The potential of protected areas for recreation and tourism: the case of Hainich and Vessertal in Thuringia – the economic perspective

General framework

Protected areas provide a wide range of ecosystem services (ESS) with value to society. These include provisioning services, regulating services, cultural services as well as supporting services. The conceptual framework of ESS (according to the Millennium Ecosystem Assessment 2005) has gained attention in research and policy in recent years. In protected areas, different kinds of services are often highly interrelated: biodiversity conservation efforts are often related to a beautiful scenery and high diversity of landscapes as well as with an increased ecosystem functioning in terms of regulating services. Thus, also recreational opportunities are dependent on the spatial distribution of ecosystem characteristics. Basically, the ESS framework is a bridging concept, integrating information from different disciplines (cf. Braat & de Groot 2012). Hence, for an effective incorporation of ESS into policy-making, the concept has to be operationalised and the ESS have to be assessed, either in qualitative, quantitative or monetary terms. In terms of geographical mapping the ecological potential of a landscape and the ecological scales at which ESS are generated need to be assessed, whereas in terms of institutional analysis the scales at which different stakeholders benefit from ESS are relevant. An economic valuation seeks to estimate the benefits for society.

In operational ESS frameworks, cultural ESS have not yet been fully integrated (compared to provisioning and regulating services), because they are difficult to capture. However, among cultural ESS, the recreational use of landscapes is related to physical factors and recreational benefits are spatially localized. Recent studies integrate the recreational potential of landscapes and the potential recreational demand in nationwide ecosystem assessments (cf. Paracchini et al. 2014)

Particularly in the case of spatially explicit ESS (such as recreational values), the integration of geo-spatial information (ecosystem characteristics, functioning and capacity of ecosystems) and the economic value (ecosystem services, benefit estimates, recreational opportunities and demand) can guide decision-making in land use policy by powerfully inform conservation and landscape planning, for example in form of a spatial cost-benefit analysis (>>> management implications). Spatially targeted policies are supposed to deliver more efficient outcomes; spatially explicit models for land use can reveal recreational opportunities and demonstrate the spatial heterogeneity of the ESS demand. Thus, the integration of ESS in landscape planning and decision-making is an interdisciplinary effort, linking ecological scales, mapping and economic values (cf. Paracchini et al. 2014, de Groot et al. 2010, Hein et al. 2006).

The study project sheds light on the recreation potential of protected areas from different perspectives and seeks to integrate them. The geo-spatial perspective deals with site characteristics and the functioning of the ecosystem as the basis for estimating the outdoor recreation potential. The economic perspective seeks to evaluate the recreational potential focusing on both, the economics of recreational use of protected areas as well as policy and management issues.
Economic issues

From an economic perspective basically two different areas are of interest:

1. **Recreation policy and management issues**: protected areas provide a lot of ESS, such as the protection of natural resources and wildlife habitat, but also recreation opportunities and thus, also strengthen local economies. An increasing demand for outdoor recreation and facilities not only create new income opportunities, but is also related to potential environmental risk: tourism in protected areas produces benefits and costs. Balancing the protection of natural resources and the provision of recreational opportunities is a core part of an integrated visitor management in protected areas, which have to deal with a range of questions and challenges.

   Relevant aspects in this area are:

   - General **overview**: role of tourism for regional development, strategic recreation decisions, potential benefits and potential risks of tourism, landscape planning as the framework concept for recreation planning and for protected area tourism, sustainable tourism, importance of tourism in different protected area categories, governance of protected area tourism

   - Distinct **management issues**: financial aspects of protected area tourism: funding, budget, pricing,...; conflicts between visitors, user conflicts, user behaviour; congestion, social and ecological carrying capacity; tools for visitor management (reducing negative impacts >>> managing the supply, the demand (restrictions), the capacity or the impact; cf. Eagles 2002)

   >>> **Introductory literature**: von Ruschkowski et al. 2013 (good example for an approach and questions with respect to visitor management), Petersson-Forsberg 2014, Eagles 2009

2. **Economic analysis of recreation and tourism**: tourism based on protected areas is an important factor for regional and local economies. Particularly national parks are seen as major nature-based tourist attractions with considerable regional economic impacts that should be integrated in tourism planning strategies. The **economic impact assessment** focuses on the ‘financial’ transactions. In contrast, an **economic benefit** in terms of a recreational value occurs when there is an increase in welfare or human well-being; hence, benefits are more than financial effects, and can encompass ‘non-market’ benefits; it refers to the benefits people obtain from ecosystems through recreation. Economic valuation approaches seek to estimate the recreational demand for assessing the welfare benefits (‘consumer surplus’) of the environmental good in question.

   Relevant aspects in this area are:

   - Estimating the **economic impact** of tourism for local communities: cost-benefit analysis; regional economic analysis; visitor numbers in different categories; visitor expenditures in different categories (“All economic impacts are measurable in the marketplace […]. Economic impact assessment measures the value of all financial transactions made by groups, e.g. tourists or governments […]” (Eagles et al. 2002: 114))

   >>> **Introductory literature**: Job 2008

   - Analysing the **recreational use** and its determinants (factors, attributes influencing the recreational use and experience) as well as estimating recreational benefits: approaches for estimating visitor use and benefits; looking at important determinants of demand (socio-economic variables, attractiveness or quality of recreation sites, accessibility of recreation sites, recreation opportunities and substitutes, perception (landscape, scenery), national park affinity)
Empirical measurements (directly or indirectly) basically focus on: visitor number and visitors profile; temporal and spatial distribution; activities; influencing factors: site characteristics, motives, attitudes and perceptions; benefit estimates take into account: visitor flows, site choice, site attributes and travel costs (travel cost studies); the value people ascribe to nature can be also reflected in housing prices or prices for holiday accommodations; hence, the influence of different landscapes might be reflected in price differences (hedonic pricing method)

Introductory literature: Weyland & Laterra 2014, Petrosillo et al. 2007 (good example for a questionnaire based perception study), Hein et al. 2006

Introductory literature (hedonic pricing): Gibbons et al. 2014, Vanslembrouck et al. 2005

We should focus on one or several issues within these areas, looking at different aspects in detail. The inter-linkages between the two projects depend on the definition of the research objectives and the conceptual framework.

Please note: an interview-based survey among visitors is not feasible due to the weather conditions in November (it is supposed to be the worst time of the year in terms of visitor flows)!

General objective and research strategy

The overall objective is a comparative analysis of different protected area categories with respect to their recreational potential, looking at the provision of recreational opportunities based on landscape characteristics (determinants of ESS supply / geo-spatial project) as well as to the assessment of the recreation potential from an socio-economic perspective, i.e. the management and benefits of outdoor recreation (determinants of ESS demand). The category of a protected area has an influence on how regions are affected or can benefit from the protection of an area and what kind of visitors are coming, etc. Thus, category groups have a decisive influence on the visitor management and protected area governance as well as on the recreation potential and value.

The focus area and the object of research as well as the research questions need to be specified in the very first phase of the project. We will start with the statements of the problem that need to be addressed for each topic, the definition of the conceptual framework and the research strategy suitable to cope with the problems and to answer the research questions.

The table provides a preliminary overview of possible aspects and approaches (need to be refined).

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## Relevant aspects and research questions

### Working program and methodology

#### Economic aspects of the recreation potential of protected areas

**a) Regional tourism effects**
- Do the different protected area categories differ with respect to the recreational potential and the regional effects?
- What indicators are suitable to assess the recreational potential on a regional level?

- Literature and document analysis (desk top study), state of research
- Analysis of available tourism surveys
- Examination of data availability and data requirements
- Development of an indicator to assess recreational potential (related to economic issues, demand)

**b) Recreational value of the landscape**
- Background: the value people ascribe to nature might be reflected in differences in prices for holiday accommodations
- Are there any site-specific differences in the prices (related to protected area categories)?
- What are the most important influencing factors (landscape quality, tourism infrastructure, accessibility, distance...)?
- Applying a hedonic pricing method

- Literature analysis (concept and state of research)
- Information and data needed
- Statistical analysis of existing data for holiday accommodations

**c) Recreational use and visitors behaviour**
- Are there any differences in the recreational use of different areas?
- What factors / attributes affect the recreational use and the recreational experience?
- Visitors’ preferences towards landscape attributes, their perceptions on differences (visitors perception and attitudes, site choice (influence of protected area categories, biodiversity), assessing travel distances)
- Do people perceive differences in protected area categories?

- Literature analysis, state of research
- Analysis of available data
- Integration of user behaviour and perceptions in protected area management

Due to the absence of visitors in the excursion week, a focus on recreational behaviour can only take place on a literature-based level or dependent on existing data (which need to be clarified)

- Linking data (user, site choice, recreational activities...) with geo-spatial analysis
- ...
References


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