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Case study report on the Hohe Tauern National Park (Austria)

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Summary

This note is a mapping of management organisation and function, and of regional development in the surroundings of Hohe Tauern National Park in Austria. The note focuses on interactions between environmental authorities and local economic actors, emerging conflicts and solution strategies as well as the influence of policies on integration of socio-economic development and management of the national park. The note is meant as a basis for further comparison between Norway and Austria concerning these issues.

Other publications from the project

Getzner (2008): "Impacts of National Parks on Tourism: A case study from a prominent alpine national park". *Economia delle fonti di energia e dell'ambiente*, 2008:3, 103-120.

Getzner (in press): "Impact of protected areas on sustainable regional development: the case of Hohe Tauern national park (Austria)", *Journal of Sustainable Economy*

Storm, Vik, Brendehaug & Åall (forthcoming): *Case study report on Jostedalsbreen National Park (Norway)*, Vestlandsforskning-note number 8/2009. Vestlandsforskning, Sogndal.

Vik, Benjaminsen & Daugstad (in press): "Synergy or Marginalisation. Narratives of farming and tourism in Geiranger, western Norway". *Norwegian Journal of Geography*.

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1 Introduction and project description

The impact of protected areas, especially national parks and biosphere reserves, on regional development is a major issue in the public debate in nature conservation policies.

The current report is a first outcome of a research program of Vestlandsforskning (Sogn-dal, Norway) in cooperation with Klagenfurt University (Austria) entitled "Policy for harmonizing national park management and local business development". Funded by LAND Miljø 2015 (NO), the program taking place from 2008 to 2010 aims – above other topics – to explore the linkages between protected areas (PAs) (national parks), regional development, and specifically PA management strategies. The paper is a case study description of the Hohe Tauern National Park (Austria), and will both serve as a basic document for the comparison between the Jostedalbreen National Park (Norway) and the Hohe Tauern National Park, and for the draft of journal publications as the main "product" of the research process. The structure of the report has been set up according to a joint case study protocol that provides the questions to be answered in the two site-specific studies.

The research questions of the research program are:

1. How does the history of interactions between environmental authorities and local economic actors influence the present situation in LPA; which conflicts have emerged and how have these conflicts eventually been resolved?
2. How do national and international policies on nature protection and economic development influence local processes relating to the integration of socio-economic development and management of LPA?
 - Why do local and regional actors adapt differently to the policies?
 - How do policy changes occur?
3. What are the differences between regional socio-economic effects of LPA in Norway and Austria, and to what extent can these be explained by policy regimes and management models?
4. What are the probable long-term effects of implementing new models for the integration of regional development and LPA management on socio-economic development and nature and cultural heritage values?
5. Which institutional changes in national policies and management models for LPA need to take place in order to secure regional socio-economic development without reducing nature and cultural heritage values inside the LPA?

The research project consists of four work packages (WP):

- WP1: Experiences and debate gained from test models on transferring the formal responsibility for managing national parks to the local level of government.

- WP2: Comparison case study in Jostedalsskogen NP in Norway and Hohe Tauern NP in Austria.
- WP3: Trailing research of i) the designation of Breheimen national park, and ii) the establishment of a management model for the UNESCO site of Nærøfjorden.
- WP4: Total synthesis to answer the main research questions.

The current report is a contribution to work package (WP) 1, providing the fundamentals for a comparative study of PAs in Norway and Austria. The report is specifically targeted to account for research questions 1 and 2, and partly for research question 3. The Hohe Tauern National Park is established in three federal states of Austria. There are similar national park policies in the three states, while there are also major differences. The current report accounts for these differences and describes policies in all three states. However, in order to simplify the analysis, regional development policies will only be analyzed more extensively in the federal state of Carinthia.

The next steps in the process are the comparison of the two case study reports Jostedalsskogen National Park (Norway) and the Hohe Tauern National Park (Austria), and the integration into one document dealing with a comparison of the two case study areas in order to answer research questions 1 to 3.

Acknowledgements

The authors thank Peter Rupitsch of the Hohe Tauern national park and his team for providing information and discussing with us several aspects of the report. The usual disclaimer applies.

2 History, establishment, management and regional development of the Hohe Tauern National Park

2.1 Short profile of Hohe Tauern National Park: Key data on the national park (geography, location, size, ownership)

The National Park Hohe Tauern was Austria's first national park founded in 1981. With an area of 1,836 km² it represents the largest protected area in the Alps. It is located in the mountainous bordering region of the Austrian federal states (*Bundesländer*) of Carinthia, Salzburg and Tyrol. The park ranges from 1,000 meters elevation in the valleys up to the highest mountain top of Austria, the "Großglockner" at 3,798 meters above sea level, covering a diverse natural and cultural landscape in the Eastern Alps.

The park is managed according to a zoning concept (core zone of 1,198 km² and a buffer zone of 638 km²) based on a variety of conservation categories (e.g. special protection zone, nature reserve, protected landscape, Natura 2000 site). Only in 2006 the park's core zone was officially acknowledged as a national park according to IUCN category II criteria after having solved land use conflicts in parts of the park in Tyrol and Salzburg. The area was declared as national park (with the aim of international IUCN acknowledgement) in Carinthia in 1981, in Salzburg in 1983, and in Tyrol in 1991.

Biodiversity of the National Park Hohe Tauern is generally rich and representative in terms of species and ecosystems characteristic for the Alps, and for Austria in particular. The park includes more than a third of all plant species and even more than half of all mammals, birds, reptiles and amphibian species known in Austria.

The Hohe Tauern National Park is well known, and accepted by the Austrian population with high numbers of visitors. With 1.75 m visitors per year (data from 2003) tourism is not only a major source of regional income but visitor management is also an important task for the park management.¹

The designation of the National Park Hohe Tauern was one of the largest regional and spatial planning efforts in Austrian history and is sometimes referred to as a role model of alpine nature conservation due to the fact that the park is mainly based on private land with about 1,100 owners (only 16% of the area is publicly owned, another 21% is owned by the Austrian Alpine Club [*Österreichischer Alpenverein*]). The planning and management of the park includes a variety of stakeholders organised in different participatory bodies and requires tailor-made solutions for land use aspects to ensure the regional implementation of the park's objectives.

¹ Excluding visitors of the Großglockner High Alpine Route [*Großglockner Hochalpenstraße*] (Hutegger, 2005); including visitors to the scenic route, the region counts 2.5 m visitors in total (Amt der Salzburger Landesregierung, 2002, 68).

Figure 1 shows an overview map of the Hohe Tauern National Park in the Austrian federal states of Carinthia, Salzburg and Tyrol.

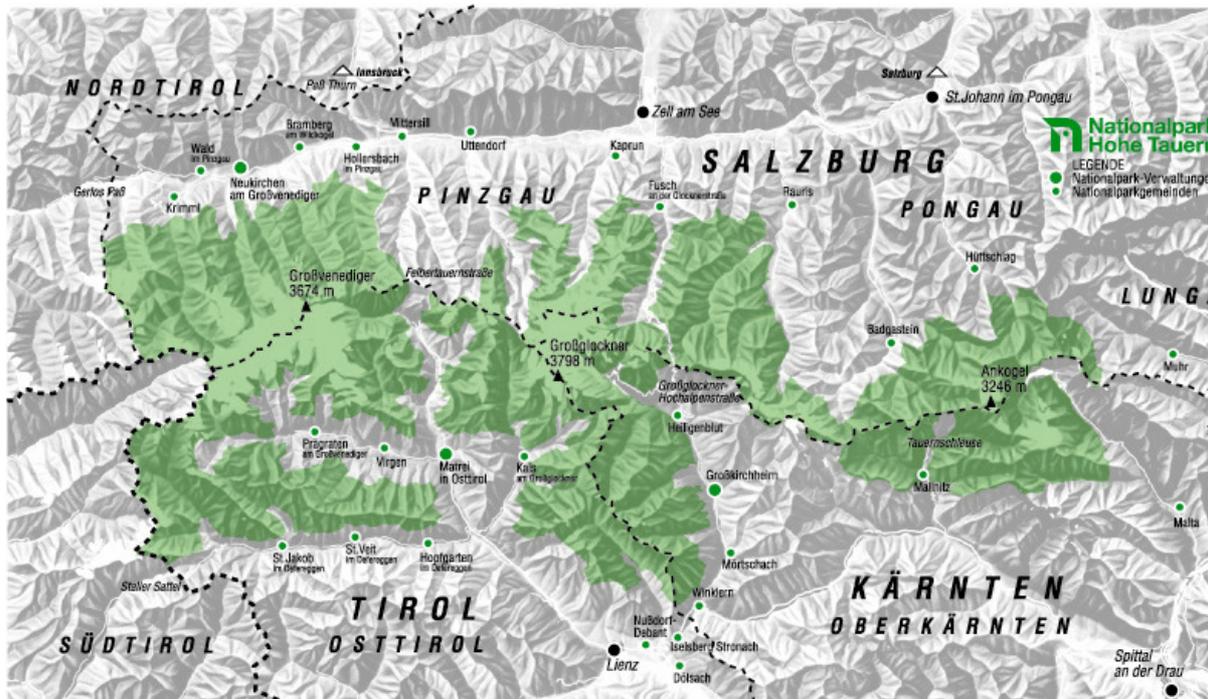


Figure 1: Map of the Hohe Tauern National Park

Source: Hohe Tauern National Park.

The regions of the Hohe Tauern National Park in Carinthia, Salzburg and Tyrol may be classified as peripheral regions in terms of population (aging, decrease of the number of residents), and regional economies (economic downturn, comparatively high unemployment rates). As will be shown in section 2.4.2, it is difficult to detect significant impacts of the establishment of the national park on regional development. However, the existing data indicates that the regions exhibit some differences to general trends that may be attributed to the national park's existence and policies.

While the analysis is complicated by different frameworks in the three federal states, there are several categories of protected areas established. As will be described in the current report, nature conservation areas as well as landscape conservation were set up before the establishment of the national park, and recent developments regarding the European Union's Natura 2000 regulations. Figure 2 shows the different PA categories. Apart from the zonation of the national park (core zone [*Kernzone*], buffer zone [*Außenzone*]), further categories are established. Taking the example of the Carinthian part of the national park, special protection zones, winter-recreation areas, game protection

areas, forest nature reserves, Natura 2000 and natural monuments are set up (Jungmeier and Zollner, 2008).

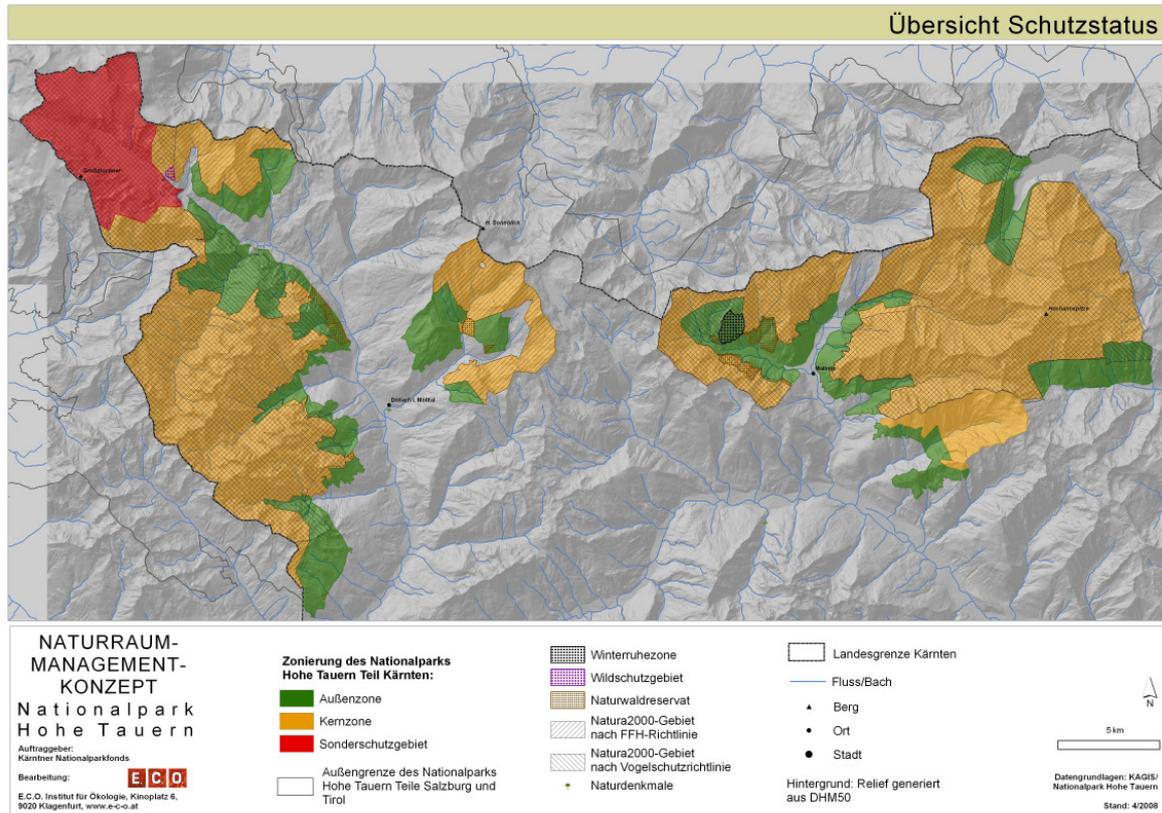


Figure 2: Map of the Hohe Tauern National Park

Source: Jungmeier and Zollner (2008).

2.2 Historical context of protected areas policies and strategies in Austria

2.2.1 History of nature conservation and development of parks²

For assessing the potential impacts of the national park on regional development, it is important to first analyze the public debate, implementation, establishment, and operation of Austrian national parks in a societal context (e.g. society's perception, culture and history of nature conservation policies).

The Austrian society started mainly in the 1980ies in recognizing the importance of nature conservation in terms of protected areas. Concrete policies to conserve nature gained momentum only at the beginning of the 20th century when the Austro-Hungarian

² For a conceptual analysis of the Austrian nature conservation history refer to Pichler-Koban et al. (2006).

monarchy stretched out far including regions that nowadays are independent countries such as the Czech Republic, Slovakia, and Hungary. The empire covered a variety of pristine areas with the effects of industrialization endangering the regional natural asset base far less than in Germany and Switzerland. The development of a nature conservation movement in Austria started in Vienna and its surroundings as the consequences of intensive forms of land use were most obvious around the congested urban areas. In 1872, the "Wienerwald" (Vienna Forests) was successfully protected against residential development and clear cutting. Parallel to efforts of securing a green belt around the capital, initiatives to protect the Alpine areas started. Some areas were "protected" for the aristocrats only for hunting, such as the floodplain forests that now constitute the Donauauen National Park.

The first ideas to set up protected areas in the Alps were announced by German and Austrian NGOs in 1909 with the aim to protect the natural landscape mainly from tourism infrastructure and development. Another milestone was reached in the second decade of the last century when private initiatives started to purchase land in the Hohe Tauern with the explicit vision to set up a protected area. Industrialist Albert Wirth and the Association Nature Reserve Park [*Verein Naturschutzpark*] became a major player in the Austrian nature conservation movement by purchasing the Pasterze glacier and other areas and transferring the property to the Alpine Club. In 1921 the first official protected area was enacted on a surface of 9,000 ha in the Granatspitze range in Salzburg. In the 1930s the legal framework for nature conservation was developed in Austria, while the Grossglockner High Alpine Route was opened in 1935. While the Nazi area in the 1940s brought some strengthening of the nature conservation issues (also due to the fascist ideology of protecting "German homeland"), conflicts were already in place which should last for decades. On the one hand, core elements of today's park were declared as protected sites (e.g. nature reserves for Gamsgrube, Grossglockner, and Pasterze glacier, natural monument for Krimml waterfalls). On the other hand, a wide range of potential infrastructure development projects was planned (e.g. Kaprun hydropower plant³; plans to use other water bodies like Krimml waterfalls, later on the Umbal waterfalls (both in Salzburg), the river Isel in Tyrol or the water storage facility in the Dorfer Valley near Kals in Tyrol). After World War II, the Austrian government took over the hydropower plans and realized the Kaprun plant until 1955.

Whereas a couple of important organisations for the protection of nature were set up on an international level (like IUCN, CIPRA or WWF), nature conservation in Austria became less important in the years of reconstruction and search for a national identity after the Second World War. Nature gained importance rather for recreational purposes (including

³ The Kaprun hydropower station was already planned in 1928 by a German consortium led by AEG; the Nazi regime took over these plans and tried to finalize the power plant by badly equipped forced laborers of which 56 people died.

the tourism sector) leading to the declaration of protected landscapes and establishment of nature parks across Austria.

In 1971 the federal governors of Carinthia, Salzburg and Tyrol signed the "Agreement of Heiligenblut" [*Erklärung von Heiligenblut*] defining the set up of the first Austrian national park, the Hohe Tauern National Park. This act was strongly related to the first year of European nature protection in 1970 and Austria's efforts to re-position itself within the international community of European nations. A lot of nature conservation efforts of that time meant to preserve distinct national characteristics in order to strengthen the new nation's identity. From the early 1970s onwards, plans for additional national parks such as the Donauauen National Park were discussed.

Like in other countries, the 1980s were determined by the Austrian society's incipient awareness of the limits of and threats to the global resource base. In a 1978 binding referendum the use of nuclear power generation in Austria was turned down – an event which marked the rise of a broader Austrian nature conservation movement, and the political party of the Greens. While the political will to set up the first national park in the Hohe Tauern was demonstrated in 1971, it took another 10 years to formally establish the Carinthian part of Hohe Tauern National Park as a lot of communication and participative planning needed to be done to reach a consensus with land owners and holders of land-use rights (for details on the establishment of the Hohe Tauern National Park see section 2.3).

The dynamics of this rising awareness once again became evident in the 1984 "occupation" (sit-in) of the Stopfenreuth floodplains (near Vienna) by thousands of particularly young Austrians, and its broad public support. Plans for the construction of a hydro-power plant in this section of the Danube River were later dismissed, and these events marked a milestone for the establishment of the Donauauen National Park in 1996. Another stimulus for nature conservation on the political side during the last decade originates from Austria's accession to the European Union (EU) in 1995 which led to a variety of newly established conservation efforts for endangered and threatened species and habitats according to the EU's FFH and Birds Directives. Natura 2000 sites nowadays cover about 15% of the area of Austria (Umweltbundesamt, 2007, 111).

Up to date, Austria has 6 national parks covering an area of 2,376 km² (about 2.8% of the total Austrian surface; BMLFUW, 2008, 5). The national parks were established over the last 27 years but with a lot of dynamics within the last decade (see Figure 3 for the location of the Austrian national parks):

- 1981 Hohe Tauern National Park in Carinthia; 1983 in Salzburg; 1992 in Tyrol;
- 1993 Neusiedler See National Park (Burgenland, with close cooperation with the Hungarian Fertő Hanság Nemzeti Park);
- 1996 Donauauen National Park (Vienna and Lower Austria);

- 1997 Kalkalpen National Park (Upper Austria);
- 1999 Thayatal National Park (Lower Austria, with close cooperation with the Czech Národní park Podyjí);
- 2002 Gesäuse National Park (Styria).

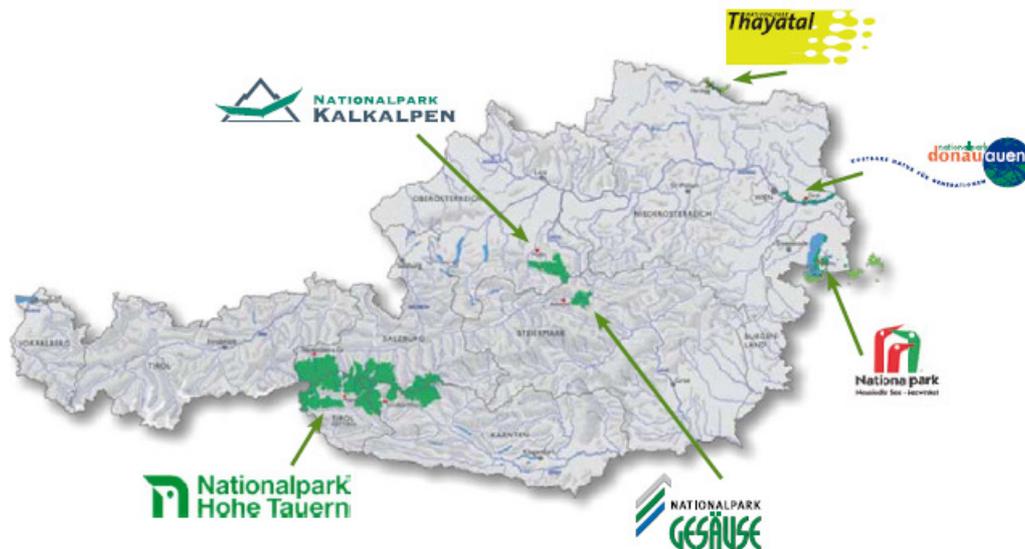


Figure 3: Location of Austrian national parks

Source: BMLFUW (no date), 46.

By 2007, 29,657 km² or about one third of Austria's territory is protected by law (although some of the protected areas interfere with each other). There are – besides the six national parks – 400 nature reserves, 244 protected landscapes, 334 protected parts of landscape, 45 nature parks, 88 enacted European protected areas (OeAV, 2007, 59; www.naturparke.at).

National parks in Austria alone employ more than 300 employees. Every year about 80,000 pupils visit the national parks in the framework of project days; in 2007 almost 400,000 visitors were counted at visitor centers and 32,000 people took part in excursions and guided hikes (BMLFUW (no date), 5).

2.2.2 National frameworks of protected areas and national parks

The national framework consists of the political, legal, administrative and ecological framework regarding the embedding of protected areas (including national parks) into nature conservation strategies and policies, and accounting for the set-up, funding, and legal responsibilities.

Political and legal framework

The legal competence for nature conservation in Austria rests with the nine individual federal states. Respective nature conservation acts define – among others – the framework for protected areas. National parks in particular are defined in more detail in specific national park acts. Legislation and administration of related issues like hunting, fishing and regional planning also rest with the federal states, whereas general environmental protection and its controlling, forestry and water management are taken care of on the national level.

The basis for the cooperation of the national and federal governments with respect to national parks is defined in individual constitutional agreements (according to Article 15a of the Austrian Federal Constitutional Act). These agreements attest the parties' support for the park and an appropriate development of the park regions, define governance structures (see section 2.3.1.6) and basic funding (which is equally provided by national and regional governments).

Besides the national framework, there is a variety of international regulations relevant for the management of protected areas in Austria, like the EU Birds Directive (79/409/EEG), EU Fauna-Flora-Habitat Directive (92/43/EEG), the Alpine Convention (BGBl. 477/1995) and its protocols (especially the protocol on nature conservation and landscape protection; BGBl. III Nr. 236/2002), the Convention on Biological Diversity (BGBl. 213/1995), and the Ramsar Convention (BGBl. 225/1983).

Educational framework

Up to 2005, the profession of a protected area manager in Austria did only exist in a "self-made version". Various educational offers in this field covered only segments of the whole spectrum of required knowledge to run a protected area. Managers had to find "their own way", and several national parks offered special training courses for rangers (e.g. Gesäuse National Park). In 2005, an Master-of-Science (M.Sc.) program named "Management of Protected Areas" (MPA) was set up by the University of Klagenfurt (www.mpa.uni-klu.ac.at). Apart from a comparable study program at the University of Madrid (Spain), this course forms the first comprehensive educational offer tailored to the very specific demands of managing protected areas. The MPA program was developed in an open process over a three years time period. Organizations like the IUCN, UNESCO, EUROPARC, ALPARC, WWF, PAN Parks and secretaries of relevant international conventions (like the Convention on Biological Diversity, the Ramsar Convention on Wetlands) as well as numerous individual experts have contributed to the structure and content of its curriculum. The vicinity of the Hohe Tauern National Park to the location of the MPA program at the University of Klagenfurt offers a great variety of synergies for between both.

Administrative framework

Protected areas

Due to legal obligations and administrative requirements, there are various concepts and strategies for nature conservation on the national level (such as the national wetlands strategy, national biodiversity strategy, national sustainability strategy; cf. Jungmeier and Tiefenbach, 2004). But due to federal responsibilities of nature conservation, Austria lacks of a coordinated nation-wide strategy for protected areas in terms of quantity and quality (e.g. conservation status, management effectiveness) as well as for a national network of protected areas (Umweltbundesamt, 2007). Except for national parks, there is a general lack of resources (human, institutional, financial) for the implementation and management of the network of protected areas (BMLFUW, 2003).

One recent supra-institutional initiative on the standards of protected area management was taken by the Austrian Nature Conservation Initiative [*Österreichische Naturschutzplattform*] (see www.naturschutz.at). The initiative is an informal network of conservation specialists which aims to protect the nation's biological diversity. It embraces representatives of the federal government's administration, the federal Ministry on Agriculture, Forestry, Environment and Water Management, the University of Vienna, NGOs, nature conservation advocacies and the state forest company Austrian Federal Forests [*Österreichische Bundesforste, ÖBF*]. These experts recognize the need for active management of protected areas including the development and implementation of management plans, the use of inventories and monitoring, the participation of stakeholders, the use of public relations and awareness raising policies and programs (Oberleitner et al., 2007).

On a federal level, protected area management concepts have recently become more popular. Good practice examples are protected area management concepts for the federal states of Tyrol or Lower Austria.

Especially for Carinthia, a "guidance system for protected areas in Carinthia" [*Leitsystem für Schutzgebiete in Kärnten*] has been elaborated within the EU's Interreg project IPAM (Integrative Protected Area Management). This guideline is not legally implemented, but provides a frame for marketing and branding Carinthian protected areas (Pichler-Koban et al., 2005). The guidance system presents the 21 most important national and international protected area categories. The single protected area categories are described by means of a descriptive matrix. This matrix facilitates the comparison of single categories and allows for an improved overview. This guidance system comprises the following items:

- *Denomination*: official German and English name of the protected area category;
- *Core philosophy*: basic idea of the particular protected area category;

- *Legal basis*: legal framework, designating, accepting and implementing institutions.

Other frameworks include recommendations and suggestions by Nationalparks Austria (strategy in development) and Alparc, the Federation of Alpine Parks.

National parks

Responsibility for the management of protected areas rests in general with the regional governments of the Austrian federal states. Nevertheless, the national Ministry of Agriculture, Forestry, Environment and Water Management is coordinating the national park development across Austria. It has a vital interest in this process as it is co-funding national park activities for all parks acknowledged to fulfill the IUCN category II criteria. The Republic of Austria is associated member of IUCN and therefore obliged to stick to IUCN guidelines, as well as signatory of the Convention of Biodiversity. The central government therefore has a strong interest in the effective and efficient management of national parks. For the planning and management of national parks the following basic requirements from the national governmental level need to be met:

- Voluntary participation of land owners in national park idea (implying a participative planning approach);
- Adequate compensation payments to holders of (land-use) rights for economic disadvantages due to the park;
- Compliance with IUCN category II criteria in the establishment and management of the park⁴, set into force by respective regional legislation.

The national government, together with the regional national parks, has recently established an umbrella organization of the six Austrian national parks under the name "Nationalparks Austria" (www.nationalparks.or.at). The aim of this platform is to coordinate the (national and international) presentation of the parks (awareness raising, common marketing of the school programs, research activities) and to "use synergies" (www.nationalparksaustria.at/article/articleview/31551/1/8615). It commissions research on visitor numbers, tourism impact and satisfaction of visitors.

National parks in Austria are very diverse – in terms of their natural asset base, the culture they are embedded in, their size, their process of designation, their organizational structure and management style. In order to define a vision for national parks in Austria for the decades to come, the park directors together with the ministry are currently drafting a strategic paper on the role and future of national parks in Austria. Results of this process and the re-positioning of "Nationalparks Austria" are expected by the end of 2008. But as the Carinthian park management mentions in its annual report 2007, "the

⁴ Minimum size of 1,000 ha, appropriate protection by law and respective management, at least 75% of core zone without use (Winnisch, 2007, 13).

development of such a vision and its implementation are the collective responsibility of the Austrian society and need to be part of an integrated social and natural sustainability policy on the national as well as the regional levels" (Kärntner Nationalparkfonds, 2008, 26).

According to the Hohe Tauern National Park management (Rupitsch, 2008, personal communication), a strategy paper on the joint development of the Austrian national parks is currently being revised. The main element of this paper will be to develop a common brand mark in order to enhance national and international presentation and marketing of national parks in Austria. The education of the rangers, the organizational structures, and the marketing should be developed in a coordinated way.

Another initiative which was launched in 2007 by representatives of the national parliament was the demand for increased marketing efforts in order to promote tourism in park regions, therefore, raising the economic value of parks. A parliamentary task force was set up and went operational a few months ago. It is meant to explore ideas for a common marketing strategy (communication targets and target groups including its implementation), organizational set up (improvement in current administrative structures), resource assessment and funding. Results of this work shall be integrated in the work of the Austrian national tourist office [*Österreich Werbung*]. Park directors are involved in this screening process.

Ecological framework

The embedding of the Hohe Tauern National Park into an ecological framework is analyzed in section 2.3.

2.3 Designation and management history of National Park Hohe Tauern

2.3.1 The park's historical and current frameworks

2.3.1.1 Timeline of park development

One of the deliverables of the current project is a discussion of the milestones of the development and planning phase of park, including the designation and implementation period, and the evolution of management structures and measures; furthermore, the inclusion of stakeholders and participative bodies has to be analyzed.

The Hohe Tauern National Park has a long list of events when it comes to its designation and management history. For easier orientation, this history is broken down into three major phases and briefly highlighted in this section based upon identified milestones. An overview of all major steps is exhibited in the appendix in section XXX. Timeline of de-

velopments in the National Park Hohe Tauern). The three phases are 1800-1970, 1971-1991, and 1992 to date.

1800-1970: Conservation versus development

The first idea to set up an "alpine nature conservation park" arose in 1909 by an environmental NGO originally based in Stuttgart, Germany. In 1918, the Carinthian industrialist Albert Wirth – inspired by his visits of US national parks – bought large parts of land around the Großglockner mountain in order to protect it from the speculative tourism industry and donated the land to the Austrian Alpine Club with the mandate to establish a protected area. The first conservation status on parts of today's park was declared in 1921.

In the 1940s, major infrastructure developments led to severe interference in the area's nature exhibiting an opposite trend to the extension of protection to very sensitive areas (Gamsgrube, Großglockner and Pasterze glacier). In the early post-war times, NGOs formed the main pressure groups to continue to put forward the national park idea.

Although there were also promoters of the park idea on central government's level, the regional governments of Carinthia, Salzburg and Tyrol were the main actors to take over the (political) responsibility of park issues in the late 1970s as a follow-up of the first European year of nature conservation in 1970.

1971-1991: Planning phase and designation

With the before-mentioned agreement of the three federal states in 1971 (declaration of Heiligenblut), the process to plan and establish the area of the Hohe Tauern as the first national park in Austria was officially launched. In 1972, a coordinating body called "national park commission" [*Nationalparkkommission*] was set up in order to plan and advise federal governments on all issues of park designation (national park act, borders, exchange with stakeholders).

In 1981, the park was set up by a regional government's decree (decision) in Carinthia, and the national park law came into force in 1983. By that time the park was also established in Salzburg.

While the protected area was labeled as a "national park", it did not yet comply with the IUCN rules regarding category II national parks. In 1986, an IUCN expert mission to the park led to the categorization of the area as a category V ("protected landscape") mainly due to the existing legal framework of land use, especially hunting and grazing, but provides substantial input for management measures in the following years, and for the acknowledgement of the area as category II ("national park"). In 1990, the formal agreement on the management and funding of the park between the federal states of

Carinthia and Salzburg with the national government according to the Austrian constitution was signed.

In 1991 after a decade of intensive negotiations, the park was also agreed upon in Tyrol following a political decision to finally dispense with the hydropower generation plans in a part of the prospective park (Dorfer Valley).

In Carinthia on the other hand, park management started with pioneering projects on land use such as the hunting project in the Seebach Valley and the mapping of the cultural landscape around the park in Mallnitz (see section XXX 3_3_2_3 for details).

1992 to date: Managing the park

The last decade was characterized by further establishment of park policies and programs. Organizational structures (e.g. management, participative bodies, and sponsorship) and management vehicles (e.g. national park funds) were installed, and funding was secured by the agreement between regional and national government in 1994. Compensation payments for land owners and holders of land-use rights were restructured and based on the size and the type of land ownership. In Tyrol a regional development program was implemented in order to increase regional acceptance of the park. Grant and funding programs administered by the respective national park funds in Salzburg and Carinthia were developed.

Basic research was carried out for the development of management plans. Federal park managers developed a common mission statement, aims and basic contents of the respective management plans which finally got approved also by participative bodies and regional governments.

Having solved land-use conflicts by strategies laid down in the management plans, the park got acknowledged as category II protected area by the IUCN (2001 in Carinthia, 2006 in Salzburg and Tyrol).

Lessons learnt

- NGOs and individuals had a strong impact in the development of the park since early days;
- Relevant political decisions for the park were taken on the regional government's level;
- Infrastructure development (tourism and hydropower) were the strongest opponents to the park idea;
- There are still heterogeneous designation processes and management approaches in the three federal states, and a differing degree of integrated regional planning (spatial planning / economic development);
- Participative processes, compensation payments and funds for regional development are significant and strong drivers for local acceptance.

2.3.1.2 Political and legal framework

In order to explore the national and international legal setting, it is important to present the responsibilities and the interaction of federal states, counties (political districts), and municipalities (Winnisch, 2007). While the general political and legal framework for protected areas in Austria is described in section 2.2.2 above, information on the specific setting of the Hohe Tauern National Park is provided in this section. The presentation uses a bottom-up approach when introducing the framework starting at the municipality (community) level and concluding with the international level.

Municipal level

The legal competence with respect to nature conservation and national park policies is rather limited on the municipality level. More tools for municipality action in Austria are found in spatial planning as the competence for local development plans and zoning plans is with in the hands of municipalities (communities) (see section 3.4.1 XXXX).

Carinthia

The responsibilities of municipalities as defined in the Carinthian national park law include the participation of municipalities in public hearings when the regional government is planning or changing a national park act or order as well as the mayor's involvement in the election of land owner representatives for the participation in the national park committee every 6 years (alongside the term of the municipality council). Representatives of municipalities are part of both participatory platforms, the national park committee and the national park board of trustees (see section 3_3_1_3 XXX). In Carinthia, seven municipalities have some share of the national park area.

Salzburg

As in Carinthia, municipalities are part of the public hearing process before the regional government can decide upon a national park order (see Salzburg National Park Act (2005), §7). Representatives of selected municipalities are part of both participatory platforms, the national park committee and the national park board of trustees. In Salzburg, 13 municipalities have some share of the national park area.

Tyrol

In the public participation process before the decree of a national park order (especially affecting zonation of the park), municipalities in Tyrol have a very active role. They need to organize the four weeks participation process in which every inhabitant of the municipality can comment on the order. Besides this involvement, representatives of selected municipalities are part of both participative platforms. In Tyrol, 10 municipalities have some share of the national park area.

District level

The relevant authority for the implementation of the national park and nature conservation laws (i.e. body for sovereign tasks in the implementation of the legal framework) in all three federal states is the district administration (for example, approval of solicitations required by law) (see Carinthian national and biosphere park act 2007 (K-NBG – LGBl. 25/2007), § 38; Salzburg national park act 1983 (as of 2005, LGBl. 58/2005), §25; Tyrolian national park act 1991 (LGBl. 103/1991), § 29).

In *Carinthia*, the national park is located in one political district (Spittal an der Drau).

In *Salzburg*, the national park is located in three political districts (Tamsweg, St. Johann, Zell am See).

In *Tyrol*, the national park is located in one political district (Lienz).

Federal (regional) level

National park laws decided by regional parliaments and respective governmental implementation orders (defining e.g. borders and zonation) define the legal framework for the park in each federal state. These laws define a national park and its region, outline aims, determine zonation categories, regulate land use, define administrative bodies and their responsibilities, the organizational set up, financing, compensation and participative processes. According to federal laws, the protection of the natural landscapes is regarded to be as important as the conservation of the Hohe Tauern's cultural landscapes. Its beauty and inviolacy shall be preserved as an example for a landscape representative for Austria. The national park is meant to benefit people, science and economy (for instance, Austrian national parks aim at nature conservation, scientific research, education and recreation). Less important in terms of park management is generally the promotion of regional development. While the national parks usually have a stake in regional development, it is not the primary goal of the national park to pursue regional development policies.

Subsidiary to the specific national park laws are the general nature conservation acts in their relevant version at the regional level (Carinthian nature conservation act (K-NSG) 2002, Salzburg nature conservation act 1999, Tyrolian nature conservation act 2005). Legislation and administration of related issues like hunting, fishing and regional planning also are in the realm of the federal states.

Supra-federal (regional) and national level

As mentioned before, the cooperation agreement of the federal states of Carinthia, Salzburg and Tyrol on the set up of a national park in 1971 (according to Article 15a of the Austrian federal constitutional act; Art. 107 B-VG, 21 October 1971) was the base for

the supra-federal (regional) planning procedure which finally led to a subsequent set up of the national park in the individual federal states.

The cooperation agreement of federal states and the national government on the protection and development of the National Park Hohe Tauern in 1994 (Article 15a of the Austrian federal constitutional act; BGBl. 570/1994) attests the parties' interest and commitment for the park and the park region, defines governance structures and basic funding terms. With this legal means the national government took responsibility for the National Park Hohe Tauern leading – among others – to a substantial increase in funds to the region.

Legislative competence in general environmental protection (and its controlling), forestry and water management is in the realm of the national level.

International level

Parts of the Hohe Tauern National Park were nominated as Natura 2000 sites, the EU network of protected habitats and species (Birds Directive (79/409/EWG) and Fauna-Flora-Habitat Directive (92/43/EWG)). Relevant EU regulations were translated into Austrian law by amendments of the federal nature conservation laws.

Another relevant legal framework for the protection of the Alpine region and the cooperation of Alpine countries and the EU is the Alpine Convention (BGBl. 477/1995). Implementation measures are defined in its protocols – among others the protocol on nature conservation and landscape protection, the protocol on spatial planning and sustainable development, the protocol on tourism, the protocol on soil conservation and the protocol on energy. In Austria, these regulations have the status of a national law, and the protocols are self executing from a legal point of view (no further inner-Austrian legislative procedure is necessary to set into force the protocols of the Alpine Convention).

Lessons learnt

- Legal frameworks of nature conservation in Austria in fact led to the development of three different administrative frameworks for the Hohe Tauern National Park;
- Substantial decision making power lies on the federal (regional) governmental level; co-funding of national government secures the coordination of park development and management;
- The national park has the mandate to benefit – among others – the economy and regional development in general.

2.3.1.3 Administration and management: organization

In order to explore the potential impacts of the national park on regional development, the organizational set-up and the management structure (e.g. council, secretariat, directorate, „Nationalparkfonds“), and the areas of management and management strategies (e.g. nature conservation, visitor management, education and information, research) have to be analyzed.

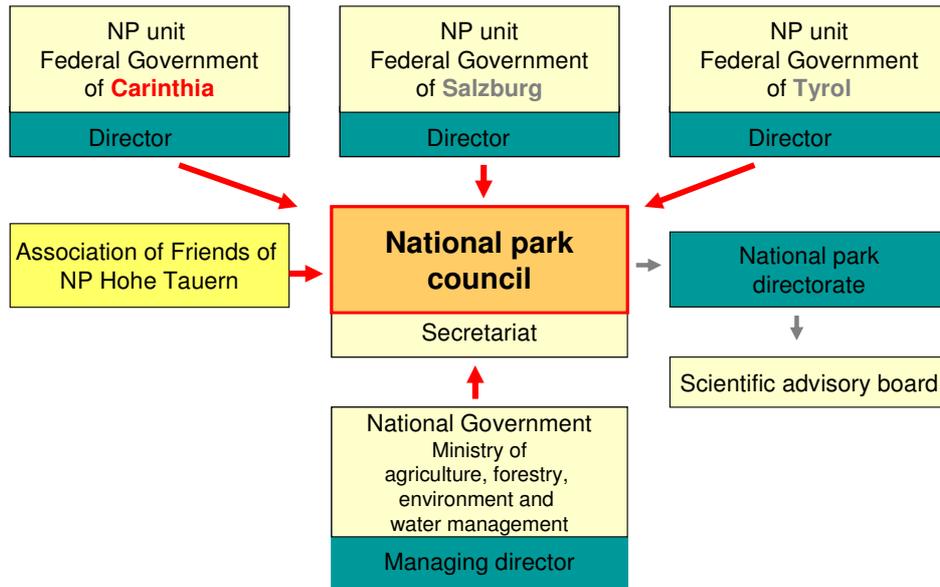


Figure 4: Organizational chart of the Hohe Tauern National Park

The management of protected areas is comprised of sovereign and non-sovereign tasks. Sovereign tasks include the execution of respective legislation by (federal) governments and the implementation of this legal framework by (federal) governments and their public authorities. Non-sovereign tasks are assigned to dedicated protected area management entities which mirror the balance of power and needs of stakeholder involvement in the decision-making and implementation processes in their structure and objectives. This section describes the organizational structure of the National Park Hohe Tauern with respect to non-sovereign management tasks. Figure 4 shows the organizational set-up of the Hohe Tauern National Park.

Park-wide bodies

National Park Council [Nationalparkrat]: The national park council is regulated in the agreement according to Art. 15a of the Austrian Constitution Act, enacted on 10 August 1994. The council consists of representatives of the national ministry (Ministry of Agriculture, Forestry, the Environment and Water Management) and of political representatives of each of the federal states (Carinthia, Salzburg, Tyrol). The general tasks are the

representation of the park on the national and international level, and the coordination of transboundary planning and management (i.e. policies “crossing” the borders between the federal states). Specific objectives are to coordinate the conservation strategy, development programs, public relations and scientific projects. The council is consulted by the national park directorate and supported by the secretariat of the national park council.

Secretariat of the national park council [Sekretariat des Nationalparkrates]: The secretariat is also regulated in the agreement according to Art. 15a of the Austrian Constitution Act, and was set up as an association with members of the national government and the federal states. Its tasks include the preparation and implementation of park council decisions and its annual work plan, and the coordination of park-wide scientific projects. It develops long-term park strategies together with national park directorate. The secretariat serves as an information hub for all park-wide developments and decisions.

Scientific advisory board [Wissenschaftsbeirat]: The scientific advisory board advises the national park council on scientific matters of park-wide relevance, and was set up in 1996. Members include natural scientists from various universities and natural history museums. Currently, the organization of the scientific boards are discussed since there are currently four bodies established, one comprising the areas of the national park in all three federal states, and three for each of the federal state separately.

National park directorate [Nationalparkdirektorium]: The directorate is also regulated according to the Austrian Constitution Act. It consists of representatives appointed by the national government and of the respective park directors of the federal states (Carinthia, Salzburg, Tyrol). Tasks include the coordination of regional park activities and management issues, and the advise of the national park council.

Structures in federal countries

Regional national park management [Nationalparkverwaltung]: The in-situ park management is regulated in the regional national park law in Carinthia (K-NBG 2007, § 15a). The management and administration is part of the respective regional government. In Carinthia, the national park administration is a sub-department of the nature conservation department (which is by itself a department of the regional planning authority). In Tyrol and Salzburg, the national park administrations are as well parts of the department for nature conservation separate from the regional planning authority.⁵ However, there is no specific regulation on the national park management in the Salzburg and Tyrolian national park acts (Kremser, 1995). The administration is headed by the na-

⁵ This is rather different to the set-up of national parks recently established. For instance, the Gesäuse National Park (Styria) is established as a public limited company (Gesäuse National Park Ltd.) with the organizational and managerial flexibility of a private company, but funded entirely by the federal state of Styria and the Republic of Austria (Getzner et al., 2008).

tional park directors in the three federal states. The administration offices are located directly in the national park region. The responsibility to provide human and financial resources lies with the regional government, together with the national level (federal ministry).

The tasks of the PA management and administration involve policies to develop the park according to its purpose, prepare and implement the management plan, service and inform the local population and visitors, and represent the national park idea to all external parties. The administration manages the national park fund (in Carinthia) and has a varying legal standing in administrative processes (e.g. solicitation processes) related to the park area depending on the regional legal framework, for instance, the national park is legal party to several admission processes in Carinthia with some differences of decision making authority in Salzburg and Tyrol.

Regional national park fund [Nationalparkfonds]: The regional national park funds are regulated in the respective regional national park laws (K-NBG 2007, § 15b; Salzburg national park act 1983 (as of 2005), §§ 10-13; Tyrolian national park act 1991, §§ 22-23). The funds are the legal vehicle for all management measures (i.e. non-sovereign tasks) of the park, and are set up as a special purpose fund. The funds are headed by the regional park director in Carinthia, by the federal government representatives in Salzburg, and by the head of the board of trustees in Tyrol.

The funds' tasks include the implementation of measures according to park aims (e.g. build and maintain park infrastructure, carry out visitor programs, and regional and tourism development projects), granting park fund subsidies, and supporting conservation measures financially (purchase, rent or contractual nature conservation measures for selected areas, compensation payments for land owners). Furthermore, the funds document and provide scientific advice to park projects. In Salzburg, the fund is also responsible for the elaboration of development concepts of the national park region.

The funds are financed by the regional and national governments, trusts and endowments, by the sale of products and organization of events (Carinthia, Tyrol), interests on fund assets, debt (Salzburg), and penalty payments due to malfeasance (Salzburg, Tyrol).

Organizational elements of the funds are two participatory bodies, the national park committee ("broad" platform) and the national park board of trustees ("condensed" platform).

Regional national park board of trustees [Nationalparkkuratorium]: The board of trustees is regulated in the respective regional national park laws (K-NBG 2007, § 15c; Salzburg national park act 1983 (as of 2005), § 14; Tyrolian national park act 1991, §

24). The board may be labeled as “condensed operative” participative platform which is controlled by the respective regional government.

Tasks of the board of trustees include the fulfilling the national park fund tasks, and among others, preparing annual reports, annual financial accounts and budgets, and handing these documents over to the regional governments. The board also defines guidelines for the granting of park fund subsidies, prepares expert opinions on measures affecting the park, revises legal acts and orders affecting the park, and represents the national park fund to the public.

In *Carinthia*, the members of the board are: one representative of the regional government, two municipality representatives (elected by their peers in the national park committee), two land owner representatives (elected by their peers in the national park committee, one expert on nature conservation and one representative of the business sector in the park region (both nominated by the federal government), one representative nominated by the national government and one nominated by the Austrian alpine club.

The board in *Salzburg* includes seven members: one representative of the regional government, two municipality representatives (elected by their peers from the national park committee), two land owner representatives (nominated by the chamber for forestry and agriculture), and two experts nominated by the regional government (at least one on nature conservation, at least one from the regional government’s administration). One representative from the national government is authorized to participate as an advisor (with voting right when it comes to the allocation of national government’s funds). Other advisors are permitted to join upon invitation (chambers, Austrian National Forests (ÖBf), alpine clubs, experts on nature conservation).

The board in *Tyrol* consists of 13 members: one representative of the regional government, four municipality representatives, five land owners (nominated by the district chamber for agriculture and forestry), one representative nominated by the Austrian Alpine Club, two experts on nature conservation and/or spatial planning nominated by the regional government. Other advisors are permitted to join upon invitation.

Regional national park committee [*Nationalparkkomitee, Carinthia; Fondsbeirat, Salzburg and Tyrol*]: The regional national park committees are regulated in the respective regional national park laws (K-NBG 2007, § 16; Salzburg national park act 1983 (as of 2005), § 16; Tyrolian national park act 1991, § 27). The committees are the “broad” participatory platforms that advise the national park board of trustees (on the program of work and financials, on guidelines for grants, on development concepts for the region, if applicable) and decide and/or recommend upon the granting of park fund subsidies.

In *Carinthia*, the committee includes 26 members: one municipality representative (per municipality), two land owner representatives (per municipality), two representatives nominated by the regional government, one by the chamber of agriculture and forestry, one by the national government and one by the Austrian Alpine Club.

Salzburg's committee consists of 24 members (plus chair person): 7 representatives nominated by the regional government (thereof three from within the regional administration), one representative nominated by the chamber for agriculture and forestry, one by the chamber for commerce, one by the chamber for labor, one by the chamber for agricultural labor, one by the association of municipalities in Salzburg, one by the Austrian National Forests (ÖBf), one by the alpine clubs in Salzburg, one each of the environmental NGOs, Association of Nature Parks [*Verein Naturschutzpark*] and Nature Conservation Alliance [*Naturschutzbund*], one by the regional association of hunters, one by the University of Salzburg, three land owners representatives and one representative of forestry rights holders (both nominated by the chamber for agriculture and forestry), and three representatives from the municipalities.

The committee in Tyrol consists of 26 members: six municipality representatives, six land owner representatives (nominated by the district chamber for agriculture and forestry), four representatives of the regional tourism associations, one representative nominated by the chamber for labor, one by the chamber for commerce, one by the district chamber for agriculture and forestry, one by the Tyrolian association of municipalities, one by the regional hunting association, one by the Austrian Alpine Club, one by the environmental recreation-oriented NGO, Nature's Friends [*Naturfreunde*], one by the university of Innsbruck, the district commissioner, and the responsible nature conservation commissioner.

Lessons learnt

- The organizational set-up of the Hohe Tauern national park is extremely complex, and aims at a system of "checks and balances" on the regional level; however, this complex organizational structure causes much overhead costs and red tape in administration and decision-making. One consequence of the regionalized structures is that there is still a lack of a "common" park-wide vision;
- Participation in the national park bodies varies between municipalities and over time;
- Regional interests in the granting of project subsidies from national park funds can be very strong.

2.3.1.4 Management areas and principles

The national park administration is responsible for five management areas (fields of management activities; cf. Kremser, 2003):

- *Nature conservation*: wildlife and biotope management, contractual nature conservation programs (natural and cultural landscape);
- *Environmental education*: development of educational materials, school programs, cooperation with local schools, interpretation for visitors in park and region, national park academy, volunteer program for students;
- *Recreation*: visitor infrastructure and guidance (visitor center, info points, thematic pathways), visitor program and information, cooperation with tourism organizations / destination marketing (especially in case of Carinthia where park management is also heading the regional tourism association);
- *Research*: assessment and monitoring of biodiversity and/or human impacts, as a base for (adaptive) management measures and technologies;
- *Public relations*: documentation and marketing of the park, its objectives and activities (books, films, website of park, park magazine, scientific magazine, fairs, congresses, visitor management); build-up of relationships with and information for stakeholders (local and regional people, visitors, press, sponsors etc.), brand management and merchandising.

A crucial development in the Hohe Tauern National Park in Carinthia is the integration of the regional tourism association as separate department of the national park administration. Until 2006/2007, the local and regional tourism companies and the municipalities had organized their own tourism association. However, it turned out that the "federal" structure of the association and the lack of funds led to an ineffective management and marketing. The government of Carinthia therefore decided to fund a newly established company under the umbrella of the national park management to coordinate tourism activities. The earlier tourism association was therefore liquidated. The newly established company now coordinates marketing activities and offers newly developed travel packages in cooperation with local tourism companies.

An important approach underlying the management strategy (defined in the management plans) of the park is the concept of zonation, including the core zone without human interventions (on at least 75% of land; IUCN category II), the buffer zone with protection and sustainable use of the cultural landscape (IUCN category V), and the "national park region" with a diverse cultural landscape to protect the ecological and economic resource base, to enhance the quality of life and to strengthen the cultural identity of the local residents. In the Hohe Tauern National Park, the safeguarding of cultural landscape is regarded to be as important as of natural landscape (Hohe Tauern National Park Council, 1995).

Due to private land ownership, the major tool for implementing no use ("natural landscape compensation") or park-conform land use ("cultural landscape compensation") in the park are contractual nature conservation agreements. These are voluntary private

arrangements (involving monetary compensation) between the land owner and/or holder of land-use rights and the respective national park fund for a period of 10 years (see section 2.3.2).

2.3.1.5 Management planning tools

National park plans (Management plans) are the strategic guidelines for operational work of the park management as they define the framework, aims and measures of management activity. Plans are required by national park law or by respective government orders. They are prepared for a 10-year period by each regional park management (current plan: 2001-2010). In order to allow for a coordinated development of the park (region), aims and contents of the sub-plans are agreed upon by the national park council. Participation in the development of such plans is an important key for success of park management policies. To demonstrate the sort of stakeholder involvement, the Carinthian national park act describes the procedural requirements as follows.

A management plan is prepared by the park management and finally agreed by the regional government. Before adoption by the government, plans are subject to a public hearing procedure involving affected land owners (or their representatives) and municipalities, alpine clubs, environmental NGOs and the nature conservation advocacy. In addition to that, a more selective process is required in the hearing of the national park committee and the chamber for agriculture and commerce (K-NBG 2007, § 9 (2)-(4)).

Mission statements and framework concepts include park-wide basic strategic guidelines adopted by the (regional and national) political decision making body, the national park council, in 1995. These guidelines set the frame for a coordinated development of the national park before management plans were developed and in force by 2001 (Hohe Tauern National Park Council, 1995).

Especially in *Carinthia*, in order to prepare the new period of the national park plan for the period of 2010-2020, two "master plans" have been prepared in 2007/2008 in order to draw the "big picture" of development for the next 15 years.

- Master plan for "tourism development": This plan defines the organizational structures, the core field of activities and aims as well as the core offers for tourists.
- Master plan for "nature development": This plan defines the subjects of protection and the specific ecological and spatial development. The basis is the analysis of nature's hemeroby (measure for the proximity to a natural ecological state), which should be enhanced as far as possible throughout the whole reserve (Jungmeier and Zollner, 2008).

Furthermore, there are specific plans for managing the Natura 2000 sites, forestry management plans, and strategies for further developing the contractual agreements with land owners.

Lessons learnt

- Broad participation and early involvement of stakeholders in the development of the management plans minimize conflicts in the implementation of the management measures later on.
- Zonation based on scientific data, natural conditions/ecosystems and current land use practices is important for reasonability and a high probability for success
- Although there is coordination on the management measures, there is no park-wide concept for a sustainable development of the entire park region.
- Though the Nationalpark is implemented for many centuries, the use of some terms partly afflicted with negative aspects is still something the management has to cope with. For example the term wilderness is being used in public talks in a very restrictive way. Many of these problems derive from the planning phase.

2.3.1.6 Councils, discussion and decision making platforms

Decision making bodies which are part of the current park-internal organisational structure are discussed in section 2.3.1.3. Other platforms and processes of mandatory and voluntary participation in the management of the park and/or the park region's development are described in this section.

Mandatory bodies

National park commission [Nationalparkkommission]: The national park commission is regulated in the cooperation agreement of federal states Carinthia, Salzburg and Tyrol on the establishment of a national park in 1971 (Article 15a of the Austrian federal constitutional act, "Agreement of Heiligenblut") (Art. 107 B-VG, 21 October 1971); the commission is the coordinative supra-regional planning commission which became operational in 1972. The commission was only active during the planning phase of the national park.

Tasks of the commission were to advise regional governments on all issues relating to the establishment of the national park, to define recommendations on park borders, conservation regulations, investment needs and grant programs. The building of local acceptance and negotiation of regulations on land use and compensation payments gradually also became part of the commission's tasks. The members of the commission are: 3 representatives of each federal state; from 1973 onwards, the commission was headed by a full-time manager. Upon invitation, the commission included experts from

the national government, the Austrian National Forests, alpine clubs, environmental NGOs and other legally relevant interest groups and municipalities. The commission was dissolved after the successful establishment of the national park in all three federal states.

Mandatory processes

Mandatory public hearings are defined in regional national park acts (K-NBG 2007, § 9 (3)-(4), § 10; Salzburg national park act 1983 (as of 2005), § 7) for which various stakeholder groups are selectively invited. Hearings are required for

- the set up or change of a national park regional governmental order, and
- the development of a management plan ("national park plan").

Generally, the national park administration as well as local residents and other stakeholders have the right to comment in public hearings and processes if they have a legal stake for public orders and other decisions (this is not specific to the national park).

Voluntary platforms and cooperations

Association of Friends of the Hohe Tauern National Park [Verein der Freunde]: The association is a sponsorship vehicle registered as an association in 1992, its bylaws comply with the Austrian Associations Act of 2000. It is managed by the Carinthian park director and supported by a president from the private sector. The association aims at supporting projects which promote the development of the national park. Projects are selected by an expert committee. Within protected areas in the Alpine region it is one of the best-practice examples in attracting and managing sponsorships. Although selected sponsorships raised public criticism in the past, the involvement in and cooperation with the business sector has substantially increased the park's public awareness range. It enabled the park to gain access to and support from a new group of opinion leaders and improved its knowledge and experience on marketing and fundraising – since its set up in 1992, the Association of Friends has attracted more than EUR 7 million for the park and its region (cf. www.tauernfreund.at).⁶

Partnership agreement with the Austrian Alpine Club [Österreichischer Alpenverein, OeAV]: This agreement on the long-term cooperation between the Carinthian national park fund and the alpine club was signed in 2002, secures contractual nature conservation measures and the rent of hunting rights on OeAV-owned land for a 30-year period,

⁶ The sum of money collected by now since 1992 is certainly considerable but not a significant contribution to the whole budget of the national park since funds are mainly spent on concrete regional projects.

and defines intensified cooperation in park-conform alpine tourism, research, education and public relations.

Partnership agreement with the Großglockner High Alpine Route company [Großglockner Hochalpenstraße, GROHAG]: This agreement on the long-term cooperation between the Carinthian national park fund tourism department and the GROHAG was signed in 2007. The agreement intensifies the cooperation between the national park and the scenic route, especially with respect to a more efficient marketing of the Großglockner region.

There are a number of informal platforms around the national park. These include *future workshops* [Zukunftskollegium Nationalpark Hohe Tauern] with informal participative platforms in all municipalities of the Salzburg part of the national park. These workshops were very active in the planning phase, and had/have a focus on culture, historic sites, education. Another platform in Salzburg is "Tauriska" which is an association aimed at promoting cultural activities in the region. One recently re-activated discussion forum in Carinthia are the "National Park Talks". This annual event is organized by the park and the regional government's representatives. It is a platform for exchanging on contemporary issues and serves as a public relations and awareness building effort as it is open to the public.

Other important platforms in the region

Platforms which have their origin not in the national park but have been important players in parts of the park region over the last two decades, are the local action groups set-up in the framework of the EU's regional development programme LEADER.

One example for a regional platform is the Leader-action-group (LAG) Nockregion-Oberkärnten: This LAG is part of Regional Management Carinthia Ltd. [Regionalmanagement Kärnten Dienstleistungs-GmbH.] which divides Carinthia into 4 LAG regions covering 8 thematic fields. The objectives of the region are to develop the natural and cultural conditions, to establish co-operations and networks and to initiate economic impulses through developing specific projects. The Hohe Tauern National Park in Carinthia is one of the partners within this network and works closely together with the LAG Nockregion-Oberkärnten on issues of joint interest.

Thematic partners and networks

The Hohe Tauern National Park is well connected to and embedded in the protected areas communities due to its involvement in national and international organizations and projects. The selection below represents a comprehensive but not full list of networks the park is involved in. In order to characterize the nature of network relations, parame-

ters like spatial, social and financial collaboration are used below (Barbirato et al., 2007).

Spatial network

The national park borders (in the Tyrolian part) with the nature park Rieserferner-Ahrn, Alto Adige/Southern Tyrol. There is no institutionalized management cooperation yet – although ecological networking is given by the spatial vicinity (“networking happens”) and spatial network relations.

Partnership network

Institutionalized cooperation is taking place with the Triglav National Park (Slovenia) and the Les Ecrins National Park (France). This cooperation was formally set up by a partnership agreement signed in 1996 for the exchange of experience, best practice and staff. In addition, common projects to solve common problems were implemented (e.g. on marketing, on monitoring). These partnerships are based on an informal, long-term, voluntary and non-hierarchical cooperation (social network relations).

Project partnerships

The Hohe Tauern National Park is actively pursuing project-related cooperation with other protected areas. This cooperation is defined in contracts and jointly financed, and represents a voluntary, temporal and goal-oriented collaboration. One example is the project HABITALP (together with partners like Berchtesgaden National Park (Germany), Swiss National Park, Les Ecrins and La Vanoise National Parks, Haute-Savoie Nature Reserve (all France), nature parks of Southern Tyrol, Stelvio National Park, Mont Avic Nature Park, Dolomiti Bellunesi National Park, Gran Paradiso National Park (all Italy)) (social and financial network relations).

Protected area networks

Overall situation

The Austrian Ministry of the Environment is the highest authority responsible for management of national parks in Austria. By providing financial resources (basic budget), the Ministry in fact governs most of national park activities. The status is based on the treaty according to Art. 15a of the Austrian Constitution Act and is obligatory for each national Park in Austria.

The Hohe Tauern National Park is embedded in several contexts. The comprehensive overview of all the networks the park is member of is not indicated in the text below. The aim of chosen examples is to demonstrate the diversity of links the park has developed.

Cooperation with other national parks

The National Park Hohe Tauern is one of six members of the umbrella organization of Austrian national parks, called *Nationalparks Austria*. This organization intends to create synergies between the parks in the matters of communication, marketing and research. The links have been institutionalized; however, they are not formal.

The National Park Hohe Tauern cooperates closely with the Rieserferner Ahrn national park which is situated in Alto Adige/Southern Tyrol (Italy). Though common management of habitats and species has not been developed so far and the links have not been institutionalized, networking in terms of ecological aspects exists, mainly due to the fact of spatial vicinity of both parks.

Les Ecrins and Triglav National Parks are connected to the National Park Hohe Tauern by institutionally backed partnership agreements that mostly focus on exchange of experience, best practice and staff. Furthermore, a lot of common projects (above all with Triglav National Park) have been developed and implemented with the aim to strengthen common marketing or to find common solutions for similar problems. The partnership forms an informal, but institutionalized, long-term network based on a voluntary, non-hierarchical approach.

Involvement in projects – time limited links

The large Alps-wide project HABITALB is one of many projects carried out in a close cooperation with the other parks and protected areas in Austria. These projects, in general, are jointly financed and carried out. They are co-financed as well by EU, which provides a return flow to each partner. The participation is voluntary and temporal, limited to the life-time of particular project.

Memberships in Europe-wide organizations – permanent links

The Hohe Tauern National Park is a member of the *Europarc Federation*. This association unites European protected areas of categories of National Park, Nature Park, Regional Park and Biosphere Reserve. Currently, there are more than 400 members in 38 countries in Europe. The organization aims at exchanging knowledge and experience among members. The relationship is institutionalized by a formal membership agreement; collaboration, though, has a very personal dimension.

The membership of the Hohe Tauern National Park in the *Alpine Network of Protected Areas (AlpParc)* is automatic, but the park is very active in the activities and boards of the network. The main idea of this network is to pool expertise, techniques, and methods used by the managers of Alpine protected areas.

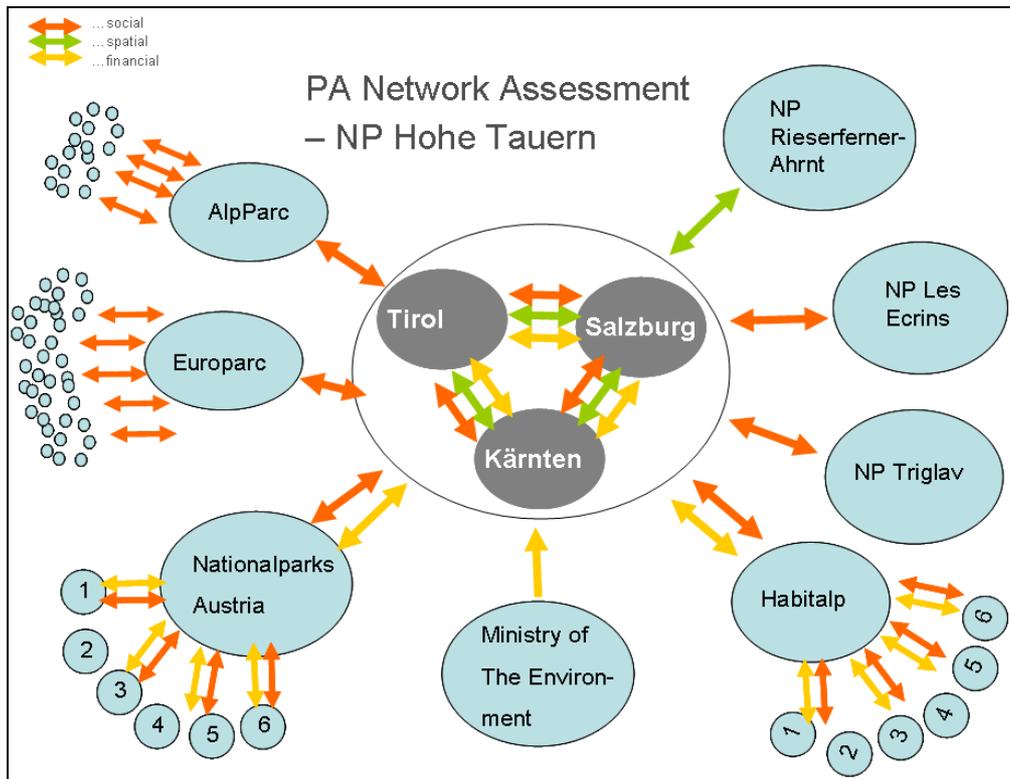


Figure 5: Hohe Tauern National Park’s PA networks memberships

Lessons learnt

- Participation has changed considerably over the life cycle of the Hohe Tauern National Park. In the planning phase the involvement of stakeholders was not yet organized nor institutionalized, the debate on the establishment of the park was very controversial and lively. Over time, conflicts were resolved, communication channels established and the park management was recognized as a major stakeholder in the region and the region’s development.
- Today, park management seems to be well connected, and stakeholder participation is to a significant extent also taking place in an informal exchange between park stakeholders and the park’s management (“open door policy”⁷ of park management).
- The promotion of cultural activities benefits the national park idea most according to a study made in the Salzburg region of the National Park Hohe Tauern (cf. Stotter, 1994).
- Voluntary partnership agreements and active participation in thematic networks have substantially increased the park’s outreach in terms of public awareness, funding and knowledge base.

⁷ This was a keyword used by national park director Peter Rupitsch in a workshop on 30 June 2008.

2.3.2 Conflicts and solution strategies

2.3.2.1 Land owners and holders of rights: Ownership structure and rights associated with land ownership

As mentioned before, unlike other large protected areas, the National Park Hohe Tauern is mainly based on private ownership (see Table 1). In total, the park's area has more than 1,100 land owners. The largest single owner and a major stakeholder in the park is the Austrian Alpine Club with 21% land ownership, followed by the Austrian state owned forest company with 16%. Nevertheless, 62% of all land is owned by private individuals or agricultural associations (cooperatives) who – at least partly – used their lands for agricultural purposes (mainly as alpine pastures), for forestry and hunting as, in Austria, land ownership implies also access to further rights, like hunting and fishing.

Table 1: Ownership structure of the Hohe Tauern National Park

Landowner	Carinthia	Salzburg	Tyrol	Total
Private	85%	59%	54%	62%
Austrian Alpine Club (OeAV)	13%	6%	45%	21%
Public*	1%	35%	-	16%
Others	1%	-	1%	1%
Total	100%	100%	100%	100%

* The main public owner is the Austrian National Forests (OeBF)

Source: Kärntner Nationalparkfonds (2001).

This ownership structure and the legal frameworks imply the need of involving and convincing land owners and other stakeholders of the park idea in order to establish the park and reach defined objectives.

To build broad support for the national park idea in the early days, national park laws did not restrict current agriculture, forestry, hunting and fishing even in the core zone of the Hohe Tauern National Park but left these issues open for later management action. Another major element in building acceptance among the land owners was the introduction of monetary incentives. As defined in the respective national park acts, land owners (and holders of other relevant rights) are entitled to "adequate" monetary compensation payments by the regional government for disadvantages, additional costs, difficulties or restrictions in the management of their lands due to the set up of a national park (K-NBG 2007, § 13; Salzburg nature conservation act 1983 (as of 2005), § 23; Tyrolian national park act 1991, § 12). A similar compensation for changes in land use is also due with other categories of protected areas such as nature reserves.

2.3.2.2 Stakeholder analysis: Interests and opinions of major stakeholders

In order to understand the broader park framework, this section gives an overview of major stakeholders involved in the planning and management of the park and its region (see Figure 6), and of the acceptance of the park (e.g. measured by acceptance studies; customer/visitor satisfaction surveys). For the purpose of this project, stakeholders are defined as persons, groups or institutions with interests in the National Park Hohe Tauern. These can be people or institutions which are directly or indirectly affected by the park, intermediaries of any kind, service user groups, and other partners (cf. Overseas Development Administration, 1995).

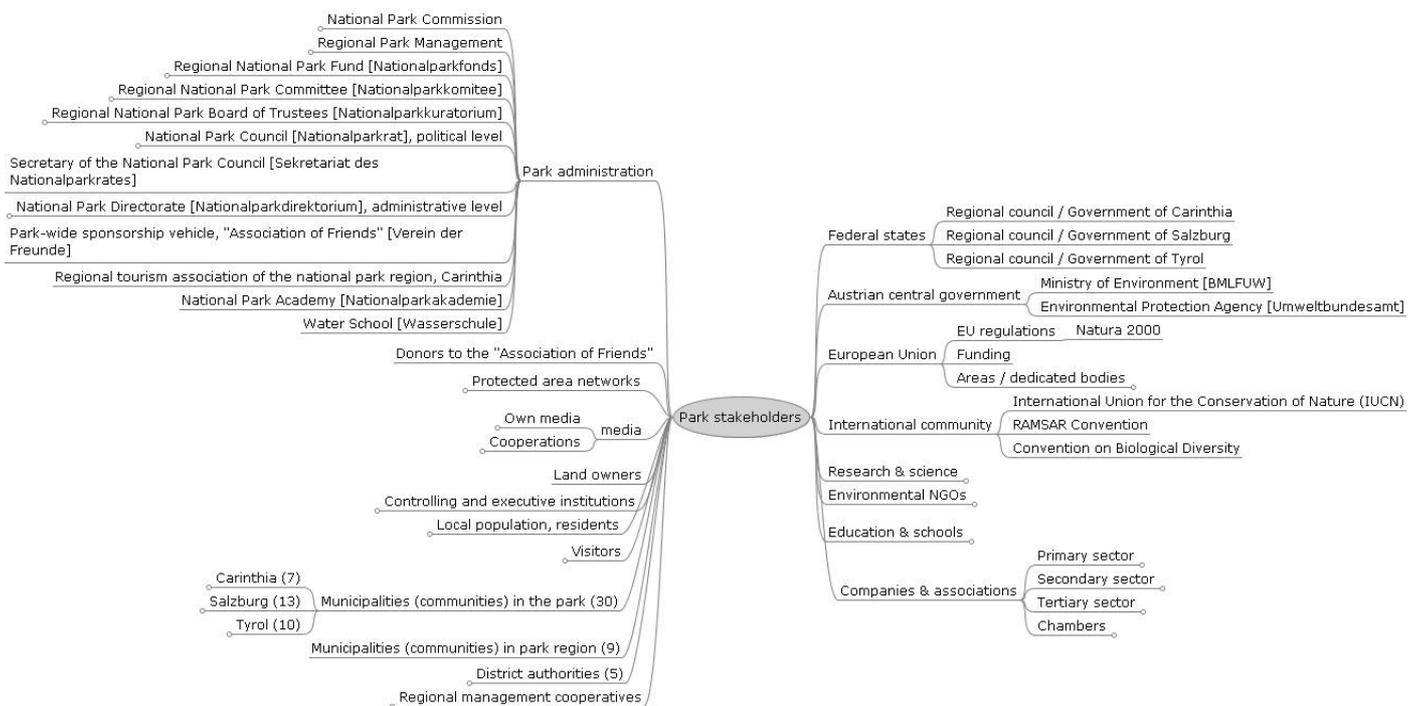


Figure 6: Stakeholders of the Hohe Tauern National Park

Source: Authors' analysis and draft.

The main groups of stakeholders are described and discussed in the following sections (see e.g. section 2.3.2).

2.3.2.3 Conflicts and strategies for solutions

The history of the Hohe Tauern national park showed a number of conflicts; in fact, main driving forces of the establishment of the park, originated from conflicts of economic development and infrastructure, and nature conservation. These include the energy sector, tourism, agriculture, forestry and hunting. Current conflicts arise in the fields of land

management in the national park by contractual nature conservation, and programs relating to holders of rights (e.g. hunting pilot project in the national park in Carinthia).

Private property rights

Problem

The main problem does not necessarily arise from measurable economic losses, but is rather a feeling of loss of decision power and sovereignty for land owners and holders of rights, and stems from mistrust and the rejection of regional and national governmental interference as voluntary participation of land owner is required according to the basic concept and understanding of national park policies.

Solution

There is a range of monetary incentives for land owners as a compensation for a larger extent of heteronomy. Land owners receive a (per hectare) "national park premium" for their land (compensation payments for "usable cultural land", i.e. forest and alpine pastures) that is located within the park boundaries (core and buffer zones). These compensation payments are fixed in "national park contracts" (for each land owner) between the rights holders and the regional "national park fund" (Amt der Kärntner Landesregierung, 1993). By 2007 in Carinthia, for example, there were 289 national park contracts securing about EUR 163,000 annually in general compensation payments for land owners (Kärntner Nationalparkfonds, 2008, 13).

The contractual nature conservation programs of the Hohe Tauern National Park were developed by the park management together with land owners and the chamber for agriculture and forestry, and represents strong pillar for local acceptance with land owners but also for IUCN category II acknowledgement (see also the section below on management programs).

Land owners also have specific rights on participation in the planning and management bodies of the national park (see section 2.3.1.3). Besides participative bodies, land owners have the right of a hearing before the regional government decrees a relevant national park order (K-NBG 2007, § 10; Salzburg national park act 1983 (as of 2005), § 7; Tyrolian national park act 1991, § 5). In Carinthia, land owners may also participate in the preparation of the park's management plan (K-NBG 2007, § 9).

Regional sovereignty

Problem

A potential conflict arises from the loss of alternative economic development options for the remote regions such as hydropower generation and mass tourism, accompanied by a loss of decision power on the municipality level.⁸

Solution

Participative procedures in the management of the park enabling involvement of stakeholder groups, the local presence of park management, and raising awareness and building trust of park management proved to be the most successful strategies for dealing with decision power conflicts. The park itself is presented as an interesting employer in the region over time. Some of the development programs *for* the park supported also the regional and local economy. The park also develops concepts and policies for park-conforming tourism offers and partially funds marketing activities. Thus, the park can be considered as unique potential for regional brand building (destination marketing, local products).

Hydropower use

Problem

The major threat of the Hohe Tauern region before the establishment of the park was the increasing pressure to use water bodies for producing electricity. Numerous projects for hydropower generation in the national park region were presented and debated, and even more were planned. The energy sector was considered as a powerful potential contributor to the regional economy in the remote areas of the park.

Solution

Environmental NGOs and local civil platforms lobbied for the establishment of protected area, preferably a national park. The political decision in 1971 to promote a park did not stop the energy sector's plans yet. Only the regional national park laws finally restricted the construction of hydro dams within park borders (which happened in Tyrol only in 1991). While with other development and economic use options such as ecotourism, agriculture or hunting, park policies have been developed to secure a development and use conforming to the national park's aims and objectives. Reduced development or use

⁸ Some of the publicly debated development options, except for hydropower generation, prove to be short-sighted. Very often, ecotourism such as tourism in national parks may be the only unique selling proposition of peripheral regions. As such, the establishment of the national park in the region is an option that rather opens up development options.

is compensated; however, potential hydropower is the only major “hard” conflict between nature conservation and economic use since there is, from a technical and ecological point of view, no form of hydropower use that conforms to national park objectives. (From a legal (IUCN) point of view, any economic development, e.g. hydropower use, is strictly forbidden.)

Tourism

Problem

Inappropriate infrastructure development due to mass tourism was already a concern in the early days of the park idea in the beginning of the 20th century and a major motivation for business man Wirth to purchase large parts of the Glockner area to devote it to conservation. More recent project ideas relate to the extension or construction of skiing areas, building or opening of (additional) mountainous roads to public traffic, and the building of cable cars in sensitive areas. There is a very high visitor frequency in some visitor “hot spots” (Großglockner High Alpine Road, Krimml waterfalls). In other areas of the park region tourism has steadily decreased over the last three decades resulting in free capacity and partially out-dated tourism infrastructure (see section 2.4.3).

Solution

Recreational activities within the mountainous areas of the park are contingent on appropriate infrastructure such as access roads, trails, mountain huts. Instead of building new infrastructure (which is anyhow very much restricted within the park by national park laws), existing capacities are maintained, and upgraded, and marketed together with accommodation providers, tourism associations and the Alpine Club.

One of the highly frequented spots in the park area is the Großglockner High Alpine Road. The road and accompanying infrastructure are technically out of the park borders. Adverse influence on the protected area is not significant due to limited accessibility of the road (open only during summer months and closed during night time) and strong visitor guidance (parking, huts, info points, visitor centre). Unfortunately, the majority of visitors of the Großglockner High Alpine Road do not stay overnight, therefore adding little value to the local economy and even less “developing more than a superficial appreciation of the park” (Synge, 2004, 27). Although the toll road generates high revenues, only very incomes stay in the region. The largest part of the toll payments constitutes revenues for the regional governments’ budgets.⁹ Cooperation of the park admini-

⁹ The Großglockner High Alpine Road is operated and maintained by a company owned by the regional governments.

stration with the public road company regarding visitor management, education and the marketing of the region has been intensified over the last years.

Example of tourism management: National park management in Carinthia as a key player in regional tourism development

In Carinthia, the national park management has a very strong stake in the region's tourism development. By political decision, the park administration took over the management of the regional tourism association covering 13 municipalities in the park region (Figure 7) and beyond as of 2006 (Hohe Tauern National Park Region Carinthia [*Nationalparkregion Hohe Tauern Kärnten*], organized as a separate department of the national park fund of Carinthia).



Figure 7: Map of municipalities under tourism management from Hohe Tauern National Park Carinthia

Source: Kärntner Nationalparkfonds, 2008, 19.

Since 2006 the separate tourism department of the Hohe Tauern National Park is in charge of developing appropriate product (travel) packages by coordinating offers from the national park as well as local service providers and marketing them (www.nationalpark-hohetauern.at). The park has established a close cooperation with about 30 tourism service providers which adhere to common quality criteria. The park has spent more than EUR 1.1 m for its tourism efforts in 2007 (this is an additional budget to the park's budget). First results of the efforts show a substantial increase in visitor requests and an extension in the length of stay of tourists.

The regional park administrations of Tyrol and Salzburg have as well developed cooperations with the tourism sector by selecting national park partner companies (see www.hohetauern.at/urlaub-im-nationalpark/partner.html).

Park management has prepared a strategy on sustainable tourism and was awarded the European Charta on Sustainable Tourism by the EUROPARC Federation in 2001 (Nationalpark Hohe Tauern Direktorium, 2001). The park's visitor management concept was selected as a good practice management example by the IUCN in 2004 (Synge, 2004).

Whereas some of the conflicting issues around the park were regulated and solved in national park laws or governmental orders, some other aspects remain open for implementation by park management, like park-conform land management measures and hunting (both described below).

Land management

Problem

Legally permitted land management in parts of the park (especially alpine pastures and forests) was not in line with IUCN criteria. Nevertheless, these pastures have been a core element in alpine culture and lifestyle over centuries and a major cause for regional biodiversity.

According to the Austrian forestry act 1975, a forest has use, protection, welfare and recreational functions. Non-use is seen by some foresters in Austria as "unreasonable, illegal and a waste of public wealth" (Amt der Kärntner Landesregierung, 1993, 65). Although only small parts of the park's area consist of forests (in Carinthia, for example, only 8% of the park area is legally classified as forest; Kärntner Nationalparkfonds, 2001), regulation on park-conform forestry was necessary.

Solution

Before touching the sensitive field of restricting land use practices, park management commissioned basic research projects in the park area. Research results showed that only a small fraction of grazing rights and forests were used at all.

In order to form incentives for land owners for land use conforming with park regulations (which is applicable to max. 25% of the core zone of the park and its buffer zone), two contractual nature conservation programs were developed (K-NBG 2007, § 14 (2); Tyrolian national park act 1991, § 21):

- The "natural landscape compensation" model compensates land owner and rights holders for fully waiving the right to use the property to the national park administration (e.g. grazing, fishing and forestry rights); and

- The "cultural landscape compensation" model that compensates rights holders for their reduction of land use according to the "sustainable use".

By 2007 in Carinthia, for example, there were 101 contracts on natural landscape compensation securing annual income for land owners of about EUR 187,000, and EUR 81,000 for cultural landscape compensation payments (Kärntner Nationalparkfonds, 2008, 13). Like the basic compensation agreements, they are codified in "national park contracts" with the federal "national park fund" for each land owner.

Example: Pilot project for a cultural landscape management program (Oesterreichischer Alpenverein, 2002, 21-24)

In order not only to secure ecologically valuable areas within the park boundaries (in the Carinthian part of the Hohe Tauern National Park), the park management of Carinthia started a pilot project on sustainable land use in the municipality of Mallnitz. In 1991, external consultants started to map agricultural land use in the surroundings of the park area and together with park management, land owners and farmers started to develop a voluntary, performance-based program to secure valuable areas. In 1992 and 1993, this project was extended to the five other park municipalities and served as an initiative for the development of a state-wide cultural landscape management program with the participation of environmental experts, hunters, the chambers for agriculture and forestry, public grant-making institutions and the regional government authorities. When Austria joined the EU in 1995, new schemes for the support of agricultural services came into force and the Carinthian efforts were taken up by the national "ÖPUL" program (Austrian program for sustainable agriculture).

Hunting

Problem

Hunting rights are associated with land ownership and are regulated by regional hunting acts on the federal state level. Any restriction on hunting is dealt with very emotionally in the public debate and is often considered as a limitation to private property rights, a restriction on "primal instincts of mankind" (Amt der Kärntner Landesregierung, 1993, 73), a threat to loose the forest-game-equilibrium due to the missing natural enemies of game, or representing fears of a disease outbreak. In order to keep conflict potential among hunters low in the planning phase of the park, the regional governments and regional parliaments decided not to restrict hunting practices by the national park acts. Willingness to discuss and readiness to change hunting practices, therefore, were extremely limited in the early days of the park. But existing hunting practices were seen as

a crucial obstacle for reaching IUCN category II certification (which in turn is necessary for a national park in Austria to obtain funding from the national government).

Solution

In order to overcome rejection and to gain experience, the management of the Hohe Tauern National Park in Carinthia initiated a pilot project in the Seebach valley, close to the village of Mallnitz. This project was a milestone in the development of hunting practices.

Example: Pilot project, Seebach valley (Carinthia)

In Austria, hunting grounds are leased on the basis of contracts for ten years. In 1990, when hunting contracts were up for renewal, the park management invited the rather park critical WWF (World Wide for Nature) Austria to team up in order to find new ways for hunting policies conforming to park objectives. An area of 2,300 hectares was leased by the WWF from 1991 onwards; the decision aimed at intensive research and monitoring of game and their impact on different habitats, of legal matters and raising awareness. Besides WWF Austria and the national park management, project partners included different research institutions and the Carinthian association of hunters. Intensive discussion with responsible authorities and land owners was part of the process.

In 1994, Carinthian park management leased all hunting grounds of the Austrian Alpine Club as well as one privately owned hunting ground covering about 25% of the Carinthian core zone of the park.

In 2000, the park representatives signed a historical agreement with the Carinthian association of hunters which confirmed their support of a park-wide implementation of hunting practices which were in line with IUCN category II criteria.

In 2001, upon renewal of hunting contracts, the park leased hunting grounds in the core zone of 22,000 hectares fixed for a period of 10 years with automatic renewal.

Besides the management policies described above, hunters are also part of the institutionalized discussion and decision making bodies of the park – they are, for example, in the broad participative platform (national park committee) in Salzburg.

Lessons learnt:

- Management efforts of the last decade have successfully settled all major conflicting issues for the time being.
- With a lot of funds flowing to the region, the park will be probably be facing the need for justification of funds (to public authorities but also to local land owners, the local population and the national tax payers) in the time to come. An example for that is the

current demand for substantially improving the marketing of the park in order to stimulate regional development by tourism, and to search for own funds such as sponsoring.

2.4 Regional development in the Hohe Tauern National Park

2.4.1 Regional development policies

As some of the examples and case studies described in this report concentrate on policies in the federal state of Carinthia, this region should also be used to highlight main regional development and policy documents.

Generally, regional entities such as communities and political districts are obliged to draft, discuss and present regional development concepts. On the municipal level, these documents include zoning plans and local development plans. On the district level, development plans have to be drafted.

Regarding the reference to the establishment of the Hohe Tauern national park, an earlier study (Getzner and Jungmeier, 2002) regarding the regional (economic) effects of Natura 2000 sites in Austria stresses the importance of development concepts and strategies. While the establishment of a protected area, even with a prominent category such as a IUCN category II national park, does not *per se* lead to economic development, the active involvement and use of regional strategies to increase local benefits are significant. This means that the regional development strategies have to actively "use" the national park in all aspects for the purpose of regional development, for instance, by offering new tourism destinations and attractions, by regional (destination) marketing, and by credible policies towards ecologically oriented economic activities also outside the national park boundaries.

In the case of the Hohe Tauern National Park in the federal state of Carinthia, there are several planning and strategy documents available. However, documents focusing primarily on the national park region are rare, with only two relevant documents of regional development policies.

(1) One of the earlier documents is the Regional Development Plan of the planning team of the Großglockner-Millstättersee-Oberkärnten region which includes not only the Hohe Tauern National Park region, but also accounts for the area of the Nockberge national park¹⁰. This Regional Development Plan (Berchtold et al., 2001), which is a proposal and

¹⁰ The area of the Nockberge is only labelled "national park" but not yet acknowledged by IUCN according to category II. There is an ongoing discussion about this area with proposals to step back from the national park concept, and to implement other frameworks such as a biosphere reserve.

describes the results of a regional working group, proposes as the main regional development strategy the intensive economic use of the natural and cultural potential [*Valorisierung des natürlichen und kulturellen Potenzials*] with a special emphasis on benefit sharing from the existing national park. However, this concept has not been officially implemented but points into the right direction from the viewpoint of enhancing regional development.

(2) The Regional Development Concept [*Regionales Entwicklungsleitbild*; Landesplanung Kärnten, 2006] of the political district of Spittal/Drau is currently available only in draft form. The main problem of this concept is that concrete policy steps are not included; among numerous regional development objectives and potential policy fields, tourism and development related to the existing national parks can also be found. Regional development based on the national park and its potentials is – at least in the draft of the concept – not a major strategy for the region.

Both documents highlight the problems of regional development policies. While it is important for a region to focus development policies on the natural resource base such as a national park to enjoy regional development on the basis of the existing national park, the documents are too loose to gain any strength in the numerous activities of regional stakeholders. Many regional developments are overlaid by agricultural, tourism, zoning and other policies. Concentrating on the national park as an asset would presuppose a much more strategic focus by incorporating the existence of the park in all different aspects of regional policies. The two documents – not even officially passed as agreed-upon documents and strategies – do not fulfil these criteria of focus and concentration. The next sections underline this argument because it is not easy to detect any significant impacts of the national park on the regional development figures.

2.4.2 Socio-economic development of the park region

2.4.2.1 Demographic and social developments

The first indicator chosen to highlight the socio-economic development of the park region is the demographic and social development. If the establishment of a national park is said to promote socio-economic development, the existing data on the number of residents, their age and education structure should bear some indication of a positive impact. For instance, if a national park – as a major regional and local enterprise in terms of nature conservation, change of land use, economic development (increasing opportunities to find local jobs) – indeed impacts regional development, one of the major effects should lie in increasing or at least stabilizing the number of residents compared to the district or federal state level.

Table 2 shows that the number of residents in the Carinthian national park municipalities stagnated around 10,200 residents, with a slight downward trend. In Salzburg, the number of residents increased significantly between 1971 and 2001, and afterwards decreased from about 32,500 to 31,000 residents. The most positive development in terms of population can be found in Tyrol where the number of residents increased in the period 1971 to 2008 from 15,000 to around 18,400. However, the development of the number of residents has to be compared to a benchmark on the local as well on the federal state level.

Figure 8 shows a comparison of the demographic development on three spatial levels. For instance, the number of residents decreased in Carinthian national park communities by 1%, while in the political district (also including municipalities that do not the national park in their area), population grew by 3%. The population in Carinthia in total grew by 7% during 1971 and 2008. It seems as if the negative development trend regarding the number of residents could not be reverted by the establishment of the national park in Carinthia. Indeed, the decrease in the number of residents in the national park communities is not only a general trend, but has been acknowledged as an alarming sign for Carinthian socio-economic policies (cf. Landesplanung Kärnten, 2006).

In Salzburg, the situation is much more positive since the population grew by 11% from 1971 to 2008. However, in the years from 2001 to 2004, the development was much more positive in terms of a stabilization of the population. From 2004 to 2008, the number of residents decreased again. Compared to the district level, the development in the national park communities is lower, with an increase at the district level of 24% between 1971 and 2008. The total population of the federal state of Salzburg grew with about 29%.

Regarding the situation in Tyrol, the number of residents grew by about 22% in national park communities, with a clear upward trend also in recent years. At the district level, population grew by about 11%, which is much lower than the community level. However, compared to the federal state, population dynamics is still below average since the Tyrolian population grew by about 31% between 1971 and 2008.

At first sight, the impacts of the establishment of the national park on population numbers have to be considered differently. In Carinthia, with the start of the park in 1983, it seems that the park had merely no impact on population dynamics. Population decreased by more (or increased less) than on the district and federal state level. It is, of course, not possible with the available data to analyze a causal relationship, nor is it feasible to argue that the decrease of the number of residents would have been larger without the establishment of the national park. We will argue below in section 2.4.3 that the national park region is indeed a peripheral region without many opportunities for economic development, regardless of the existence of a national park. Therefore, we

might say at the most that the national park may have had some influence because fewer people left the region than without the existence of the park.¹¹

The trend in Salzburg is in total more optimistic; however, as the park was established in 1983, the negative trend of the last years suggests that the park as well had little impact on population dynamics. This is especially interesting since population dynamics was much higher in terms of growth rates on the district and federal state levels.

The only positive development can be seen in Tyrol where the population in national park communities grew to a larger extent than on the district level. Compared to the federal state level, the number of residents still grew slower.

The current available data showed that there is no direct and clearly detectable impact of the establishment of the national park in terms of population dynamics. The methodological problem arises that, first, available data over a longer time period such as annual data, does not readily exist. Second, population dynamics may have to be differentiated between several factors:

- Population dynamics based on general trends such as the leaving of peripheral regions and growth of cities;
- Causes of population changes due to local and regional influences (regional policies, opening or closing of important companies; and
- Effects of the national park itself regarding the offer for new jobs and economic development options.

Even if effects of the national park may exist, it is hard to locate the impacts in terms of time periods since the establishment of the park "on paper" does not *per se* lead to a change of trends and policies. The data on population dynamics suggest that the establishment of a national park is – even with important dates such as the international IUCN acknowledgement of the park – a gradual development rather than a one-off discrete event that changes the region in a fast way.

¹¹ The existing data do not allow a more thorough econometric analysis of the time series, including an analysis of the trend with/without the establishment of the national park.

Table 2: Residents in the national park municipalities

	National park municipalities in...			Total
	Carinthia	Salzburg	Tyrol	
1971	10,249	27,972	15,045	53,266
1981	10,407	29,641	16,240	56,288
1991	10,743	31,224	16,970	58,937
2001	10,619	32,336	18,138	61,093
2002	10,605	32,502	18,204	61,311
2003	10,439	32,537	18,148	61,124
2004	10,376	32,657	18,199	61,232
2005	10,367	32,225	18,266	60,858
2006	10,280	31,548	18,329	60,157
2007	10,255	31,297	18,362	59,914
2008	10,184	30,940	18,358	59,482

1971 to 2001 data is based on the national census; 2002 to 2008 data is computed by the official Austrian Population prognosis.

Source: STAT (2008); authors' calculations.

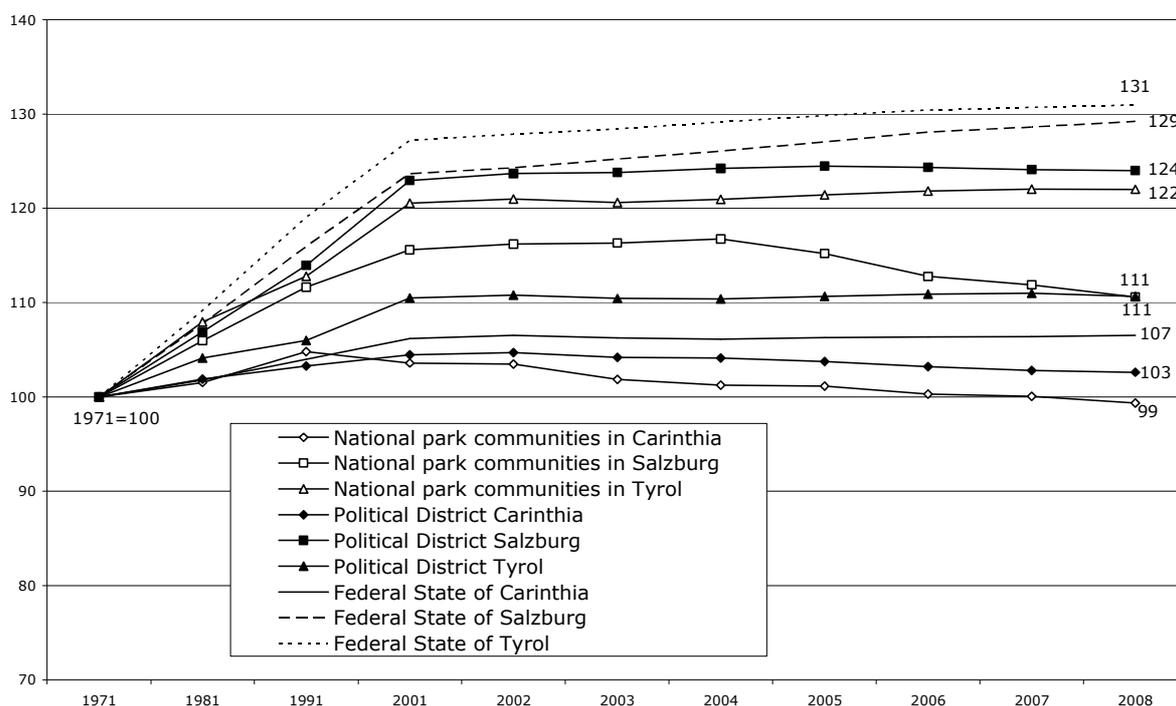


Figure 8: Population development of national park municipalities compared to the district and federal state level

Index 1971=100

Source: STAT (2008); authors' calculations.

Table 3 shows that – besides the comparatively weak population dynamics in terms of residents moving from peripheral to more central regions – the aging population in the regions of the Hohe Tauern national park is a particular problem. The table presents data on the age structure of the population. On all levels, the share of young residents decreases (due to lower birth rates) and the share of elder people increases (due to a longer life expectancy). However, in most comparisons, national park municipalities face more dramatic changes of the population; the number of young residents decreases at a higher pace, and the share of elder people increases faster, compared to the benchmarks of the national park district and especially of the federal state level. The underlying annual numbers (not presented in detail here) suggest that the establishment of the national park had no short-term impact on this very development.

Table 3: Change of the age structure in the national park municipalities

<i>Federal state</i>	<i>Carinthia</i>				<i>Salzburg</i>				<i>Tyrol</i>			
	<i>1971</i>	<i>1981</i>	<i>1991</i>	<i>2001</i>	<i>1971</i>	<i>1981</i>	<i>1991</i>	<i>2001</i>	<i>1971</i>	<i>1981</i>	<i>1991</i>	<i>2001</i>
<i>National park municipalities</i>												
Residents under 20	41%	35%	28%	25%	40%	35%	28%	25%	47%	41%	32%	29%
Residents over 60	14%	15%	18%	21%	14%	13%	15%	18%	13%	12%	15%	18%
Change of young residents	-36%				-27%				-27%			
Change of elder residents	53%				50%				64%			
<i>National park district</i>												
Residents under 20	39%	33%	27%	24%	40%	35%	28%	26%	43%	38%	30%	27%
Residents over 60	15%	16%	19%	21%	14%	14%	16%	18%	14%	15%	18%	20%
Change of young residents	-34%				-19%				-32%			
Change of elder residents	49%				54%				51%			
<i>Federal state</i>												
Residents under 20	36%	31%	25%	23%	34%	31%	26%	24%	36%	33%	26%	25%
Residents over 60	17%	17%	20%	22%	16%	16%	17%	19%	15%	15%	17%	19%
Change of young residents	-32%				-10%				-15%			
Change of elder residents	39%				47%				48%			

Source: STAT (2008); authors' calculations.

2.4.2.2 Land use changes

Land use changes mirror several developments closely interlinked. On the one hand, the structure of land use may be different in national park regions, especially with the Hohe Tauern national park. Compared to district or federal state levels, land use might be quite different in national park communities. For instance, the Hohe Tauern national park consists mainly of high Alpine mountains with rocks and glaciers. As can be seen from Table 4, the share of forests is around 22% of the total area, while it is more than 33%, up to more than 50%, on the federal state level.

Table 4: Land use changes in the national park municipalities

	Carinthia	Salzburg	Tyrol	Carinthia	Salzburg	Tyrol	Carinthia	Salzburg	Tyrol
	Area in hectares (ha)			Share of areas in total area			Percentage change of land use 1991-2005		
<i>National park communities</i>									
<i>1991</i>									
Total area	89,323	179,331	114,364						
Construction	89	202	131	0.10%	0.11%	0.11%			
Agriculture	5,697	12,380	6,917	6.38%	6.90%	6.05%			
Forests	20,882	40,287	22,956	23.38%	22.47%	20.07%			
Permanent residential areas	6,547	14,042	7,740	7.33%	7.83%	6.77%			
Traffic infrastructure	381	695	425	0.43%	0.39%	0.37%			
<i>2005</i>									
Total area	89,355	179,384	114,365						
Construction	97	231	135	0.11%	0.13%	0.12%	7.92%	13.98%	3.48%
Agriculture	4,931	10,826	5,325	5.52%	6.04%	4.66%	-13.45%	-12.55%	-23.01%
Forests	22,092	41,762	24,280	24.72%	23.28%	21.23%	5.80%	3.66%	5.77%
Permanent residential areas	5,854	13,222	6,535	6.55%	7.37%	5.71%	-10.58%	-5.84%	-15.57%
Traffic infrastructure	494	1,081	640	0.55%	0.60%	0.56%	29.61%	55.56%	50.39%
	Carinthia	Salzburg	Tyrol	Carinthia	Salzburg	Tyrol	Carinthia	Salzburg	Tyrol
	Area in hectares (ha)			Share of areas in total area			Percentage change of land use 1991-2005		
<i>Political district</i>									
<i>1991</i>									
Total area	276,402	541,614	201,998						
Construction	614	1,138	342	0.22%	0.21%	0.17%			
Agriculture	29,461	72,853	17,237	10.66%	13.45%	8.53%			
Forests	99,733	194,154	58,868	36.08%	35.85%	29.14%			
Permanent residential areas	35,042	85,740	19,559	12.68%	15.83%	9.68%			
Traffic infrastructure	2,432	3,771	1,067	0.88%	0.70%	0.53%			
<i>2005</i>									
Total area	276,452	541,591	201,987						
Construction	631	1,293	374	0.23%	0.24%	0.18%	2.75%	13.67%	9.09%
Agriculture	26,094	61,536	13,248	9.44%	11.36%	6.56%	-11.43%	-15.53%	-23.14%
Forests	106,222	205,760	64,864	38.42%	37.99%	32.11%	6.51%	5.98%	10.19%
Permanent residential areas	32,624	74,242	16,512	11.80%	13.71%	8.17%	-6.90%	-13.41%	-15.58%
Traffic infrastructure	2,954	5,090	1,570	1.07%	0.94%	0.78%	21.45%	35.00%	47.14%

Table 4 continued on the next page.

Table 4 continued

	Carinthia	Salzburg	Tyrol	Carinthia	Salzburg	Tyrol	Carinthia	Salzburg	Tyrol
	Area in hectares (ha)			Share of areas in total area			Percentage change of land use 1991-2005		
<i>Federal state</i>									
<i>1991</i>									
Total area	953,312	715,414	1.264 m						
Construction	5,012	2,419	3,616	0.53%	0.34%	0.29%			
Agriculture	210,869	132,600	141,040	22.12%	18.53%	11.15%			
Forests	474,977	268,380	443,078	49.82%	37.51%	35.03%			
Permanent residential areas	245,584	157,017	162,023	25.76%	21.95%	12.81%			
Traffic infrastructure	14,802	6,999	9,001	1.55%	0.98%	0.71%			
<i>2005</i>									
Total area	953,588	715,421	1.264 m						
Construction	4,092	3,180	4,151	0.43%	0.44%	0.33%	-18.35%	31.45%	14.79%
Agriculture	189,409	116,630	116,986	19.86%	16.30%	9.25%	-10.18%	-12.04%	-17.05%
Forests	504,284	284,188	466,047	52.88%	39.72%	36.85%	6.17%	5.89%	5.18%
Permanent residential areas	231,421	142,908	149,333	24.27%	19.98%	11.81%	-5.77%	-8.99%	-7.83%
Traffic infrastructure	17,370	8,964	11,134	1.82%	1.25%	0.88%	17.35%	28.09%	23.70%

Source: STAT (2008); authors' calculations.

The permanent residential area is small with only around 6 to 7% in national park communities, with up to over 20% on the federal state level. These numbers indicate that national park communities are as expected quite different from the other regional levels. Interesting, though, is the change within the last 16 years (the longest time span available). From 1991 to 2005, agricultural land was significantly reduced in national park regions. This effect may be attributed to several factors:

- General trend of reduction of agricultural production;
- Specific reduction of agriculture due to reducing production on marginal land which is especially true for high mountainous areas;
- National park policies reducing traditional agriculture in the national park area.

The growth of forests – a general trend in Austria – is not apparently different at the different spatial levels. It is nevertheless significant that traffic infrastructure has developed more rapidly in national park regions. This trend may also partly be attributed to the establishment of the national park. While peripheral regions may in general be developed only secondary compared to more central levels in the first place, traffic development (construction of new traffic infrastructure in order to enhance the accessibility of the region) can be considered as a regional development instrument. In the Hohe Tauern national park region, the transport infrastructure developed at a faster pace than on the other regional levels.

2.4.3 Transformation of the regional economy

2.4.3.1 Regional GDP (gross domestic product)

One of the most important indicators for economic development is GDP (Gross National Product). While on the national level, data is readily available for a long time period and in quarterly frequency, the available data on the regional level is much more restricted. First, the official statistics only show a time period between 1988 and 2005. Second, data is available only in a crude regional differentiation. Below the level of federal states, the already rather large political districts are partly combined to NUTS3 regions.

The Hohe Tauern National Park may benefit the regional economy in terms of additional income in several ways. On the one hand, the establishment of the park leads to an inflow of resources (funding) to the national park region. Annually, about EUR 7.5 m are spent on the management of the Hohe Tauern National Park; however, these funds are only partly relevant for regional production since some funds are compensation payments (transfers) with no effect on regional production. Other funds are spent on goods imported to the national park regions. Furthermore, public funds of the federal states and the central government are financed by taxes which are paid by tax payers also in national park regions. Besides annual payments, the national park funds in the three federal states of Carinthia, Salzburg and Tyrol have invested about EUR 154 m from the year of establishing the park up to now.

The funds connected to the management of the national park may nevertheless be smaller compared to money inflows due to developing the national park region as an attractive tourist destination. Currently, there is no detailed statistics (time series) of tourists' expenditure in the national park region available. Other potential money inflows include marketing and branding of regional products with a "national park label".

If we consider the money inflow to the regions alone, these may be considered as substantial since the national park management and the regional demand for goods and services associated with it is comparable to the establishment of one new medium-sized enterprises for each of the national park regions in the three federal states. However, while important for the local economy of the national park municipalities where the administration has its headquarters, the effects may be marginal when compared to total regional income and production. Table 5 shows the regional GDP on the level of the federal states as well as on the level of NUTS3 regions which are close to the national park regions defined as the political districts where the national park is situated. In terms of regional GDP, the development over time suggests that the national park regions exhibited an economic growth equal to that of the federal state. An exception is the national

park region of Carinthia which exhibits significantly smaller growth rates than the federal state.

Table 5: Regional GDP in national park regions and federal states (m EUR, constant 2000 prices, 1988 to 2005)

	Regional entity*			Federal state of ...		
	Upper Carinthia	Pinzgau-Pongau	East Tyrol	Carinthia	Salzburg	Tyrol
1988	1,769	2,741	664	8,830	10,779	12,828
1989	1,831	2,775	665	9,381	11,095	13,208
1990	1,902	2,823	712	9,740	11,474	13,841
1991	2,146	2,953	742	10,110	11,920	14,429
1992	2,034	3,122	764	10,172	12,457	14,983
1993	1,991	3,170	767	10,186	12,601	15,050
1994	2,068	3,225	836	10,492	12,847	15,313
1995	1,971	3,267	849	10,694	12,999	15,225
1996	2,003	3,355	854	10,979	13,403	15,366
1997	2,071	3,400	867	11,193	13,714	15,590
1998	2,048	3,613	900	11,493	14,386	16,321
1999	2,171	3,728	927	11,998	14,637	16,872
2000	2,226	3,870	971	12,219	15,138	17,741
2001	2,240	3,839	956	12,269	15,050	17,997
2002	2,355	3,890	941	12,379	15,159	18,524
2003	2,314	3,904	946	12,472	15,303	18,817
2004	2,342	3,969	970	12,842	15,793	19,136
2005	2,340	4,146	1,039	13,098	16,045	19,723
AAG**	1.7%	2.5%	2.7%	2.4%	2.4%	2.6%

* The regional entities considered in this table are partly larger than the national park regions. In Carinthia, the regional entity of Upper Carinthia does not only include the national park region (district) of Spittal/Drau, but also the districts of Hermagor and Feldkirchen. In Salzburg, the entity of Pinzgau-Pongau only includes the district of Zell/See and St. Johann/Pongau, but excludes the district of Tamsweg. In Tyrol, the regional entity of East Tyrol is identical to the political district of Lienz.

** AAG = Average annual growth, 1988 to 2005.

Source: Authors' calculations based on STAT (2008) and WIFO (2008).

From the viewpoint of effects of the national park on regional economic growth, the data presented do not suggest a straightforward impact of national park establishment. While the national park can certainly be significant from a local perspective (e.g. by establishing the headquarters of the national park management in a certain municipality), there is no clear indication that the national park significantly contributed to a faster regional development in terms of regional GDP (income). However, it is questionable in general whether such indication may be found at all. The statistics on regional production and income are certainly too crude to detect locally important economic effects; for instance, even if the money inflow of about EUR 7.5 m for the management of the park is sub-

stantial for a small region, it is nevertheless insignificant in terms of the regional entities for which reliable data are existent.

2.4.3.2 Structural change of the local economy in national park communities

While data on regional production (income, GDP) exist only on a high regional level, data are available for the structural change of the economy on the municipality, district and federal state level. Figure 9 shows for Carinthia (Figure 10 for Salzburg, Figure 11 for Tyrol;) how the local economy has changed in terms of the number of jobs in the different sectors of the economy.¹² For Carinthia, the picture shows that between 1973 and 1981, there was a significant downturn of the regional economy in terms of the number of jobs. After 1981, a slow process of recovery took place, with the largest job growth in the tourism and service sectors, especially in the period of 1991 to 2001, i.e. after several years of the establishment of the national park. A similar development at least for the period of 1991 to 2001 can be seen in the employment figures for the national park municipalities in Salzburg and Tyrol. For all of the national park communities, job growth in the service sector is large, leading also to a larger share of the tertiary sector (services and tourism) compared to the federal state or national average. This means that – with local exceptions – the national park regions in general have had only a small industrial sector.

¹² For the agricultural sector, detailed data on the municipality level is only available until 1999 on the basis of the agricultural census taking place irregularly about every ten years; only in 2011, new data will be available for a complete picture of the number of farms, and the individual areas. Data on agricultural development was already discussed in section 2.4.2.2 regarding land use change.

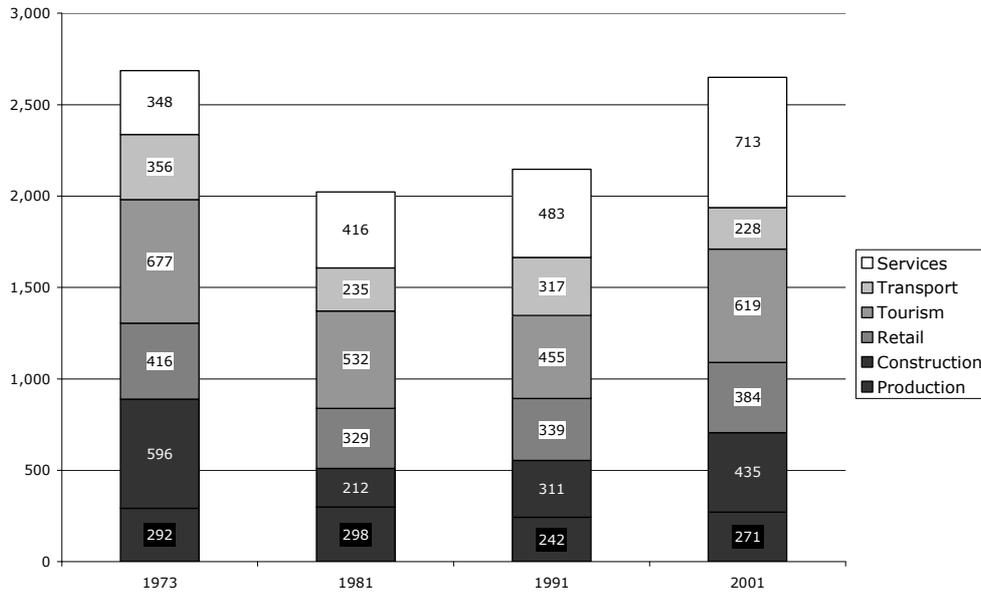


Figure 9: Structural change of the local economy in national park communities: Carinthia

Source: STAT (2008); authors' calculations.

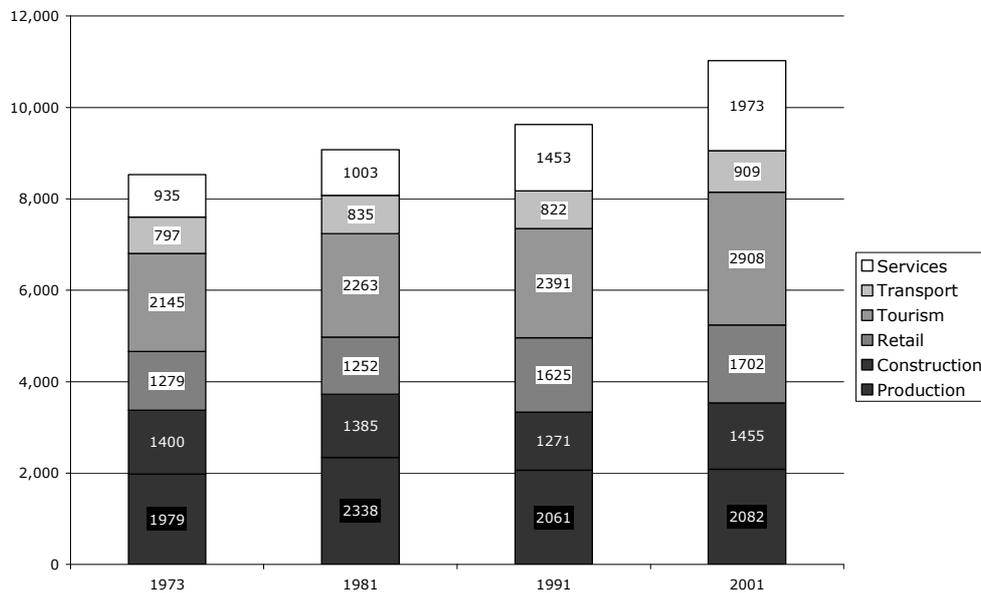


Figure 10: Structural change of the local economy in national park communities: Salzburg

Source: STAT (2008); authors' calculations.

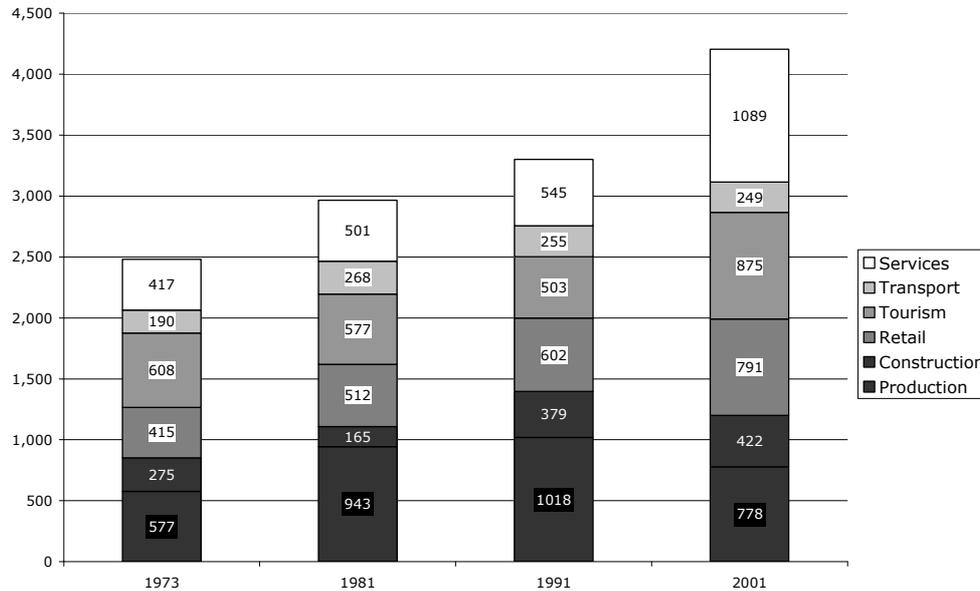


Figure 11: Structural change of the local economy in national park communities: Tyrol

Source: STAT (2008); authors' calculations.

Table 6 presents data on the regional situation regarding employment (number of jobs available in the regions). Compared to the population living in the national park municipalities (see section 2.4.2.1) it is apparent that there is only a small share of the working population to enjoy a workplace in the same community. A majority of employees has to commute at least to another municipality, to the district capital, or even to larger cities such as Villach (Carinthia), Bischofshofen or Salzburg (Salzburg), or Lienz (Tyrol). Regarding the development over time, it seems as if disparities between national park regions and the federal state level have decreased over time. While the periods before the establishment of the Hohe Tauern National Park were characterized by slow economic growth or even downturn in terms of employment, in recent years, the development of employment was comparable. Especially regarding structural change (see Table 7), national park municipalities exhibit a faster job growth in the tourism and service sector, compared to the federal state level. However, this development is especially significant for municipalities in Carinthia and Tyrol. Regarding municipalities in Salzburg, the national park regions have always been major tourist destinations during summer (hiking, swimming) and winter (skiing); job growth started therefore on a higher level, with smaller growth rates (cf. also section 2.4.3.4 on tourism).

Table 6: Employment (no. of jobs) in national park communities compared to the district and federal state level and relative change (% , 1973 to 2001)

	<i>Carinthia</i>	<i>Salzburg</i>	<i>Tyrol</i>	<i>Carinthia</i>	<i>Salzburg</i>	<i>Tyrol</i>
<i>National park municipalities</i>						
1973	2,685	8,534	2,482			
1981	2,022	9,075	2,966	-25%	6%	19%
1991	2,147	9,623	3,302	6%	6%	11%
2001	2,650	11,029	4,204	23%	15%	27%
<i>District</i>						
1973	24,085	46,049	11,755			
1981	22,777	51,613	12,473	-5%	12%	6%
1991	24,260	58,228	14,315	7%	13%	15%
2001	26,575	71,293	17,413	10%	22%	22%
<i>Federal State</i>						
1973	169,690	160,061	188,603			
1981	173,967	176,867	203,542	3%	10%	8%
1991	189,289	202,052	237,632	9%	14%	17%
2001	214,469	244,378	295,390	13%	21%	24%

Source: STAT (2008); authors' calculations.

Table 7: Structural change in terms of employment (no. of jobs) in national park communities compared to the district and federal state level and relative change (percentage change, 1981/1991 and 1991/2001)

<i>National park municipalities</i>						
	<i>Carinthia</i>		<i>Salzburg</i>		<i>Tyrol</i>	
	<i>1981-1991</i>	<i>1991-2001</i>	<i>1981-1991</i>	<i>1991-2001</i>	<i>1981-1991</i>	<i>1991-2001</i>
Production	-19%	12%	-12%	1%	8%	-24%
Construction	47%	40%	-8%	14%	129%	11%
Retail	3%	13%	30%	5%	18%	31%
Tourism	-14%	36%	6%	22%	-13%	74%
Transport	35%	-28%	-2%	11%	-5%	-2%
Services	16%	48%	45%	36%	9%	100%
Total number of jobs	6%	23%	6%	15%	11%	27%
<i>Political districts</i>						
	<i>Carinthia</i>		<i>Salzburg</i>		<i>Tyrol</i>	
	<i>1981-1991</i>	<i>1991-2001</i>	<i>1981-1991</i>	<i>1991-2001</i>	<i>1981-1991</i>	<i>1991-2001</i>
Production	-11%	-18%	-4%	2%	24%	-5%
Construction	16%	22%	14%	9%	40%	20%
Retail	7%	16%	17%	20%	5%	22%
Tourism	0%	10%	4%	43%	-4%	46%
Transport	15%	-10%	10%	8%	-20%	-5%
Services	33%	35%	37%	39%	25%	51%
Total number of jobs	7%	10%	13%	22%	15%	22%
<i>Federal states</i>						
	<i>Carinthia</i>		<i>Salzburg</i>		<i>Tyrol</i>	
	<i>1981-1991</i>	<i>1991-2001</i>	<i>1981-1991</i>	<i>1991-2001</i>	<i>1981-1991</i>	<i>1991-2001</i>
Production	-9%	-4%	-5%	-2%	-1%	5%
Construction	-3%	9%	7%	3%	20%	8%
Retail	11%	14%	14%	14%	16%	15%
Tourism	7%	10%	9%	33%	11%	39%
Transport	7%	-15%	7%	18%	26%	14%
Services	35%	36%	41%	45%	34%	48%
Total number of jobs	9%	13%	14%	21%	17%	24%

Source: STAT (2008); authors' calculations.

2.4.3.3 Unemployment

The three national park regions¹³ can be classified as peripheral regions also in terms of unemployment rates, though, in different extents. The unemployment rate of the national park regions (districts) is generally about 2 to 5 percentage points higher than at the federal state level. Figure 12 presents the unemployment rates for the national park

¹³ There are currently no data available for unemployment rates at the level of municipalities (with the exemption of the national census taking place every 10 years). Actual data exist only at the level of labor market districts which are in most cases identical to Austrian political districts. The discussion in section 2.4.3.3 therefore relates to the national park districts (regions).

districts as well as for the federal states, while unemployment rate differentials are shown in Table 8.

The numbers in Figure 12 and Table 8 show that the business cycle is closely followed in all three federal states as well as in the national park districts. Carinthia shows the highest unemployment rates both at the federal state and districts levels; Tyrol as well as Salzburg face much lower unemployment rates at the federal state level, with the national park district in Tyrol bearing the largest unemployment rate differential. In Tyrol, the unemployment rate is close to 5 percentage points higher at the district level. In Salzburg, unemployment rate are generally lower, with the smallest differential at about 1.5 percentage points in the last years.

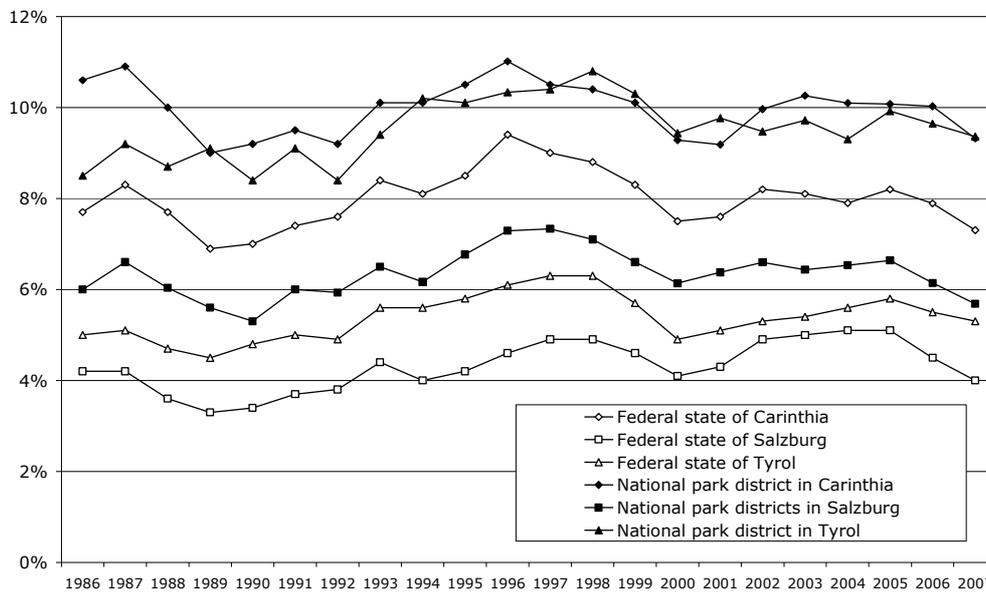


Figure 12: Unemployment rates in federal states and national park districts (annual average in %, 1986 to 2007)

Source: AMS (2008); authors' calculations.

Table 8: Unemployment rate differentials between national park districts and federal states (percentage points, 1986 to 2007)

	<i>Carinthia</i>	<i>Salzburg</i>	<i>Tyrol</i>
1986	2.9%	1.8%	3.5%
1987	2.6%	2.4%	4.1%
1988	2.3%	2.4%	4.0%
1989	2.1%	2.3%	4.6%
1990	2.2%	1.9%	3.6%
1991	2.1%	2.3%	4.1%
1992	1.6%	2.1%	3.5%
1993	1.7%	2.1%	3.8%
1994	2.0%	2.2%	4.6%
1995	2.0%	2.6%	4.3%
1996	1.6%	2.7%	4.2%
1997	1.5%	2.4%	4.1%
1998	1.6%	2.2%	4.5%
1999	1.8%	2.0%	4.6%
2000	1.8%	2.0%	4.5%
2001	1.6%	2.1%	4.7%
2002	1.8%	1.7%	4.2%
2003	2.2%	1.4%	4.3%
2004	2.2%	1.4%	3.7%
2005	1.9%	1.5%	4.1%
2006	2.1%	1.6%	4.1%
2007	2.0%	1.7%	4.1%

Source: AMS (2008); authors' calculations.

Regarding the effects of the establishment of the Hohe Tauern national park on unemployment rates – with a hypothesized positive impact on regional development followed by a lower unemployment rate – it is important to consider the development of crucial determinants of the unemployment rate over time. However, it seems as is there is a slight general trend in national park regions towards decreasing the unemployment rate differential. This trend is most visible in the national park region in Salzburg where the differential decreased from over 2.5 to significantly below 2 percentage points. This development may be attributable to the establishment of the national park; however, a clear causal relationship cannot be established by the data. Nevertheless, taken together with the results of sections 2.4.3.1 (regional GDP) and 2.4.3.2 (structural change), it seems that the national parks regions – while still peripheral regions in terms of income, production and unemployment – are developing on a more positive path in recent years.

2.4.3.4 Tourism

While the international IUCN guidelines for category II national parks include visitors' education and recreation as an important ingredient in national park policies, national parks themselves do not have the legal obligation to enhance tourism in their region. Rather, supporting and developing tourism is generally part of a regional development strategy. As discussed above in section 2.3.2.3, the administration of the Hohe Tauern

National Park has recently been actively involved in managing tourism in the national park region in Carinthia by forming and promoting the regional tourism association which formerly was done on the basis of an association of several tourism businesses in the region. It is important to note that by political declaration and legal coverage, the national park organized the new tourism management platform, and also received additional funds for these tasks. The forming of this new organization points to an important insight regarding the potential effects of national parks on tourism. National parks *per se* do not automatically lead to regional development or promoting tourism. The region itself has to engage actively in designing tourism and development policies. Even with active policies, it is a complicated task to decide whether the establishment of a national park in general has significant impacts on tourism development. Table 9 gives an overview of visitors at national park points of interest. Of course, only a certain share (usually the minority) of visitors also uses the national park facilities intensively and are therefore counted as such. However, around 80,000 visitors are counted each year at national park centers and exhibitions. Roughly one forth also pays for entering the diverse exhibitions at the centers. Table 10 presents the staff servicing visitors.

Table 9: Visitors and activities at Hohe Tauern National Park

<i>Schools and Students</i>	No.	<i>NP centers and exhibitions</i>	Anzahl
Students (total)	5,204	Visitors at information points and at the center	79,908
of which:		Paying visitors at exhibitions	18,579
Kids (6-10 yrs.)	2,048	Guided tours through exhibitions	842
Kids (10-18 yrs.)	2,887		
Kids up to 5 yrs.	269	<i>Events</i>	
Classes (total)	236	Presentations and lectures	15
of which:		Participants	324
Fundamental school	114	Dia and multimedia shows	44
High school, college	110	Participants	1,536
Others	6	Own events organized by the national park	6
Kindergarten	6	Participants	1,415
Trip duration of half or full day	89		
Trip duration of more than 1 day	147		
Guided tours	454		
Excursions and guided walks	232		
Participants total	2650		
International groups			

Source: Hohe Tauern national park (2009).

Table 10: Staff for servicing visitors

Staff	No.
Personnel (staff) for visitors	
Employed for the whole year	6
Employed for the season	5
Volunteers	18
Supporting staff	4

Source: Hohe Tauern national park (2009).

Table 11: Basic tourism data (arrivals, overnight stays) in selected regional entities (2005)

	Regional entity	Arrivals (winter)	Overnight stays (winter)	Arrivals (summer)	Overnight stays (summer)
Federal state (Bundesland)	Carinthia	717,675	3,332,528	1,740,272	9,338,659
	Salzburg	2,789,071	13,246,615	2,375,864	9,452,537
	Tyrol	4,717,619	25,035,297	3,747,773	17,281,889
Communities of the Hohe Tauern national park in...	Carinthia	50,433	285,155	88,145	346,565
	Salzburg	397,704	2,237,276	271,271	1,509,454
	Tyrol	33,146	201,244	52,994	279,874

Source: Own calculations based on STAT (2007)

In total, the regions are major tourist destinations in terms of overnight stays, and the length of stay (Table 11). Tourism development is determined by a number of influential factors, such as preferences of households, prices of alternative destinations, income and future expectations; one additional factor may be the existence of a protected area. Getzner (2008) has studied the potential effects of the establishment of the Hohe Tauern national park on tourism (the cited paper includes more details on the methodological approach chosen). While it is hard to detect statistically significant differences between a situation with and without the existence of the park, there is some indication that the Hohe Tauern National Park led to a slight increase in tourism (in comparison to the federal state benchmark).

Figure 13 shows the development of tourism over time in Carinthian national park municipalities compared to the federal state benchmark. While summer tourism is important for the national park region (but of limited significance with respect to the federal state level of Carinthia with around 5%), winter tourism in national park communities significantly lost importance. In the 1970, 20% of Carinthian winter tourism was booked in the region while in 2005 only around 8% of winter tourism took place in the national park region. However, it is interesting to search for breaks in the tourism time series. Only several years after the establishment of the park, a statistical break point can be

detected. The time series of ex-post forecast shows how tourism may have developed without the establishment of the park – the difference shows the potential (maximum) contribution of the park to tourism development. Of course, the differences between actual and forecast values may also be contributed to other influential factors (such as important new tourism infrastructure projects in the region besides the park). However, new infrastructure projects were realized inside and outside the national park region. Therefore, we assume that the other determining factors of tourism demand were quite similar inside and outside of the park region.

Figure 14 and Figure 15 show the tourism development in the other two federal states, Salzburg and Tyrol. Some of the differences detected are within the range of statistical errors. However, while the analysis cannot indicate significant impacts of the national park on tourism, this result itself is interesting. It is a call for caution because even in the case of the oldest and most prominent Austrian national park an apparent and easy-to-detect influence of the park on tourism is only very small and not straight forward.

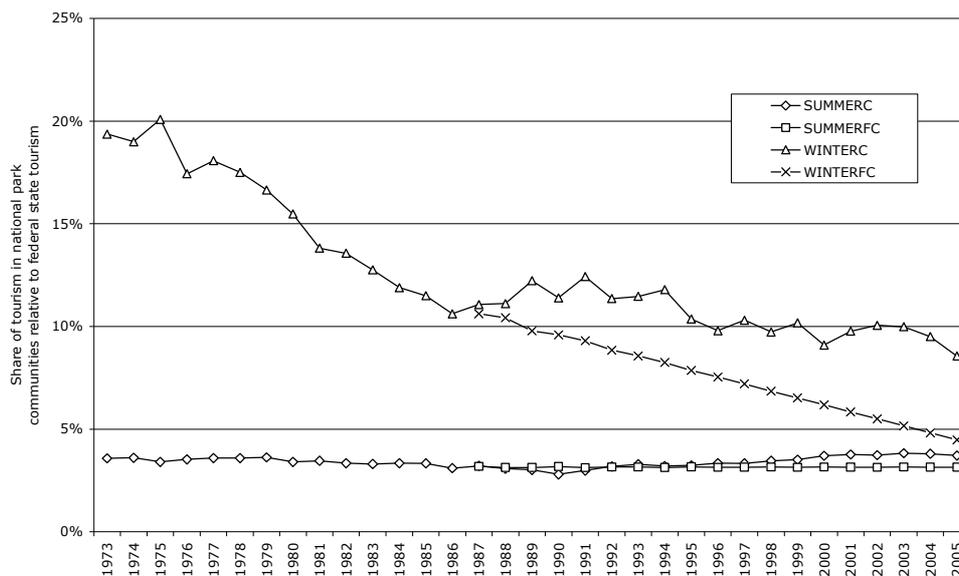


Figure 13: Share of tourism in national park communities compared to federal state level (including ex-post forecast): Carinthia

Variables: SUMMERC = Summer tourism in Carinthia; SUMMERFC = Ex-post forecast of summer tourism without the establishment of the park; WINTERC = Winter tourism in Carinthia; WINTERFC = Ex-post forecast of winter tourism without the establishment of the park

Source: Authors' calculations; Getzner, 2008.

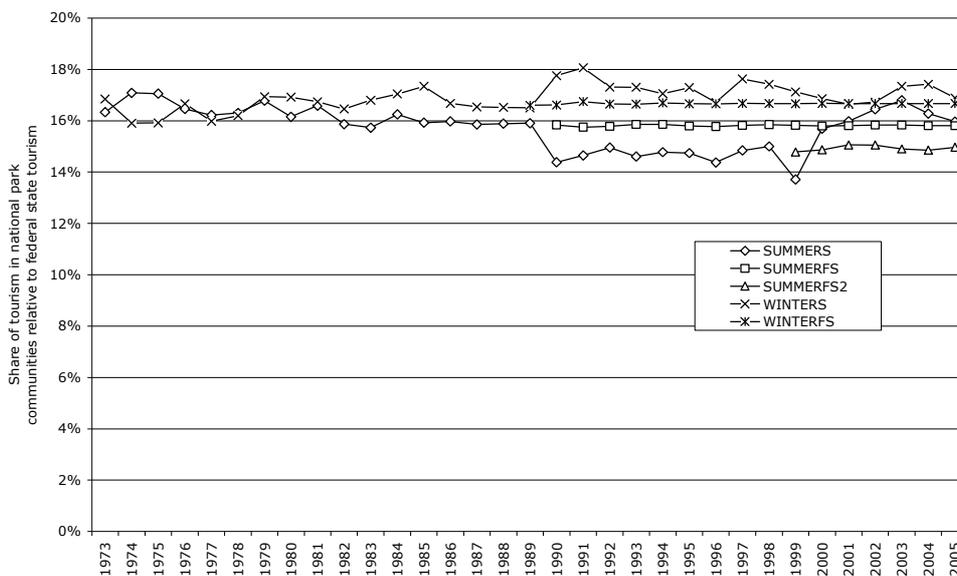


Figure 14: Share of tourism in national park communities compared to federal state level (including ex-post forecast): Salzburg

Variables: SUMMERS = Summer tourism in Salzburg; SUMMERFS = Ex-post forecast of summer tourism without the establishment of the park; WINTERS = Winter tourism in Salzburg; WINTERFS = Ex-post forecast of winter tourism without the establishment of the park

Source: Authors' calculations; Getzner, 2008.

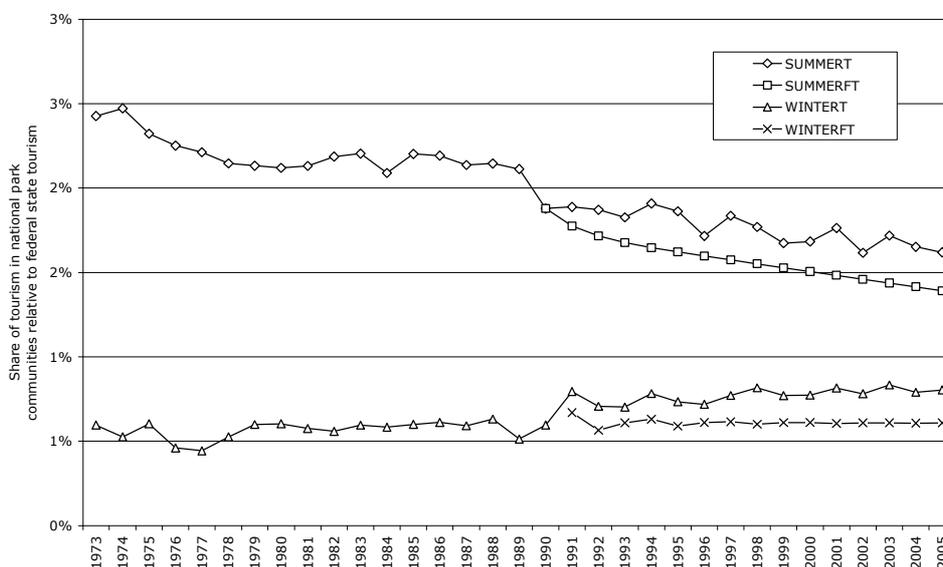


Figure 15: Share of tourism in national park communities compared to federal state level (including ex-post forecast): Tyrol

Variables: SUMMERT = Summer tourism in Tyrol; SUMMERTF = Ex-post forecast of summer tourism without the establishment of the park; WINTERT = Winter tourism in Tyrol; WINTERTF = Ex-post forecast of winter tourism without the establishment of the park

Source: Authors' calculations; Getzner, 2008.

Summing up, for most national park communities, the results suggest that the establishment of the national park had some impact by enforcing an already positive trend or by weakening or reversing a negative trend of tourism. However, breakpoint tests exhibit turning points up to several years after the establishment of the park, indicating that taking a national park as the basis for tourism development is a medium to long term development strategy. In the short term, the impact of a national park on tourism is not measurable. Tourism increased by 1 to 3% annually after the breakpoint, indicating that the establishment of a national park has to be incorporated into the tourism and development strategy of a region right from the start. The causal relationship between the establishment of the national park and tourism development may be weak, in particular in communities where the difference between the actual and the forecast numbers of overnight stays is small. Marketing national park tourism and building up a brand or distinctive label may therefore contribute to regional development particularly in the long term.

3 Summary and synthesis (discussion of results)

3.1 Summary

The Hohe Tauern National Park is the oldest national park in Austria with a long history dating back nearly 100 years ago. First ideas for conserving nature in the area originated from the aim to conserve the beauty of landscape and protect the natural habitats from economic development, specifically from using the potentials for producing electricity in hydro power stations. One of the major motives for the establishment of a *national park* was therefore the prevention of hydro power use in the area in the early 1970s. It is interesting, though, that nature conservation in the area was always closely connected to private initiatives, starting from the first areas conserved by private land acquisition specifically for conservation purposes.

Due to the federal structure of Austria, the Hohe Tauern National Park is established according to three different national park acts in the three federal states of Carinthia, Salzburg and Tyrol. While coordination and cooperation between the three state governments is crucial, there are also many differences in the set-up of the administration. Currently, there is a movement towards a clearer and coordinated management structure, and the set-up of common organizational and managerial principles.

Participation of land owners is probably the most prominent and important management principle of the Hohe Tauern National Park. While it is crucial to include land owner and holders of land use rights in the decision making process merely because the major areas of the national park are privately owned, participation of stakeholders in general has been established as a major constitutive principle of the national park. However, conflicts, especially with land owners, have a quite long history, and prevented the acknowledgement of the area as an international IUCN category II protected area ("national park") for more than a decade.

Furthermore, the more than two decades of experience with the establishment of the Hohe Tauern National Park led to major changes in the organizational and managerial frameworks of the other national parks in Austria that followed later (until recently with the 5 years old Gesäuse National Park, Styria).

Some of the major lessons learnt in the history and current frameworks of the Hohe Tauern National Park are:

- NGOs and individuals had a strong impact in the development of the park since early days;
- Infrastructure development (tourism and hydropower) were the strongest opponents to the park idea;

- There are still heterogeneous designation processes and management approaches in the three federal states, a differing degree of integrated regional planning, and extremely complex organizational set-up, with the consequence of a still lacking common vision;
- Broad participation and early involvement of stakeholders in the development of the management plans minimize conflicts in the implementation of the management measures later on.
- Participative processes, compensation payments and funds for regional development are significant and strong drivers for local acceptance.
- Participation has changed considerably over the life cycle of the Hohe Tauern National Park. In the planning phase the involvement of stakeholders was not yet organized nor institutionalized, the debate on the establishment of the park was very controversial and lively. Over time, conflicts were resolved, communication channels established and the park management was recognized as a major stakeholder in the region and the region's development.
- Voluntary partnership agreements and active participation in thematic networks have substantially increased the park's outreach in terms of public awareness, funding and knowledge base.
- With a lot of funds flowing to the region, the park will probably be facing the need for justification of funds (to public authorities but also to local land owners, the local population and the national tax payers) in the time to come. An example for that is the current demand for substantially improving the marketing of the park in order to stimulate regional development by tourism, and to search for own funds such as sponsoring.

3.2 Research question 1: Interactions, conflicts and solutions

How does the history of interactions between environmental authorities and local economic actors influence the present situation in large protected areas (LPA); which conflicts have emerged and how have these conflicts eventually been resolved?

The main conflicts between nature conservation (national park) arose between two groups of interests:

- The history of the national park highlights that nature conservation in the area was always connected with the conflicts between nature conservation (landscapes, habitats and ecosystems, species) and economic development (e.g. hydro power use).
- The second major conflict stemmed from the interests of land owners and holders of land use rights.

The first conflict was solved basically by the establishment of the park itself. On the park's land, no further economic development, including the use of hydro power, is possible according to federal states', national and international regulations. The second group of conflicts was solved primarily by the extensive participation and coordination processes developed over two decades of practical experience, and by the large and diversified compensation and incentive schemes for land owners to add their land under the management umbrella of the national park.

Participation and compensation of land owners was not only a prerequisite from the factual state of distribution of rights, but also a strong political commitment to establish a park only after appropriate participation, compensation and acceptance. The compensation schemes enacted included strong incentives for voluntary participation in the national park management schemes since some payments significantly overcompensated land owners. This also led to a delay of the IUCN category II acknowledgement of the Hohe Tauern National Park as such.

Regional acceptance of the national park establishment and management also significantly contributed to management effectiveness in terms of the main goals of the national park like nature conservation, education and visitor management, information and scientific research. Recently, the national park administration in Carinthia is also in charge – by adding respective funds to the national park budget – to coordinate the regional tourism activities by managing the regional tourism association.

3.3 Research question 2: Policies, processes and management

How do national policies on nature protection and economic development influence local processes relating to the management of LPA?

There are a number of international and national policies influencing national park management policies as well as (subsequently) regional development. First of all, the involvement of the central government of Austria in the establishment process of the Austrian national parks led to some coordination and transfer of experience and knowledge between the Austrian national parks. This is important since the federal structure of Austria poses some difficulties to implement joint structures, and to facilitate common structures, management and learning processes. By means of sharing the funding of the national park between the central and the federal states governments, a minimum common standard of implementation is secured.

Second, the European Union's programs on rural development as well as regional coordination, cooperation and development increasingly account for the establishment and management of the natural and cultural heritage, especially in protected areas. The European Spatial Planning Strategy in general, and specifically the recently established

programs on rural development (ELER) provide funds for projects in regions with protected areas (with an emphasis on national parks), with the aim to enhance regional activities for education and training, marketing and organizational development.

Third, regional development and funding schemes as well provide incentives to utilize the establishment of the national park for regional development strategies and initiatives. Some national park management activities – on the other hand – specifically account for regional development such as tourism, recreation, and public procurement.

While there are numerous national park strategies and frameworks that potentially influence regional and local development, the impacts of the establishment and management of the national park on regional demographic, social and economic indicators may be difficult to detect. On the one hand, data availability on the local and regional level is limited. Data are available only for certain periods (such as detailed demographic data in a 10-years interval parallel to the national census) or at certain regional aggregation levels (e.g. structural change, unemployment figures). On the other hand, there are methodological uncertainties and problems involved. While the establishment of a national park is a major regional and local effort, there are numerous other factors that influence regional development. For instance, the motive of visiting the national park and enjoying the recreation and education facilities might be of great importance for the local tourism industry. However, while the tourism facilities (e.g. quality of hotels) are also important, tourism demand depends in particular on comparative prices, and the quality of other destinations. Therefore, it is specifically important to discuss the regional economic impacts with reference to a relevant benchmark, and over time.

With all necessary caution, the data reveal some possible effects of the establishment of the national park on regional development. Regarding social development in terms of population, no significant impacts can be detected. Additionally, unemployment rates have not changed. However, the number of tourism jobs increased significantly compared to the benchmark, as can also be seen by the share of regional national park tourism compared to the federal state level. Furthermore, infrastructure investments led to an above-average development in terms of transport infrastructure.

3.4 Research question 3: Socio-economic impact

What are the differences between regional socio-economic effects of LPA in Norway and Austria, and to what extent can these be explained by policy regimes and management models?

This research question will be answered in the next working step.

3.5 Research question 4: Effects of policy change

What are the probable long-term effects of implementing new models for the integration of regional development and LPA management on socio-economic development and nature and cultural heritage values?

This research question will be answered in the next working step.

4 References, tables and figures

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Online Resources

Park and related bodies

- Webpage of the National Park Hohe Tauern: www.hohetauern.at
- Webpage of the National Park Hohe Tauern sponsorship vehicle: www.tauernfreund.at
- Webpage of National Park Hohe Tauern touristic offers for the entire park: www.nationalparkferien.at
- Webpage of the Tourism Region National Park Hohe Tauern Carinthia (general info): www.nationalpark-hohetauern.at
- Webpage of the Tourism Region National Park Hohe Tauern Carinthia (hiking & family offers): www.tauerngold.net
- Webpage of the Tourism Region National Park Hohe Tauern Carinthia (alpine offers): www.tauernalpin.at
- Webpage of the Tourism Region National Park Hohe Tauern Salzburg: www.nationalpark.at
- Webpage of the Tourism Region National Park Hohe Tauern Tyrol: www.hohetauern-osttirol.com

Public authorities

Webpage of the Austrian ministry for agriculture, forestry, environment and water management: www.lebensministerium.at

Webpage of the umbrella organisation of the Austrian national parks: www.nationalparksaustria.at

Webpage of the Carinthian government: www.ktn.gv.at

Webpage of the Salzburg government: www.salzburg.gv.at

Webpage of the Tyrolian government: www.tirol.gv.at

Regional management bodies

Webpage of the National Park Region Hohe Tauern Salzburg (regional development platform in the framework of the LEADER programme): www.nationalparkregion.at

Selected organisations and companies

Webpage of the Austrian alpine club: www.alpenverein.at

Webpage of the Großglockner High Alpine Route company: www.grossglockner.at

Networks

Webpage of the association of Austrian nature parks: www.naturparke.at

Webpage of the Austrian nature conservation platform: www.naturschutz.at

Webpage of the Alpine Network of Protected Areas: www.alparc.org

Webpage of the EUROPARC Federation: www.europarc.org

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