

Income generation from tourism in National Parks: European experience

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Abstract

National Parks are founded to protect natural and cultural heritage. An important question is how to balance this main goal with attraction of tourism to the area. An answer is based on a demonstration project called MOPARK used in eight National Parks in six countries of Northern Europe. This paper presents monitoring results of MOPARK. The project generated several dozen sustainable innovations in the sense of cleaner new technologies and activities with social contributions in leisure, education, research, sport, health and so on. It is found that small and medium size enterprises in tourism are cooperative and that tourists appreciate new activities in the National Parks although it is too early to estimate use of the activities. The results of MOPARK are that authorities in the park can undertake entrepreneurial activities to generate income without undermining the prime goal capacities for the social entrepreneurship.

Keywords: National Parks, tourism, mobility, sustainable vehicles, income generation, environmentally friendly technologies.

1 Introduction

National Parks are developed to preserve natural and cultural qualities. But private mobility endangers these natural qualities. Almost 40% of all private mobility is for recreational purposes and the demand for recreation is still increasing. Especially in National Parks the negative effects of mobility are evident. However, restricting all activities makes National Parks difficult to maintain and does not generate social activities. An emerging view is that good management of mobility in national parks can provide a basis for natural qualities, social activities and economic progress.



The article is based on the project Mobility in National Parks, in short MOPARK (funded by Interreg IIIB North Sea program), which has a central question of how to guarantee sustainability of National Parks by applying environmentally friendly technologies in an economically viable way. Concrete aim of the project is to ensure income generation of national parks by increasing tourist quality based on natural assets without compromising those qualities by modern, innovative tourist mobility services. Eight National Parks in six North-West European countries are involved in the project.

Specifically in this paper monitoring results of MOPARK show the possibilities of generating income from innovative tourist activities. Brief description of each National Park with its characteristics and sustainability activities are provided in the following parts.

2 National Parks

The participating parks are: Alde Feanen National Park in the Netherlands; Weerribben and Weiden National Park, the Netherlands; Hardangervidda National Park in Norway; Lille Vildmose National Park in Denmark; Söderåsen National Park in Sweden; Loch Lomond & Trossachs National Park in UK/Scotland; British Waterways in UK/England; and Region Uthlande in Germany.

Alde Feanen National Park covers 25 km² of area. The park has been established recently, in 2005, with a wide variety of landscapes like lakes, bogs and marshy woodlands. Its rich biodiversity attracts lots of visitors and makes it popular among water sport lovers. There is no community within the Park but few thousands of people live in villages at the border of the National Park. Tourism in and around the area of the Park is intensive. About 100,000 tourists visit the Park and stay on average about a week. About 20,000 people stay in and around the park during the peak of summer season. Despite the intensive tourist use, the area considered to be rich in biodiversity.

Weerribben and Wieden National Park covers 35 km². It is an old peat district and a biggest marshland of Western Europe. The main characteristic of the Park is the presence of reeds, turf ponds and moor lands. A wide variety of biodiversity with plant and bird species is connected to an interesting landscape with good opportunities for cycling and canoeing. There is a small community (around 500) within the Park and few thousand people live around and at the border of the National Park. Tourism in the Park is very intensive with about 1 million tourist coming annually.

Hardangervidda National Park is the largest plateau in the Northern Europe. The Park is 3422 km² with its unique nature and cultural qualities. Hardangervidda has the largest population of wild reindeer and also many arctic plants and animals. There are ten thousands of people living around and at the borders of the National Park. The number of tourists coming annually is 50,000.

Lille Vildmose National Park covers approximately 80 km² and consists mainly of grazed forests and raised bogs. Because of its outstanding biodiversity the area has been designated as Natura 2000 site. About ten thousand people live



within and in the surrounding of the National Park. Nature and landscape are the main reasons why people come to visit the area. Around 115,000 tourists come annually in and around the park, which indicates that tourism is quite intensive in the area.

Söderåsen National Park is located in the south part of Sweden and covers 16 km² of area. It has rich biodiversity, outstanding geological features, accessible nature and interesting cultural aspects close to large urban areas. It is one of the few parts in Sweden where large deciduous forests exist and the biodiversity is of great value. Regarding the community, there are 2000 people living around the park. Tourism is intensive in and around the Park with 50.000 tourists coming in and 700,000 tourists coming around the Park.

Loch Lomond & Trossachs National Park covers around 1865 km² of some of the finest area in Scotland. It is an area of contrasts from lowland landscapes in the south to high mountains in the north. 15,600 people live in the National Park and more than 70% of Scotland's population live less than an hour's travel time from Loch Lomond & Trossachs. Among tourists it is a very popular place to visit, as about 2.2 million tourists visit park annually.

British Waterways manages and cares for over 3200 km (2000 miles) of Britain's canals and rivers. Although not actually a National Park, the waterway provides link between the city of Manchester and the surrounding countryside. It terminates at the small towns of Whaley Bridge and Bugsworth in Derbyshire, close to the boundary of the Peak District National Park. There are about 90,000 people living around the area. Number of tourists coming annually is about 62,000.

Region Uthlande is located in Germany and covers 5 islands and 3 halligens (muddy flats), surrounded by the National Park Schleswig-Holsteinisches Wattenmeer, the Wadden sea and the deep sea island of Helgoland. The surrounding Wadden Sea is a nature area which is unique world-wide and is therefore protected in the National Park. Almost 36,000 people live and work in Uthlande. The tourism is very intensive in the area, there are up to 21 million visits annually in and around the National Park.

3 Tourist values

The table 1 shows different characteristics of the parks and some monitoring results of MOPARK project.

Most participating National Parks focus on protection of nature and education. Two parks out of eight have focus on local development in Loch Lomond National Park in Scotland and protection of Wadden Sea in Region Uthlande in Germany. Most National Parks have biodiversity as a key feature, except of British Waterways that distinguishes environmental and industrial natural landscape.

There are various tourist attractions with potential for the development of innovative activities, like hiking, fishing, swimming, bird watching, cultural sightseeing, castles, etc.



Table 1: Monitoring results of the MOPARK.

Country	Alde Feanen	Werribben	Hardangervidda	Lille Vildmose	Soderåsen	Loch Lomond	British Waterways	Region Uthlande
Area (km ²)	Netherlands 25	Netherlands 35	Norway 3,422	Denmark 80	Sweden 16	Scotland 1,865	England	Germany
Functions	Nature, education Biodiversity	Nature, education Biodiversity	Nature, education Arctic species, culture	Nature, education Largest bog, rare species, culture	Nature, education Biodiversity, geology, culture	Local development Diversity of landscape	Nature, recreation Environmental & industrial landscape	Waddensea protection Unique nature
Qualities	Water sports, culture	Water sport, camping	various	Coastal, various	Nature, castles	Forest parks	Historic port, canal	various
Attractions	16	10	15	4	1	1	2	1
Responsible organisations								
Org. involved in Mopark	58	193					4	
Community in/ around		3,500	10,176	10,000	2,000	3,515,600	90,020	36,000
Visits/year in/ around	100,000	1,000,000	50,000	115,000	750,000	2,200,000	62,000	21,000,000
Income from state	200,000		2,870,911		605,000	9,995,189	57,949	
Income from tourism	79,300,000	25,000,000			50,000	76,340,000	455,013	



National Parks differ extremely in the size of the area. It does not mean that large parks have many visitors, but it is often quite the opposite. For example Werribben has 35 km² with 2 million visitors coming, compared to Hardangervidda National Park of 3,422 km² with 50.000 visitors, or Söderåsen with 16 km² has 750,000 visitors during the season which is 2,343 p/km². The spending per tourist for the use of the parks also varies. Based on the data obtained so far main income in most parks comes from tourism. In Alde Feanen the annual income from tourism is € 79.3 million with € 200,000 state support and € 175,300 costs of the park, which is € 793 per visitor. In Werribben annual income from tourism is € 25 million with € 2 million of costs of the park. This is € 25 per visitor.

In Söderåsen National Park income from tourism is rather low that is € 50.000, whereas € 605.000 is provided by state and various projects. However, during the season it has lots of visitors, and application of new kind of activities makes possibilities to generate more income. Income from tourism in Loch Lomond is € 76.34 million with around € 10 million income from the state. In British Waterways income from tourism is € 455,013 and with € 57,949 from the state. Income from tourism is much important then from other sources.

4 Activities in the National Parks

In MOPARK activities are organised in three categories: information and communication, transport and sustainable vehicles. The category of information and communication aims to make area more attractive for people by better promotion of the areas' qualities, making people aware of natural assets, letting people experience and enjoy nature in different ways and developing new tourist services. The category of transport systems aims at organising innovative and sustainable mobility as well as attractive tourist packages, which enable sustainable tourist mobility in different countries, in various periods of the year and provide income to park authorities. And finally, in the category of sustainable vehicles measures are focused on demonstration of sustainable means of transport and assessment of possibilities for successful application of these means of transport in nature areas of National Parks. The activities per partner National Park are indicated next.

4.1 Activities in Alde Feanen National Park

Eighteen different kinds of activities are introduced in Alde Feanen, out of which nine falls into information and communication category, five- into transport and the rest four into sustainable vehicles.

Activities in information and communication services represent multimedia facilities for better promotion. These are:

- solar cell interactive info panels which produce bird sounds and give information about the area and birds;
- solar cell web cams showing the attractiveness of the area via internet in the visitor centre;



- GPS routes for walking, biking and boating;
- SMS server, which can be used for GPS for kids and for booking holiday packages;
- cyber guide which is a GPS on boats, and database which provides cyber guide and trail with information;
- *Veenquest* is an interactive and educative game for primary school children.

Transport systems include packages combining public transport, sustainable vehicles and interesting local facilities. These are:

- sustainable route planner showing via internet the types of sustainable vehicles that visitors can use in the National Park;
- *Wetterbus* service is a pilot activity that is a combination of bus and boat as a sustainable form of transport;
- holiday packages like *Ottersurvival* for children and
- *Longditch*- a survival holiday package which is a result of a contest among entrepreneurs realising the best holiday package;
- a pilot project of a bike-taxi is introduced in summer 2006 to cruise the National Park. This taxi is driven by a pedal pushing cabby and can seat two people. The cabby is also helped by a small auxiliary fuel cell engine;

For sustainable vehicles four activities were initiated:

- pilot with sailing boat *Torenvalk* on solar cells;
- 3 electric prams and 4 sailing prams;
- solar cell ferry for bikes;
- innovative bikes that can be used by disabled visitors;
- demonstration of Solar cell boats

4.2 Activities in Weerribben and Wieden National Park

Otter Fleet is one of the sustainable projects realised in the Park. Navigating in an electro sloop, tourist discovers places where conventional boats have no access.

In the Otter Fleet project five electro sloops were developed with different facilities on the board:

- route book on every boat with important background information about the sloops;
- GPS route guiding system;
- navigation route packages;
- online booking system.

In the transport category there were introduced:

- new electric boats;
- network of charging points;
- adaptation of the electrical system for whisper boats;
- electric boat holidays

The electro sloops have basic facilities and can accommodate six persons. The concept of Otter fleet was hired by the regional entrepreneurs, and many promotional activities have been launched.

4.3 Activities in Hardangervidda

The aim when starting activities in the Park was to provide knowledge about Hardangervidda and to improve attractiveness of the Park. For that, the next activities were organized:

- educational courses about Hardangervidda using 3D technology. The combination of traditional learning methods and new technology can contribute to make this a new and creative product;
- web page, providing information about park;
- 3D maps were applied for the improvement of the sustainable behaviour and awareness of tourists;
- downloadable GPS/PDA routes;
- project management as a meeting place between public and private management within activities.

In transport systems the next activities were developed:

- adventure/discovery trips;
- bike routes as a part of adventure/discovery trips and tourist packages;
- canalising document was made with the purpose of directing tourists to the most sustainable areas and activities;
- cooperation with local businesses on supporting public transport up to mountain plateau.

4.4 Activities in Lille Vildmose

In the category of information and communication there are similar activities with other parks, like:

- offering of GPS facilities;
- development of 3D map program for interactive planning and booking of trips in Lille Vildmose;
- digital information boards with access to homepages;
- video and nature information.

Regarding transport systems:

- routes and complete packages linking several Natura 2000 areas are developed;
- accessibility for disabled improved;
- paths and toilets for disabled in the area of Oster Hurup were developed;
- viewpoints for disabled;
- bird watch tower, car park, pathway to tower and
- primitive campsite for disabled are in progress.

For sustainable vehicles:



- innovative bikes and horse carts are introduced;
- two boats for disabled people are delivered.

4.5 Activities in Söderåsen

Different information and communication strategies have been developed and tested, such as:

- network for local female entrepreneurs with nature as the starting point for their business has been set up;
- GPS and hand held computers;
- Ipod technique for information in objects, special themes and seasonal information.

In the area of transport some studies and strategies have been developed, like:

- the study on possibilities of introducing recreation traffic within the public transportation system between the National Park, Copenhagen and Malmö was realized;
- development of a strategy for a total management system for all public transportation within the municipality, including systems for recreation traffic was done;
- pilot project for development of transport systems in rural areas.

Regarding the sustainable vehicles:

- electric trains and
- ethanol buses are put into operation

4.6 Activities in Loch Lomond and Trossachs

Significant outputs have been delivered during the project. In information and communication:

- Two multi media interpretive journeys on audio guides and PDAs were completed;
- 3D virtual glacial interactive map were introduced;
- a Digital Asset Management System and training for staff to operate the equipment and update the content were completed;
- data population and set up of metadata structure were completed;
- adjustment of boat into an electric pollution free boat with multimedia facilities and improvement of accessibility for disabled were realized.

For sustainable vehicles:

- a small electric boat was purchased and operated;
- two solar electric buggies to enable small groups of visitors to explore the area around Loch Katrine, and
- solar electric boat operating on Loch Lomond, also accessible for disabled, were put into operation.

4.7 Activities in British Waterways

Activities undertaken through Mopark were directed to improve the connection between City of Manchester and Peak District National Park by improving interpretation facilities. This was done through:

- preparation of an interpretation plan for the Bugsworth Basin area, in conjunction with ideas for walking/cycling links between Bugsworth and Peak District National Park;
- development of an online resource for schools, consisting of self guided trail around the Bugsworth site through British Waterways', education website (Wild over Waterways) for downloading by teachers was introduced;
- policy for access to canals and canal side sites for disabled was developed; this policy has been developed into a draft Access Framework that can be used by all national parks.

With regard to the transport systems:

- the study on alternative transport means encouraging people to visit the canal (cycling/walking/public transport) was done;
- promotional material to link canal with local businesses and public transport was introduced.

In terms of sustainable vehicles, no specific actions were undertaken by British Waterways; however the possibility of establishing an electric powered trip/public transport boat is investigated, taking into account other partners' experiences in developing alternative powered boats. Feasibility study on solar or electric power vessel and investigation of hydrogen fuel cell technology was undertaken.

4.8 Activities in the Region Utlande

To deal with the tourism and traffic inside and towards the National Park some activities have been started:

- as a first step, a holiday package called "Islandhopping" offering information about the park, public transport, boat trips, bike rental, regional meals and local events was developed; the package also offers bike rental and local facilities. Tourists can book a trip to various islands and halligen, hotel, service, etc. in one go.
- another step to deal with tourism was improvement of attractiveness of the National Park in a sustainable way. The activity undertaken was called Mobility and Accessibility of the Islands and Halligen based on communication process with all regional partners.

5 Conclusion

The question discussed in this article was whether the National Parks can generate income based on natural assets using sustainable innovations. The paper illustrated preliminary results of the activities in eight northern European



National Parks which participated in the MOPARK project. In short, from the descriptions of the eight participating National Parks it can be concluded that: First, national parks are realized to be bonded with tourism and provide different attractions and experiences for tourists;

Second, national parks vary a lot in the size but this does not prevent them to be attractive for tourists and generate income from different activities. Income from tourism is much important then from other sources.

Third, some national parks provide more diverse activities then others based on their qualities and features.

Forth, sustainable activities can not only contribute to the parks environmentally, but also socially and economically, generating income to the parks as well as to the communities living in and around parks.

Finally, more entrepreneurship can be stimulated, involving local communities in the development of the protected areas using environmentally friendly activities.