰¹ It is therefore important to investigate not only potential existing conflicts but also if and how there have been conflict resolutions. This form of interaction represents a fragile situation in a project's development and determines the project's success or failure.

The dynamics of stakeholders' interests in natural assets of a region is one of the most important aspects determining the success or failure of any project that aims to foster sustainable development. Chapter 4 discussed possible conflicts between values and interests people give to nature. If conflicts are not solved there might be a deadlock situation or only very limited development. In order to create economic, environmental and social positive effects it is thus necessary that conflicts are resolved.

6.2 Local support

The consciousness of the need of local support for nature conservation has increased during the last years in Sweden.¹⁰² Local support is considered important for nature conservation. In order to create local support, certain conditions have been identified, e.g. knowledge (people having knowledge about nature and conservation values have a better understanding of the limitation of activities in land use), early and clear information and continuity, personal meetings, democracy and representation, adaptation to the situation, power of insight, and getting key persons positive to the project.¹⁰³

Local support mainly concerns the local inhabitants but also other important local stakeholders, e.g. authorities, entrepreneurs and organisations of various kinds. Kühn states that only when local people can see the economic and social advantages provided by *biosphere reserves* will the strategy of integrating protection and the land use be acceptable.¹⁰⁴ This relates to local support as well as to local people's awareness of benefits of certain projects. Carroll shows an American example of the need for effective local involvement when implementing federally protected rivers. Local support is also mentioned in *Biodiverse* as an important factor for successful nature conservation.¹⁰⁵

A lack of local support, i.e. participation of the local inhabitants, could create conflicts in the later stage of an initiative of nature conservation.¹⁰⁶ Ioannides states that it is important for policy-makers to give an opportunity to all stakeholders to become actively involved in the

¹⁰¹ Trakolis, D. (2001) and Shore, K J. (2001). *Resolving Conflicts Over natural Resources in the Galapagos Islands*. http://network.idrc.ca/ev.php?ID=5233&ID2=DO_TOPIC [2003, September 10].

¹⁰² Swedish EPA. (2003c), p. 5.

¹⁰³ Swedish EPA. (2003), pp. 6-8.

¹⁰⁴ Kühn, M. (2000). Policy and practice. Biosphere reserves as planning models for sustainable regional development: Schorfheide-Chorin, Germany, p. 904.

¹⁰⁵ Ebenhard, T. (2001). Det finns goda exempel! *Biodiverse*, 6, p. 2.

¹⁰⁶ Trakolis, D. (2001), p. 228.

decision-making process in order for sustainability to be achieved.¹⁰⁷ Conflict resolution could be attained by dialogue, compromises and participation.¹⁰⁸

6.3 Network of key stakeholders

Partnership and network of key stakeholders are also important for the success of a project. In *Sustainable tourism based on natural and cultural heritage*, key success factors are listed, which have been identified from a wide range of practical examples of tourism based on natural and cultural heritage in non-traditional areas. Partnership was proven to be one key success factor.¹⁰⁹ It has shown significance for success of integrated conservation development projects (ICDPs), which need to have partnership between conservation and development organisations as well as between these organisations and authorities.¹¹⁰ The *Biodiversity Support Programme* has listed five main conditions for success in any conservation effort, of which equitable and effective social processes and alliances, i.e. partnerships, is one condition.¹¹¹

6.4 Knowledge development

The World Conservation Union (IUCN) identifies what makes an integrated conservation and development project successful or at least more likely to succeed.¹¹² Another condition for success in conservation initiatives listed in the *Biodiversity Support Programme* is awareness, knowledge and capacity to conserve biodiversity.¹¹³ The importance of awareness has also been mentioned by Kühn, who investigated *biosphere reserves* (in which knowledge development is an essential concept, see 2.3.2).¹¹⁴

Knowledge development is pointed out in the report *Sustainable tourism based on natural and cultural heritage*. It is important to present the natural and cultural heritage of areas in an understandable and enjoyable way so that tourists will be able to learn from them. Otherwise tourists are unlikely to recommend the area to anyone else or to understand the needs of the natural resources.¹¹⁵ The *Swedish Institute of Ecological Sustainability* (IEH) also emphasises the need of transferable information and experiences of for example working methods, which relates to the spreading of knowledge.

¹⁰⁷ Ioannides, D. (2001). Sustainable development and shifting attitudes of tourism stakeholders: Towards a dynamic framework. In S.F. McCool and R.N. Moisey. *Tourism, recreation and sustainability: Linking culture and the environment*, p. 62.

¹⁰⁸ Shore, K.J. (2001).

¹⁰⁹ European Commission. (2000b). *Sustainable tourism based on natural and cultural heritage*. Luxembourg: Office for Official Publications of the European Communities, p. 29.

¹¹⁰ Wells, M. and Brandon, K. (1992). *People and parks: Linking protected area management with local communities*. Washington: International Bank for Reconstruction and Development, p. xi.

¹¹¹ MacKinnon, K. (2001). Editorial. *Parks: Working with parks and people*, 11, p. 2.

¹¹² MacKinnon, K. (2001). Editorial, p. 2.

¹¹³ MacKinnon, K. (2001). Editorial, p. 2.

¹¹⁴ Kühn, M. (2000). Policy and practice. Biosphere reserves as planning models for sustainable regional development: Schorfheide-Chorin, Germany, p. 904.

¹¹⁵ European Commission. (2000b), p. 29.

6.5 Strategies to deal with tourism peaks

It has been discussed in this thesis that there is a risk of over consumption of natural assets in protected areas due to heavy tourism. This could lead to degradation of the assets that are the initial attracting ability of the area. As investigated by Bäck there are certain areas in the Swedish mountains, where the initial assets now are destroyed leading to the abandon of tourists.¹¹⁶ For a project related to nature conservation it is important how to deal with the tourist peaks in order to minimise the impacts. This could be done by for example taking into consideration the *carrying capacity* of an area (see 4.2).

6.6 Commitment of authorities, project leaders and workers

This factor could be seen in three perspectives; the commitment at the level of authorities, who are often the ones deciding about a project, the project leaders who manage the project and the workers who are carrying out various tasks within the project. This also relates to local support and partnership. Commitment is also mentioned in *Sustainable tourism based on natural and cultural heritage* as being important for initiative to happen and to be developed.¹¹⁷ The link between nature conservation and commitment is also emphasised by Harrison et al.¹¹⁸ In the UK, commitment of local authorities is important in order to co-ordinate nature conservation measures.¹¹⁹

6.7 A holistic vision

This factor implies the importance of having a holistic vision of the project. A holistic vision is emphasised in the concept of *biosphere reserves*, which aims at conservation, development and providing support for information exchange.¹²⁰ This shows the importance of having combined results, e.g. protection of nature and development in the region. However, a holistic vision also has to be complemented by clear goals.

Peters states that there has to be clear incentives for local people in an area where an initiative of nature conservation is taking place in order for them to cooperate in achieving both conservation and development goals.¹²¹ The *Biodiversity Support Programme* confirms the importance of clarity in conservation goals and objectives.¹²²

¹¹⁶ Bäck, L. (2000). Intressekonflikt i norra Lapplandsfjällen, pp. 12-13.

¹¹⁷ European Commission. (2000b), p. 31.

¹¹⁸ Harrison, C.M., Burgess J. and Clark, J. (1998). Discounted knowledges: farmers' and residents' understandings of nature conservation goals and policies. *Journal of Environmental Management*, 54, p. 317.

¹¹⁹ South Northamptonshire Council. (n.d.). *Nature conservation: Supplementary planning guidance*. http://www.southnorthants.gov.uk/docs/snc_doc_SPG%20-%20Nature%20Conservation.pdf [2003, September 10].

¹²⁰ UNESCO. (n.d.).

¹²¹ Peters, J. (1999). Understanding conflicts between people and parks at Ranomafana, Madagascar. *Agriculture and Human Values*, 46, p. 72.

¹²² MacKinnon, K. (2001). Editorial, p. 2.

6.8 Coherence with regional political goals

This factor relates to how the project matches the regional political goals. In order to attain desired effects it is important to be in coherence with political priorities to avoid the risk of less funding or helping measures for initiatives in nature conservation to be carried out. Coherence with regional political goals also refers to the partnership between authorities and network of key actors. The *Biodiversity Support Programme* confirms the importance of supportive policies (local, national and international).¹²³

6.9 Cooperation between academics and practitioners

The cooperation between academics and practitioners has been mentioned by *Biodiverse* as an important factor for successful nature conservation.¹²⁴ A solution for careful use of nature or nature conservation developed by a scientist could be proved to be unviable in reality. It is imperative to have a cooperation between academics and practitioners in order to implement functional measures and incorporate research into nature conservation measures.¹²⁵

6.10 New working methods or techniques

The Swedish Institute for Ecological Sustainability has developed criterion for their *environmental pearls*, i.e. a good example of environmental work carried out in municipalities. One criterion includes techniques or working methods, which give significant environmental benefits (of ecological sustainability) and are seen as being successful by the owners of project facilities in terms of practicality and ease of maintenance.¹²⁶ Another criterion is that the project should contribute with valuable information and experience, which could be useful to municipalities, industries and other active stakeholders of projects. The transferability of techniques and working methods are thus important. The Swedish EPA has studied how to use good examples as information-based policy tools by for example evaluating how information on environmental best practices and good examples are documented and disseminated.¹²⁷ Driving forces, opportunities and common problems of good examples have also been identified.

The transferability of this factor is important since working methods that are site-specific might not work in other projects. New working methods could also be taken into consideration when planning of new projects of this type.

¹²³ MacKinnon, K. (2001). Editorial, p. 2.

¹²⁴ Ebenhard, T. (2001). Det finns goda exempel, p. 2.

¹²⁵ Global Environmental Facility. (2001). *Bioplan posting*. http://www.unep.org/bps/bioplan_archive/BIOPLANS-OCT-2001/BIOPLAN_POSTING-2001-10-13.html [2003, September 10].

¹²⁶ Swedish Institute for Ecological Sustainability. (n.d.a). *Best practice*. <http://www.ich.se/eng/miljoparlor/> [2003, September 10].

¹²⁷ Swedish Environmental Protection Agency. (2002). *Exemplens makt: Utvärdering av hur arbetet med goda exempel fungerar i miljöarbetet*. Report 5259. Stockholm: Swedish Environmental Protection Agency; Swedish Environmental Protection Agency. (2003). *The power of example: An evaluation of how examples of best practises and success stories are used in the work for sustainability*. Report 5283. Stockholm: Swedish Environmental Protection Agency.

6.11 Other factors

Another key success factor is **marketing**.¹²⁸ If one aim of the projects related to nature conservation is to attract more tourists into an area, the branding and marketing are important tools in order to increase the awareness of the natural values in the area. Already mentioned is the factor of **funding**, which is likely to influence the success of a project to a large extent. The **initiator** could be another factor that is determinant for the success of a project.

In order to investigate other possible factors, the project leaders were asked to complement the questionnaire. Other interviewees were asked an open question: *What factors have been important to the project's success?* These are discussed in chapter 9.

¹²⁸ European Commission. (2000b), p. 29.

7. Descriptive model

This chapter explains the model used for describing the empirical research. It should be seen as the author's perceptions of the linkages between different concepts.

A model showing linkages between projects related to nature conservation (where projects are understood as activities conserving natural assets), stakeholders' interests, factors determining success and sustainable regional development, has been developed from the literature studied with the aim to structure the empirical research in this thesis. The model should be seen as a skeleton framework linking different concepts rather than a purely analytic tool. The model will however be used for investigation and interpretation of results even though focus will be on describing projects related to nature conservation and their dynamic relations, and less on explaining them. The model is illustrated in Figure 8, in which the project related to nature conservation is illustrated by the grey box.

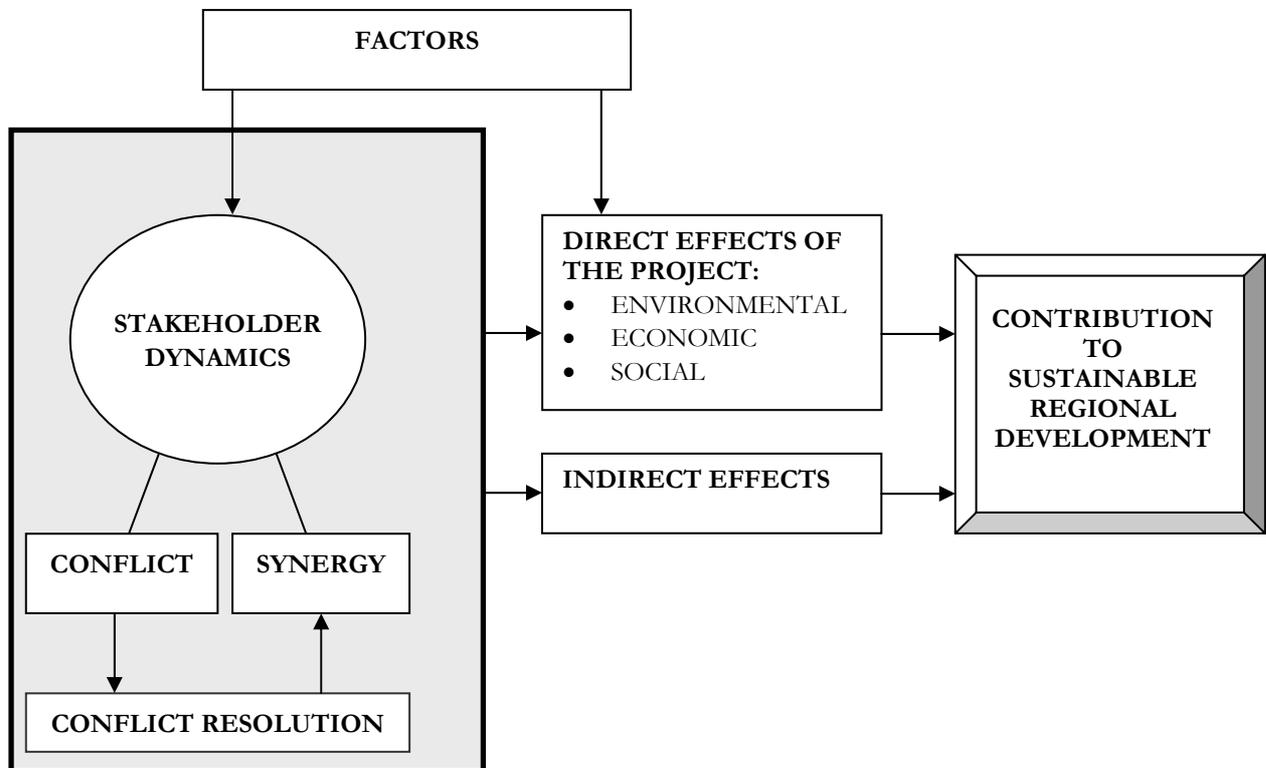


Figure 8: Model used to describe and investigate successful projects related to nature conservation

7.1 Stakeholders' dynamics

The effects of a project related to nature conservation are influenced by the stakeholders' dynamics and their interests are affected by different underlying economic, environmental and social values. Not only the interests but also the different interactions between stakeholders influence the effects. The interactions depend sequentially on the internal power structure among the involved stakeholders.

If there are too many opposing interests in the project or related area/region, there is a risk that there will be conflicts. A conflict could hinder the project from obtaining sustainable

regional development since the three positive effects are not likely to happen due to failure in agreements of stakeholders. On the other hand, if interests become mutual, synergy effects could be created leading to sustainable regional development in the long run. A solved conflict or created mutual interests could thus be considered as one success factor for sustainable regional development. The factor “potential existence of conflicts” has already been described in chapter 6 and it is consequently one of the ten factors.

7.2 Determinant factors

The determinant factors are influencing the projects’ outcome, i.e. the direct economic, environmental and social effects. If they are present they could be considered as success factors but if they are missing they could hinder the reaching of all three dimensions of the sustainability concept and thus lead to failure of the project in the long run. An example is that if there is no knowledge development it might be difficult to attain the three positive effects. The identified determinant factors are:

- Local support
- Network of key actors
- Knowledge development and increased awareness
- Strategies to deal with tourism peaks
- Commitment of authorities, project leaders and project workers
- A holistic vision
- Coherence with regional political goals
- Cooperation between academics and practitioners
- New working methods or new techniques

They will be investigated for each selected case in chapter 9.

7.3 Direct economic, environmental and social effects

The direct economic, environmental and social effects of each project will be investigated in chapter 8. The investigation of effects has been based on the theme indicator framework by CSD, presented in chapter 5.1. The data used for describing the effects are mainly from primary sources, i.e. interviews but also data from secondary sources are used in order to complement facts and information and to broaden the overall understanding of a project’s development.

As shown in the model, a project related to nature conservation that generates economic, environmental and social effects could contribute to sustainable regional development.

8. Investigation of effects

This chapter describes the selected cases for deep investigation, from the perspective of their generated direct effects. The data of the findings come from the interviews but also from secondary sources, e.g. projects' official web pages.

First, the projects will be described from the perspective of their development. Second, the direct economic, environmental and social effects will be discussed.

8.1 Vasikkavuoma hay-mire

Development of the project

Vasikkavuoma hay-mire lies in the rural district of Pajala municipality, which is situated approximately 80 km north of the Arctic Circle near the Finnish border. Vasikkavuoma hay-mire is the largest (250 hectares) and best-preserved hay-mire in northern Europe.¹²⁹ It has been designated as nature reserve and habitat for species typical of and dependent on mire haymaking since 1999 with the main purposes to conserve, strengthen and develop natural and cultural values connected with the mire.¹³⁰

MEJA Village Development Association consists of four villages Mukkakangas, Erkheikki, Juhonpieti and Autio. The association started the reconstruction of the mire during the summer 1996 when they successfully applied for EU funding.¹³¹ The reconstruction work was carried out during two summers after which the association cultivated 18 ha of the mire. The aim was to keep the old tradition of hay-mire making and to conserve something for future generations.

The first mire harvests probably date back to the 18th century. In the 1950s there were 250 to 300 barns on the mire but by the mid 1990s Vasikkavuoma was virtually overgrown with brushwood.¹³² Since 1996, many parts have been restored to a workable state by MEJA village development association, with environmental assistance from the county. Now there are 82 pine and spruce log barns.¹³³

Vasikkavuoma hay-mire won a medal in the category of cultural landscapes, Europa Nostra (2002), for the important conservation of the largest surviving example of a rare hay-mire, together with its ecological setting, maintenance techniques and buildings.¹³⁴

Direct effects

Economic direct effects of the project are the creation of work opportunities. Kjell Palo, the former project leader, says that only 2 jobs have been created directly on a long-term

¹²⁹ Europa Nostra. (2002b). *Vasikkavuoma hay-mire, Pajala, Sweden*. http://www.europanostra.org/lang_en/awards_2002/vasikkavuoma.html [2003, September 10].

¹³⁰ Europa Nostra. (2002b).

¹³¹ Palo, K. (n.d.). *Återskapande av slätteräng*. <http://www.meja-camping.com/> [2003, September 10].

¹³² Europa Nostra. (2002b).

¹³³ Europa Nostra. (2002b).

¹³⁴ Europa Nostra. (2002a). *European cultural prize for cultural heritage*. http://www.europanostra.org/lang_en/index.html [2003, September 10].

basis. However, this means a lot in densely populated areas, which have unemployment rates of 15-20 %. During the most intense time of restoration, approximately 10 persons were involved (1996-1997).

Another direct source of income is the haymaking that gives considerable amounts of water horsetail, which is sold as fodder for reindeers. In time, up to forty tons of water horsetail will be provided annually. Tore Kreku, responsible for the practical work at the hay-mire, is hoping that the plans of making pellets of the water horsetail could be realised, since it would imply great economic opportunities.

Environmental effects from the nature conservation are increased biodiversity. Many species (mostly flora), e.g. were nearly extinguished from the area but now they have been re-established, e.g. water horsetail and bogbean. More birds have also come to the area after the restoration, e.g. curlew. However, Kjell Palo emphasises the importance to take into consideration towards birds nesting while making hay with the machine.

The hay-mire became a nature reserve in 1999 due to the initiative of Rolf Ilskog (also the initiator of the project) even though it was not a defined goal in the project. It was also a solution to secure financial means from the county administrative board in order to be able to continue maintaining the area. Since it now is a living project, the mire will continue to be cleared and the worked acreage will be increased.

Social effects are that there is a more positive attitude towards the future in the surrounding villages. The project has showed that there are new possibilities for creating enterprises. The project is also unique since it is the local inhabitants that have administrated it, says Maud Videhult (responsible for the project at the county administrative board). Knowledge development is important aspects of the project. There is documentation of historical land use, which enables visitors to learn about former living conditions and the significance of mire hay to northern Sweden. The restored barns emphasises the cultural importance of the project. The project has been important in order to spread information about nature and old working methods of haymaking to future generations, says Rolf Ilskog.

According to Kjell Palo, approximately 3000 persons are visiting the hay-mire each season (by living just nearby, he has estimated this number of visitors by counting the cars parked). Other interviewees seem to think there are less people visiting (but they have not done any estimations). It is however difficult to estimate the number of visitors since it is an open (and very large) area. The hay-mire could be said to contribute to social benefits by providing a beautiful scenery for out-door recreation.

Indirect effects

Economic indirect effects are that MEJA camping has been created (or rather been developed during the same time period). The camping business employs 3 people every season. This summer there was a music and dance concert on the mire, attracting approximately 500-750 people, which, according to Else-Maj Kreku (former chairman for MEJA village development association), would not have been deployed if the mire had not been restored. Kjell Palo also has developed a new enterprise to restore barns, which might not have happened if he did not have obtained the knowledge from the project. He also has some income from guiding tourists. Kjell Palo thinks that the project has created approximately 10 new working opportunities within tourism.

Special tools have been developed within the project for the haymaking machine from *Dorotea Mekaniska AB*. These tools (and the machine) are now sold to other countries that are restoring hay-mires, e.g. Poland and Hungary, which brings back revenues to the region.

Environmental indirect effects are reduced transport due to the local production of fodder but on the other hand there are increased transport from tourism, which is generated increased number of visitors (important to note in this context is also the distances in the Northern part of Sweden).

One example of social indirect effects is the creation of one school (that are cultivating one part of the mire for pedagogy purpose). There are also in general attitude changes in the society and a much better village spirit, which could lead to further projects since the network is already existing.

8.2 The Emå river project

Development of the project

The Emå river basin is situated in the southeast part of Sweden in Småland County. The river runs into the Baltic (Kalmar Strait). The watershed is sparsely populated but there are more than 850 lakes and more than 800 kilometres of rivers and streams in the area.¹³⁵ The land is predominantly cover by forest but arable land covers about 12% of the area.¹³⁶

The seed of the project started around 1992, but it was not until 1997 that the cooperation project, between eight municipalities, two regional administrative boards, the farmers union, NGOs, fish water owners, sport fishing organizations and local history associations, was really launched.¹³⁷ The background for the project was several conflicts concerning the use of water in the Emå river basin. One conflict relates to the large variations of flows in the river, which causes flooding and thus destroys corps for farmers.¹³⁸ There was also a more general conflict concerning the upstream and downstream problems, i.e. what happens upstream have consequences for the quantity and quality downstream. The river also hosts several power plants that reduce the possibilities for fishes to reach their spawning areas further upstream. The main aim of the Emå river project is to create an economically and environmentally sustainable society in the Emå region.

The Emå River Project is actively trying to protect and improve the water quality in the Emå watershed, e.g. by launching projects in order to develop biological, physical and chemical qualities. The authorities and voluntary organisations work together in eight specialised workgroups. The main goals with the Emå River Project are the following:¹³⁹

- More employment in tourism
- Increased number of visitors to the area.
- Better possibilities for developing new business enterprises in farming and forestry.

¹³⁵ Emåprojektet. (n.d.). *The Emå river project*. <http://www.emaprojektet.h.se> [2003, September 10].

¹³⁶ Emåprojektet. (n.d.).

¹³⁷ Emåprojektet. (n.d.).

¹³⁸ Emåprojektet. (n.d.).

¹³⁹ Emåprojektet. (n.d.).

- Easier access to lakes, rivers, nature and to places of historic or cultural interest.
- Increased awareness of the values in the Emå region.
- Better co-ordination between different enterprises and stakeholders within the watershed.
- Increased interaction between different stakeholders to find a strategy for how the natural resources can be exploited from a holistic and sustainable perspective.
- Better water quality within the Emå watershed. Pollution should not restrict the use of the water resources for drink water production, fishing, bathing, industrial purposes.
- Better environment for trout and salmon.
- The high nature values that exist within the watershed shall be preserved and developed. Natural species shall remain in sustainable populations.

The project is strongly connected to the *EU Water Framework Directive*, which came into force in the end of year 2000. The directive will imply changes compared to how Sweden previously administrated water issues. The administration will now be more focused on the watershed area and not on the political divisions of different areas.¹⁴⁰ The project is still pointed out as the best example in Sweden on coordinated water planning within a watershed.¹⁴¹

Direct effects

Economic direct effects: The project has two employees on full time basis but there are approximately 80 persons that are working with different issues related to the project. The economic benefits of the project are starting to be visible according to Sivert Carlson (chairman of Mönsterås municipality and representative in the Emå river project board). The incomes have been 1.728 million and the costs are calculated as 1.671 million year 2002.¹⁴² Bodil Liedberg Jönsson however thinks that there could have been a better development of the project if the funding would have been larger.

Environmental direct effects: Stefan Svenaeus (head manager of environmental conservation at Kalmar county) states that the nature values of Emå are unique and the project is important in order to improve the nature values of the area. Environmental direct effects concern above all the fish migration through fish ladders and fish trails. Within the project, five municipalities have been trying to restore fish migration in the river. The municipalities agreed that the migrating fish should have access to the same area it had before the power plants were build. Several new fish trails have now been built. The aim is that the salmon and trout will have access to natural spawning grounds in the main channel within the next ten years. The project has submitted a EU application to obtain funding for restoring the access of 125 km of the river.

¹⁴⁰ Swedish EPA. (2002b). *Helhetsyn i vattenvården*. Stockholm: Swedish Environmental Protection Agency, p. 5.

¹⁴¹ Emåområdets intresseförening. (2003). *Verksamhetsberättelse för 2002*. <http://www.emaprojektet.h.se> [2003, September, 10].

¹⁴² Emåområdets intresseförening. (2003).

The project has also been able to reduce the amount of nitrogen and phosphorus used by the landowners. 195 landowners are active in different “watercourse groups”, which aims to plan how to decrease the pollution by nutrients from the forests and the lands.¹⁴³

There are also initiatives aiming at informing people of sustainable canoeing. Other environmental effects are a storm water treatment plan, in which the project cooperates with the Swedish national road administration to reduce the salt used for the roads wintertime.¹⁴⁴ An inventory has been made for the nature and cultural history in order to assess different sites that are in need for restoration.

The Emå area is part of the *Natura 2000* network and there are also several nature reserves in the watershed area. Bodil Liedberg Jönsson thinks that even though the project might not have generated nature reserves, certain reserves are likely to have been more noticed due to the project and the administrative period in certain cases has been reduced thanks to the project.

Social direct effects are improved networking. Most important capital generated by the project is an improved climate for dialogue according to Stefan Svenaeus. The project also aims to change the population trend by attracting new inhabitants to the area. Bodil Liedberg Jönsson thinks that the project has made people more proud of their home district and its specific assets. Because of this people stay and do not emigrate, which is a social benefit for the region.

Bodil Liedberg Jönsson says that the number of visitors has increased in the area but there has been a clear lack of coordinated marketing. They have recently started visiting places for nature pedagogy, so-called ekoturum, which has helped spreading information about the nature values in the area. Arne Ljungberg is responsible for the ekoturum at Stubbhult and former chairman of Emådalens nature conservation association, which has approximately 1200-1300 visitors (this year is the first year of activity). The visiting places generate social benefits through people learning about the nature values and why they are important to protect.

In the current organisation structure of the Emå river project there is only one representative for the non-profit nature conservation associations in the area (approximately 30 organisations). Arne Ljungberg think there could be more representatives from the nature conservation associations in order to increase the focus on the natural assets in the area.

Indirect effects

Economic indirect effects are for example the revenues from the fishing tourism, which is now more spread due to the measures for fishing migration upstream. According to Bodil Liedberg Jönsson, the tourism sector has had an increase in working opportunities.

The “watercourses” could have lead to decreased eutrophication in the Baltic Sea since less amounts of nutrients are used in surrounding areas to the river. This could be said to be an indirect environmental effect.

¹⁴³ Emåprojektet. (n.d.).

¹⁴⁴ Emåprojektet. (n.d.).

Arne Ljungberg and Kalle Ljungberg (chairman of Emådalen's nature conservation association) says that Stubbhult ekoturum, which has been created by the project, could lead to less dependence on timber production if the tourism increases (since they then will obtain money from tourists instead of selling timber). This could also enhance the natural assets in the area. They are further planning to build strolls around the ekoturum, with information signs about nature considerations in forestry.

One social indirect effect is for example that the consultancy firm SCC Natura and Swedish International Development Agency (SIDA) have courses in the area to teach watershed management. This could be considered to be a social effect since knowledge and good examples are spreading to other project-managers. The administration of the Emå river project is often asked about their experiences and other watershed areas are interested in how the work is carried out in Emå. There are several collaborations with researchers and universities, which also contributes to information sharing.

Emå basin is part of the Hydrology for the Environment, Life and Policy (HELP) network and it has been used for visiting participants of a HELP symposium. HELP is a joint initiative of United Nations Educational, Scientific and Cultural Organisation (UNESCO) and World Meteorological Organisation (WMO), which is creating a new approach to integrated catchment management.¹⁴⁵

8.3 Restoration of meadows in Kungsör municipality

Development of the project

Kungsör is located in the County of Västmanland nearby Stockholm. The landscape is typical of the Lake Mälaren valley with open fields, fertile agricultural land and wooded areas. Kungsör became one of Sweden's 61 "eco-municipalities" already in 1990.¹⁴⁶ The municipality has a long tradition of engagement in environmental conservation, which has led to careful and sensitive restoration of meadows and pastures and preservation of threatened plants. The municipality has been awarded two prizes in the King Carl XVI Gustav environmental competition, of which one relates to the restorations of meadows and pastures.¹⁴⁷

In 1973, an extensive work started to restore the over-grown grazing lands in the municipality.¹⁴⁸ The preservation and conservation has led to protection of sensitive species and today there are approximately 70 restored grazing lands in the municipality (approximately 700 ha corresponding to 5 % of the land area of the municipality). The aim with the restoration has been to preserve it for future generations.

Direct effects

Economic direct effect: The conserving of the cultural landscape has led to benefits for the living-environment, tourism, preservation of the biodiversity and the identity of culture

¹⁴⁵ UNESCO. (2003). *HELP symposium 2002*.
http://portal.unesco.org/sc_nat/ev.php?URL_ID=1848&URL_DO=DO_TOPIC&URL_SECTION=201 [2003, September 10].

¹⁴⁶ Kungsör kommun. (n.d.a). *Kungsör in brief*. <http://www.kungsor.se/en/index.html> [2003, September 10].

¹⁴⁷ Kungsör kommun. (n.d.a).

¹⁴⁸ Kungsör kommun. (n.d.b). *Naturvård*. <http://www.kungsor.se> [2003, September 10].

and history in the municipality.¹⁴⁹ Both Pekka Hedin (the head ecologist in the municipality) and Hans Westin (administrative director at Kungsör municipality) are convinced that nature can enhance regional development.¹⁵⁰

Economic direct effects have been attained by attracting new inhabitants into the area. The living-environment is essential in the marketing and a part of the living-environment is the closeness to nature and the restored meadows and pastures. According to a survey done for knowing why people move to the municipality, the second reason after to find a good place to live, was the closeness to water and nature.¹⁵¹ The area is unique since the meadows and pastures are that closely situated to the city centre, which means that people could enjoy it to a larger extent. The restored meadows are used in the marketing of the municipality for attracting new inhabitants. Not many families have to move to the area in order to pay back for the costs for the nature conservation, according to Pekka Hedin. The natural assets could be thus said to be a positive localisation factor, i.e. they constitute values that people appreciate and take into consideration when deciding to move to the municipality.

14 people are working in two teams; one focusing on nature and one on culture. The creativity of the working teams gives cost-effective solutions for the nature conservation measures. The net cost for the municipality for the two teams is approximately 1.6 million SEK per year according to Birgitta Broman. The cost for the working team would also have been higher if they were not enrolled in the working teams according to Pekka Hedin. In the project, when restoring the working teams have earned income by cutting down timber. They are also decreasing their costs due to taking care of the shrewd, which they sell and use the money for transport and fuel. They also keep the hay and use it as fodder for the cattle.

There are also economic effects from tourism. Pekka Hedin however says that it is difficult to increase the ecotourism and nature-based tourism due to lack of cooperation with the tourism sector.

Environmental effects are that the biodiversity has increased and that the meadows and pastures are restored to an old agrarian state. The project has led to increases of species that are rare in the country. However, Pekka Hedin thinks that the system solutions are so advantageous much due to their long-term development, that they could be used in other similar places as well. Hans Westin says that the project has led to new nature reserves. The municipality has many *red listed* endangered species, which Hans Westin thinks is the result of having a real enthusiast as Pekka Hedin has been in the area. Other results have been that there are important inventory done of the flora and fauna, something that could be used for research purposes. There have also been projects carried out in order to restore wetland areas in the municipality.

Social direct effects have been that unemployed inhabitants are performing meaningful work tasks according to Lars Ekdahl (coordinator of the nature working team). On the word of Pekka Hedin, the police have stated that the nice nature is one factor that has contributed to the perceived security among the inhabitants in the area. There are also initiatives within the municipality to improve public health, in which the meadows and pastures are providing

¹⁴⁹ Kungsör kommun. (n.d.b).

¹⁵⁰ Widera, B. (2001). *Environmental values as development and marketing factor: A case study of "Environmental strategy" of the municipality of Kungsör*, p. 37.

¹⁵¹ Kungsör kommun. (2002). *Enkäter: En sammanställning av svar från inflyttade och utflyttade*. Unpublished.

increased possibilities for outdoor recreation. The inhabitants have received a lot of information about the project, e.g. through pamphlets, guiding tours, nature stations etc. many people uses the strolls in the meadows and pastures, especially the Kungsörsleden, according to Hans Westin.

Nature pedagogy is an important part of the project and there are 35 nature stations established nearby visitor strolls, which provides information about the area and its flora and fauna.

Indirect effects

An indirect economic effect is that the company *Transcom*, employing 300 persons, started up in the municipality, which was largely due to the nice living environment says Hans Westin. However, that this event would be directly linked to the restoration of the meadows and pastures is of difficult to establish. 35 landowners are part of the project and they receive EU funding for having cattle on the meadows and pastures, implying that it is economic profitable viable for them to have the meadows and pastures on their land restored since it both increased the value on the land as well as giving subsidies.

One environmental and social indirect effect is that many students and scientists that come to the area to investigate and study the landscapes. This could lead to spreading of information and working methods. The environmental effects are that best practices within nature conservation are shared and social benefits that networking is established or improved.

8.4 The rich wetlands of Kristianstad

Development of the project

The rich wetlands of Kristianstad include the catchment area of the Helge River in the Municipality of Kristianstad and the coastal stretches of the large bay known as Hanöbukten.¹⁵² The wetlands have been accorded the status of a “Ramsar Convention site” as an area of international significance.¹⁵³ The total catchment area is 90 700 ha and the Ramsar-area is 8 050 ha. It is also a part of the *Natura 2000* network. The region has a rich biodiversity and the surrounding countryside, including the country’s most extensive inland wet grasslands, has a unique value. The region also has one of the largest reserves of groundwater in the whole of northern Europe. The project of the rich wetlands of Kristianstad aims to preserve and develop the ecological values and cultural heritage of the area, while at the same time making careful and sustainable use of them.

The project was initiated in 1989 by the municipality of Kristianstad and it is responsible to the municipal community board.¹⁵⁴ The rich wetlands of Kristianstad has also applied to become a biosphere reserve, which has influenced the daily working methods in the area. The functions in a biosphere area are conservation, sustainable development and logistics, i.e. research, monitoring, knowledge development etc.

¹⁵² Kristianstad Vattenrike. (n.d.). *Ecomuseum Kristianstad Vattenrike*.
<http://www.vattenriket.kristianstad.se/eng/summary/index.htm> [2003, September 10].

¹⁵³ Kristianstad Vattenrike. (n.d.). *Ecomuseum Kristianstad Vattenrike*.

¹⁵⁴ Kristianstad vattenrike Biosfärkandidat. (2003). *Verksamheten år 2002*.
http://www.vattenriket.kristianstad.se/verksamhet/pdf/krvattenrike_2002.pdf [2003, September 10].

Direct effects

The **economic direct and indirect effects** come from tourism. More than 150 000 people visit the various information stations, i.e. ecomuseums, each year. The sales from fishing cards gives approximately 300 000 SEK per year. Nils Hoffman (fishing coordinator) says that there are plans for having more profiled fishing products of high quality, which for example could imply cooperation with local camping sites. However, Sven-Erik Magnusson (project leader of the Ecomuseum) is underlining that the greatest values provided by the project are the ecosystem services and the conservation of wetlands. The operation budget (paid by the municipality) is about 1.2 million SEK per year. The biosphere area also receives approximately 900 000 SEK from the municipality, county administrative board, Region Scania and the Swedish EPA.

Environmental direct effects are seen as result of the various nature conservation activities of the project. One activity has aimed to reintroduce storks in the area. Another activity concerns cranes and to find strategies to minimise the pasture damages but at the same letting cranes reside in the area with a minimum of disturbance and maximise the possibilities for people to enjoy them. In this activity there is also collaboration with a German interest group of cranes, which is one example of the international network of the rich wetlands of Kristianstad.¹⁵⁵ Another activity is an administration plan for greylag, a type of goose, which population increase has been brought problems for many farmers.

There is also a activity carried out between the administration of the rich wetlands of Kristianstad, the snack company OLW and WWF, which aimed at conserving the biodiversity in and around the Vram River (many of the potatoes producers are situated around the river).¹⁵⁶ The selling of snacks would provide money for the project.

Other activities have improved the habitats for fishes, e.g. restoration of fish migration. One activity aims to reintroduce the catfish in the area that disappeared in the 1960s due to pollution in Helge River. The rich wetlands of Kristianstad has also managed to put certain restrictions of fishing in the area in co-operation with the administration of fish conservation area, e.g. the prohibition of tow fishing behind a boat in certain rivers and lakes. The administration of the rich wetlands of Kristianstad is not encouraging canoeing, which easily could disturb the nature. Another activity however aims at improving the using of boats in nature. The administration has also worked actively against water-skiing in the area. However, important to note is that the administration does not have any legal authority or executive power. It works according a certain policy and informs responsible authorities if there is a misuse of the nature in the area.

Some of the main environmental effects could however be seen in the restoration of the wetlands, where cattle now are grazing. These efforts have lead to increased biodiversity. The administration of the rich wetlands of Kristianstad has also received a price for its wok in inventory from the Swedish Species Information Centre on Nature Conservation. Before the project started there were only two nature reserves in the area. The project has lead to 5 new nature reserves in the Ramsar-area according to Sven-Erik Magnusson.

The tourism manager Tommy Gustavsson thinks it is important to make the whole area available for tourists. He believes that being part of the *Natura 2000* network could in some

¹⁵⁵ Kristianstad vattenrike Biosfärkandidat. (2003).

¹⁵⁶ Kristianstad vattenrike Biosfärkandidat. (2003).

cases imply that a “dead hand” is laid over an area, which is why it is important to interpret the regulations in a practical way. Tommy Gustavsson also feels that there is a need for a portal, e.g. a water house, as an entrance point to the area. He also underlines the value in merging the tourist areas of forests and seas in order for the whole region to be developed.

Tommy Gustavsson has together with the ecomuseum and municipalities in northeast Scania initiated one information meetings about ecotourism with local entrepreneurs in the area. The administration is trying to steer the streams of visitors to public ground and not to land owned privately. Hans Cronert (nature conservation coordinator) says that it is better to put resources on making some areas especially accessible.

Some **direct social effects** are connected to the knowledge development induced by the ecomuseums, which are 13 information stations, each dealing with different aspects of the general theme of water. The ecomuseums are used by the local inhabitants to a large extent. Another project aims to restore the ruined castle so that people could use it and learn about the history of the area. Another important project is the nature school, which purposes are to let pupils and teachers explore and examine nature and culture values in the area. Much efforts has also been put on the homepage, which has had approximately 40 000 visitors.

Networking is important for the project, which has many international contacts, which could be seen as a social effect of the project. The administration of the rich wetlands of Kristianstad has had a close cooperation with the Swedish EPA, county administrative board, WWF, farmers’ association and ornithology clubs, landowners and leaseholders. Research by the University of Stockholm (Centre for Research on Natural Resources and the Environment (CNM)) has been using the rich wetlands of Kristianstad in an international project “Millennium Ecosystem Assessment”. The project in Kristianstad has therefore been investigated and analysed in several doctoral thesis.¹⁵⁷

Indirect effects

Indirect economic effects are that people are attracted to the area. The wetlands are for example used in the marketing of the municipality in order to attract new inhabitants. Other indirect economic effects come from tourism. Approximately 3 000 - 4 000 persons are for example taking the flood boat during a nice summer, according to Lennart Björck (entrepreneur in boat sightseeing). This might not have happened if the wetlands were not restored. However, it has been important underline the environmental concept of the rich wetlands of Kristianstad in the cooperating entrepreneurs.

A cultivating machine and special tools have also been developed. According to Håkan Olsson (farmer, cultivator and landowner), there seems to be an increase in the second hand market, which implies future economic revenues.

Indirect environmental effects could for example be that the restored wetlands decrease the eutrophication in the Baltic Sea, which is one of its main environmental problems. However, a quantification of this could be difficult to establish.

¹⁵⁷ Olsson, P. (2003). *Building capacity for resilience in social-ecological systems*. Stockholm: Natural Resource Management Department of Systems Ecology.

8.5 Grövelsjön mountain lodge

Development of the project

Grövelsjön mountain lodge of the Swedish Touring Club, situated in the northwest of the region Dalarna, offers an exciting mix of both Swedish nature reserves and Norwegian national parks. The lodge was established in 1937 but began their environmental work in 1990 and it has approximately 26 000 visitor nights per year according to the manager Charlie Ekberg.

This project could be said to differ the most from the other ones. This is due to its size and that it is a mountain lodge and not a project directly related to nature conservation. It could however be interesting to investigate how a mountain lodge could reduce its input on the natural assets in the region and at the same time provide opportunities for people to enjoy nature in surrounding national parks and reserves. The mountain lodge has been awarded by several environmental prizes and is seen as a forerunner in sustainable tourism.¹⁵⁸ Due to the specific characteristics of the mountain lodge, only one person, Charlie Ekberg, has been interviewed.

Direct effects

Economic direct effects are above all the revenues from tourists. Working opportunities have also been created/sustained (approximately 30 people work at the lodge of which 10 are full time). Charlie Ekberg implies that the profitability of the lodge is high, which is quite unusual for a non-profit organisation as is the Swedish Touring Club. The environmental work has led to both decreased costs and increased revenues, which has improved the profitability. The lodge has a yearly turnover of 15-20 million SEK.

Environmental direct effects: Grövelsjön mountain lodge is a pioneer among Swedish mountain lodges when it comes to ecotourism and environmental adaptations, which reduce the environmental impacts of the lodge. The restaurant is KRAV-labelled¹⁵⁹ and “locally produced” is an important concept when purchasing food and services. The lodge is also environment-labelled with the *Swan*, which is the officially Nordic eco-label for products that are a good environmental choice, instituted by the Nordic Council of Ministers. Other environmental measures are reduced use of chemicals, e.g. by using dry mops and high performance cloths. The waste from the lodge is also sorted and some composted. One important contribution to reduce the environmental impacts of the lodge is probably the use a heat exchanger and the peat from two bogs, which take care of the heating of practically the whole establishment. This reduces the use of oil, which last winter only was 1.1 m³. Charlie Ekberg thinks that the energy solution (made already in 1985) is better than the magician shows by Joe Labero.

People’s knowledge at the lodge has been a sort of reference to environmental work in the area. If an environmental project will be deployed, the people administrating the lodge are almost always asked for suggestions (i.e. practical environmental solutions). The mountain lodge has actively participated in restoring barns in the area. Raising the awareness of new generations about the unique culture- and nature values in the mountain ranges is today one of the lodge’s most important contribution to nature conservation.

¹⁵⁸ Nature’s Best. (n.d.). *STF – Grövelsjöns Fjällstation*. <http://www.naturensbasta.com/en/grovelsjon.asp> [2003, September 10].

¹⁵⁹ KRAV is a Swedish organisation active within IFOAM - International Federation of Organic Agriculture Movements.

The lodge has received many awards for its environmental work, e.g. Dalarna environmental award and the Grand travel award, which Charlie Ekberg thinks has given great publicity to the lodge. The motivation of the labelling committee of *Nature's Best* says that: "The environmental pioneer work of Grövelsjön is really something to copy for other lodges. Exciting tour products with knowledgeable guides in fantastic nature make it all even better. Behind his accent from the South of Sweden, Charlie Ekberg also shows an enormous commitment to north-western Dalarna, and the local network extends from the new Sami community in Idre to the village association and sports club."¹⁶⁰

Social direct effects: The mountain lodge offers a varied selection of courses and activities and one key to their success is the knowledgeable guides. Charlie Ekberg says that the lodge is a sort of advance kinder garden for adults. Most people come there however, to hike or ski in the nature reserves or surrounding national parks. The lodge lies for example 100 km from Fulufället national park and Charlie thinks that many visitors are also visiting the park and that this number will increase even further in the future.

The environmental work has also lead to new networks. The lodge has got the confidence from SIDA to provide courses in sustainable tourism development, in which tourist managers from mainly Africa participate. This implies that even though the benefits from the environmental work depend on site-specific factors (e.g. closeness to bogs), there are still many system solutions and ideas that can be transferred to other areas as well. Charlie Ekberg thinks that this course is the best recognition the lodge has received since it means that they could spread their knowledge globally.

Indirect effects

Other entrepreneurs in lodging in the area have also started to implement different types of energy solutions, e.g. geothermal heat, in order to decrease the dependency on oil. A project in solutions of local tourist communications is about to be deployed, which could lead to the indirect effect of reduced impacts from transportation. This might not have happened if the lodge would have had a different policy.

8.6 Vindel River's natural pastures

Development of the project

The river landscape around Vindel River has been characterized by small-scale agriculture surrounded by areas of forests. The amount of farmers has decreased due to financial difficulties. However, the consequences of diminishing farmlands are that the open landscapes will be reduced and in the end, disappear. When agricultures are disappearing, meadows and pastures start to overgrow. Old farmlands, which are not ploughed or fertilised, often has a high degree of biodiversity. The grazing and mowing prevent tall plant species like fireweed to take over and instead a large number of plants and animals are able to live side by side. Plants like curlew, lapwing, cat's foot and bluebell and all the insects that depend on cow dung suffer when agricultural practices are shut down.

The project *Vindel River's natural pastures* was initiated by the WWF (the project owner is however Sorsele municipality) in 2001 and it aims to conserve natural grazing lands' biodiversity and cultural history for future generations and to create the conditions for

¹⁶⁰ Nature's Best. (n.d.).

profitable farming through the production of naturally grazed beef.¹⁶¹ The project provides advice and covers the costs for restoring valuable natural grazing lands. It also offers education for farmers about operating “green” farms with focus on developing a naturally grazed beef product.¹⁶² The project focuses on concepts such as profitable agricultural practices, nature and culture values and retained attraction values and small-scale tourism in a “living” river valley. The regional production of quality meat will also provide value added for nature conservation. The overall goal is to increase the attraction of the surrounding areas of Vindel River through restoring of the natural pastures. The aim is that by the end of the project in year 2006, there will be profitable agricultural practices that guarantees the conservation of the valuable nature and culture landscape in the surrounding of Vindel river (from mountain range to the coast line). The expectations are that the farming activities will be self-sustainable and could provide a functional model for other areas in the northern parts of Sweden.

Direct effects

Economic direct effects: The high quality beef product provides farmers with higher returns (due to better quality of meat it is possible to charge higher prices) and better conditions for their conservation measures. A general key problem for agricultural practices is to achieve profitability. However, if farmers cooperate concerning purchasing and using of machines, costs could be reduced. Also, with coordinated logistics and knowledge development within the cooperation other benefits could be attained. The direct economic effects thus come from the selling of high quality meat. The meat has just started to be sold in stores (the cows have to eat the grass on the natural pastures during a certain time in order to for the meat to get an improved quality), thus making economic evaluations difficult. However, only 2 animals will be sold per week to ICA Maxi in Umeå. There are today approximately 350 animals grazing on the natural pastures but the goal is to have around 500 animals later into the project. The project has a turnover of 2.5 millions SEK yearly. Total costs have been 12 million SEK.

Jobs have partly been created but jobs have also been sustained. There are 22 farmers that are part of the project of which 4 are newly established. Many farmers also work with tourism as a complement to the agricultural practices. With the producers’ cooperation there has been a possibility to decrease costs since farmers could for example share one machine. To cooperate and share machines have been necessary thinks Sven-Olov Borgegård (consultant at WWF).

Environmental direct effects are that 125 ha of 800 ha of natural pastures will be restored during the project’s timeframe. The flora and fauna has been inventoried in the area in order to see how these change due to the restoration and grazing. According to Gunilla Hedman (handling officer at Västerbotten county administrative board), one of the most important effects of the project is that the landscaped has been opened up.

The handling of fertiliser is of significance. A prerequisite is that the most of the manures should go back to the meadows and pastures in order to have a closed loop and to minimise the use of artificial fertilisers. It is also important to have the right sequence of plants and to use nitrogen-fixating plants to reduce the artificial fertilisers. A leaflet about the project says

¹⁶¹ Johansson, I. (n.d.). *Landskapsvård och köttproduktion i Vindelälvens närområde.*

¹⁶² Johansson, I. (n.d.). *Landskapsvård och köttproduktion i Vindelälvens närområde.*

that “every cow’s bite is a benefit for biodiversity; every cow patty is a contribution to nature conservations”.¹⁶³

No new protected areas have been initiated by the project but Ingemar Johansson claims that it has prevented further exploitation of natural resources in these types of areas, e.g. the building of a helicopter landing place. Ingemar Johansson has applied to register the meat under own label. Sven-Olov Borgegård thinks that the project could lead to several hiving offs, which could be labeled *beef from Vindel River’s natural pastures* in the future.

According to Ingemar Johansson (project leader), one **social effect** has been that the farming have attained a higher quality, thus making raising the farmers’ status. The shutting down of farming practices was the last nail in the coffin for the region but the project has now increased the future prospects.

The project has had many visitors much thanks to the involvement of WWF, which has been recognised both nationally and internationally. Ingemar Johansson thinks it is important to spread the concept that the project is using and to have a coordinated trademark since customers could get confused if there are several concepts of beef products from natural pastures areas. One problem according to Sven-Olov Borgegård has been that certain organisations and associations have tried to copy the concept of WWF without informing WWF, which has lead to complications. One cooperation is for example with *Gastrobotnia*, which is a project aiming at developing market cooperation within trade and restaurants and developing the quality of provisions. Sven-Olov Borgegård thinks that a future cooperation could be green public procurement. Further, he anticipates the concept to spread and that the beef will be called “beef from natural pastures in Västerbotten”.

According to Sven-Olov Borgegård, even persons resistant towards EU projects think that the project has lead positive benefits for the region, a confidence which could be due to the rapid visible results.

Indirect effects

A living river valley could lead to increased possibilities of attracting tourists, which could benefit other companies in the area in the long run. Jobs could also be created in the product chain while handling the meat (transportation, slaughtering, sales etc).

Increased meat production could lead to environmental effects of increases of green house gases. The methane (CH₄) production by the cattle itself is one of the major contribution to environmental impacts (calculated in global warming potentials) along the life cycle chain according to LCAs.¹⁶⁴ Sven-Olov Borgegård however clarifies that the methane gas production from up to a thousand animals is not a problem in Sweden, which is a densely populated country, as compared to the problems that arise from overgrowing pastures.

¹⁶³ Johansson, I. (n.d.). *Landskapsvård och köttproduktion i Vindelälvens närområde*.

¹⁶⁴ Olsson, V. (2002). Naturbetesköttet har mervärden! In *Naturbetesköttet har mervärden!*, February 2002, SLU, Uppsala.

8.7 Fulufjället national park

Development of the project

Fulufjället is situated in the northwestern part of county Dalarna on the border to Norway. Fulufjället was designated nature reserve in 1973 and in 1990 the work started to establish the area as a national park.¹⁶⁵ However, it did not become a national park until September 2002 as a result of the decision by the Swedish Parliament's 24 April 2002. It is the latest implemented park of the 28 national parks in Sweden. The Swedish Government owns the land of the park and the county administrative board in Dalarna are the administrators of the park.

Fulufjället is a unique mountain range in Scandinavia as it is actually a 35 km long, 15 km wide plateau of sandstone.¹⁶⁶ The purpose of the park is to conserve a southern mountain area with unique vegetation and significant nature values in an essentially unchanged way.¹⁶⁷ The national park of more than 38 000 ha is one of the few areas in Sweden that is still unspoiled by exploitation. In the north east part, lays the cascading waters at Njupesjär, Sweden's highest waterfall and the main attraction of the park.¹⁶⁸

In 1995, the area was designated for the *Natura 2000* network.¹⁶⁹ Fulufjället is a member of the Protected Area Network of parks by WWF, which aims to create a European network of wilderness protected areas; improve nature protection by sustainable tourism development and to provide a reliable trademark which guarantees nature protection and is recognised by all Europeans.¹⁷⁰

This is the largest project related to nature conservation in this study. In the establishment of the national park, there were several part projects, of which the *Surroundings of Fulufjället* (an assessment of the local inhabitants and the possibilities of development in the region) and *Fulufjällsringen* (a compilation of development ideas, which later became the name of an association of entrepreneurs in the area) will obtain special attention. These two projects were an outcome of discussions between the county administrative board in Dalarna, the Swedish EPA, the municipalities of Älvdalen and Malung and local inhabitants.

There are many elderly persons among the population in and around Fulufjället and there are also high unemployment rates. There were 364 inhabitants in the area 1998 and the majority are men (women and youngsters are heavily underrepresented).¹⁷¹ Hunting, fishing and snowmobiles are important interests in the area.

¹⁶⁵ Swedish Environmental Protection Agency. (2002). *Skötselplan för Fulufjällets nationalpark*. Report 5246. Stockholm: Swedish Environmental Protection Agency, p. 1.

¹⁶⁶ PAN Parks. (n.d.a). *Fulufjället National Park* <http://www.panparks.org/Network/Ourparks/Fulufjallet> [2003, September 10].

¹⁶⁷ Lundqvist, R. (2002). *Fulufjället: Nationalpark i Dalafjällen*. Värnamo: Fälth & Hässler, p. 1.

¹⁶⁸ PAN Parks. (n.d.a).

¹⁶⁹ Swedish EPA. (2002d). *Skötselplan för Fulufjällets nationalpark*, p. 71.

¹⁷⁰ PAN Parks. (n.d.b). *What is PAN parks?* <http://www.panparks.org/> [2003, September 10].

¹⁷¹ Arnesson-Westerdahl, A. (1998). *Fulufjället omland: Hållbar utveckling av natur- och kulturturism i anslutning till nationalparksbildning*. Falun: Länsstyrelsen i Dalarnas Län.

In 1997 when the project *Surroundings of Fulufjället* was launched, the conflict between the local inhabitants and the national authorities had reached a deadlock in the negotiations. There was thus an over-hanging risk of not being able to establish a national park in Fulufjället. This was the third attempt by the Swedish EPA to establish a park in the mountain range of Sweden, which was why it was not possible to fail one more time since it then would have been extremely difficult to establish a national park in these areas in the future.

Direct effects

Economic direct (and indirect) effects have aroused from the increased tourism in the area. There are approximately 40 000 visitors every year that see the waterfall of Njupeskar. There is a well-developed system of trails in the park, which provides possibilities for outdoor recreations. A study from the ETOUR made before the establishment of the park reveals that 40 % of the tourists think the area will become more attractive when established as a national park.¹⁷² Further, most of the tourists are Swedes coming by car but there are also many tourists from Germany, Denmark and the Netherlands.¹⁷³ On average, every visitor pays approximately 300 SEK for living, food and souvenirs etc.¹⁷⁴ This money could also be seen as entering the region (however, more as indirect effects of the park).

Kjell Røngård (chairman of *Fulufjällsringen economic association* and manager of Sälen Hostel) has for example seen an increase of tourists, both in the hostel and generally in the region, since the park was established. He thinks the national park is an excellent magnet due to both the national and international marketing, which has been important for the establishment of the park. Today, there are also fewer costs for the companies in Fulufjällsringen since they have increased co-operation and shared marketing. The economic association of Fulufjällsringen has also undertaken certain environmental criteria, with the aim to be certified in the future with the label Nature's best for ecotourism.

Four new working opportunities were created by the project. There are also jobs that have been sustained. New companies that have started thanks to the park. The information centre at the main entering point to the park, Naturrum, has been creating both work opportunities when it was constructed as well as later, in management. It now shows an exhibition about the flora, fauna and cultural history of Fulufjället.

Pan Parks accommodation will build a holiday village outside the park, with the aim to attract European tourists with more purchasing powers. The holiday village will cost 35-40 millions SEK, provide 280 beds and only local inhabitants will be employed for the construction work.

Birgitta Pettersson (project leader for *the Surrounding of Fulufjället*) thinks that the certification of Pan Parks has led to an increase of the nature values in the area.

¹⁷² ETOUR. (2002a). *Forskning om turismen i Fulufjällets nationalpark*. Östersund: Mitthögskolan, p. 1.

¹⁷³ ETOUR. (2002a). *Forskning om turismen i Fulufjällets nationalpark*, p. 3.

¹⁷⁴ ETOUR. (2002a). *Forskning om turismen i Fulufjällets nationalpark*, p. 4.

Environmental direct effects come from that the park has improved the protection of the natural assets. Stig-Åke Svenson (head manager of environmental conservation at Dalarna county administrative board) thinks the establishment of the park has given a more significant quality mark to the area (than the previous nature reserve). He also think the protection has been more sharpened and optimised.

The implementation of the zoning into 4 different areas of activities has been important to solve the initial conflict since people kept some of their initial rights in certain areas. In the central core of the park, no activities are permitted which might disturb the experience of nature. The recreation opportunity spectrum (ROS) method, an analysis and matching of visitors' desires and the conditions of the area, has also been used. Carrying capacity is another applied concept, which has been important around the waterfall of Njupesjär since, according to Staffan Eriksson (manager of Naturrum), 99.9 % of the visitors go to see that place.

The hunting of small game hunting will be forbidden within a ten-year period. Gunder Eriksson (chairman in the Särna-Idre haunting association) thinks that certain restrictions in hunting could not be biologically motivated, e.g. the hunting of beaver, which only influence the strain marginally.

Since the land have not been used for reindeer pastures, the area and its natural assets is interesting from a reference point of view in research. There are however clear-cut areas of forests just on the edge of the park, which Rolf Lundqvist (nature conserver, author and photographer) does not think is acceptable.

Social effects have been that new cooperative working methods have been created for attaining local support or solving conflicts when establishing a park. The consequences of zoning increased the local inhabitants possibilities to hunt, fish and use snowmobiles and thereby their support for the park. The establishment of the park has also lead to improved networks in the area. Per Wallsten (coordinator for the park at the Swedish EPA) thinks that many network have been created, especially among women, which has lead to other types of projects and further spin-off effects of the establishment of the park.

Indirect effects

A road between the village Mörkret and the Norwegian border has been improved, which was one of the main requests of the local population. A mobile antenna has also been set up. The future ecotourism labelling of entrepreneurs will further benefit the natural assets in the area. From an economic point of view more financial resources from tourists could also help to protect and maintain the natural assets in the area.

Socially, there is now better communication and cooperation in and among the different villages, which has reduced other conflicts in the area. Göran Greider (head editor at the newspaper *Dalademokraten*) has done research in the area concerning the initial conflicts, which will be published later this autumn. The project has also been a part of the process to develop a network for education with local schools and learning centres. The national park attracts for example researchers from Swedish university of Agricultural Sciences (SLU), University of Stockholm and University of Umeå.

The seven selected projects have contributed to a variety of not only environmental positive effects from the measure of nature conservation but also economic and social positive effects to the region. The selected projects could thus be considered as successful and contributing

to sustainable regional development. Important to note however is that the effects must be seen in the context of the projects and the regions since they vary in size to a large extent.

9. Investigation of determinant factors

This chapter presents how the identified factors correspond to the selected projects.

The interviews were carried out with relevant key persons in each project in order to investigate how the identified determinant factors correspond to the selected projects. The answers of the interviewees were considered from a “yes-and-no-perspective” but also allowing free scope for underlining certain factors. Two questionnaires (see Appendix 1: Questionnaires) have been used: one for the project leaders in which ten factors were listed and one for other stakeholders using the open question: *What factors do you think have contributed to the project’s success?*

9.1 Setting of investigation

The factors identified from literature were: local support; network of key actors; knowledge development; strategies to deal with tourism peaks; commitment of authorities, project leaders and project workers; a holistic vision; coherence with regional political goals; cooperation between academics and practitioners; potential existence of conflicts; and new working methods or new techniques. The relative importance of factors was established based on the information of the interviews. Eight out of the ten factors were found important and four more were added by the interviewees.

9.2 Occurrence of factors

The identified determinant factors matched the projects well, as the project leaders confirmed their importance for the projects’ successes. Table 6 shows the results of the investigation of factors. The grading XX, X and - will be used. XX means that the factor has been necessary for the project’s success, while X implies that the factor has played an important role. – however indicates that the factor has been less important. The table reflect the author’s perception of the importance of the factors from the content of the interviews, i.e. the project leaders have not graded their importance themselves.

The column to the right in Table 6 sums the X. If a factor was given above half of total (i.e. 7 X or more out of 14), it has been considered as an important factor for the success of projects. If a factor was given less than below half it was considered to be a less important factor. The table shows that two out of ten were less important factors.

Table 6: Importance of success factors for the different projects

Factors/Projects	1	2	3	4	5**	6	7	Σ (X)
Local support	XX	XX	X	XX	X	XX	XX	12
Networks	XX	XX	X	XX	X	XX	XX	12
Knowledge development	XX	XX	XX	XX	XX	XX	XX	14
Tourism strategies	-	X	X	XX	XX	-	XX	8
Commitment	XX	XX	XX	XX	-	XX	XX	12
Holistic vision	XX	XX	XX	XX	XX	XX	XX	14
Coherence political goals	-	X	-	-	-	-	-	1
Cooperation academics and practitioners	X	X	-	X	-	X	X	5
Potential existence of conflicts*	X	XX	X	X	-	-	XX	7
New working methods	XX	XX	XX	X	XX	XX	XX	13

XX = necessary factor, X = important factor, - = less important factor.

If >7 X in total = important factor

* Considered as form of interactions rather than a factor.

** The project leader, i.e. the manager of Grövelsjön mountain lodge, has not been asked specifically about the different factors due to the specific characteristics of the project.

9.2.1 Important factors

The table above show that some success factors seem to have been more important than others and these should be taken into consideration when planning new projects. As mentioned, there are difficulties in comparing the experiences of projects since they differ from each other considerably. However, some factors are not site-specific but more of a general kind which could be one reason why they match several projects.

The importance of **local support** has already been confirmed in the report *Goda exempel på lokal förankring i naturvård* (Good examples of local support in nature conservation) by the Swedish EPA, but the quality of the examples in this collection have not been secured. In some cases, local support has been the most necessary factor for success, e.g. in the case of Fulufjället national park. The former project leader for the *Surrounding of Fulufjället* says that local support is extremely important since the establishment of the park otherwise would not have succeeded. In the case of Vasikkavuoma hay-mire, the MEJA village development association were the administrators of the project and the local inhabitants initiated the development of the project, which also confirms the importance of local support. In Emå river project, Kungsör municipality, the rich wetlands of Kristianstad and Vindel River local support has been an important factor for the success of the projects.

Network of key stakeholders is another important factor for the success of projects related to nature conservation. Networks were crucial parts of the success of establishing Fulufjället national park, above all the collaboration with PAN parks. In Vasikkavuoma the network of

key stakeholders has been an important factor. The environmental work of Grövelsjön mountain lodge has led to increased networking, e.g. with SIDA. In Emå river project, networks have been extremely important for the success of the project since they are needed due to the large geographical spread of the area. Networks have therefore been founded both within organisations but also between different actors. Networks have together with local support been the most important factor in the case of the rich wetlands of Kristianstad. In one case, Kungsör municipality, it is however pointed out that the network could have been much better.

Knowledge development is another factor that stands out in importance. The meaning of knowledge development and increased awareness have been differently perceived by the interviewees, but it seems to have been important both from a tourist perspective, e.g. many projects have information stations, and from a network perspectives, i.e. sharing of information and knowledge. In the case of Vasikkavuoma, knowledge development is important, especially concerning the cultural heritage of the hay-mire. Schools for example are now using the area for both nature pedagogy and to learn about ancestors' work and traditions. In Emå river project, knowledge development and, above all, the increasing awareness of use of pesticides and fertilisers of farmers have been central. The information stations, ekoturum, have also led to increased spreading of knowledge among visitors and tourists. Nature stations, which are situated in different biotopes, have also been important in the case of Kungsör municipality. In the rich wetlands of Kristianstad a lot of the knowledge development has been attained through the information stations ecomuseum, which has been necessary for the project since it otherwise would have been insubstantial. The ecomuseums provide a deeper understanding to the visitors. The project leader of the rich wetlands of Kristianstad however says that it is however important to build knowledge not only on species information but also to incorporate the social, economic and cultural aspects for people to relate to. In the cases of Grövelsjön mountain lodge, the organisation *Nature's Best* has emphasised the knowledgeable guides of the lodge, which relate to the importance of knowledge development since guides are teaching tourists about the nature values in the area. In the area of Vindel River, knowledge development has been important and the project has initiated educational courses for the farmers since the project implies different ways of managing the land than in traditional farming. In Fulufjället, the knowledge development and increased awareness have been important factors from two perspectives, i.e. to use the knowledge of the authorities and field workers but also the one of the local inhabitants.

Strategies how to deal with tourism peaks and over-consumption of natural assets seem necessary in most projects, which all somehow relate to visitors and tourists. There are many examples where tourism has led to severe damage of natural assets. However, in the selected projects this factor does not seem to have had any wider relevance, which could be due to the fact that the areas/regions considered are relatively large and that the number of tourists relatively small. Another reason could be that projects include various attractions, which thus "share" the flow of tourists. In one case, Fulufjället national park, the carrying capacity has been investigated but this might be due to that one attraction, i.e. Njupesjär waterfall, is seen by 99.9 % of the tourists that come to the area. Efforts are made to canalise tourists and to increase their utility while at the same time reduce their environmental impacts. Strategies for handling streams of visitors in the park are also important from the standpoint of local inhabitants, who did not want to be regarded as "monkeys in a zoo". Overall, it is however important to have sustainable conditions for tourism in an area, says the former project leader of the project *the surrounding of Fulufjället*. It must however be noted that most projects have some sort of strategy for handling tourists. In Emå river project, canoeing strategies have for example been considered. In Kungsör municipality efforts have been made in

steering tourists by using different signs in the strolls. In the rich wetlands of Kristianstad, strategies for handling the amounts of visitors have been important since the project aims to steer the visitors in nature so they disturb the least but at the same time obtain a maximized experience.

Commitment has been necessary both within the administration and the ones carrying out the project but also of regional authorities, which often are, at least partly, decision-makers of the project. Commitment is also closely related to local enthusiasts, which several stakeholders have mentioned as an important factor of success (discussed in 9.2.3). In Vasikkavuoma, commitment has also been vital, especially relating to the cooperation and sharing of knowledge in the project organisation. Commitment of authorities are important both on a regional and national level in the case of Emå river project. This is confirmed in the case of Kungsör that commitment from authorities, especially the municipality, has been an important factor for the success. The commitment in the working teams has also been crucial. In the rich wetlands of Kristianstad, commitment is essential on every level. Personal relations are a key issue as well as letting authorities come and visit the area since experiencing the ecosystem services gives a different understanding than just discussing the regional development in an office building. In the area of Vindel River, the commitment of authorities has been substantial, e.g. the county administrative board chose the project to represent Västerbotten County at a large trade fair. In Fulufjället, commitment of authorities is important in the way that the local inhabitants must feel that their needs and wishes are recognised.

A **holistic vision** seems to be necessary. However, since the factor is loosely defined it could have a different significance for different people. What most interviewees seem to have meant by a holistic vision is that many different types of goals were wished to be attained (as opposed to a narrow focus where only a few measures or actions are taken). A holistic vision have in many cases also lead to other projects or actions, which increases the chances of the initial project to develop further. In Vasikkavuoma, the holistic vision implied cultivating the whole hay-mire and increasing tourism. The project has lead to “many rings on water” in forms of new projects and visions. A holistic vision has merged different interests in the Emå river project but important to note is that a holistic vision could also lead to more diffuse actions and measures. A holistic vision has been significant in the case of the restoration of meadows in Kungsör municipality. Tourism, living environment, public health, nature and cultural values and social effects have all been incorporated in the restoration work. In Kristianstad, a holistic vision has also been vital but it must be able to be concretized (otherwise it is of no use says the project leader). At Grövelsjön mountain lodge, a holistic vision (shown in the environmental policy of the lodge) seems to have been an important factor for the success of the lodge since they use their environmental niche to attract a certain types of tourists. The project leader for Vindel River’s natural pastures says that a holistic vision is important in order to, at all times, see where the project is going as well as knowing what is desirable to achieve. A holistic vision has been a significant factor for the success of the surrounding of Fulufjället national park but it had to be complemented by a strategy for the future, i.e. a concrete plan how a project should be implemented.

The **potential existence of conflicts** is more seen as a form of interaction than a factor itself. Resolution of conflicts or rather avoiding conflicts are important for many projects, especially for the ones that has a history of conflicts, e.g. in the watershed area of Emå River and in the region of Fulufjället national park. There still remain some major conflicts in Emå watershed area, mainly between farmers and non-profit nature conservation associations concerning the flooding of Emå River. In Fulufjället, the resolution of conflicts has been an

absolute necessity for the success of the national park. Many projects have put a lot of effort into solving differences in opinion at an early stage through dialogue, networks and information spreading. In a few cases, the adversaries have been included in the project, which has changed their opinion, e.g. Vasikkavuoma hay-mire.

New working methods and techniques seem to have been necessary for the success of the projects. In Vasikkavuoma, new tools for the cultivating machine have been developed while working with the project, which is now sold to other areas where hay-mires are restored. In Emå river project, new working methods that have been important for the success relate to administrating water issues from a watershed perspective instead of from a political or geographical perspective. In Kungsör, new working methods have been crucial for the success of the project, especially the system solutions. In Kristianstad, the main new working method has been the holistic approach of the administration. At Grövelsjön mountain lodge, one new working method is the energy extractions from the bogs, which appears to be vital for its success. In the area of Vindel River, the disposition of the project by WWF has been a new method. In Fulufjället, the inventory of development possibilities of the area and the deep interviews of the local inhabitants have been crucial new working methods in order to solve the conflicts.

9.2.2 Less important factors

Two factors seemed less important: coherence with regional political goals and cooperation between academics and practitioners. **Coherence with regional political goals** does not seem to be important for the success of projects, which could be due to a steady regional climate in the region (i.e. same party has governed for a long time without changes in priorities). It could also be that in a few cases there is less cooperation between the project and politicians than in others (e.g. Pajala municipality versus Kungsör municipality). It could be considered contradictory since it seems to be important that the regional authorities are committed to the project but regional political goals are unimportant (the commitment of politicians could be influenced by political agendas and goals). Regional political goals are also often deciding the funding to various projects within the region, which thus could be important for projects related to nature conservation. In Emå river project for example, politicians are influencing the success to a certain extent since they are distributing the financial means in the region.

Cooperation between academics and practitioners could be perceived as a vaguely formulated factor and requires a definition of both academics and practitioners. This has led to difficulties for the interviewees to interpret the factor. However, most interviewees see academics as persons working at regional authorities since they often have some sort of higher education. Practitioners are often the ones that are working with the nature conservation itself (most project leader though have a combined experience from both practical and theoretical work). Some interviewees mentioned the cooperation as important when it comes to find specific solutions to a problem, which often requires both academics as well as practitioners, e.g. building fish trails in the Emå river project. The project leader in Vasikkavuoma underlines that there has been a close and necessary cooperation between authorities (academics) and practitioners but it is however important that the project leads the practitioners and not vice versa. In the area of Vindel River, the cooperation between academics (e.g. University of Umeå) and practitioners has been important for the inventory of the flora and bird life in the area.

9.2.3 Additional factors identified

The interviews gave information about additional factors that are determinant for the success of projects related to nature conservation. These are presented in Table 7.

Table 7: Additional determinant factors for a project's success

Project	Additional factors
1. Vasikkavuoma hay-mire	International recognition, local enthusiast, attained nature reserve status
2. Emå project	Enthusiastic project leader, financial means, visible results, national and international recognition
3. Kungsör Municipality	Local enthusiast, support from municipality, visible results, administration and budgeting of working teams
4. The rich wetlands of Kristianstad	Broad vision, networks, knowledge development, local enthusiasts, relationships*
5. Grövelsjön mountain lodge	Specific target group, information spreading, to be a serious and trustworthy operator
6. Vindel River's natural pastures	Spreading of information, visible results
7. Fulufjället National Park	Democratic process, visible results, retaining some of the local people's rights, zoning, mapping of possibilities, international and national recognition, financial means, deep interviews, local enthusiasts

* The factors are mentioned by Thomas Hahn in Rutberg, I. (2003).

Three factors have been mentioned to be important in several cases:

- Local enthusiasts/project leaders
- Visible results
- National/international recognition
- Financial means and funding

Local enthusiasts/project leaders are important since they are leading the development of the project. Somebody has to be prepared to sacrifice a lot of time and effort in order to make things happen successfully. In Vasikkavuoma, it has been important to have a local enthusiast as a project leader (somebody has to work with the project fulltime in order for it to function administratively). However, a risk is that the project could become vulnerable if that one person leaves according to one interviewee. Much of the success in the Emå river project is due to the enthusiastic project leader. In Kungsör, one of the most important factors is that a local enthusiast has been willing to sacrifice a large amount of time on the project (30 years). A knowledgeable and enthusiastic project leader is another mentioned factor of success in the case of Vindel River's natural pastures.

Visible result have been mentioned by several stakeholders, which is important especially when it comes to turn the public opinion of the project. The results should not only be visible but also be shown within a certain timeframe. In the Emå river project, attained positive results have been shown to others through the HELP (hydrology and environmental life policy) seminar that was held in the watershed area. The visible results have thus contributed to its success. In the area of Vindel River, visible results have been important

since they make people believe more in the project. Concerning the natural pastures, the increased natural values could be seen rapidly. In Fulufjället, the building of the Naturrum was a visible result, which became a symbol of the commitment of the Swedish government.

National and international recognition are vital since they enlarge the networks (and chances of increasing knowledge) and at the same time gives publicity and marketing benefits, which is especially important when attracting tourists. This factor has been important in the case of Vasikkavuoma hay-mire, which attained international recognition through the Europa Nostra price. To use the concept of WWF in the area of Vindel River has been important since it gives a higher status to the project. In Fulufjället, the cooperation with PAN Parks has influenced the success of the national park. The certification has led to new international cooperation and partners, e.g. PAN Parks accommodation village, and that local entrepreneurs have increased their performance (in order to be able to compete internationally).

Financial means and funding seems to be an important factor of success. Often the funding of a project determines if it will be a success or not. However, in the selected project there is the aim that they should be self-financing (that is with some sort of EU or Swedish funding) after they officially have been ended. Some examples of the importance of funding are here given. Vasikkavuoma hay-mire has developed a lot much thanks to the attained nature reserve status of area. The commitment from the county administrative board has been vital for the project's success, not at least from a financial perspective (the nature reserve status guarantee financial means in the future). In Emå river project, it has also been important to have sufficient financial means. In Kungsör, it has been crucial that it is economically profitable for the farmers to keep cattle on the land (that is with EU funding). It has also been necessary to have enough financial means in the case of Fulufjället national park, which might otherwise not have been established. It would thus be interesting to do a more financial/economic analysis of the projects' success but this is not within the scope of this thesis.

Other factors: The factor of being "right-in-time" has also been important in the case of Emå river project due to the coming implementation of *EU Water Directive*. In Kungsör, one vital factor has been the administration and budgeting of the working teams, since the project otherwise could not have been financially carried out. Charlie Ekberg, manager of the mountain lodge, stated the following as important factors for success in a written communication (e-mail translated from Swedish to English by the author): "This type of activity and the focus on target groups that not many other are interested in lies right in time. This coincidence probably with that this type of target group has an understanding and an active interest of sustainable nature and environment. It is also important to spread one's message and to be visible and the only way to do that in these types of circumstances is if one is serious and trustworthy." One main factor was the democratic process in the project *the surroundings of Fulufjället* and also the deep interviews (which required time, interests and trust). Without the project the surroundings of Fulufjället, the conflict between the local inhabitants and the authorities is not likely to have been solved thus precluding the establishment of the park. One important factor for Fulufjället is that the local inhabitants could keep some of their hunting (moose) and fishing rights, which was much due to the zoning concept.

10. Conclusions and recommendations

This chapter presents the conclusions and discusses the validity of the study. A few recommendations will be suggested for decision-makers of projects related to nature conservation.

The first research question of this study investigates if nature conservation enhances sustainable regional development in all three, i.e. economic, environmental and social, dimensions. The findings indicate that projects related to nature conservation could actually enhance, not only environmental effects from nature conservation, but also economic and social positive effects in a region. Although research on nature conservation is focusing more on bringing environmental benefits, this thesis adds the proof that projects related to nature conservation could contribute to all three dimensions of the sustainability concept.

There are different ways that projects or nature conservation could lead to sustainable regional development. Significant effects that have been generated by the projects are:

- Economic effects:
 - Creation or retention of work opportunities
 - Revenues from tourism and from conservation activities
- Environmental effects:
 - Conservation of nature
 - Increased biodiversity
 - Less human impacts
- Social effects:
 - User benefits
 - Work opportunities
 - Changed attitudes towards entrepreneurship and development
 - Conservation of nature for future generations

One surprising finding, relating to environmental positive effects, was that several of the projects have led to increased protection, e.g. new nature reserves as in the cases of the rich wetlands of Kristianstad and Kungsör municipality. This could be due to the building up of an administration and/or organisation, which is capable of convincing other actors (i.e. the county administrative board in the case of nature reserves) to further protect nature. One project, Vasikkavuoma hay-mire, did so in order to secure financial means for the area of the project even in the future. It thus seems that projects related to nature conservation enhance the establishment of new protected areas.

The second research question in this study investigated what factors determine the success of projects related to nature conservation in Sweden. From literature ten determinant factors were identified. The results show that eight of these factors were important for the success of projects related to nature conservation. Other factors were also discovered from the interviews to be significant for the success of a project. All determinant factors are shown in the following list:

- Local support
- Networks
- Knowledge development and increased awareness
- Tourism strategies
- Commitment of external and internal actors
- A holistic vision
- Potential existence of conflicts
- New working methods
 - Local enthusiasts/project leaders
 - Visible results
 - National/international recognition
 - Funding

Local support and networks could help avoiding conflicts. Local inhabitants are the ones that are mostly influenced by a project, which is why local support is important for the success of the project. Knowledge development and increased awareness is vital in order to improve the project or to reach better results or in a more efficient way. Tourism strategies have significance since most of the projects are aiming at increasing the number of visitors in an area. Considerations should therefore be taken towards the initial natural assets in order to limit the damages of the tourists and visitors, e.g. by using the concept of *carrying capacity*. Commitment increases the chances of having things done. A holistic vision seems also to attain the three dimensions of the sustainability concept. It has however to be complemented by clear goals. New working methods are often vital since they imply significant improvements leading to the success of the project.

Other factors found important for the success of projects were local enthusiasts or project leaders who could attract commitment of others and coherence of vision. A project is likely to need an enthusiastic leader in order to develop. Visible results could increase the local support and change opinions of adversaries. National and international recognition is related to attention and marketing, which are important aspects in order to increase the awareness of the project.

In the Swedish context, local support, commitment and solving conflicts might be considered as important to prevent people's frustration from restrictions imposed by nature conservation on the local inhabitants' and the visitors' rights to nature.

10.1 Validity of study

The investigation made in this thesis is performed among projects related to nature conservation in Sweden but the results might also be applicable in other Nordic countries where nature conservation has a long tradition and *the right of common access* exists. There is a great geographical spread of the cases since the selected projects are located in different areas of Sweden. The results are thus applicable for projects both in northern and southern parts of Sweden as well as in rural and urban areas.

The determinant factors were identified through a literature study. In order to complement these factors, the interviewees were given the possibility of adding factors, which they found significant.

To check the accuracy of information provided by the interviewees, a draft was sent to the project leaders giving them the possibility to add/comment the content of the study.¹⁷⁵

The descriptive model shows the author's perception about linkages between different concepts. The author's contribution to the descriptive model is the perspective, i.e. the focus on projects related to nature conservation, illustration of how concepts are interlinked and the investigation of factors that determine the success of projects related to nature conservation. Therefore the model was only used for the systematic description of the cases.

10.2 Recommendations

Advisory forum

When planning or implementing projects that relate to nature conservation it is suggested that the above mentioned success factors are taken into consideration since they could influence the success of a project and also the chances of contributing to sustainable regional development. One idea is to have an advisory forum, in which information could be shared and best practices benchmarked. This would allow well functioning system solutions, techniques, working methods and organisational features to be spread to a larger extent. Ideas would then not have to be developed twice, e.g. as the haymaking machines in Pajala and the rich wetlands of Kristianstad, thus releasing time and finances for other measures.

Gradual accessibility of people in protected areas

Allowing different degrees of accessibilities of people in nature could be considered as one solution to conflicts in areas where protection imposes significant restrictions on the initial rights of the local inhabitants. This was for example the case in Fulufjället National Park, in which the dividing of the area into different zones of activities was seen as a resolving compromise by many stakeholders. Different degrees of accessibility in an area could thus be a valuable action when establishing protected areas or taking nature conservation measures.

Complementary research

This qualitative study could be complemented by designing quantitative indicators to measure the sustainability effects. Surveys for collecting data on large numbers of tourists, local inhabitants and other important stakeholders could also be used. Wider choice of stakeholders, including local inhabitants and visitors, could bring complementary information.

Another suggestion is to include investigations of projects related to nature conservation from a failure perspective, as much could be learned from studying projects where things went wrong. An interesting area is also to investigate how much and what type of funding is necessary for the success of these types of projects. Economic instruments, e.g. subsidies from the EU, are often a strong incentive for actions. The impact of decision-makers' influence on successful projects related to nature conservation is still another research area.

¹⁷⁵ Four (of seven) project leaders gave feedback.

It has been showed in this study that projects related to nature conservation could generate not only environmental benefits but also economic and social positive effects, which could enhance sustainable regional development. A number of determinant factors for the success of projects were also identified, which should be taken into consideration when planning and implementing projects of this type.

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Nordin, Alf. Mountain administration at the Dalarna County administrative board. (2003, August 11). Telephone interview.

Pettersson, Birgitta. Project leader *The Surroundings of Fulufjället*. (2003, August 7). Telephone interview.

Röngård, Kjell. Chairman of Fulufjällsringen, an association of entrepreneurs. (2003, August 7). Telephone interview.

Svenson, Stig-Åke. Nature conservation director at Dalarna County administrative board. (2003, August 7). Telephone interview.

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Abbreviations

BOD	Biological Oxygen Demand
CNM	Centre for Research on Natural Resources and the Environment (Stockholm University)
CSD	Commission on Sustainable Development
EPA	Environmental Protection Agency
ETOUR	European Tourism Research Institute
EU	European Union
GDP	Gross Domestic Product
GHG	Green House Gases
HELP	Hydrology for the Environment, Life and Policy
ICDP	Integrated Conservation and Development Projects
IEH	The Swedish Institute for Ecological Sustainability
IIIIEE	International Institute for Industrial Environmental Economics at Lund University
IUCN	International Union for Conservation of Nature and Natural Resources
LCA	Life Cycle Analysis
LRF	Federation of Swedish Farmers
NGO	Non-Governmental Organisation
NMA	Nature Management Area
NP	National Park
NR	Nature Reserve
ROS	Recreation Opportunity Spectrum
SIDA	Swedish International Development Agency
SLU	Swedish University of Agricultural Sciences
SSNC	Swedish Society for Nature Conservation
TEV	Total Economic Value
UNESCO	United Nations Educational Scientific Organisation
WMO	World Metrological Organisation
WS	Wildlife Sanctuaries
WWF	World Wide Fund for Nature

Appendix 1: Questionnaires

Information about the project (same in both questionnaires):

This project is a thesis for the fulfilment of the master program at the International Institute for Industrial Environmental Economics that is carried out in cooperation with the Swedish Environmental Protection Agency (EPA). The thesis will later be part of larger assessment by the Swedish EPA concerning conservation measures in protected areas.

The aim of the project is to investigate how natural assets/ nature conservation could contribute to regional development and growth. The project will identify a number of successful projects and assess them with respect to their environmental, economic and social aspects and to analyse success factors.

Background (same in both questionnaires):

Approximately 10 % of Sweden's land surface consists of protected areas such as national parks, nature reserves, nature management areas and wildlife sanctuaries. In all protected areas there are both conflicts as well as reciprocal support between conservation and use.

Natural assets related to protected areas may enhance opportunities for tourism and new working opportunities within nature conservation. Some national parks and nature reserves are protected to an extent, which only permits very restricted use while other protected areas are used in a destructive way of for example to large flows of tourists. Since actors have different economic and environmental interests is it interesting to investigate projects that have been able to create synergy effects between different interests. The question is weather there are common factors for "successful" projects, where natural assets related to protected areas have contributed to regional development without negatively influencing on the natural assets in the area.

Questions: project leaders

Tell me shortly about the project and your working tasks.

Why is this project important?

What are the goals of the project? Have these been fulfilled?

What factors have been positive respectively negative in order to attain the goals of the project?

Who are the most important actors for the project?

Have there been any conflicts in connection with the project?

How many visitors/tourists come to the area every year? Are there any negative effects of too many visitors?

How many working opportunities within tourism have been created by the project?

How many working opportunities within nature conservation have been created by the project?

What nature values/environmental improvements have the project contributed to?

Have the project brought any negative consequences for the natural values in the area?

Have the project contributed to any positive or negative social effects for the society?

What are the costs and revenues of the project?

What parts of the working methods or results of the project could be transferred to other projects/areas?

Do you think the project has been a success?

What of the following factors do you think have been important for the success of the project?

1. Local support and/or network of key actors
2. Knowledge development and increased awareness, e.g. nature pedagogy
3. Strategies to deal with tourism peaks and over-consumption
4. Commitment of authorities, project leaders and project workers
5. A broad vision
6. Coherence with regional political goals
7. Cooperation between academics and practitioners
8. Solutions of conflicts
9. New working methods or new techniques

Are there any other factors that have not been mentioned that are important for the success of the project?

If you would redo the project today, what would you then have done differently?

What factors do you think have been important for the region to continue to develop even then the project officially has ended and/or the financial means are finished?

Questions: various stakeholders

Why is this project important?

What are the effects? (nature conservation, economically and socially)

Have there been any conflicts related to the project?

What results or working methods could be transferred to similar areas/projects?

What factors have been important for the project's success?

Appendix 2: Table of selected projects

Table 8: Table of selected projects

Projects	Criteria	Source
1. Vasikkavuoma hay-mire (MEJA Village Development Association)	1, 2	The Swedish Institute for Ecological Sustainability Report from the Swedish EPA: Expand the perspectives! <u>Special recognition</u> : medal in the category of cultural landscapes, Europa Nostra (2002)
2. The Emå river project	1,2	The Swedish Institute for Ecological Sustainability LEADER II <u>Special recognition</u> : part of the HELP (hydrology for the environment, life and policy) network by UNESCO
3. Restoration of meadows in Kungsör municipality	1,2	The Swedish Institute for Ecological Sustainability Report from the Swedish Government: Collected policies for nature conservation <u>Special recognition</u> : King Carl XVI Gustav environmental competition: 2 nd price (1992)
4. The rich wetlands of Kristianstad	1,2	The Swedish Institute for Ecological Sustainability Report from the Swedish Government: Collected policies for nature conservation <u>Special recognition</u> : biosphere reserve candidate, project in Millennium Ecosystem Assessment
5. Grövelsjön mountain lodge	1,2	Report from the Swedish EPA: Expand the perspectives! Nature's Best – Approved Swedish Ecotourism <u>Special recognition</u> : Ecotourism-price by grand travel Award
6. Vindel River's natural pastures	1*,2	Report from the Swedish EPA: Expand the perspectives! Swedish Farmers' Association <u>*Special recognition</u> : (has applied for) own label
7. Fulufjället national park	1,2	The European Tourism Research Institute (ETOUR) Report from the Swedish Government: Collected policies for nature conservation <u>Special recognition</u> : WWF – Protected Area Network Parks

Appendix 3: Reasons for protection in Sweden

Table 9: Reasons for protections in Sweden

Motive	Number of objects (NP, NR, NMA)*
Botany	1 181
Outdoor recreation	1 037
Forest ecology	816
Geology	657
Scenery	556
Ecology	546
Ornithology	492
Zoology	467
Cultural environment	455
Hydrology	116
Fresh water ecology	67
Education	52
Research	37
Fresh water ecology	67
Marin ecology	34
Geography	1

Source: Statistics Sweden (2001a)

* NP = national park, NR = Nature reserve, NMA = Nature Management Area

Appendix 4: Geographical spreading of projects

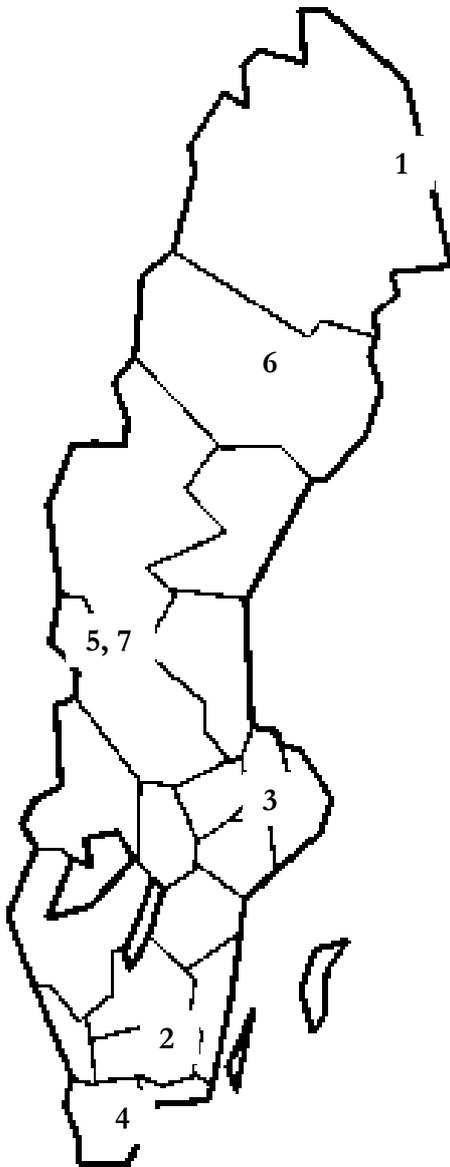


Figure 9: Map of the projects' locations

1. Vasikkavuoma hay-mire
2. Emå river project
3. Kungsör Municipality
4. The rich wetlands of Kristianstad
5. Grövelsjön mountain lodge
6. Vindel River's natural pastures
7. Fulufjället National Park