Geographie

FOREST–BASED TOURISM AND RECREATION

A THEMATICALLY SEGMENTED CLUSTER ANALYSIS IN TOURISM ON THE LOCAL SCALE

Case study in the Hochsauerlandkreis
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Anna Martinsohn

aus Merseburg

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Referent: Prof. Dr. Andreas Schulte
Korreferentin: Prof. Dr. Ulrike Grabski-Kieron
Drittgutachter: Priv.-Doz. Armin Scholl

ABSTRACT

This study examines the relevance of Porter's cluster concept to the thematic segment of forest–based tourism and recreation. The prime objective of this research is the conceptual development of the forest–based tourism and recreation cluster and its verification in a case study applying a *cluster–specific approach*. The study concept is based on a broad scientific literature review. A case study in the Hochsauerlandkreis [Hochsauerland County], North Rhine–Westphalia, Germany, aims at analyzing the competitiveness of this rural forest tourism and recreation–based destination by using Porter's *Diamond model.*

Based on recent cluster research in tourism, this approach uses secondary statistical data from the Federal Agency for Statistics and the location quotient (LQ) to identify the forest–based tourism and recreation cluster in geographical space. Furthermore a triple–layered questionnaire survey is conducted to obtain quantitative and qualitative primary data from [1] tourism operators, [2] visitors and [3] tourism–related experts. The study examines the four elements of Porter's *Diamond* underpinning *competitive advantage*. It describes the dimensions of the cluster, identifies communication and cooperation patterns and considers possible *complementarities*. A social network analysis (SNA) of the tourism expert group and an analysis of strengths, weaknesses, opportunities and threats (SWOT) provide the basis for policy recommendations for this cluster.

In *cluster dimensions*, the forest–based tourism and recreation cluster in the Hochsauerlandkreis shows both a high *density* of positioned accommodation business and a wide *breadth* in the same branch. A lack of *depth* for forest–based tourism products leads to few specialized businesses and little niche development and thus shortcomings in *diagonal clustering*. However, tourism businesses indicate a share of income from forest visitors of 40–60%. The natural assets, together with the *positioning* of the businesses and marketing, are seen as the most relevant factor conditions of the region. Cooperation among tourism operators occur [1] by adding supplementary products and services to their own offers, showing tendencies towards *diagonal integration,* and [2] by developing a network using business certification, which represents an explicit *positioning* in the national forest–based tourism and recreation market. Survey results show that businesses opting for these strategies and thus adapting to the demand of particular forest–oriented visitors clearly tend to have greater financial success.

Policy recommendations for the local scale include enhancing service quality and further development of innovative products. Additionally, the creation of niche

products, especially in the private sector, could contribute to *complementarities*, an extension of *diagonal clustering* and thus increasing the *competitive advantage* of the forest-based tourism and recreation cluster.

The concept of the forest-based tourism and recreation sector proposes a service-related view of interlinked industries that capitalize on the same natural resource. As in comparable clusters (e.g. wine tourism cluster) interdependencies between the primary production sector and the tertiary sector play a key role. The study reveals that rural areas dominated and shaped by forest management mainly for purposes of timber production, can and do attract large numbers of tourists, which sustain a local forest-based tourism infrastructure and generate considerable added value for the regional economy. This has so far been demonstrated mainly for destinations of exclusive tourism land use (e.g. national parks), but barely for regular forestry contexts. As a result, the current concept of the forest-based sector, solely focusing on industries linked to the resource wood, still underestimates the full socio-economic and socio-political benefits of rural managed forest areas.

The *cluster-specific* approach for forest-based tourism and recreation offers cross-sectoral insights for regional economists, tourism planners, managers and local forest authorities, which can support action to strengthen the local tourism management.

ZUSAMMENFASSUNG

Die vorliegende Studie überprüft Porters Clusterkonzept auf dessen Eignung im Segment des waldbezogenen Tourismus (*forest–based tourism and recreation* = Waldtourismus). Das übergeordnete Ziel der Forschungsarbeit ist die konzeptionelle Entwicklung eines Waldtourismusclusters und dessen Erprobung im Rahmen einer Fallstudie mittels eines *cluster–spezifischen* Ansatzes. Das Konzept der Studie basiert auf einer ausführlichen Literaturrecherche. In einer Fallstudie des Hochsauerlandkreises in Nordrhein–Westfalen wird der Waldtourismuscluster anhand des Porterschen *Diamanten* analysiert, um Aufschluss über die Wettbewerbsfähigkeit von ländlichen und waldreichen touristischen Destinationen zu gewinnen.

Angelehnt an die aktuelle Tourismusforschung werden statistische Sekundärdaten genutzt, um mit Hilfe eines ökonomischen Konzentrationsindex (Lokationsquotient) die räumliche Verortung des Waldtourismusclusters empirisch nachzuweisen. Weiterhin nutzt der vorliegende Forschungsansatz ein mehrschichtiges Umfrageverfahren mittels dreier Fragebögen, um quantitative und qualitative Primärdaten von [1] den touristischen Leistungsträgern, [2] den Waldtouristen und Besuchern und [3] Experten im Cluster zu erheben. Im Rahmen der Studie werden die vier wettbewerbsfördernden Elemente von *Porters Diamant* untersucht, *Clusterdimensionen* des Waldtourismusclusters beschrieben und Kommunikations– und Kooperationsmuster aufgedeckt, sowie existierende und mögliche *Komplementaritäten* aufgezeigt. Eine soziale Netzwerkanalyse (SNA) der befragten Experten und eine Stärken–, Schwächen–, Chancen– und Risikenanalyse (SWOT) bilden die Grundlage für Handlungsempfehlungen für den Cluster.

Die *Clusterdimensionen* des Waldtourismusclusters im Hochsauerlandkreis zeigen sowohl eine hohe *Dichte* im Bereich der positionierten Übernachtungsbetriebe als auch eine relativ große *Clusterbreite* in derselben Branche. Eine geringe *Clustertiefe* bei Waldtourismusprodukten führt zu minder spezialisierten Unternehmen und nur zu einer geringen Nischenentwicklung für *Komplementärprodukte*. Daraus lässt sich auf eine wenig entwickelte *diagonale Clusterdimension* im lokalen Waldtourismus schließen. Dennoch geben die ansässigen touristischen Leistungsträger an, rund 40–60% ihres Gesamtumsatzes durch Waldtouristen zu erwirtschaften. Als wichtigste *Faktorbedingungen* werden sowohl das Naturraumpotenzial, als auch die Positionierung der Unternehmen am Waldtourismusmarkt und deren Marketing gesehen. Die touristischen Leistungsträger kooperieren zum einen, indem sie [1] ihrem Angebot zusätzliche

Produkte und Dienstleistungen hinzufügen und dabei *diagonale Integrationstendenzen* aufweisen und [2], indem sie sich mit ihren Unternehmen mittels eines Zertifizierungsverfahrens bestimmten Kriterien verpflichten und als Netzwerk zusammenarbeiten (z. B. „*Sauerländer Wandergasthöfe*“). Der Zertifizierungsprozess fördert die explizite Positionierung im Waldtourismussegment. Die Ergebnisse der Studie lassen auf einen höheren Unternehmenserfolg schließen, wenn der touristische Leistungsträger derartige Kooperationsstrategien verfolgt und auf den Waldtouristen als Zielgruppe eingeht.

Handlungsempfehlungen beinhalten die Förderung der Servicequalität und die weitere Entwicklung von neuen und innovativen Produkten und Dienstleistungen. Darüber hinaus wird ein weiteres Potenzial im Bereich der komplementären Nischenprodukte, besonders durch Privatanbieter, gesehen, die als *Komplementaritäten* in der *diagonalen Clusterdimension* zu mehr *Wettbewerbsvorteil* gegenüber anderen Destinationen führen könnten.

Das Waldtourismuskonzept ermöglicht eine dienstleistungsbezogenen Betrachtung miteinander verzweigter Industrien, die auf Basis der selben natürlichen Ressource wirtschaften. Wie in vergleichbaren Clustern (z.B. dem Weintourismuscluster), spielen Wechselbeziehungen zwischen primärem und tertiärem Sektor eine Schlüsselrolle. Die Studie zeigt, dass ländliche Räume mit ausgeprägter forstwirtschaftlicher Nutzung durchaus eine große Anzahl von Waldbesuchern anziehen, die eine dichte lokale waldtouristische Infrastruktur aufrechterhalten können und somit für die regionale Wertschöpfung von großer Bedeutung sind. Dies wurde bisher fast ausschließlich für exklusiv naturtouristisch positionierte Destinationen (z.B. Nationalparks) nachgewiesen, aber kaum für forst– und holzwirtschaftlich geprägte Regionen. Dies weißt nach, dass eine Clusterdefinition des Forstsektors, welche sich produktbezogen allein auf die Betrachtung des Rohstoffes Holz und seiner Wertschöpfungskette konzentriert, eine begrenzte Sichtweise darstellt, und somit die tatsächliche sozioökonomische und soziopolitische Bedeutung von ländlichen und forstlich bewirtschafteten Räumen noch deutlich unterschätzt wird.

Der *cluster–spezifische* Ansatz im Waldtourismus ermöglicht Regionalökonomen, Tourismusplanern, Tourismusmanagern und lokalen Forstbehörden einen branchenübergreifenden Einblick, auf dessen Basis das lokale Tourismusmanagement weiter gestärkt werden kann.

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TERMINOLOGY

Activity base of a cluster	"The number and nature of the activities in the value–added chain […] performed within a region". *Activity–rich* clusters contain more or most of the critical activities of the value–added chain. *Activity–poor* clusters contain only "a few activities in a given industry or set of related industries" (Enright, 2000).
Attraction points	"A network of event options which are combined with services and feature a certain scene–oriented spirit and atmosphere for specific target groups. They provide multioptionality combined with making good use of time, […] options for individual activities for the members of groups or families, and the opportunity for investors to optimize their rate of return" (Bieger and Laesser, 2003).
Cluster	"Geographic concentrations of interconnected companies, specialized suppliers, service providers, firms in related industries, and associated institutions […] in particular fields that compete but also cooperate" (Porter, 1990).
Cluster analysis in tourism	Analysis of strategies and cooperation in interconnected companies focusing on the *competitive advantage* criteria in Porters diamond. This study follows an in–depth local *cluster–specific approach* (Feser, 1998), rather than an approach of agglomerating key data under determined conditions. A main characteristic of the *cluster–specific* approach is to underpin a certain value–chain through a case–specific demand–side and supply–side analysis and derived policy recommendations (Feser, 1998, Feser and Bergmann, 2000).
Cluster density	Economic weight concerning the market share between the relevant industries and other firms in the cluster (Feser and Bergmann, 2000).
Cluster dimensions	An attribute, used to characterize a regional cluster including vertical, horizontal and diagonal *cluster dimensions*.
Cluster initiatives	"Cluster initiatives are organized efforts to increase growth and competitiveness of clusters within a region […]." (Sölvell *et al.*, 2003)
Cluster management	Comprises coordination activities among the different cluster branches or entities to foster mutually benefiting processes and synergies within a cluster, as well as the external representation of the cluster and its products and services (Michael, 2007b).
Cluster size	Is described by the absolute employment in the cluster compared to other located industries in the same region.

Complementarities	Products or services, which are commonly demanded in combination by the customer, resulting in an increased benefit value. Consequently the demand of the combination drops, if the price of one good increases (Friedmann, 2007). The principle of *complementarities* offers niches and may contribute to a new, innovative product development in network processes (Porter, 1998). Porter points out the three most important *complementarities* as [1] complementary products for the buyer, [2] marketing *complementarities* and [3] *complementarities* due to a better alignment of activities among cluster participants (Porter, 2000).
Diagonal (lateral) clustering	Describes the co–location of complementary firms in a geographic area. "*Diagonal clustering* occurs where firms working together create a bundle of separate products and services that the consumer effectively purchases as a single item. The situation is common in many tourism destinations, where separate firms with separate production processes supply activities, transport, hospitality, accommodation, etc." (Michael, 2007a).
Diagonal integration	Describes the integration of complementary activities into one firm, resulting in supplemental products and services (Enright, 2000). *Diagonal integration* may occur if providers of complementary activities are nonexistent, inefficient and/or provide less complex products or services which facilitate the integration of this activity in the structure of the competitor with the same or a similar target group.
External economies / externalities	Is an impact (positive or negative) of an economic decision of one party to third parties, which are not directly involved and usually located in close proximity. Also referred to as spill–over cost or spill–over benefit. (e.g. locally available skilled labor) (Friedmann, 2007).
Forest–based tourism and recreation cluster	Means a "geographic concentration of interconnected companies, specialized suppliers" of services and products around forest–based activities as well as related industries and associated institutions (Porter, 1990 – modified). These include [1] *attraction points* (Bieger and Laesser, 2003) which focus on the existence of forests, [2] tourism service companies (e.g. accommodation and gastronomy businesses), [3] sectors that support tourism (e.g. agriculture, building and constructing sector), [4] infrastructure (e.g. roads, energy), [5] institutions providing specialized qualification (e.g. research institutes, consulting agencies) and [6] regulating institutions (e.g. government agencies) (da Cunha and da Cunha, 2005).
Geographical scope of a cluster	Describes the territorial extent of the service providers, firms and interconnected companies in a cluster and their relationship among each other (Enright, 2000).

Horizontal clustering (Cluster breadth)	Describes the co–location of similar firms, with the same stage in the value chain, in a certain geographic area (Michael, 2007a). These firms or industries are related by common end users, distribution channels or common technologies. *Broad clusters* are marked by a variety of products in related industries. *Narrow clusters* provide a few industries and their supply chains (Enright, 2000).
Innovation capacity	Refers to the capability within a cluster to generate innovations, which are relevant for the *competitive advantage* of the cluster (Feser and Bergmann, 2000). Innovation capacity is often linked to a strong horizontal competition and a consistent business size structure (Bröcker *et al.*, 2003). Innovations can occur [1] in hardware, [2] in the service chain (process / logistical dimension) and [3] through customer perception (communication) (Bieger and Weinert, 2006).
Micro–clusters	"The concept of micro–clusters can be applied to identify a concentration of firms in close geographic proximity": bounded by a single community or neighboring communities of social and economic interests. Local firms "are effectively contributing to a local specialization and engaged in servicing a common clientele" (e.g. tourism industry at location endowed with fishing resources) (Michael, 2007c).
Ownership structure	The ownership structure in regional clusters describes whether companies or businesses are locally owned or by foreign investors, whether they are multi–groups or small and medium sized enterprises (Feser and Bergmann, 2000).
Positioning	Describes the specific allocation or assignment of a certain product to a designated target market as well as its endowment with certain attributes (Bieger, 2005).
Service chain / Supply chain	"Comprises the suppliers of all the goods and services that go into the delivery of tourism products to consumers. […] Tourism supply chains involve many components – not just accommodation, transport and excursions, but also bars and restaurants, handicrafts, food production, waste disposal, and the infrastructure that supports tourism in destinations. (Tapper and Font, 2003).
Stage of life cycle	Clusters have to change over time in order to maintain their *competitive advantage*. Cluster literature distinguishes between four stages: seed clusters, emerging clusters, expanding clusters and transforming clusters (Gollub *et al.*, 2002).
Strength of competitive positioning	Describes the range from world–leading to leading within a supranational region and reaches from *strong* competitive firms to *weak* competitors (Feser and Bergmann, 2000).

Sustainable forestry / sustainable forest management	Means "the stewardship and use of forests and forest lands in a way, and at a rate, that maintains their biodiversity, productivity, regeneration capacity, vitality and their potential to fulfill, now and in the future, relevant ecological, economic and social functions, at local, national, and global levels, and that does not cause damage to other ecosystems" (FAO, 2005).
Tourism	"Activities of persons traveling to and staying in places outside their usual environment for not more than one consecutive year for leisure, business and other purposes not related to the exercise of an activity remunerated from within the place visited" (UNWTO, 2006).
Tourism businesses / tourism suppliers / tourism service companies	Firms, companies or businesses, that are either tourism–specific, tourism–related (e.g. accommodation businesses, gastronomy) or niche suppliers adding up to the visitors experience (Commission of the European Communities – Eurostat, 2001). In this study the terms tourism businesses, suppliers and service companies are used as synonyms.
Value chain	Comprises the activities in an operational chain of one firm, which add value to a product. The value chain comprises the supply chain and the demand chain (Porter, 1985).
Vertical Clustering (Cluster depth)	Describes the co–location of firms operating at different stages in the value chain in a certain geographic area (Michael, 2007a). *Deep* clusters do not only consist of a set of similar industries but contain a complete supply chain. In *shallow* clusters the industries rely on input from outside the region, e.g. equipment, services (Enright, 2000).

LIST OF ABBREVIATIONS

a.o.	among others
DeHoGa	Deutscher Hotel– und Gaststättenverband
Dwif	Deutsches Wirtschaftswissenschaftliches Institut für Fremdenverkehr (German economic institute for tourism)
e. g.	example given
EC	European Commission
esp.	especially
ETI	Europäisches Tourismus Institut Trier (European Institute for Tourism research)
HSK	Hochsauerlandkreis (Hochsauerland County)
i. a.	inter alia / amongst other things
i. e.	id est / that is
ibid.	ibidem / at the same place
IMPLAN	Impact analysis for planning
NACE	Classification of Economic Activities in the European Union
NRW	North Rhine–Westphalia
NUTS	Nomenclature of Territorial Units for Statistics
RBA	Regierungsbezirk Arnsberg (Administrative District of Arnsberg)
RMF	Recommended Methodological Framework
SGV	Sauerländer Gebirgsverein e.V. (local hiking association)
SME	Small– and Medium sized Enterprises
SWOT	Strength, Weakness, Opportunities and Threats analysis
TSA	Tourism Satellite Account
UNCED	United Nations Conference on Environment and Development
WCED	World Commission on Environment and Development

LIST OF MATHEMATICAL SYMBOLS AND ACRONYMS

σ	mean standard deviation
Δ	delta for network density
$\bar{x}$	average mean
$\sum$	sum
*	significant at the .05 level (significant)
**	significant at the .01 level (very significant)
***	significant at the .001 level (highly significant)
df	degrees of freedom
MD	mean difference
F	Fisher index
Sig.	Significance
CI	Confidence intervall

PREAMBLE

Recently published results of cluster analyses in the forest and wood–based industries have underlined the importance of this primary production sector and its value–added industries for the labor market and the overall national turnover in Germany (Mrosek *et al.*, 2005a, Schulte and Mrosek, 2006). Yet, the concept of the forest and wood–based industries cluster revealed several shortcomings, e.g. with regard to the methods used (Kies *et al.*, 2008). Also the official definition of the cluster by the European Commission (EC) has not yet been object to serious scrutiny. This definition solely focuses on the production, extraction, and processing of wood (EC, 1999). However, a concept based on cooperation and competition should also include industries which capitalize on the same resource. Regarding changing forest political paradigms in the future (e.g. resource competition arising from the use of wood as an alternative energy source), the debate on climate change and the growing demand for recreational activities in a sound forest environment, it becomes clear that a changing forest landscape will be closely linked to a shift of work fields, entrepreneurs and stakeholders (Krott, 2005, Stölb, 2005).

Regardless of the different objectives and ongoing debates between tourism and forestry, forest–based tourism destinations in commercially managed forest areas have been marketed and positioned successfully in Germany's past. Forest–based tourism and recreation commonly occurs in rural forested low and mid mountain ranges and contributes to Germany's rural tourism, overall generating 943 Million Euros turnover with 25.000 businesses per year (Bundestag, 2008). Many forest–based tourism destinations – not only in Germany and especially in low and mid mountain range regions – have lately suffered from a serious decline of tourist arrivals due to an outdated image, the commencing climate change or a an increasingly competitive global tourism market (Rosenthal, 2007, Schrep, 2007). Also the general trend toward shorter stays in a region influences national rural tourist arrivals. Additionally visitors increasingly demand naturally sound surroundings. Since the ability to sustain the quality of natural assets is crucial for the degree of competitiveness among resource–based tourism destinations (Huybers and Bennett, 2003), it is hardly possible to separate forestry from forest–based recreation and tourism planning.

While Porter marks the *Californian wine cluster* as a primary production cluster as well, he also identifies tourism to be a key component to support this cluster (Porter, 1998). In addition to the natural amenities of wine regions and their

inherent potential for the regional gastronomy and accommodation businesses, he highlights the importance of *complementarities*. He additionally identifies cooperation and collaboration among the different branches to be crucial for innovation processes and, hence, for regional *competitive advantage* (Porter, 1990). Since social and ecological criteria are two equivalent values of today's sustainable forest management, the clusters' focus needs to be extended beyond timber production to include non–extractive products and services, such as forest–based tourism and recreation. This thesis contributes to filling this gap on a local scale for commercially managed forests by applying a *cluster–specific* case study approach.

Concerning format and style: Proper nouns, brand names and technical terms as well as in text citations are put in *italic* letters. Sub headlines are <u>underlined</u> Scientific or technical terms with multiple interpretations are explained in the section TERMINOLOGY with their definition in the scope of this study. Although this thesis is based on a case study in Germany, it was written in English due to the fact that most of the cluster literature is published in English.

"The most obvious forms of complementarities are among products. In tourism, for example, the quality of the visitor's experience depends not only on the appeal of the primary attraction but also on the comfort and service of area hotels, restaurants, souvenir outlets, airport and other transportation facilities, and so on. As this example illustrates, the parts of the cluster are often truly mutually dependent. Bad performance by one part of the cluster can undermine the success of the others."

Michael E. Porter (1998)

"*Clustering might well be at its most effective in non–metropolitan environments when the activities of the co–located industries are based on visitation, in that increases in the demand for travel enhance the need for the complementary growth of the support industries that deliver visitor services.*"

Ewen J. Michael (2007)

1. Introduction

1.1. General

This introduction contains an excerpt on cluster theory and recent trends and approaches in cluster research. Starting first with the influence of clusters on *competitive advantage*, a second narrower focus addresses cluster theory and its application in the forest and wood–based industries sector. In addition to the implication of these findings, conceptual research gaps and further research needs are outlined. This leads to a closer look at forest–based tourism and recreation, which is the topic of this thesis. Subsequently, an overview of concepts and methods of studies covering nature–based tourism and recreation on different spatial scales provide recent scientific approaches to the evaluation of this sector. The additionally presented research background on cluster theory and application in the tourism industry recapitulates recent trends and findings. In the following, the study objectives are presented and the structure and content of the thesis are outlined.

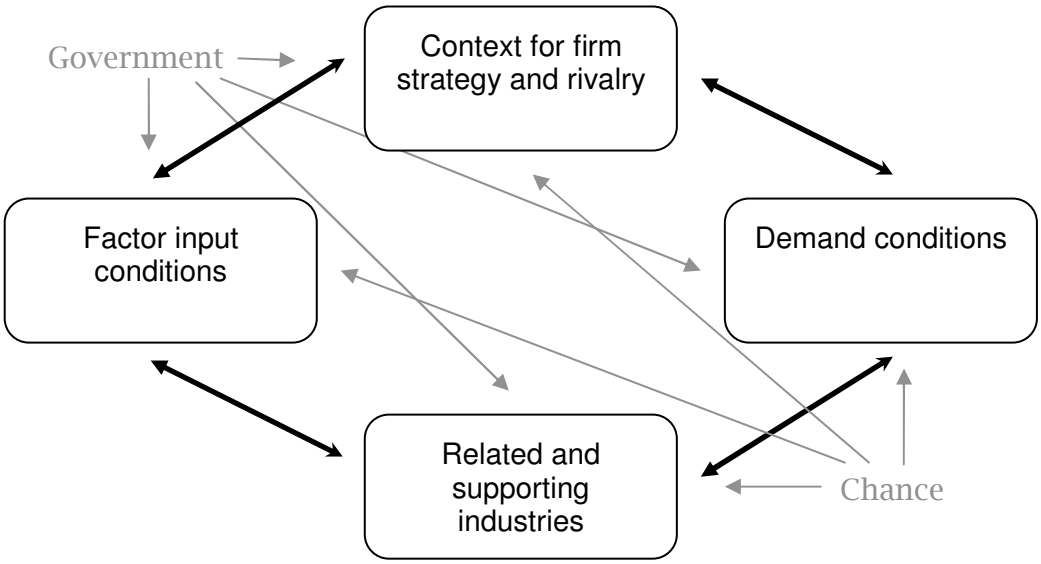
1.2. Literature review

1.2.1. Cluster theory

Michael E. Porter published his theories on *competitive advantage* in 1990 and opened a fundamental discussion on the role of location in the globalization process (Porter, 1990). By drawing a summary on a century of research on competition and location in economy, he untied a myriad of new, innovative research possibilities; his formulation of the *cluster theory* marking one of them.

According to Porter "*clusters are geographic concentrations of interconnected companies, specialized suppliers, service providers, firms in related industries, and associated institutions […] in particular fields that compete but also cooperate*" (Porter, 1998). Clusters influence competition and *competitive advantage* in three primary ways: [1], they increase productivity of businesses, firms or companies; [2], they influence innovation processes; and [3], they enhance new business formation by the generation of niches or the demand for complementary products or services (Porter, 1998). *Competitive advantage* is hence no longer solely attached to location or size but to a multitude of conditions which Porter visualizes in his *Diamond model* (Porter, 1998) (Figure 1). Each of the four diamond elements consists of various tangible assets.

Figure 1. The four elements of *competitive advantage* in Porter's *Diamond model* (Porter, 1998).



While the *demand conditions* contain the current and future demand for an industry's product or service, highly depending on a set of criteria given by the customer, the *factor conditions* describe (input) factors such as natural resources, capital, physical infrastructure or labor force. Furthermore the absence or presence

of *related and supporting industries* may influence production processes or innovation. The last component, *firm strategy, structure and rivalry*, takes the government and political conditions into account according to which an industry performs economic activity (Porter, 1990). According to Porter, factor inputs need to improve in quality (e.g. of the product or service) and efficiency (e.g. in the production or communication process) in order to increase productivity. Also the specialization of input factors to particular cluster areas (e.g. innovation, upgrading) is crucial to increase productivity (Porter, 1998). However, more important than each single factor is the interaction between the individual elements (Hawkins, 2004, Michael, 2007b). This results in a very complex model with a multitude of unknown variables and an irreplaceable importance of chance, which makes the cluster concept an intriguing, yet contentious issue for government leaders, economists and researchers alike.

In the last decade, numerous studies have addressed cluster theory as well as existing clusters and cluster initiatives to determine their dimensions, developing process, function and success (Organisation for Economic Co–operation and Development, 1999, Maier and Tödtling, 2002, Bröcker *et al.*, 2003, Asheim *et al.*, 2006, Litzenberger, 2007). According to Feser (1998) two basic types of cluster approaches can be distinguished. *Cluster–specific strategies* focus on clusters and their development by analyzing their characteristics (commonly through expert forecasts and SWOT analysis). This comprehensive attempt focuses attention on fostering the demand– and supply side development by policy interventions. *Cluster–informed strategies* survey specific aspects of a cluster, mostly with a narrower focus on one part of the value chain. They are hence less holistic than *cluster–specific strategies* (Feser, 1998).

Incidentally cluster policymaking was set up including cluster analysis, policy implications, policy design and implementations (Feser and Bergmann, 2000). The cluster approach has been widely applied in macro–economic analysis and the manufacturing industry with a focus on value chains (Litzenberger, 2007). However, as the objectives of cluster studies vary strongly, results of existing studies give evidence to the fact that neither cluster definition, nor concept or methods are identical (Enright, 2003). Enright (2003) states that cluster terminology "*seems so embedded that one despairs […] sharply defining the term*". Cluster–types within recent cluster research expand "*as researchers identify the myriad of contributing factors, environments and indicators involved*" (Aylward and Glynn, 2006). Beside the value–added chain focused industrial production clusters, knowledge clusters and service clusters have been studied. According to Enright (2003), clusters can be

defined and identified by [1] geographical scope, [2] cluster density, [3] cluster breadth, [4] cluster depth, [5] their activity base, [6] their strength of competitive position, [7] their innovative capacity and [8] their ownership structure. Gollub *et al.* (2002) add [9] the stage of life cycle.

Cluster theory has been further developed and adapted to be applied for various industries and in regional analysis (Karlsson, 2007, Kiese and Schätzl, 2008). In the course of its application, location theory and tools for analyzing economic growth in combination with business development strategies, comprised the identification of critical impact factors for the development of regional communities (Michael, 2007b).

1.2.2. The forest and wood–based industry cluster

The forest and wood–based industry cluster has recently gained in importance in the European context (EUROFOR, 1997, Bundesrat, 2001). The main objective in applying Porter's cluster concept to the forest and wood–based industries was the exposure of its socio–economic and political relevance in context with other industrial sectors and national economies as well as the preservation of its long–term competitiveness in global markets (Union, 1999, Bundesrat, 2001). The rather unspecific definition of the EU describes the wood–based industry sector with all branches associated with the resource wood. Based on this definition a multitude of studies have been carried out covering different contexts and scales a. o. (Hanzl and Urban, 2000, Hazley, 2000, Schulte and Mrosek, 2006).

In Germany the concept was first applied –for descriptive purposes– on state level for the federal state of North Rhine–Westphalia (Schulte, 2002), leading to a major interest of its application in other federal states e.g. Brandenburg (MLUV – Ministerium für Ländliche Entwicklung, 2005), Bavaria (Lutze *et al.*, 2006) and Saxony (Kramer and Möller, 2006) and on the national level (Mrosek *et al.*, 2005a, Seintsch, 2007). According to the national survey, the German forest and wood–based industry sector features an annual turnover of 181 billion Euros, 1.3 million employees and approximately 185.000 businesses (Mrosek *et al.*, 2005a). These results rank the forest and wood–based industries among the most economically important, ranking 2nd after the automobile industry, and employment–politically relevant branches of Germany, ranking 1st before the machinery and electronic industries (Mrosek *et al.*, 2005a). Subsequently, a methodological statistic–based approach based on the Classification of Economic Activities in the European Union (NACE) was developed in order to achieve reproducibility on an international level

(Kies *et al.*, 2008). Furthermore spatial agglomerations of the different cluster–related branches could be discovered and described (Kies *et al.*, 2009).

Subsequent studies developed policy recommendations to strengthen and support these clusters (Mrosek *et al.*, 2005b, Mrosek and Schulte, 2007). However, non–wood forest products and forest services seem neglected in the official cluster definition, although there is proof that sales of non–wood forest products (e.g. hunting, fishing, mushroom gathering) are still a major source of income in many countries of the world (Vantomme, 2003) and recreational services can make up a much more relevant source of income than timber sales (Font and Tribe, 2000, Maso *et al.*, 2006). With the United Nations Conference on Environment and Development in Rio de Janeiro (WCED, 1987, UNCED, 1992), *sustainable forestry* must include ecological as well as social functions, such as products and services based on forest ecosystems, especially in an approach that aims for interaction and cooperation among companies capitalizing on the same resource. Thus the socio–economic and political relevance of the forest and wood–based industries cluster may increase if focus is extended beyond timber industries and forest enterprises to include the regional economy surrounding forest–based tourism and recreational areas.

In the next chapters, recent approaches towards, [1], the local and regional evaluation of nature– and forest–based tourism and recreation as well as a general macro–economic evaluation of this segment [2], a recapitulation of forest–based tourism and recreation in Germany and [3], the cluster concept concerning its application in tourism will be examined.

1.2.3. Nature–based tourism and recreation

Nature–based tourism is one of the fastest growing tourism segments in the world (Ceballos–Lascurain, 1996, Huybers and Bennett, 2002). Recently however, visitor arrival declines in protected nature areas could be observed in countries with a high per capita income (e.g. USA, Japan) (Balmford *et al.*, 2009), resulting in a stronger internal competition among nature–based tourism destinations. Together with farm–based tourism, forest–based tourism, ecotourism or adventure tourism (a.o.), nature–based tourism falls under the broader term of rural tourism (OECD, 1994). Since rural tourism is as multifaceted as the areas it occurs in, "*a working and reasonably universal definition of the subject is difficult to find*" (*ibid.*). However, these tourism segments have been the subject of a multitude of sociological and economical studies in the recent past and various approaches to the evaluation of economic impacts exist.

1.2.3.1. Evaluation research

A large part of the research concerning economic evaluation on recreational nature or forest use covers multidisciplinary approaches, mostly with a fixed focus on the local or regional scale. These approaches include the travel–cost and contingent–valuation method (Löwenstein, 1994, Bateman *et al.*, 1995, Elsasser, 1996, Huybers and Bennett, 2000, Chaudhry and Tewari, 2006), the hedonic–pricing method (Hunt *et al.*, 2004, Boxall *et al.*, 2005) or the input–output method (mostly based on an *Impact Analysis For Planning Model* (IMPLAN)) (Bergstrom *et al.*, 1990, Cordell *et al.*, 1990, Eagles *et al.*, 2000, Murthy and Cubbage, 2004). While the former constitute a mere hypothetical factor for analysis, the latter require such a degree of detail in the entailed data set, that it is often only possible to obtain for state–regulated nature sites with boundaries and entrance corridors facilitating and supporting visitor monitoring. Hence, most studies list protected forest areas and parks as key visitor attractions for case study research.

In Germany a further method, commonly applied for single nature–based recreational products (e.g. cable cars) is the one by the German Economic Institute For Tourism [*Deutsche wirtschaftswissenschaftliche Institut für Fremdenverkehr* (*Dwif*)] (Harrer and Bengsch, 2003). This approach relies on a quota sample, where primary data, obtained through questionnaires on the demand side is linked to secondary data, interpreted from national statistics of the supply side. Depending on the study objectives overnight or day visitors can be analyzed (Harrer *et al.*, 1995, Harrer and Scherr, 2002). The quota sample is commonly used in market research (Broda, 2006).

Additionally to the focus on economical values, another, yet still separated, main issue of nature–based tourism and recreation evaluation research is the visitor's influence on the local communities and their livelihoods regarding social and cultural aspects (Taylor, 1995, Howe *et al.*, 1997, Tosun, 2000, Murphy and Murphy, 2004, Nepal, 2004, Li, 2006, Simpson, 2008) as well as destination perception and social prosperity (Howe *et al.*, 1997, Bramwell and Sharman, 1999, Crouch and Ritchie, 1999, Dwyer and Kim, 2003, Walder *et al.*, 2006), although neither the former nor the latter can be truly separated from local and regional economic evaluation research.

Macro–economic evaluation studies in tourism (on the national scale) have been carried out using the *recommended methodological framework* (RMF) of the *Tourism Satellite Account* (TSA) and the derived Eurostat guidelines (2002) (Commission of the European Communities – Eurostat, 2001, Eurostat, 2002).

However, a thematic segmentation – implicating a process of filtering certain tourism segments (in this case: forest–based tourism and recreation) – does not correspond with the primary objectives of the TSA (Libreros *et al.*, 2006). Furthermore a practical application below the national scale would be limited by the officially existing statistical data sets and their insufficient level of detail. Although studies have been carried out replacing this missing data through survey results (e.g. Wales, Scotland) (Jones and Munday, 2007), denoting that the RMF has been applied on scales below the national scale (e. g. on *NUTS–2–level* in Austria, corresponding to German administrative districts [*Regierungsbezirke]*, its altered calculation methodology has been regarded skeptically (Smeral, 2006). An application of the RMF by the TSA, implicating a statistical macro–economic accounting methodology by using consumer tables, production tables and goods tables, seems thus inappropriate for the segment of forest–based tourism and recreation.

1.2.3.2. Forest–based tourism and recreation in Germany

Among the European states the rural tourism development in Germany – measured by public regulations on access issues – is seen as a "*classic model of good practice*" (OECD, 1994). In Germany a significant amount of forest–based tourism and recreation occurs in commercially managed forests due to their *free access right* [*Freies Betretungsrecht*] as well as their high infrastructural coverage and site development (Mantau *et al.*, 2001, Türk *et al.*, 2004, Bundesministerium für Umwelt, 2007). This is incorporated in the national forest program, which calls for a more purposive integration of existing and constantly growing societal needs in the forest management plans of federal and state authorities (Bundesministerium für Verbraucherschutz, 2004). Although examples of research attempts to include recreation demand into forest management plans on an operational level are presented in case studies from Great Britain and Scandinavia, a proven poor practical feasibility due to the lack of detailed data impedes further structured efforts (Kaltenborn *et al.*, 2001, Hill and Courtney, 2006). However, the German forest program realizes the increasing importance of commercially managed forests for society's recreation demand (Bundesministerium für Verbraucherschutz, 2004). Especially forests in the surrounding of industrial areas are more frequented by recreation seekers or day trippers (Arnberger and Eder, 2007). The evolving conflicts have been motive for contemplative research approaches as well as research on the operational level. Debates about the common welfare and an analysis of the political area mark a few of them (Krott, 2001, Memmler and Ruppert, 2006). On the

operational level, multiple stakeholder entitlement as well as resource use conflicts have likewise served as a basis for a multitude of studies, resulting in recommended courses of action on different spatial scales (Weber, 1999, Schemel and Erbguth, 2000, Fischer, 2007).

In Germany, major forest–based tourism areas can be found in the low and mid mountain ranges, such as Bayerischer Wald, Schwarzwald, Harz and Sauerland. General forest recreation of course also occurs in the forested surroundings of industrial areas and urban agglomerations. The main recreation activities comprise hiking and walking as well as mountain biking and horseback riding during the summer season and skiing, snow boarding and snowshoeing in the winter season (Ammer and Pröbstl, 1991). About 46% of the total forest area is privately owned (BMELV, 2004) and open to anyone for public use, whereas specifications of the *free access right* are subjected to the individual states (Klose and Orf, 1998). The free public use of private property in combination with additional financial cutbacks of government supports has recently opened a controversy within the private forest owner community and tourism planners. To achieve compensation, conceptual possibilities to commercialize non–wood forest products and services were presented for private forest owners by recent publications (Malzburg, 2000, Welcker, 2001, Mrosek *et al.*, 2006). Although private forest owners have been politically encouraged to market non–wood forest products and services, and studies on best–practice examples have outlined a myriad of possibilities, only few forest owners realize the made suggestions (Welcker, 2001, AID–Infodienst, 2006). Due to the legislative framework – *free access right* – and the fact, that the size of a private forest property in Germany averages 2.4 ha, an active marketing of recreational services is mostly not feasible (Mrosek *et al.*, 2005a).

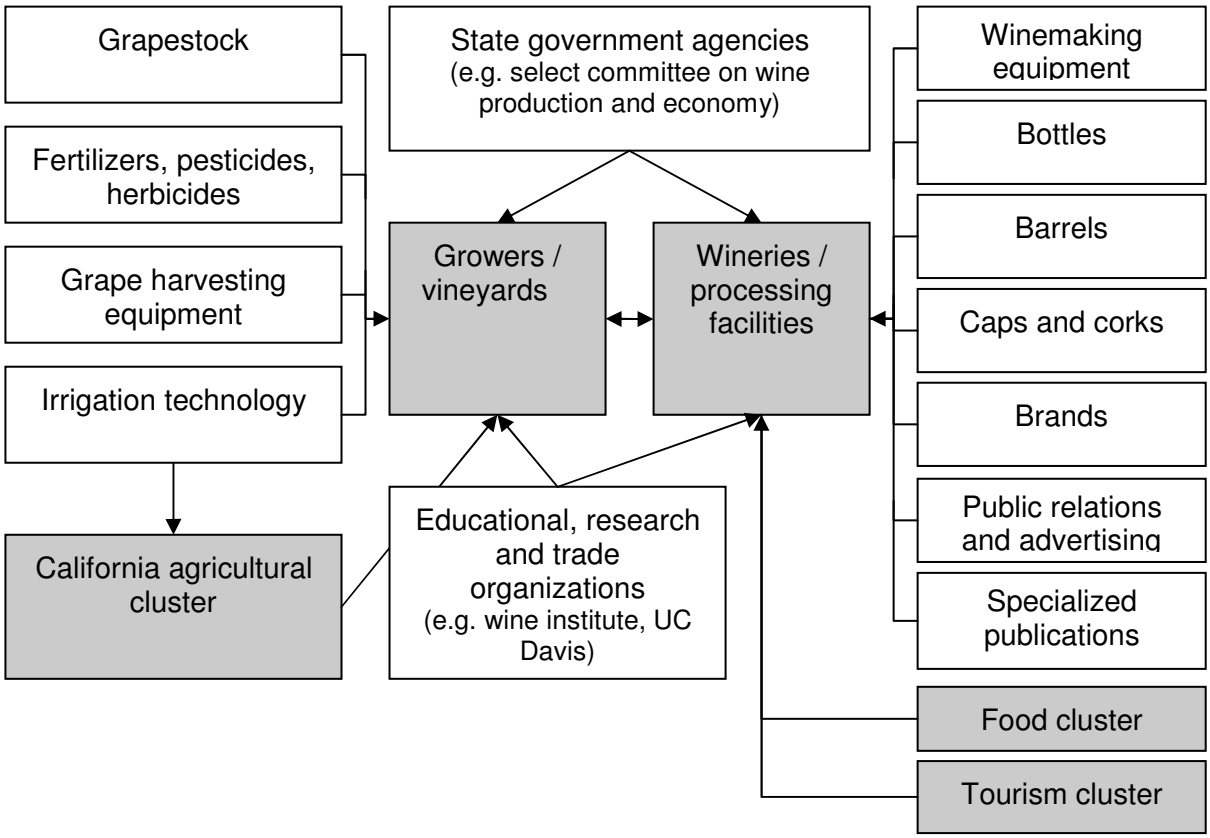
The community, state and federal forests are subjected to fulfill environmental duties and societal responsibilities according to the national forest law (BWaldG, 1987). Thus they comprehend a majority of the protected areas in Germany, such as national– and nature parks. However, since non–protected areas usually hold a bigger potential for additional recreational activities, they open specific niches for tour operators and tourism businesses, which enables a growth of complementary activities or a breadth of product offerings (Buultjens *et al.*, 1998).

1.2.4. The cluster concept in tourism

One of the first examined clusters according to Porter's concept is the *Californian wine cluster* (1998) (Figure 2). Within the *Californian wine cluster* tourism was identified to be a major contributor to the competitiveness of the wine

manufacturing industry and the region it was situated in. This approach included an examination of the concentration of like firms (the wineries) and a further look into the *depth* and *breadth* identifying other industries and suppliers (Porter, 1998). Also existing links between the individual firms and businesses were examined. Although Porter's *Californian wine cluster* does not include all entities which make up the respective cluster, his figure illustrates important cluster attributes (Porter, 1998). With a further examination of the wine cluster, wine tourism, as a thematic segment, was extracted to be investigated in detail, *i. a.* (Williams, 2001, Novelli, 2003, Aylward, 2005, Brown and Getz, 2005). In the recent past the cluster concept has been implemented on different spatial scales in tourism, also addressing different tourism segments, such as culture and heritage tourism, health tourism or wellness tourism (Heffernon *et al.*, 2000, Jackson and Murphy, 2002, Nordin, 2003, Hawkins, 2004, Brown and Geddes, 2007). However, concept applications in small localized environments have been scarce (Michael, 2007a) and only few recent studies address the implication of networks and cluster formations in the tourism sector in detail (Canina *et al.*, 2005, Saxena, 2005, Novelli *et al.*, 2006). The existing research approaches vary strongly, not only in research objectives but also in concept, methods and cluster characteristics (da Cunha and da Cunha, 2005).

Figure 2. Californian wine cluster according to Porter (1998)



The majority of cluster research in tourism focuses attention on critical impact factors fostering regional competitiveness, which can be found in Porter's *Diamond model*. This includes the analysis of demand conditions in tourism destinations, the context of firm strategy and rivalry, factor conditions, as well as governmental support concerning infrastructure, facilitating inputs (e.g. educated workforce) and enforcement maintenance (Porter, 1998, Jackson and Murphy, 2006).

According to Novelli (2006) research of tourism clusters and networks is supposed to point out the availability of specific tourism activities in a certain destination or region, and to get small and medium sized enterprises (SMEs) to cooperate and build successful tourism products and services. Additionally cluster theory in tourism is used to minimize tourism leakages (Gollub *et al.*, 2002).

New media, such as the internet and web 2.0, have altered information processes for tourists. This concluded in a major consumption change of tourism products and services and also altered tourism service patterns (Doolin *et al.*, 2002). Because tourists are able to request information directly from the tourism business owner and on business evaluation sites (e.g. trip advisor), the service quality of a single business or the quality of attraction points will sooner relate to the whole destination. Additionally the tourist is able to choose desired products and services more specifically. A specialized and more segmented market has developed, which aims "*at unique activities available at the places visited*" (Nylander & Hall, 2005 in Novelli *et al.*, 2006). Especially in nature–based tourism destinations, activity niches (e.g. fun sports) developed. This introduced additional players to the tourism market as well as new needs towards the natural assets of the tourism destination. Huybers and Bennett (2003) expect the inter–firm cooperation in nature–based tourism clusters to materialize "*because the environment is the major regional characteristic that determines the competitiveness of the cluster*".

Combining these arguments it becomes clear that in a global tourism market it is indeed the location and its natural assets, which mark the foundation of nature–based tourism destinations, but beyond this foundation, the offer of tourism products and services of the co–located SMEs as well as existing synergies and productivity are seen as key components to local development of cluster and network processes.

Within the idea to foster network processes, the creation of regional brands is among the most common cluster initiative objectives (Sölvell *et al.*, 2003). Although clusters and networks are often used synonymously in tourism, Braun (2005) argues that they are "*different yet interdependent, whereby small business network*

structures underpin the growth and sustainability of clustering". An overview is given in Table 1 to outline the differences:

Table 1. Differences between networks and clusters according to Rosenfeld (2001) *in* Braun (2005)

Networks	Clusters
Networks allow firms access to specialized services at lower costs	Clusters attract needed specialized services to a region
Networks have restricted membership	Clusters have open membership
Networks are based on contractual agreement	Clusters are based on social values that foster trust and encourage reciprocity
Networks make it easier for firms to make complex products	Clusters generate demand for other firms with a variety of similar and related capacities
Networks are based on cooperation	Clusters take both cooperation and competition
Networks have common business goals	Clusters have collective visions

Cooperation in regional clusters demands a certain degree of trust, especially in small localized environments (Lynch and Morrison, 2007, Staber, 2007). Within cooperation patterns, the means of clear communication is crucial to overcoming individual interests when disputes or disagreements arise (Selin and Myers, 1998). A central part of cluster cooperation is parting knowledge. Bieger and Weinert (2006) identify the transfer of implicit and tacit knowledge to "*generate competencies and help strengthen the regional competitive capacity*". In this context they list innovative inputs through suppliers (innovation push), demanding customers (innovation pull), informal information and knowledge transfer through social relationships, a transparent communication infrastructure and an attractive labor market among the transfer mechanisms inside of tourism clusters.

Tourism clusters differ from industry clusters since they are not building up one single product, but a bundle of products and services (Michael, 2007a). *Value chains*, which are object to the most part of industry cluster research, are not so much chains as they are constructs of interdependent products and services which build "experiences" or "experience bundles" in tourism (Poon, 1993, Gollub *et al.*, 2002). *"[…] Where consumers are seeking not to purchase a single product but rather a bundle of attributes that make up their travel experience"* the concept of *diagonal clustering* seems particularly relevant (Michael, 2007b). While vertical dimensions and horizontal dimensions are crucial components in a cluster analysis for the

manufacturing industries, Michael (2007b) hence identifies *diagonal clustering* to be most effective in the tourism industry. This implies a concentration of complementary firms, adding to the activities of others and thus broadening the extent of products and services for the customer. *Diagonal clustering* may also generate *external economies* and is thus a further key criterion for successful tourism destinations, which base their multitude of recreational activities on a vast nature–use potential (Michael, 2003).

Compared to industrial districts, economic alliances or other competitive strategies, the cluster theory supports the idea to establish an institution which enhances local competitiveness (Jackson and Murphy, 2006). In the set framework of a *cluster initiative*, this is often referred to as *cluster management*. Knowledge transfer, communication as well as the support of innovation and product development processes are among the main managerial functions (Sölvell *et al.*, 2003). In tourism, these and / or similar activities are carried out by the regional tourism marketing association, responsible for the marketing of a whole tourism destination. Due to a rapidly changing global tourism market and a constantly growing field of new entrepreneurs (Hopfinger, 2004), tourism destinations can only be successful if they [1] fulfill customers expectations and [2] manage to build up a high quality tourism product by developing an operating performance chain among the service providers (Bieger, 2005, Bieger and Weinert, 2006). This requires "Co–opetition" (Nalebuff and Brandenburger, 2002) as a driving factor to overcoming fragmentation and to foster innovation in market economy (Keller, 2006). Hence, in global tourism markets competition "*is not limited to the level of service providers. The real battle indeed is at the level of destinations*" (*ibid.*).

Marketing and destination management have thus become inseparable instruments (Steingrube, 2004). Competitiveness needs to move on from cost orientation toward product and service differentiation, *complementarities* and process optimization (Bieger and Jäger, 2001, Bieger and Weinert, 2006). With the special focus on remote nature–based tourism, this means:

[1] establishing high quality products, [2] maintaining qualified labor force, [3] disposing available investment funds, [4] *positioning* tourism products and services in the market, [5] maintaining competitiveness among SMEs to foster innovation, [6] maintaining and upgrading of natural assets and [7] sufficiently communicating through exterior marketing (Haedrich, 2001, Bieger, 2005, Freyer, 2006, von Peinen, 2008).

This excerpt on clusters in tourism introduces the most important part of the reviewed literature. However, from this literature review, various short–comings

emerge, which are used to formulate rationale, research shortcomings and further on research questions for this thesis. It becomes evident why the holistic approach of the cluster concept seems highly suitable:

- to point out the socio–economic and political relevance of tourism in managed forest areas
- to explore and determine key factors to encourage the development of a successful forest–based tourism and recreation destination
- to improve policy conditions in a multi–stakeholder conflict area

In the next chapter, the presented short–comings will be transferred into research needs and research questions, which this thesis is going to address. Additionally the objectives will be outlined with their constituting subordinate objectives.

1.3. Thesis research

1.3.1. Research project and rationale

Based on a rationale background in forestry, methods in economics, geography and social sciences, as well as selected case study approaches in tourism cluster research, this study intends to analyze the forest–based tourism and recreation cluster on the local scale, applying a *cluster–specific strategy* approach (Feser, 1998). For this thesis, the thematic segment of forest–based tourism and recreation was chosen to be examined in a case study approach, which was carried out in the Hochsauerland County, North Rhine–Westphalia.

The research field builds on concepts and methods of the following disciplines:

[1] Classical forestry
[2] Cluster economics
[3] Tourism, regional economy, and sociology

From the literature background presented above, the following shortcomings and research needs emerge:

- [1] As a concept based on communicative and cooperative behavior the cluster concept of the forest and wood–based industries clearly neglects to include industries capitalizing on the same resource, like non–wood forest products and forest services, such as forest–based tourism and recreation.
- [2] A conceptual cluster understanding for the tourism segment of forest–based tourism and recreation is consecutively missing, leading to the need for a conceptual outline of this cluster. Also needed, is the description of its dimensions including the identification of methods for a critical mass or concentration of forest–based tourism and recreation in a certain area (descriptive consideration).
- [3] Consecutively there is a need for a further cluster analysis of identified clusters considering the four elements fostering *competitive advantage* in Porter's *Diamond model* (explicative consideration).
- [4] Finally the need for policy recommendations to foster competitiveness of forest–based tourism destinations evolves (normative consideration).

The following questions are derived and selected to be elaborated in the course of this thesis:

[1] Concept of the forest–based tourism and recreation cluster:

– Does the extension of the forest and wood–based industries cluster by non–timber forest products and services and the thematic separation of forest–based tourism and recreation contribute to a better understanding of the forest and wood–based industries cluster?

– How can the forest–based tourism and recreation cluster be defined / mapped?

– How can its dimensions be described?

[2] Identification of forest–based tourism and recreation clusters:

– How can a forest–based tourism and recreation cluster be identified in a certain area?

[3] Cluster analysis in case study approach:

Using Porter's *Diamond model*:

– *Factor input conditions*: What kind of general factor endowment occurs in the forest–based tourism and recreation destination (case study area) and which factors are crucial for success? What is the cluster members' appraisal of the attitude concerning local factor conditions?
– *Demand conditions*: What is the demand for forest–tourism and recreation products? Who are forest tourist and recreation seekers and what attitude do they have concerning the forest? Which activities do they pursue and which products do they demand?
– *Context for firm strategy and rivalry*: Which role do networks have? How important are communication processes among the forest–based tourism and recreation cluster members / tourism experts? What kind of cooperation occurs? How do SMEs profit from networks and cooperation in forest–based tourism clusters? What strategies are crucial for successful SMEs in the case study area?
– *Related and supporting industries:* Which role do *complementarities* play? Who fosters innovation?
– *SWOT–analysis:* What are the strength, weaknesses, opportunities and threats in the forest–based tourism cluster of the case study area applied to Porter's *Diamond model*?

[4] Instruments and recommendation for competitive forest–based tourism destinations:
– Which instruments foster competitiveness of forest–based tourism and recreation especially in the low and mid mountain ranges? Which policy recommendations contribute to a sustainable development of forest–based tourism destinations?

1.3.2. Research Objectives and estimated results

This thesis focuses attention on the following superior and subordinate objectives:

[1] A literature–based conceptual development of the forest–based tourism and recreation cluster by applying Porters definition (Porter, 1998)

[2] The identification of forest–based tourism and recreation clusters by applying the location quotient (Bathelt and Glückler, 2003, Bowe and Marcouiller, 2006)

[3] The further analysis of the cluster using an activity–based approach to thematically separate forest–based tourism from other tourism segments in the localized environment of a case study by applying Porter's *Diamond model* in a *cluster–specific* approach

[4] The development of recommendations for competitive forest–based tourism destinations

This research intends to extend the forest and wood–based industries cluster purposely leaving the scope of the EC definition (EC, 1999) to cast some light on social and non–extractable values of the forest. In the localized environment of a case study a *cluster analysis* is performed to find key factors contributing to, or inhibiting, the competitiveness of single businesses and the cluster in the case study area. According to similar studies on different tourism segments (e.g. wine tourism, health tourism), the following hypotheses for forest–based tourism and recreation clusters are derived:

The success of the forest–based tourism and recreation cluster depends on:

- the unique features of tourism products and services offered around the primary resource forest (unique and coherent destination management) (Steingrube, 2004)
- the sound forest environment and connected landscape characteristics (Huybers and Bennett, 2002)
- the breadth of product offerings by creating complementary products and services (Poon, 1993, Porter, 1998, Michael, 2007a)
- the network structures and knowledge exchange between tourism management, primary resource management (forestry), forest owners and other stakeholders (Pan and Scarbrough, 1999, Burgess *et al.*, 2000, Tracey and Clark, 2003, Aylward, 2005)
- the innovation capacity within the local cluster (Bröcker *et al.*, 2003, Aylward and Glynn, 2006, Bieger and Weinert, 2006, Walder *et al.*, 2006)
- the marketing strategies (Steingrube, 2004, Freyer, 2006)

At SME level, success depends on:

- fulfilling customer needs by offering supplemental products and services or providing access to *complementarities* (Novelli *et al.*, 2006, Michael, 2007a)
- a clear *positioning* by choosing a forest–based tourism target customer (Nilsson, 2001, Williams, 2001)
- innovation of services / products on the company level (Aylward and Glynn, 2005, Novelli *et al.*, 2006)

1.3.3. Study limits

This study will not cover the following areas:

- Account for the full economic effects of all forest–based tourism to the regional economy of the research area (method and data limitation)
- Spatial mapping of the complete forest–based tourism and recreation cluster (spatial limitation by case study approach)

1.3.4. Thesis organization

In the following chapter, material and methods are outlined. The first part provides an overview of the study proceedings. Following, a definition of forest–based tourism and recreation as well as derived businesses is given. A brief introduction into the case study area, its tourism background and its forest–based tourism activities and offers, in combination with the calculation of the location quotient for forest–based tourism and recreation, provide information, as to why this region has been chosen for the case study. Primary and secondary data sources including the closer methodological proceedings are outlined.

2. Material and methods

2.1. General

As already outlined in the literature review, a multitude of methods exist to carry out cluster analysis. The majority of authors have widely disregarded the ambition to create comparable and reproducible approaches (Held, 1996). Two basic approaches can be distinguished for cluster analyses and the establishment of cluster initiatives, both differing in their intended purpose (Jappe–Heinze *et al.*, 2008). On the one hand there are politically instructed approaches to foster certain economies and industries by political will. On the other hand researchers in economy and geography or related disciplines intend to identify clusters in certain spatial units by applying mostly geo–statistical methods. However, these identification results constitute merely the base for follow–up research on identified clusters. Frequent scientific critique addresses politically instructed research approaches because of their presumed lack in factual foundations (Feser and Bergmann, 2000).

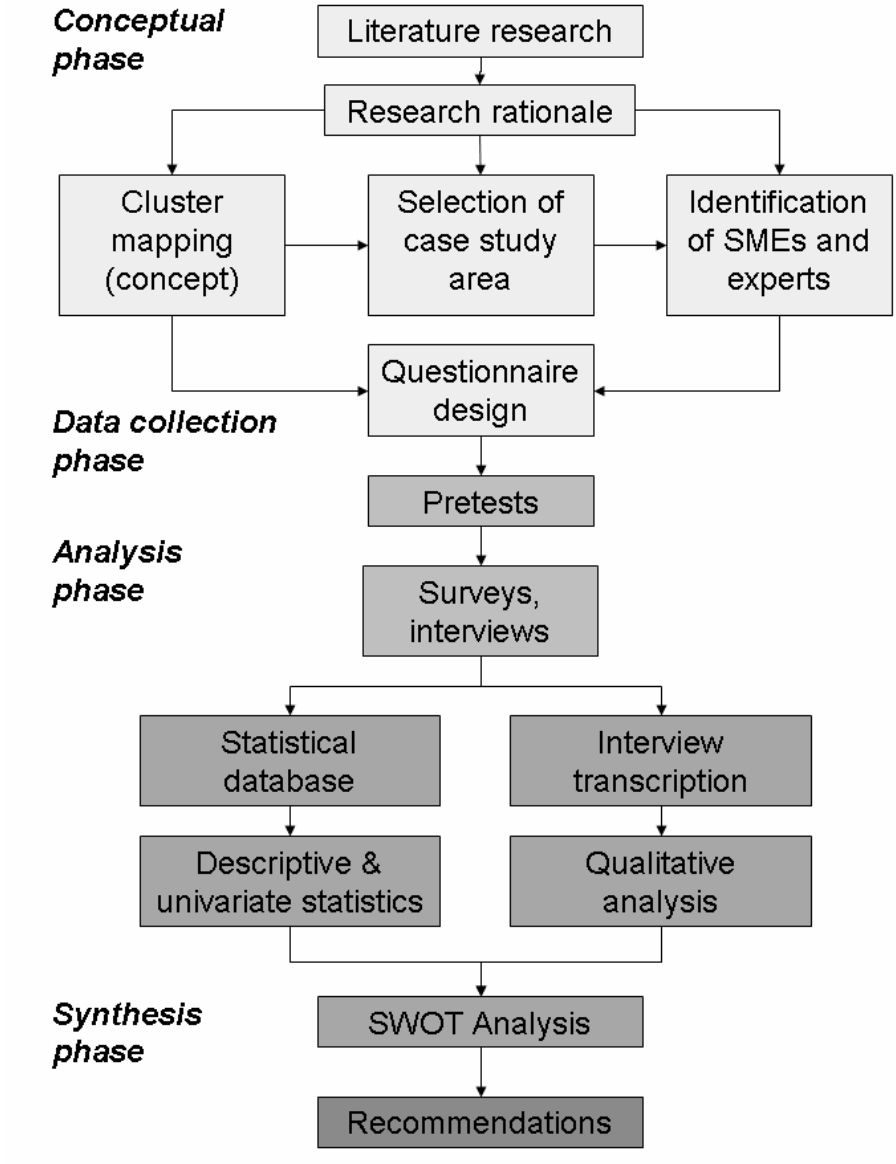
Among the most commonly used methods in general cluster research are location quotients and shift–share analyses for cluster identification and industry–based input–output models for a more specific look at a certain industry cluster (Armstrong and Taylor, 2000, Bathelt and Glückler, 2003). Both require suitable statistical data. Yet, for a large part of research, especially on smaller branch segments, the statistical classification systems are non–compliant with the cluster approach (Porter, 1998). In other research, cluster identification methods sometimes resort to segment–comprehending branches or industries for cluster identification. For follow–up research case industry growth forecasts (partly using expert opinion), case studies and SWOT analyses are used.

Due to the interdisciplinary character of this study in tourism, secondary data is used to identify the case study area. Later on primary data is obtained by surveys, including quantitative and qualitative measures (Held, 1996). Hence, this *cluster–specific approach* includes field research of quantitative and qualitative data and its combination with secondary data from national statistics, following the approaches of Braun (2005), Aylward and Glynn (2006) and Jackson and Murphy (2006).

2.2. Proceedings

Figure 3 provides an overview of the general thesis proceedings. During intensive literature research, concept shortcomings for the forest and wood–based industries cluster were identified and the research rationale was built. Consequently in a conceptual outline the forest–based tourism cluster was mapped, methods for the identification of forest–based tourism and recreation clusters were chosen. The case study area was selected using secondary data.

Figure 3. Overview of the proceedings of the forest-based tourism and recreation cluster research project.



Within the case study area, SMEs in tourism (gastronomy, accommodation and additional forest–based tourism and recreation suppliers), tourism experts and actors were identified. A three layered questionnaire survey was generated in order to obtain primary data directly from [1] tourism operators, [2] visitors and [3] local tourism experts and stakeholders. After pre–tests the survey was carried out. A more detailed method description of the questionnaires is given in chapter 2.5. The obtained data was analyzed quantitatively by using SPSS and univariate statistics and qualitatively by transcribing the expert interviews and analyzing them according to their content. Furthermore a basic social network analysis (SNA) was applied to the expert group. Finally a SWOT matrix was used to point out strength, weaknesses, opportunities and threats of forest–based tourism and recreation in the case study area. Based on this, recommendations for the case study area were made.

2.3. Identification of the case study area

According to Jackson and Murphy (2006) and Bowe and Marcouiller (2006) spatial criteria influence the selection of a study within administrative boundaries. In Bowe's and Marcouiller's study in North America Counties were used with a forest coverage of 50% as criteria for "forested Counties" and a locally existing tourism infrastructure based on total turnover in "five types of retail and service sub–sectors". For secondary data they relied on IMPLAN. Applying the location quotient (LQ) they identified forestry–timber dependencies. For this study Bowe's and Marcouiller's (2006) criteria were adopted. Only four Counties in NRW fulfill the above mentioned criteria. They are all located in the greater area Sauerland region. Namely they are Hochsauerlandkreis (forest coverage of 56%), Märkischer Kreis (forest coverage of 50%), Kreis Olpe (forest coverage of 59%) and Kreis Siegen–Wittgenstein (forest coverage of 65 %). All other Counties in NRW hold less than 50% forest coverage.

For identifying forest–based tourism and recreation clusters, the LQ was used: Local concentrations of industries, industry branches or sectors are calculated by using the LQ (Bathelt and Glückler, 2003). It shows a local industry's share in a certain unit compared to the share in the same industry in a reference area (e.g. local employment in the car manufacturing industry compared to the regional or federal employment in the car manufacturing industry). If the LQ equals more or less 1, the observed local share of a certain industry's unit does not differ from the regional or national share of the very same unit. The more the LQ of the observed local industry's unit exceeds the value 1, the higher is the local share compared to

the national one. Hence a local concentration of this industry in the local unit was discovered.

For analyzing possible concentrations in the tourism sector, it is difficult to rely on total turnover or employment data in the designated industries only: In the tourism industry – in comparison to the supply–based and export–driven forest and wood–based industries sector – the services comprised in one economic branch classification (e.g. gastronomy) are demanded by tourists and by non–tourists. Thus the overall turn–over should not be the only indicator because it does not refer to tourism only. Furthermore, the employment data in tourism destinations is often subjected to seasonal fluxes (e.g. summer holiday season with additional temporal employment in comparison to low– or off–season employment). In order to clearly identify forest–based tourism clusters, two relational indicators were chosen:

[1] Guest arrivals to the area in relation to the local population density of the area.

[2] The total turnover liable to tax on sales of the hotel and restaurant industry in relation to the total turnover in all tertiary industries.

For the second calculation the LQ of the class H in the German Classification of Economic Activities [*Klassifikation der Wirtschaftszweige*] was related to the total tertiary sector comprising classes G–O excluding H. The LQ was calculated first with the reference area of the administrative district Arnsberg (forest coverage of 42%), and second referring to the whole federal state of North Rhine–Westphalia (forest coverage of 26%).

$$LQ_{gi} = \frac{x_{gi} / \sum_i x_{gi}}{X_i / \sum_i X_i}$$

LQ = location quotient

g = index of industry branch

i = index of local unit

x = observed value for local activity ((1) tourist arrivals; (2) total turnover in gastronomy)

X = observed value of reference ((1) total local population; (2) total turnover in tertiary sector)

Regarding the LQ of 5.14 for tourist arrivals and total population in the area of the Hochsauerlandkreis in relation to the administrative district of Arnsberg [*Regierungsbezirk Arnsberg*] it becomes evident in Table 2, that the HSK exceeds the RBA clearly. It also exceeds all other Counties in the Sauerland region. Its LQ of 17.45 in relation to the reference area of the federal state NRW (albeit with a forest-cover of only 25%) marks its tourism character through guest arrivals even more.

Table 2. Location quotient (LQ) according to tourist arrivals to the area and total local population in the area, Federal Agency for Statistics [*Statistisches Bundesamt*], 2008.

Spatial area	Tourist arrivals to the area	Total population of the area	LQ for reference area RBA	LQ for reference area NRW
North Rhine-Westphalia (NRW)	13,491,274	17,944,064	0.30	1.00
Administrative district Arnsberg (RBA)	9,452,562	3,699,748	1.00	3.40
Hochsauerlandkreis	3,567,290	271,891	5.14	17.45
Märkischer Kreis	449,884	437,785	0.40	1.37
Kreis Olpe	585,474	140,481	1.63	5.54
Kreis Siegen-Wittgenstein	980,471	286,299	1.34	4.55

The LQ of 2.09 calculated for the turnover liable to tax on sales [*steuerbarer Umsatz*] in the hotel and restaurant industry for the HSK compared to the RBA clearly points out the importance of the tourism sector for this County. At the same time the neighboring Counties with similar forest coverage do not show these clear tendencies at all. In reference with the federal state NRW the LQ was calculated with 3.19 (Table 3).

With this foundation it becomes evident that the HSK is not only a forest-based tourism and recreation cluster. It also constitutes a promising area for a case study approach to further examine and analyze this cluster. Although clusters exceed administrative borders in size and scale (Porter, 2000, Asheim *et al.*, 2006), the limitation to the Hochsauerlandkreis was decided for two reasons: [1] secondary data was available at the County level and [2] an analysis of the whole region or landscape unit would have been beyond the scope of the study regarding both time and financial sources.

Table 3. Location quotient (LQ) according to turnover liable to tax on sales in the hotel and restaurant industry (class H) in relation to the turnover liable to tax on sales in the whole tertiary (service) sector (German Classification of Economic Activities classes G-O excluding H), Federal agency for statistics [*Statistisches Bundesamt*], 2008.

Spatial area	Turnover liable to tax on sales in the tertiary sector in thousand Euros	Turnover liable to tax on sales in the hotel and restaurant industry	LQ for reference area RBA	LQ for reference area NRW
North Rhine-Westphalia	740,256,837	11,586,893	0.65	1.00
Administrative district Arnsberg	82,439,909	1,970,726	1.00	1.53
Hochsauerlandkreis	4,247,977	211,891	2.09	3.19
Märkischer Kreis	8,023,521	183,127	0.95	1.46
Kreis Olpe	2,239,935	81,302	1.52	2.32
Kreis Siegen-Wittgenstein	6,034,004	128,528	0.89	1.36

2.4. Definition of forest-based tourism and derived businesses

While an industry is defined by its common production processes for a group of similar enterprises and businesses, the tourism industry is defined by the activity of the consumers (Hall and Michael, 2007). "*Activity-based segmentation is predicated on the assumption that different tourism products appeal to different types of tourists.*" (McKercher *et al.*, 2002). In order to analyze a particular branch segment completely, it is necessary to clearly define which activities characterize that particular process and to what extend the process remains part of the actual tourism product. Focusing on the thematic segment of forest-based tourism and recreation, the presented approach is hence activity-based. It is assumed that the top interest for the visitor to travel to the destination / to pass their leisure time and pursue recreation in the designated area is strongly connected with the offered activities and the natural amenity of the forest. The herewith presented approach defines leisure according to Dumazedier (1974) *in* Veil (1992) as:

- *"An activity, apart from the obligations of work, fail, and society – to which the individual turns at will, for either relaxation, diversion, or broadening his knowledge and his spontaneous social participation, the free exercise of his creative capacity."*

Recreation is defined according to Fairchield (1970) *in* Veil (1992):

- *"Any activity pursued during leisure, either individual or collective, that is free […] having its own immediate appeal, not impelled by a delayed reward beyond itself, or by any immediate necessity."*

The definition for forest–based tourism is adapted from Murthy and Cabbage (2004), Kajala *et al.* (2004), Buultjes *et al.* (2003) as well as Cordell and Tarrant (2002):

- *"Forest–based tourism is tourism that involves recreation in natural forest surroundings, combining recreational use of forests and tourism. Forest–based tourism is defined as including portions of all direct nature–based services activities related to tourism. In forest–based tourism, the forest is a significant attraction or environment for activities."*

The forest–based activities were adapted from Ammer and Pröbstl (1991) and created according to (Dissart, 2005) where natural amenities are closely linked to recreation activities in their surroundings (Table 4). The connection between the presence of forest resources at a certain forest coverage percentage and its visitation frequency was established in past studies (Marcouiller, 1998, Marcouiller *et al.*, 2004, Bowe and Marcouiller, 2006).

Table 4. Natural amenities and their influence on activity and activity supporting products and services according to Dissart (2005) / modified

Natural amenity	Recreational activity	Specialized products / services derived from the recreational activity
Relief	Mountain biking Downhill skiing Snowboarding Cross country skiing Paragliding	Mountain bike trails Ski slopes / ski trails Cable cars Runways Climbing routes

	Climbing Nordic-skating Bob-sledding	Skating-tracks Bob runs
Forests	Hiking / going for a walk Animal observation Photography Horseback riding Gathering of fruits / mushrooms Camping	Hiking trails / hiking infrastructure (signage, benches, weather huts Look-outs) Horseback riding trails Picnic-sites Campsites / Campgrounds

2.5. Questionnaire surveys

Research methods for leisure and tourism are closely derived from methods in social sciences, including interviews and surveys (Veil, 2006). A major part of today's tourism research is based on questionnaire surveys in order to obtain primary data as effective and precise as possible (*ibid.*). Especially in tourism marketing and destination management with the application of tools such as benchmarking and *positioning*, it is crucial to address tourism operators and visitor directly (Yangzhou and Ritchie, 1993, Baloglu and McCleary, 1999, Kozak and Rimmington, 1999, Kozak, 2002).

According to recently accomplished tourism cluster case studies by Novelli *et al.* (2006) and Jackson and Murphy (2006) and an orientation towards proved methodological frameworks by Harrer (2002) and Rütter (1996), the primary data was obtained by a triple–layered questionnaire survey method. The first layer consists of a tourism business survey in the case study County to examine the offer of forest–based tourism products and services (supply side). The second layer contains a visitor survey covering visitor demand and analyzing the target group (demand side). An additional third layer was added by expert consultations in various tourism branch–related institutions and other stakeholder institutions.

The method of using a triple–layered questionnaire survey of businesses, visitors and experts, paired with a recording of secondary data is derived from local cluster studies in Australia (Braun *et al.*, 2005, Aylward and Glynn, 2006, Jackson and Murphy, 2006, Scott *et al.*, 2008), Great Britain (Asheim *et al.*, 2006, Novelli *et al.*, 2006) and Canada (Brown and Geddes, 2007) also addressing tourism segments, such as wine tourism, folk–music and culture tourism, and health tourism. A detailed description of the proceedings on the questionnaire surveys follows in the next chapters.

The four elements in Porters diamond, underpinning *competitive advantage*, are studied in detail. First, the regional endowment with the various factor conditions is examined. Second, the communication patterns are analyzed to determine the receptiveness of local cluster members for cluster strategy (context for firm strategy and rivalry). Additionally, an appraisal of the tourism operators' attitude towards the forest in the area and its importance for their businesses is accomplished. With regard to related and supporting industries, products and services are surveyed to identify supplementary products, niches and opportunities for *complementarities*. Finally, demand conditions are analyzed by characterizing the forest tourist and recreation seeker.

2.5.1. Tourism businesses survey

General

Since one scope of the study focuses attention on factor conditions and competitiveness of businesses (SMEs) in the forest–based tourism sector, it is necessary to obtain primary data on the different tourism businesses. The questionnaire survey was developed for this purpose, covering the elements *context for firm strategy and rivalry* and *factor input conditions*.

Existing data on local tourism businesses contains the number of businesses in the County and in the case of accommodation businesses the number of beds and the capacity use. While tourist information offices list address data of accommodation and gastronomy businesses in their town or community, they were unable to list businesses offering specific products and services related to forest–based tourism. In order to complete the list of tourism businesses for the forest–based tourism sector, relevant brochures at tourist information offices were screened with regard to forest–based tourism products and service offers. Furthermore, most of the tourist information offices lacked data on small private accommodation businesses with less than 9 beds. Businesses with less than 9 beds capacity are not registered by the Federal Agency for Statistics (NRW, 2007b). Because of the high importance of these smaller businesses especially for remote rural areas, *Dwif* methods were applied (Harrer and Scherr, 2002) where local accommodation lists were compared, the yellow pages were screened and an internet research was carried out.

Although detailed data on employees and turnover of the accommodation and gastronomy businesses exists at an organizational level, e.g. in the German Hotel and Gastronomy Association [*Deutscher Hotel und Gaststättenverband* (*DeHoGa)]*, this data underlies data protection regulations and could not be used for this study.

In the end a list of local accommodation and gastronomy businesses was created for the whole HSK, also including some businesses with less than 9 beds. Additionally a list with forest–based tourism and recreation related niche businesses, including outdoor equipment stores, bike–, ski– and horse rentals, and fitness trainers was created.

Questionnaire

The questionnaire for the tourism businesses (see Annex IV) consisted of closed questions in order to facilitate the completion process (Veil, 2006) and the statistical analysis in SPSS®. To increase the response rate, the survey participant was ensured absolute anonymity (Mayer, 2004, Schnell *et al.*, 2005). The only information for a spatial location of the business was the zip code.

The first part of the questionnaire was designed to acquire background information on the business concerning its organizational form, its certification status, its business objectives as well as its employees, turnover, capacities and most important; the estimated relevance or share of the turnover derived through forest–based tourism in relation with the overall turnover of the tourism business. Responses were classified to ensure that sensitive information, such as turnover, could not be used as identification factors.

The second part contained a product catalogue where businesses were asked to specify their offered products and services including supplementary products and services. Multiple answers were possible. Additionally they were asked to estimate key factors concerning their average customer.

In the third part of the survey, factor conditions for the economic action of their businesses needed to be estimated. These contained location factors such as infrastructure and nature use potential as well as political conditions and self–marketing. Moreover the importance of the cooperation with other businesses was to be determined by the different tourism businesses. To avoid a neutral result, the neutral answering class was eliminated from the uneven 5–point–Likert–scale. This is the only occasion in the questionnaire that a 4–point–Likert–scale was used.

In addition, forest values and business' opinion on the forests of the region were acquired in the fourth part of the questionnaire. Tourism businesses were also asked for their opinion on a set of statements concerning the hurricane *Kyrill*. Moreover they were asked for their opinion on the natural resource wood and whether it was used as a construction material in their facility.

Finally, tourism businesses were asked on their knowledge concerning free access rights to forests in Germany and the derived legal duty of the forest owner to

maintain public safety, which may cause additional costs for the owner. Related to this statement they were asked to give their opinion on possible scenarios to reimburse the forest owner.

Realization

One month prior to the start of the survey on the 22nd June 2007 a pre-test was carried out with ten tourism businesses of the region within a project meeting of a regional certification brand. The questionnaire was completed by the respondents in the presence of the interviewer. Questions that turned out to be vague or offered multiple interpretation possibilities were altered thereafter. Some response categories were altered according to the recommendations of the business owners and the present tourism managers of the region. The main concern of the businesses was the possible disclosure of their identity from made specifications or statements.

Out of all tourism operators every second business in the County was sampled from the list of accommodation and gastronomy businesses. Of the niche businesses list all businesses were chosen to be queried. These included equipment rentals (e.g. bike, ski, horse), climbing gardens / canopy walks (e.g. *Kräftespiel Arnsberg*) and trainer and guide services (e.g. Nordic-Walking). The survey started on the 9th July and was carried out in two waves – for summer and fall-dependent businesses and for winter-dependent businesses again – until February 28th 2008. The survey was taken by driving to each business personally, informing the owner of the purpose of the study and asking her / him to participate. If they were willing to participate, the questionnaire was either completed immediately together with the owner or the questionnaire and a postage-paid reply envelope were given to the owner. The owner was then asked to complete the questionnaire by the end of the acquisition closure. The survey process in the field was supported by a graduate assistant who helped with the distribution of the questionnaires and maintained the list with the sampled businesses.

It occurred that businesses had closed down or had had an ownership change. In the first case, they were eliminated from the list. In the second case the new owner was asked. Hence in some towns and communities less than 50% of all businesses were surveyed. Additionally, the return rate was checked two months prior to the data acquisition closure. In towns and communities with unsatisfying return rates (lower than 25%) a second data acquisition was pursued with businesses that had not been surveyed in the first place. Thus some towns and communities were completely surveyed (e. g. Marsberg). However, partly this means did not lead

to a significant increase of the return rate. After a low return rate was noticed for the winter–dependent businesses a follow–up phone survey was initiated.

344 questionnaires were distributed. 162 questionnaires were returned. 158 questionnaires were usable if at least the first page, containing the most important information for this study, was completed. This leads to minor variations of n in the course of the interpretation. A survey return rate of 45.9% could be reached. In the scientific literature, postal questionnaire surveys are often reported with a return rate of 25–30% (Veil, 2006). Considering this fact, the 45.9% are exceeding the average return rate in leisure and tourism studies. An overall coverage of 25.6% is acceptable for questionnaire surveys (Schnell *et al.*, 2005) (Table 5).

Table 5. Distribution and return rate of the tourism businesses questionnaires according to towns and communities in the Hochsauerland County. Data acquisition in the period between July 2007 and February 2008

Communities and towns	Zip code	Busi-nesses	Distri-buted question-naires	Returned question-naires	Total rate [%]	Return rate [%]
Arnsberg	59755-59821	19	7	7	36,8	100,0
Marsberg	34431	16	15	3	18,8	20,0
Schmallenberg	57392	151	85	44	29,1	51,8
Sundern	59846	33	19	9	27,3	47,4
Meschede	59872	31	23	7	22,6	30,4
Eslohe	59889	34	30	13	38,2	43,3
Bestwig	59909	20	14	7	35,0	50,0
Brilon	59929	45	35	9	20,0	25,7
Olsberg	59939	30	24	14	46,7	58,3
Winterberg	59959	164	60	34	20,7	56,7
Medebach	59964	55	22	8	14,5	36,4
Hallenberg	59969	20	10	3	15,0	30,0
Total	-	618	344	158	25,6	45,9

2.5.2. Visitor survey

General

Visitor surveys have been proved and tested as a suitable tool to analyze the general visitor demand, visitor opinion, attitude and interest in regional tourism destinations (Veil, 2006). To reach the forest–based tourist and recreation seeker, interview locations were chosen in cooperation with the regional tourism managers.

The questionnaire was developed for the purpose of covering the element *demand condition.*

Questionnaire

To facilitate completion, the visitor questionnaire (see Annex V) consisted of closed questions only (Veil, 2006), except for the demographic part.

The first part of the questionnaire includes general information on travel and accommodation in the region, such as travel companions, departure, arrival, stay in days, accommodation, travel decision and first information on vacation in the region.

Besides the question on landscape characteristic, the second part of the questionnaire surveys visitors' interests and activities according to their three top preferences. This intends to ascertain a main interest and activity and additional or complementary interests and activities of the visitors. According to their answer on these questions, visitors are categorized into forest–based visitors and other visitors.

The forest–based tourist is filtered according to the activities s/he pursued (Dissart, 2005) and to his / her attitude and interest. If the following criteria are fulfilled, the survey participant is classified forest–tourist and continued to be examined:

- "forests" or "hills and valleys" have to be characteristics of the landscape
- primary interests need to contain "recreation by activity", "recreation by sport", "photography and nature observation" or "retreat from everyday life"
- primary activities need to contain "hiking", "going for a walk", "Nordic–walking", "cycling", "Nordic skating", "downhill mountain biking", "skiing", "horseback riding", "nature stay" or "recreation by change of place"

In the third part, visitors' expenditures on tourism specific and tourism–related products and services are surveyed. In order to facilitate the completion and accelerate the respond process, classes are built to make it possible to check off answers.

In the fourth part forest values of the visitors and attitudes towards the forest are collected. Especially the question on the legal duty to maintain safety on private forest property intends to give new insights into the visitors' perspective. Additionally questions on the hurricane Kyrill are asked due to prevailing reasons.

The fifth part consists of questions on the demographic background of the survey participant for reasons of comparison with other implemented studies in the same region.

Realization

On the 22nd of June, one month prior to the survey start, a pre–test with 20 copies was carried out in the case study region. Random visitors in a tourist information office and in a restaurant were given the questionnaire to complete it in the presence of the survey conductor and a graduate assistant. Based on the experience from the pre–test, the explanation of the study purpose in the accompanying letter needed major revision and response categories needed to be added. Furthermore, a time–frame, for the response of the survey, could be established as information for future participants (Schnell *et al.*, 2005).

Questionnaires were on free display in different tourism businesses and tourist information offices that were chosen randomly from a set of cooperative businesses in the time period between July 2007 and February 2008. Throughout the whole time period questionnaires were displayed in tourist information offices (e.g. Arnsberg, Schmallenberg). During the main hiking and mountain biking season, certified businesses of *Bike–Arena Sauerland*, *Sauerländer Wandergasthöfe* and *Qualitätsbetriebe Rothaarsteig* offered to provide customers with the questionnaires while checking in. Additionally various personal questionnaire distributions were pursued during one national holiday and two weekends in summer and fall. In the winter, the questionnaires were on free display in the tourist information of Winterberg from December 2007 to February 2008. Additionally, two personal questionnaire distributions were pursued on one national holiday and during winter break. While hikers in the summer were mostly unwilling to join the survey, skiers tended to agree on survey participation if they were seated inside a restaurant close to their ski track. While personal surveys proved more successful in the winter, the highest return rate from questionnaires on display could be observed in tourism information offices, namely Schmallenberg. All cooperating institutions received a postage paid A3 reply envelope to collect the completed questionnaires and send them to the research institution. Partly the questionnaires were also recollected at the cooperation institutions.

During the questionnaire distribution no differences were made between day visitors and overnight guests or recreation seekers living in the area (Murphy, 1986, McKercher, 1996). All people pursuing leisure or recreation in the forest were offered the same questionnaire.

In order to create an incentive to participate in the survey, a lottery with various prizes was indicated on the front letter of the questionnaire. The first prize consisted of a weekend for two people in a certified accommodation business of the region, the second prize was a hiking backpack and the third to fifth prize were annual tickets for the "Wildwald Vosswinkel", a regional forest recreation park.

Out of about 1.000 distributed questionnaires 186 were filtered to be utilizable for the study, resulting in an overall return rate of 18.6%. Considering an average return rate of 25–30% (Veil, 2006), the 18,6% are rather low. At least three other additional visitor surveys were carried out in the same period.

2.5.3. Expert interviews

General

The semi–structured questionnaire for the expert interviews was developed for the purpose of covering a part of the element *related and supporting industries.*

Communication and knowledge management on the organizational as well as the operational level were proved to be major influential factors concerning competitiveness and innovation (Pan and Scarbrough, 1999, Carneiro, 2000). The nature of knowledge and its communication in local and regional clusters is crucial for a high productivity and a higher rate of innovation (Bieger and Weinert, 2006). Bieger and Weinert (2006) distinguish between two kinds of knowledge in regional clusters: [1] *"explicit knowledge, which is transferable in the form of checklists and instructions"* and [2] *"tacit knowledge, meaning covert cognition […] acquired through deeper argumentation and understanding."* To analyze the role of knowledge in forest–based tourism and recreation destinations, expert interviews with forest resource–related institutions and tourism–specific facilities were conducted, which also allow for a certain amount of forecasting regarding recommendations for furthering this sector (Clayton, 1997, Rowe and Wright, 1999). The questionnaire consists of open and closed questions. One part of the questions is identical to the questions given to the tourism operators. Due to "expert knowledge" different results are expected (Collins and Evans, 2002). Open questions were used to gain supplemental qualitative information (Scholl, 2003).

According to Chi (2006) and Cooke (1991) the following criteria were used to define "expert" and "expert knowledge": In the study context an expert differs from a novice by the following criteria:

- experts posses detailed in depth knowledge of their own field
- experts analyse problems predominantly qualitatively with more time than novices
- experts decision making processes are often quicker and more accurate in the result
- experts posses more accurate self–monitoring skills

"*Expert knowledge is owned by the person who is continuously reaching excellent effect in a certain number of activities in an area; […] that effect is not reached by the person not having expert knowledge*" (Chi *et al.*, 1988). However being endued with numerous years of experience in a certain area does not necessarily lead to expertise (Ericsson *et al.*, 2006). Additional criteria for expert knowledge are the capability of retrieving long–term information on a subject and connecting it to present problems. Expertise can also be understood as a form of power by possessing a certain social status. The need for an interdisciplinary approach by consulting experts from various thematic backgrounds is seen because of the interdisciplinary conceptual formulation of the research, as well as the fact, that expert knowledge is often restricted to a specific domain and a narrow context. In order to exceed contextual cues and to suit the interdisciplinary approach, the chosen experts cover more than the regular tourism business context (Chi, 2006).

Questionnaire

For the expert interviews, a semi–structured questionnaire was developed as a guiding tool in the in–depth interviews. The first part of the questionnaire contained information on the institution and possible existing secondary data relevant for the research project. Additionally the expert was asked to rank his "expert knowledge" on the criteria: tourism, nature sports, gastronomy and accommodation businesses, forestry, regional management, nature conservation and other forest use forms (e.g. hunting) on a 10 point scale, where 10 referred to "expert knowledge". Furthermore, the experts were asked to estimate certain key factors, such as share or relevance of forest–based tourism for all tourism businesses in the region. They were also asked to roughly sketch the average visitor.

The second part contained an estimation of the cooperation level related to the implementation of new projects and daily management with other branches and branch–related institutions. The expert was asked to identify institutions and related persons playing a key role for forest–based tourism with which she / he

maintains a regular and close contact. The expert was able to name as many institutions as possible. Answers were used – besides Porters definition – to map out the forest–based tourism and recreation cluster in the following. In addition to the prior question the third question in this block tends to analyze the way of communication and its importance to the expert.

The third part included the experts' estimation of the same set of factor conditions the tourism businesses were asked. Additionally they were asked to comment on their estimates. Further open questions addressed developing trends in forest–based tourism, problems and conflicts and a detailed SWOT analysis from the experts' point of view.

Finally the experts were asked for development potential in forest–based tourism and recreation and a recommended course of action considering the named problems and conflicts. Since the hurricane *Kyrill* had damaged a large part of the forest infrastructure including hiking and biking trails, the experts were also asked for a statement on the communication between the concerned institutions during the first few days after the incident (Annex VI).

Realization

Before the interview started, experts were informed about the intention of the research project and the definitions and terminology that formed the basis of the following conversation. Important terms such as forest–based tourism were defined to ensure a clear communication. The interviews took between one and one and a half hour per expert. The interviews were partly taped by mp3–recorder, depending on the cooperation of the expert, and additional notes were taken. During the first three interviews a research assistant accompanied the process observing communication and interpretation. If the expert rephrased a question for better understanding, or if the research assistant observed that questions were not clear enough, questions were rephrased. The questionnaire was then changed accordingly.

2.5.4. List of experts and backgrounds

Table 6 provides an overview of the interviewed institutions in the HSK. The experts were chosen according to their (mostly) leading position in companies and institutions that are either based in tourism or related to the local tourism industry according to Porter's cluster definition. Additionally their academic background and their local knowledge of the HSK were selection criteria. While it is crucial to interview the tourism managers of the different towns and communities on the local

characteristics and communication efforts within the communities, it was also necessary to obtain information on the same issues by a supervising institution, which is the tourism marketing association: The shift of perspective enables different answers. In the most cases the chosen tourism experts had held their professional position for several years and thus had gathered experience and knowledge in their position. Concerning institutions in forestry or forest–related fields it was most important to consult operative institutions, such as the forestry administration and a private forest owner offering tourism products and services. The forestry administration manages communal, state and most of the small private forests and serves as principal authority and mediator in resource use issues. Prior to the interviews, an administrative reorganization of the forest authorities on the federal state level had resulted in a change of the individual forest offices. Three former forest offices of Schmallenberg, Meschede and the municipal area of Sundern, which had executed administrative duties in the HSK, were assembled to one forest office Forstamt Oberes Sauerland. Although the former responsible directors of these forest offices were asked to take part in the expert interviews, they proposed *Hans von der Golz*, as officiating director to answer the questions.

The exact list of experts along with interview dates is attached in Annex I. While it was intended to interview all 15 tourism offices of the different towns and communities on the operational scale, two towns were managed by one person, three towns did not provide an interview and one town lacked an expert due to personnel issues

Although the experts were assured anonymity, some experts allowed the use of quotes.

Table 6. Number of experts in tourism and branch-related institutions in the Hochsauerlandkreis [n=18]

Number	Category
1	Tourism management administrative scale
9	Tourism management operational scale
1	Forestry
4	Providers of forest-based tourism products or services (e.g.: forest owners, Rothaarsteig e.V.)
3	Other interest groups (e.g.: nature conservation, hunting)

2.6. Data processing and analysis in SPSS

The data was entered in Microsoft Excel® by a research assistant. It was then converted, processed and analyzed using the software SPSS® (SPSS–Inc., 2005). In the course of descriptive, explanatory and evaluative measures, standard calculation methods according to Bühl (2006), Schnell *et al.* (2005) and Veil (2006) were used. The majority of the questions in the questionnaires are standardized with regard to a quantitative analysis. Mainly frequency distributions and standard means including standard deviations are calculated and used for the interpretation (Bühl, 2006).

Inferential statistics were performed by applying a one–way Analysis of Variance or ANOVA to the data sets of turnover, business certification and share of income through forest–based tourism and recreation. A one–way ANOVA is performed to determine similarities between mean–values of different groups in chosen variables. If one variable has more than two groups, a one–way ANOVA can be applied (Bühl, 2006). The procedure could be carried out although it lacked a normal distribution because a positive Kruskal–Wallis–test was applied prior to the ANOVA (Bühl, 2006).

2.7. Social network analysis

Introduction

Social network analysis (SNA) is considered one of the most promising areas of research in sociology today (Jansen, 2006, Wasserman and Faust, 2009). SNA allows for the description of agglomerated and internally structured units and their emergent systematic features (Jansen, 2006). SNA has been applied in research fields such as psychology, politics and economy. In geography and especially in the regional sciences SNA has not been considered seriously until the mid 1990s (Vyborny and Maier, 2008). However, there are early regional research studies that contain:

[1] SNA–methods (i.e. relation matrices, network visualization, the calculation of *indegree*s and *outdegree*s, network density, connectivity, centrality degree and block models)

[2] SNA–concepts (without using explicit methods and more on a descriptive basis, e.g. describing *weak* and *strong ties*)

[3] implicit SNA–concepts without knowing SNA–literature and terms (Vyborny, 2005, Vyborny and Maier, 2008)

Today network analysis in regional sciences research is used to determine relations between actors (on an individual scale), and between existing groups (e.g. in projects, businesses or branches) but also between flows of masses, units and goods. Network analysis has mainly been applied in the field of economic geography as a tool for analyzing transaction costs of enterprises and branch units i.e. for new industrial spaces (Bathelt and Glückler, 2000), for analyzing commuter flows (Vyborny and Maier, 2008), in cluster research (Scott *et al.*, 2008, Steiner and Ploder, 2008, Carrington, 2009, Erkus–Öztürk, 2009), in tourism research (Tinsley and Lynch, 2001, Dredge, 2006, Scott *et al.*, 2008, da Fontoura Costa and Baggio, 2009, Lemmetyinen and Go, 2009) as well as in research concerning learning regions, innovative / creative milieus or regional networks (Butzin, 2000, Pommeranz, 2000). Initially in regional sciences two types of social networks were defined as research objects: [1] *local networks* on a territorial level, which are considered historically grown and rather unintentional in origin, and [2] *intentional networks* that were created with a certain objective or function (e.g. projects for developing a tourism brand in a certain area). In a quite similar approach Mytelka and Farinelli (2000) and Aylward and Glynn (2005) tried to distinguish between two cluster models. They grouped clusters in [1] spontaneous (or informal) and [2] constructed clusters (Mytelka and Farinelli, 2000, Aylward and Glynn, 2005).

Although efforts have been made by many researchers to clearly distinguish these two types by definition, more recent research papers tend to disapprove of this separation because of contextual ambiguity: *Local networks* can be intentional and *intentional networks* can be historically grown as well (Butzin, 2000).

Networks in tourism

In tourism networks *local* and *intentional network* types also merge since tourism may be based on historically grown features and ownership patterns of destinations (e.g. natural resources and infrastructure). Additionally the destination–comprehending tourism management is based on clear objectives. Most network studies in tourism consider three spatial levels for SNA: individual networks with individual or group perspectives, community networks and networks at the destination level (Tinsley and Lynch, 2001).

In the general context of network analysis, networks are defined as "*a specific type of relation linking a set of persons, objects or events*" (Knoke and Kuklinski, 1983 in Tinsley and Lynch, 2001). Three types of relationships can be identified in social networks. First, structural networks, where "the behavior of a person is interpreted in terms of action appropriate to the position they occupy" (ibid.), second,

categorical networks, where unstructured situations are interpreted in terms of social stereotypes such as class, race, ethnicity. And third, personal networks, where structured or unstructured situations are interpreted in terms of personal links that individuals have with a set of people and, in turn, their links among themselves and with others" (Mitchell, 1973 in Tinsley and Lynch, 2001). For this study the third network interpretation is used to identify links between individuals.

Tinsley and Lynch (2001) used Mitchell's three types of relationships in networks and adapted them for their research project on small tourism businesses and destinations. According to their study, one can differentiate between three types of networks. First, exchange networks, where the focus is on commercial transactions between tourism SMEs and other companies or organizations. Second, they introduce communication networks with "*non–trading links which inform its business activities*", also including the "*sharing of information between firms*" (Tinsley and Lynch, 2001) and hence the exchange of explicit and tacit knowledge. Third, there are social (normative) networks with ties of family and friends of the SME business owner (ibid.). In most studies the first type of networks is examined and the different branches of the tourism product (e.g. accommodation, food and primary sector) are investigated to gain information on communication and cooperation patterns, connectivity and cohesion (Hall, 2003, Lynch and Morrison, 2007). However, this study will focus attention on the second type of network, since the transfer of explicit and tacit knowledge is seen as key–criterion in a cluster. Additionally, communication can be used as an indicator for effectiveness to examine the cohesiveness of destination networks (ibid.).

In cluster research of tourism clusters SNA is used in destinations, which are then defined as "*collaborating networks of complementary organizations*" (Gunn 1997 in Scott *et al.* 2008) or as "*loosely articulated groups of independent suppliers linked together to deliver the overall product*" (Scott *et al.*, 2008). Within these clusters communication and cooperation patterns, connectivity and cohesion are examined (Scott *et al.*, 2008). Parameters such as *degrees*, *ties* and *local concentrations* are indicators for cohesion in SNA. Cohesion measures specify at which extend all sampled units interact with each other. Structures can be discovered by identifying areas in a graph (socio–graph), where *centralization* or *density* differs from other areas (ibid.). Such graph visualizations display actors and their relation to each other.

Data collection background

Data collection in social network analysis differs generally from data collection in social research because in addition to individual (non–relational) data, relational data is obtained (Wasserman and Faust, 2009). This relational data may be binary or structural (Jansen, 2006). Binary data includes the information on the existence of a relation (1 = yes or 0 = no). Three types of relations for binary data exist:

Ni Nj (Dij = (0,0) Null Dyad
Ni ––––––→ Nj (Dij = (1,0) Asymmetric Dyad
Ni ←–––––– Nj (Dij = (0,1) Asymmetric Dyad
Ni ←–––––→ Nj (Dij = (1,1) Symmetric Dyad

Structural data contains information about the quality of the relation (ibid.). For structural data one distinguishes between relational, comparative and contextual features. Relational features put one actor in relation with another actor (e.g. pupils within a school class). Comparative features are used to find out relations between an individual actor and a group (e.g. income compared to average income). Contextual features are features, where an actor is described by a relative feature applying to every actor of a certain group (e.g. citizen of a country with a high crime rate) (Jansen, 2006, Wasserman and Faust, 2009).

Prior to the data acquisition in the process of network determination the following frequent problems occur: First, it is difficult to exactly determine when a network can be considered complete according to specifically set boundaries, implying that all actors were taken into account. This is a far smaller problem if the network is constituted of a set group (e.g. a school class / members of an organization). The second problem concerns the sampling of actors in the group, leading to the question: who is supposed to be included in the group or classified as suitable according to certain criteria (Wasserman and Faust, 2009). This implies specific criteria on who belongs to the actor set and who does not match the developed criteria. Criteria for actor network classification can be constituted by geographical boundaries, membership in groups / organizations, participation in events, actor attributes (e.g. age, education, social status) and relations between actors (e.g. marriage, work relation) (Jansen, 2006).

In tourism cluster research social network boundaries are mostly set by focusing on a geographical area (Tallmann and Jenkins, 2002, Jackson and Murphy, 2006).

Further methodological problems concern the "*calibration of exchange and the social mechanisms of governance*" (Scott *et al.*, 2008) and by displaying and analyzing the architecture of the network (ibid.) However, since this study does not focus on relation qualities, these two problems can be neglected.

Various techniques exist to collecting relational and structural qualitative and quantitative data in network analysis: These techniques include: questionnaires, interviews, observations, archival records, experiments, other techniques (including ego–centered, small world, diaries) (ibid.). Questionnaires are most commonly used (ibid.) and were also used in this study approach. According to Wassermann & Faust (2009) "*questionnaires are most useful when the actors are people, and the relation(s) that are being studied are ones that the respondent can report on*". In SNA "*qualitative studies ultimately aim to describe and explain a pattern of relationships which can be done only with a set of conceptually specified analytic categories*" (Miles 1994 in Tinsley & Lynch, 2001). Both inductive and deductive procedures are allowed (ibid.).

If network data needs to be obtained according to certain objectives the appropriate method for the questionnaire needs to be chosen first. In SNA this can include actor lists, as well as free choice, fixed choice or complex rating approaches (Jansen, 2006). In a free choice approach the actor is able to name as many relations as possible. In a fixed choice approach, the actor is forced to pick his top actors (e.g. n=3 or n=5) actors. In the case of a fixed choice approach additional relational data is obtained by the rank of the actor relation. In a complex rating approach, the actor is able to pick a certain quality concerning this relation mostly based on an evaluation scale (e.g. "very important contact" vs. "unimportant contact"). Relations can also be further described by asking for the "kind of relation" (e.g. telephone contact, mail, private social contact) (Jansen, 2006).

Binary relational data can be further examined by calculation, e.g. *network density* as and *in and outdegree*. The calculation of *in* and *outdegrees* of the network relations allows for conclusions on the structural position of an actor in the network. *Indegrees* are calculated in columns (where j=1) of socio–matrices where one actor is chosen by other actors:

$$id_j = \sum_{i=1}^{N} x_{ij} = x_j$$

Outdegrees are calculated line wise (where i=1), referring to the choice of the actor towards all other actors:

$$od_i = \sum_{j=1}^{N} x_{ij} = x_i$$

Network density describes how related all actors of the chosen group are. It is calculated:

$$\Delta = \frac{\Sigma x_{ji}}{\alpha n(n-1)/2}$$

n = number of nodes

x_{ij} = relationship between i and j

The calculated network density always has a value between 0 and 1. If the network density is close to 0, almost no relations exist between the actors. If the network density equals 1, all possible relational ties exist.

In this research project the *in and outdegree* as well as the *density* of the network is calculated and depicted in SocNet V (Kalamaras, 2010).

In the present study 18 experts (actors) were chosen with regard to their working area, which is limited spatially by administrative (geographical) boundary of the Hochsauerland County. In order to belong to the expert group their business background and position in the nature–based tourism cluster of the case study area were crucial (see chapter experts 2.5.3). In summary, the limiting frame is the case study region and the context–related affiliation to the tourism industry. Nonetheless it cannot be ruled out that one or more experts may have been overlooked.

In the present study a semi–structured questionnaire was used and a in depth–interview was carried out with each of the experts chosen, to discover communication and cooperation relations (Tinsley and Lynch, 2001). In the interview the experts (actors) were asked to name a person including their position in a firm or facility, with whom the actor maintained "*intensive contact (e.g. due to cooperation in a certain area) while playing a key roll in the regional forest–based tourism cluster*". The survey method is based on an ego–centered approach with alter connections (Breiger, 2004), where the actor is asked on his or her personal important intensive contacts, although he belongs to a fix determined group. The herein named alteri were sometimes part of this determined group, sometimes they

were players in the same or related branch but situated outside of the geographical boundary of the Hochsauerland County. A free choice approach was chosen to enable the actor to name as many relations as possible (Jansen, 2006). However, it can not be ruled out that all truly important contacts were mentioned. Still, for the obtained group of actors it is possible to analyze relations by calculating *in and outdegree* as well as the *density* of the network. Additionally, a socio–graph displaying the relations among the actors will help to visualize the clusters.

Additional questions on the quality of the contact with other actors (i.e. by e–mail or telephone, personal or business contact) were asked. However, the herein obtained data can not be analyzed using the network approach because the answers were kept general, which means that they do not direct to specific actors and are thus non–relational on an individual base.

2.8. SWOT analysis and operationalization

The strengths, weaknesses, opportunities and threats analysis (SWOT) is a general managerial tool used for strategy formation (Belton and Stewart, 2001). It contains a reflection of two present factors (strengths, weaknesses) in a fixed set of conditions and it essays to focus on prospective factors (opportunities, threats) for the same conditions (ibid.). If SWOT is applied on company level in economic studies, the strengths and weaknesses mostly focus on processes within the business or company. Opportunities and threats are seen as external factors. The SWOT analysis was developed in the 1960s and has been being applied in economy and research for more than half a century (Piercy and Giles, 1989). Although some researchers have objected SWOT for being an out–dated cure–for–all instrument for company leaders and supervisors (Hill and Westbrook, 1997), it is still popular and often practiced today (Houben *et al.*, 1999, Jackson *et al.*, 2003). In a *cluster–specific approach* SWOT analyses are frequently used (Feser, 1998), and they have been applied in local and regional cluster analyses in the forest and wood–based industries (Rauch, 2007).

Two of the major points of critique for SWOT analysis in scientific research are its [1] lacking objectivity in the methods through expert surveys and [2] its case study character and limited (precise) reproducibility for other case study approaches. In the 1990s knowledge–based system research tried to improve the purely qualitative and descriptive character of SWOT. However, Houben et al. (1999) found that operationalizing strengths and weaknesses in five management areas and analyzing them with a computer lead to the same results as the consultation of

an expert circle. Nonetheless, they also found, that "*it is not possible to construct a detailed list of specification requirements*" for a SWOT analysis (ibid.). Still, there are studies, which try to expand SWOT with quantitative measures by weighing and rating factors (Rauch, 2007). Others establish a list of specification requirements or parameters to operationalize SWOT in cluster research.

Jappe–Heinze et al. (2008) for instance used a set of criteria and indicators in research on cluster management initiatives. The basic method behind criteria and indicators, is the operationalization of issues which are hardly measurable or immeasurable, by choosing appropriate parameters (Meyer, 2004). Criteria and indicators can be used for simple issues (e.g. boiling water) as well as for quite complex issues, such as benchmarking in the economy or sustainability (Mrosek, 2002, Fuchs and Weiermair, 2004, Meyer, 2004). An indicator needs to be effective and efficient. This means that it needs to measure the theoretical issue optimally while offering its realization according to the existing conditions (Meyer, 2004). Indicators always measure artificial constructs, never reality (ibid.). As they are theoretical constructs themselves by operationalizing theoretical considerations, the quality of an indicator always remains theoretical because the actual construct can never be measured directly. Hence, an empirical verification of the operational consideration is impossible (ibid.). Indicators are often used in evaluation research, where they mark the starting point of the process. By interpreting indicator results, an evaluation process is terminated (ibid.). Two important things need to be kept in mind while operating with indicators in the course of the methods: First, the indicator needs to fit the intended features, meaning, it needs to be valid. And second, the measurements need to be reproducible, thus the indicator needs to be reliable (ibid.). For operating with indicators within the study frame of a project, logical frameworks proved useful. Logical frameworks contain the theoretical construct (SWOT in cluster research) with its criteria (e.g. innovation) and indicators (e.g. collaboration with universities or other research facilities).

Within the scope of this study, a SWOT analysis is used to juxtapose actual and possible future parameters, which influence the competitiveness of the forest–based tourism and recreation cluster in the case study area. An attempt is made to operationalize strengths and weaknesses by criteria according to Porters' *Diamond Model,* which were found crucial in similar studies, investigating other tourism segments (Houben *et al.*, 1999, Jackson *et al.*, 2003, Jappe–Heinze *et al.*, 2008). This approach follows the one of Houben et al. (1999) focusing on strengths and weaknesses. Opportunities and threats are possible prospective measures and thus highly speculative. More than the strengths and weaknesses they vary strongly with

the study context. Opportunities are seen as external factors, which nurture the anticipation to improve the business / cluster size or foster business operation and cluster management. They can emerge through politics (e.g. an announced tax relief for the accommodation industry, financial advancement in regional development programs), chance (e.g. weather phenomena) and other determining factors, such as the breakdown of a major competitor. Threats are also external factors which may inhibit and weaken cluster structures and business operation and result in disadvantages for the cluster and business. Because of this highly speculative character, the emerging possibilities and their context–depending interpretation, it is impossible to establish criteria for opportunities and threats. Hence, the following criteria and indicators address strengths and weaknesses exclusively.

"*Strengths thereby relate to the competitive advantage and other distinguishing competencies*" within the distinctive cluster or business (Houben *et al.*, 1999). Weaknesses are progress–hindering limitations for the cluster or business (ibid.).

Table 7 shows a list of criteria and indicators for the analysis of strengths and weaknesses (SW) in forest–based tourism and recreation cluster research. The list could possibly be expanded.

Table 7. Logical framework of criteria and indicators for a strengths, weaknesses, opportunities and threats analysis in forest-based tourism and recreation clusters.

Construct	Criteria	Indicators	Sources
Strengths	Vast nature use potential / high quality of natural resources	- diversified landscape features (lakes, rivers, hills, forest, fields, meadows) - forest cover - partially protected areas and parks	(Huybers and Bennett, 2003) (Buultjens *et al.*, 2003) (Hall and Boyd, 2005) (Marcouiller, 1998) (Cordell *et al.*, 1990)
	Skilled staff (quality)/ Human resources (quantity)	- high standard service quality - schooling / training of new staff	(Porter, 1998) (Tapper and Font, 2003)
	Physical infrastructure	- auto route / railway net - local public transportation - accommodation businesses / gastronomy - attraction points	(Brown and Geddes, 2007) (Tapper and Font, 2003) (Nilsson, 2001)
	Capital resources / bank loans / investment opportunities	- bank loans for private sector - upgrade of service standards - forward integration of products or services	(Porter, 1998) (Poon, 1993) (Brown and Geddes, 2007)

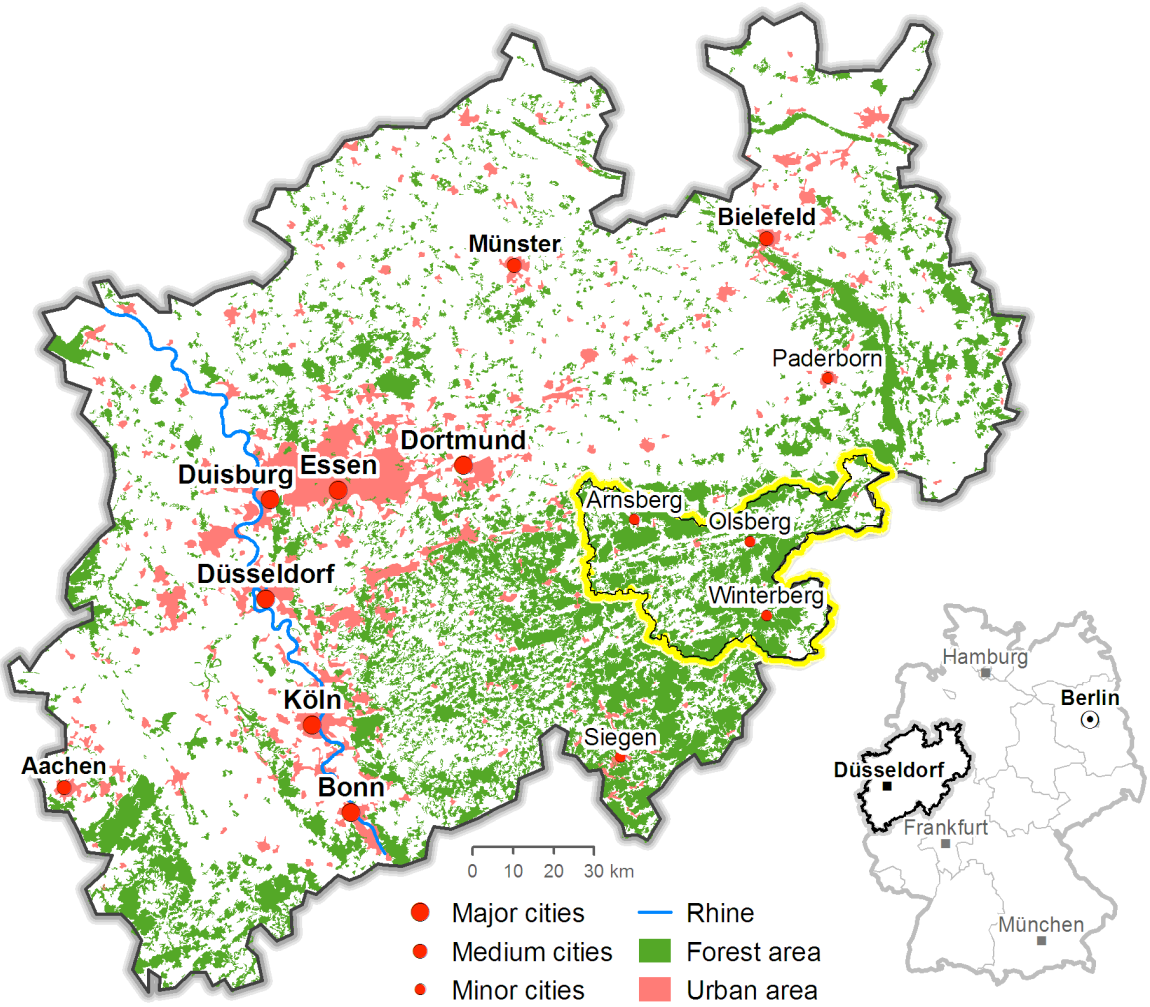
	Long-time / trustful intersectoral cooperation	- high density in cooperation between different branches / sectors - exchange of explicit and tacit knowledge	(Novelli *et al.*, 2006) (Feser, 1998) (Brown, 2000) (Bieger and Weinert, 2006)
	Branding	- developed brands - marketability - positioning	(Porter, 1998) (Novelli *et al.*, 2006) (Williams, 2001)
	Innovation capacity and research endeavours	- cooperation with research institutions - use of consulting services	(Porter, 1998) (Enright, 2003) (Mytelka and Farinelli, 2000)
	Development of diagonal dimension	- supplementary products and services adding up to other dimensions - complementarities - product niches	(Weiermair, 2006) (Michael, 2003) (Michael, 2007b)
	High demand	- visitor catchment area and attractive product / service - high visitor arrivals to the area	(Porter, 1998) (Poon, 1993) (Hall and Boyd, 2005)
	Strong supply side	- local concentration of suppliers	(Porter, 1998)
Weaknesses	Unskilled workers / lack of work power	- missing education institutions or training businesses - lack of manpower through little settlement (e.g. in remote areas) - dissatisfying working conditions	(Porter, 1998) (Buultjens *et al.*, 2003) (Tapper and Font, 2003)
	Information leakage / Lacking communication patterns	- *weak ties* in cooperative networks - “information holes” in the organisation set up of tourism marketing / management	(Staber, 2007) (Lynch and Morrison, 2007) (Tracey and Clark, 2003) (Simpson and Bretherton, 2004)
	Lack of infrastructure	- public transportation net - autobahn (auto routes) - railway net - broad band internet connections for customers	(Porter, 1998) (Brown and Geddes, 2007) (Tapper and Font, 2003) (Nilsson, 2001)
	Lacking demand side	- little visitor arrivals to the area - no customer orientation	(Porter, 1998) (Poon, 1993) (Hall and Boyd, 2005)
	Weak suppliers	- dependency of view large scale suppliers	(Porter, 1998) (Poon, 1993)

2.9. Introduction to the case study area

2.9.1. General

The Hochsauerlandkreis (HSK) County is situated in the south–east part of the federal state North Rhine–Westphalia and belongs to the larger landscape unit Sauerland (Figure 4). With a surface area of 1.959 km² it is the largest County of the state and less densely populated than most of the other Counties and cities in the state. With its natural use potential including mid–mountain ranges up to 847 meters, various rivers and storage lakes and a forest coverage of about 56%, the HSK belongs to one of the biggest recreational areas in the northern part of Germany (Schulte, 2003).

Figure 4. The federal state of North Rhine-Westphalia with urban and forest coverage and the situation of the Hochsauerland County.



Local land utilization is mainly dominated by agriculture and forestry in the primary sector. In the secondary sector metal industry and engineering are the main

industries with a distinctive structure of small and medium sized enterprises (SMEs). Especially the predominance of SMEs is seen as a cause for the fairly strong economic situation of the region compared to other NRW regions with bigger monopolistic enterprises. While the loss of employment averages 30% for the state of NRW over the last 20 years, the loss of employment in the HSK was detected with only 6% (Hochsauerlandkreis, 2008). The tertiary sector, comprising the hospitality and tourism businesses, holds about 45% of all socially ensured employees (Ahlert *et al.*, 2003). This shows that next to the manufacturing industry, service related industries also play an important role in the study area. Although the employment rates in the secondary sector have been being on a continuous downturn, the average increment of employment in the tertiary sector, expected to counterbalance this trend, did not occur (Ahlert *et al.*, 2003). A possible reason could be the deficiency of qualified employees for the tertiary sector (*ibid.*). Among the branches with the highest turnover are officially the metal industry, the manufacture of machinery and equipment as well as the manufacture of electrical machinery and instruments (NRW, 2007b). Among the most important enterprises, firms in the forest and wood–based industry cluster can be found, such as *Egger* / Brilon (derived timber products) as well as *Interprint* and *Cascades* / Arnsberg (décor printing and paper manufacturing industries). Other important enterprises are *Severin* / Sundern (electronics), as well as *Falke* / Schmallenberg (textile industries).

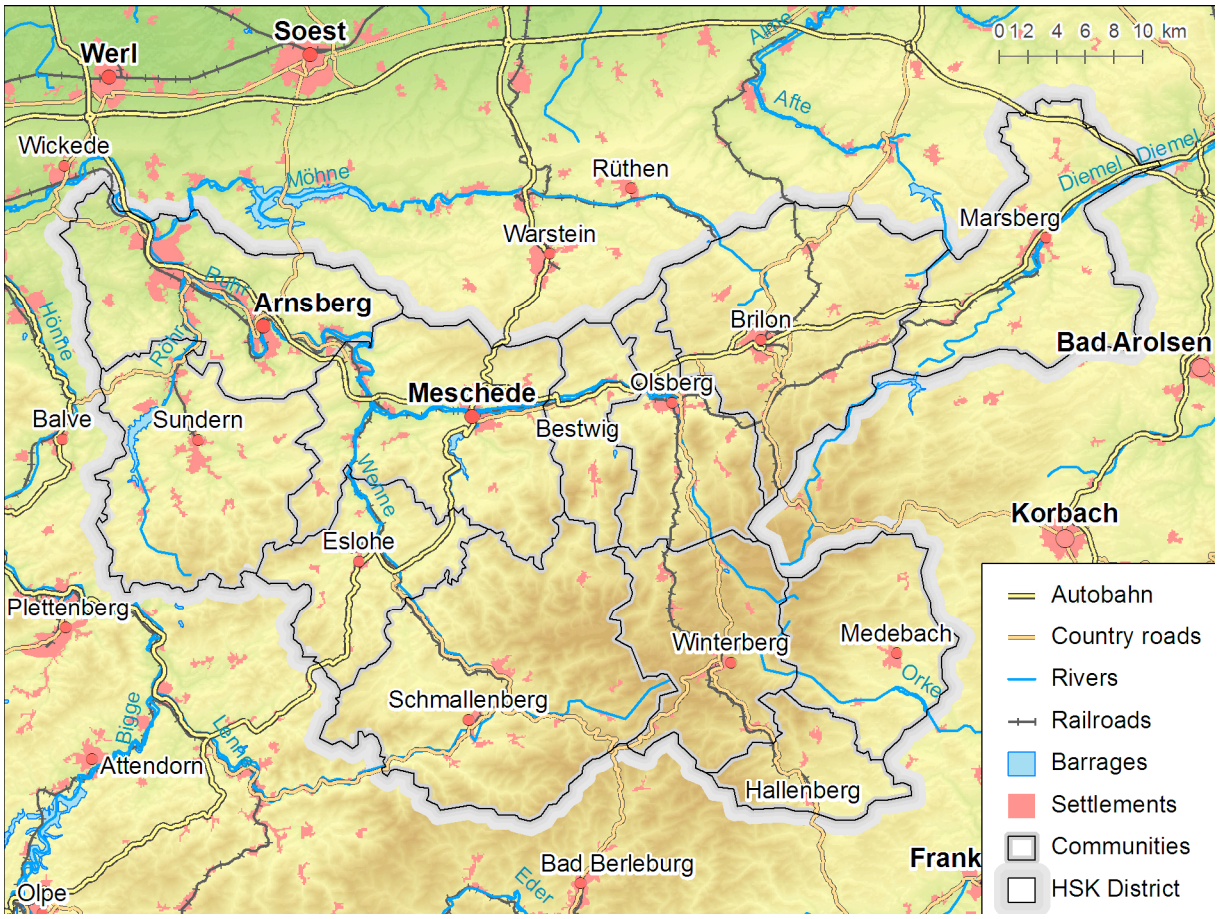
The HSK is the only County in NRW reaching the maximal 160 points on the attractivity index for landscape and tourism (Bundesamt für Bauwesen und Raumordnung *in* (Engels, 2008)), which takes into account *i.e.* the fragmentation of the landscape, the forest coverage and the relief energy (see Annex III).

The annual precipitation averages around 1,000 mm, which is rather high for a destination based on visitation of sport and recreation tourists in Middle Europe. Due to the maritime influences, summers may be wet and cold and thus unsuitable for tourism. However, due to the mountainous character with altitudes suitable for longer periods of snow and the high precipitation in the winter months, the area has also achieved to develop as a winter vacation destination.

About 25% of the forest is state or community owned. The larger part of 75% is privately owned with three private forest owners holding more than 2,000 ha in the HSK (Landesanstalt für Ökologie, 2006). Five nature parks are situated in the HSK. The County consists of the two communities Bestwig and Eslohe and the ten towns Arnsberg, Brilon, Hallenberg, Marsberg, Medebach, Meschede, Olsberg, Schmallenberg, Sundern and Winterberg (Figure 5). The HSK has been object to tourism and recreation research for several decades. Already in the 1970s an

evaluation of the landscape was carried out concerning its potential for outdoor recreation and tourism (Kiemstedt, 1975).

Figure 5. Map of the Hochsauerlandkreis (Hochsauerland County with communities and towns, communities and relief, in English)



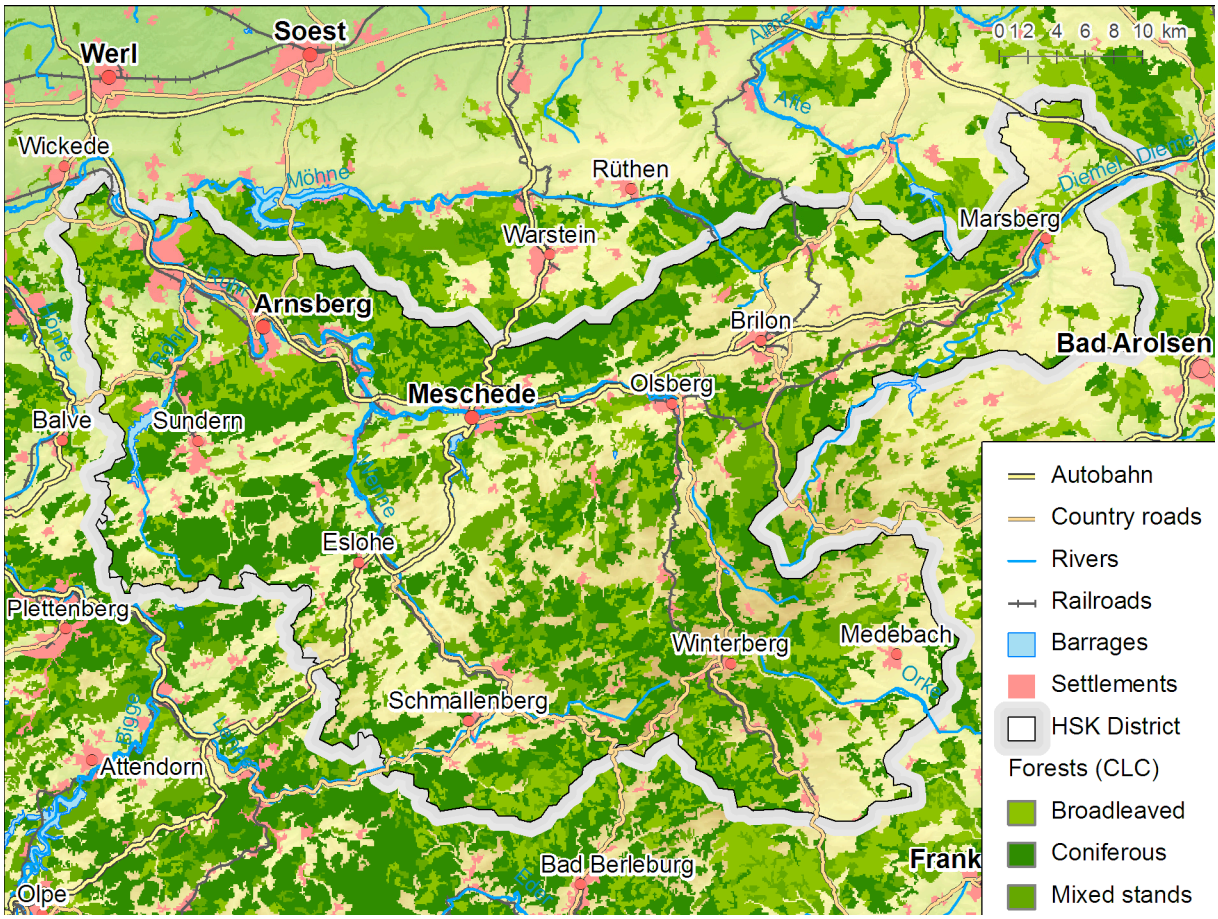
2.9.2. The regional tourism sector

2.9.2.1. History

Major infrastructural improvements that took place around the middle of the 19th century were the first milestone and evidence to a developing tourism sector in the Sauerland area (Krajewski *et al.*, 2008). Road improvement and the construction of the railway connected the eastern remote low mountain range region with the national transport network (Kracht, 2005). With the founding of the local mountaineering association *Sauerländer Gebirgsverein e.V.* (Mountaineering association Sauerland) in 1891, hiking trails were built and mapped and the recreation possibilities in the natural surroundings of the region were first communicated to German and Dutch tourists and recreation seekers. The annual leaflet "*der Sommerfrischeführer*" (guide for summer health resorts) became the main information source for tourism and recreation in the region in the second half

of the 19th century. Until today these hiking trails mark a very important part of the tourism and recreation infrastructure. Around 1900 the railway net was extended from the west to reach the more eastern towns Brilon and Winterberg. Until this time, the more remote eastern part of the Hochsauerlandkreis had hardly been developed which had led to economic backwardness of the concerned communities compared to neighboring communities (Kracht, 2005). With the railway net, the tourist arrivals increased significantly. During the *Second World War* the trend of increasing tourist arrivals stagnated for the first time. With the reconstruction of West Germany in the 1950s and the golden 1960s, the Sauerland became increasingly interesting as a destination for recreation and tourism. Intensified reforestations predominantly with spruce trees have been forming the character of the landscape and countryside until today (Schulte, 2003). When the main traffic routes Autobahn 45 *Sauerlandroute* and A 44 were constructed, two feeder roads facilitated the access to the Sauerland. However, only with the construction of the A 445 and the A 46 in the 1970s / 1980s a direct and fast access to the Hochsauerlandkreis was established (Figure 6).

Figure 6. Infrastructure in Hochsauerland County and forest cover



An increase of 3.4 to 5.5 million overnight stays occurred over a time period of 20 years between the 1960s and 1984 (Gläßer *et al.*, 1997). With a growing interest in the travel abroad and the increasing attractiveness of the Mediterranean, visitor arrivals stagnated a second time during the 1990s. Since then visitor arrivals have not significantly increased again.

2.9.2.2. Recent development

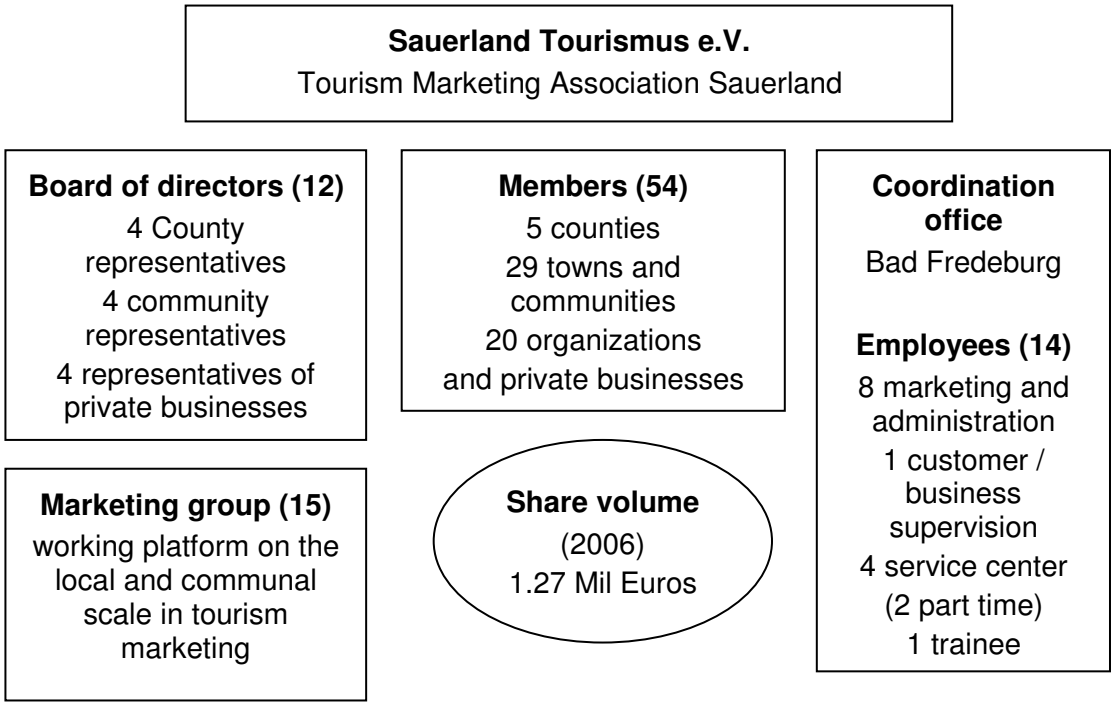
The catchment area of the Hochsauerlandkreis for potential visitors includes the biggest industrial conurbation of Germany, the Rhein–Ruhr with 10 Million inhabitants in the reach of a one hour drive (Krajewski *et al.*, 2006) as well as the Netherlands and Belgium with 27 Million inhabitants in the reach of a two to four hours drive. According to a recent study of the Dwif (Deutsches Wirtschaftswissenschaftliches Institut für Fremdenverkehr e.V.) about 2 billion Euros gross turnovers are gained through tourism in the Sauerland region (Deutsches wirtschaftswissenschaftliches Institut für Fremdenverkehr, 2005). This constitutes to about 10% of the overall tourism turnover in the state of North Rhine–Westphalia. The main profiting industries are in the hospitality and tourism sector with 45%. The retail industry profits with 33%. Other service sectors profit with 21%. Additionally, Henseling (1998) calculates an employment equivalent of 10% of all socially ensured employees in the southern Sauerland region (Henseling, 1998).

Figure 7. Hiker's lookout at the *Rothaarsteig*, photo: author (photo taken in 2006 prior to *Kyrill*)

The regional tourism management mainly focuses on forest–based tourism themes (Figure 7) with an emphasis on hiking, biking, fun–sport, family vacation and healthy–lifestyle (Sauerland–Tourismus, 2004). Although culture and heritage tourism as well as conference tourism are further regional tourism segments, they remain rather marginal (Sauerland–Tourismus, 2004).

In the last decade, the regional tourism management put a strong emphasis on hiking, aiming to become the "hiking destination number 1" in Germany. Increased investments in the establishment of high quality products (e.g. *Rothaarsteig*) and intensified promotion efforts on a national and international basis followed. The regional tourism marketing association *Sauerland Tourismus e.V.* covers the Hochsauerlandkreis, Märkischer Kreis, Kreis Olpe and Kreis Soest. Its main objectives are destination marketing, coordination and monitoring of theme marketing and the overall transfer of tourism–relevant information and data to all member organizations (Figure 8).

Figure 8. Organization of the regional tourism marketing association "Sauerland – Tourismus e.V."(Sauerland-Tourismus, 2006)



While the individual Counties are responsible for the implementation of new tourism marketing measures, the tourism marketing associations' function is mainly the agglomeration of all thematic segments and the branding of these segments to suit the umbrella brand name *Sauerland* (Sauerland–Tourismus, 2004). It also carries out the so called "permanent visitor surveys", which are two periodically

repeated surveys in order to determine the typical profile of first, the overnight guest and second, the day visitor. An exterior expertise was ordered in commission by *Sauerland Tourismus* to analyze the existing destination marketing strategy in 2005. The consulting agency summarized that neither a competitive profile for the target audience nor an overall profile of the single towns and communities had been developed sufficiently (Wenzel–Consulting, 2005). Furthermore three different websites provided inconsistent information on the same region. Apart from these websites, each single town and community provided their own visitor service with a differing branding and conceptual design, where the major part was in nonconformity with the umbrella brand name (Wenzel–Consulting, 2005). The consulting agency recommended all towns and communities to focus on the umbrella brand name *Sauerland* and to consequently implement this marketing strategy.

2.9.3. Regional certification and positioning

In order to provide the customer with a consistent service quality and orientation on the one hand and the tourism businesses with *competitive advantage* on the other hand, certification according to official standards can be a means of *positioning*. Various brands or so called certificates for accommodation businesses exist in the HSK (Figure 9). Businesses within the hiking trail corridor of the main hiking trail *Rothaarsteig* were able to obtain the brand *Qualitätsbetrieb Rothaarsteig* (quality business *Rothaarsteig*) if they fulfilled a specific set of criteria. This was enabled by the state and community–funded *Rothaarsteig* project management in a top–down approach. The leader association *Rothaarsteig* highlights these businesses for instance by printing postal addresses on the official hiking maps, setting up directing signage along the hiking trail or advertising in regional newspapers on a seasonal basis. According to the *Rothaarsteig* managers no structured marketing measures take place (personal communication, Rosenkranz, 2007). The brand is merely supposed to serve as “additional information” for the hiking customer. Shortly after the *Rothaarsteig* brand was established, a number of regional gastronomy and accommodation businesses created the brand *Sauerländer Wandergasthöfe* (hiking hotels Sauerland) in a bottom–up–approach which is not subjected to the hiking trail corridor. Currently 25 certified businesses are members of *Sauerländer Wandergasthöfe* (Sauerländer–Wandergasthöfe, 2008).

Figure 9. Regional brands [1], [2], [3] and supraregional brands [4], [5] for quality standards in forest-based tourism and recreation accommodation businesses (Copyright by brands), (own compilation and depiction, 2009)

1 2 3 4 5

Businesses with this brand voluntarily subject to higher quality criteria based on national quality standards (DeHoGa two star superior class) and promoted standards by the German hiking association *Deutscher Wanderverband* with their national brand *Qualitätsgastgeber Wanderbares Deutschland*. Additionally, businesses are subjected to offer supplementary services for forest recreation seekers, such as guided hiking tours, a trail network for smaller walks around their facilities, extensive information on the subject hiking in the region with numerous tour recommendations as well as regional and organic food.

In the recent past cooperation efforts were made with the national outdoor equipment provider *Schöffel* specialized in hiking, and further local beverage brands (Veltins, Schwarze & Schlichte) (Sauerländer–Wandergasthöfe, 2008). *Sauerländer Wandergasthöfe* businesses benefit from a designated marketing strategy organized by brand founders and managers, clearly exceeding the efforts of *Qualitätsbetriebe Rothaarsteig* (personal communication, Schmidt, 2007).

Additionally the brand *Bike–freundliche Betriebe* for cyclists was established by *Bike Arena Sauerland* based on criteria of *Allgemeiner Deutscher Fahrradclub* and *Deutscher Tourismusverband* (Deutscher Tourismus Verband, 2008a). Currently 60 certified businesses are members of this network (Deutscher Tourismus Verband, 2008b).

2.9.4. Influences of hurricane *Kyrill* on the region

On January 18th in 2007, six month prior to the beginning of the data acquisition, the hurricane *Kyrill* caused severe damage in the forestry sector in the HSK. With peak wind speeds of 225 km/h many hilltops were deforested (Figure 10). Within a week of the hurricane, the forestry authorities and the tourism management of the region closed down numerous hiking trails, among them parts

of the *Rothaarsteig*, due to the continuing danger from damaged trees and blocked trails (Arnsberg, 2007). 6 Mil m³ of wind throw and windbreak lead to an exploitation of 4.7 Mil m³ throughout the year 2007 (Ministerium für Umwelt und Naturschutz, 2008). Logging roads which are commonly used as hiking or biking trails were intensively used for clearing. Due to the rather cold and humid summer of 2007, this resulted in a significant decline of the infrastructure for forest–based tourism (personal communication, Beckmann, 2007). Although it was originally planned to re–open the hiking trails for the beginning of hiking season in May, this was not possible due to a lacking labor power in the forestry sector of the region. Instead, through cooperation between forest authorities and tourism management blocked trails were relocated and detours were marked to allow forest–based recreation to continue (Figure 11). Additionally, a promotional program was initiated and funded by *Sauerland Tourismus*, encouraging local tourism businesses to actively take part in promoting their products and services (Sauerland–Tourismus, 2007b) to avoid sales collapses.

Although while designing the questionnaires it was decided not to bring up the hurricane as a subject of discussion in the framework of this thesis, early expert interviews showed that its impact had consequences for tourism planning as well as for the local and regional SMEs in tourism. If regarded out of *Porter's Diamond model* perspective, there could not be a better example for "Chance" in the forest–based tourism and recreation cluster. Hence one question on the hurricane was added to questionnaires.

Figure 10. Deforested hilltops nearby the *Rothaarsteig* and the Bruchhauser Steine in the Hochsauerlandkreis one month after Kyrill, photo: Wald-Zentrum (2007)

Figure 11. Marked detour of a hiking trail in the Hochsauerland County after the hurricane *Kyrill* caused major damages in the tourism infrastructure, photo: Sauerland-Tourismus (2007a)

2.9.5. Forest-based tourism activities and offers

Forest-based tourism and recreation activities in the Hochsauerlandkreis comprise hiking, walking, Nordic-walking, biking, down-hill and off-road biking as well as road biking, climbing, horseback riding and sledding. Also animal observation and nature photography are attractive local activities for the visitors due to a sound forest management, five nature parks and various nature reserves. Table 8 shows an overview of the main forest-based tourism and recreation activity offers.

Table 8. Overview of the main forest-based tourism and recreation activity offers in the Hochsauerlandkreis 2007, own compilation

Activity	Infrastructure / facility / provider	Additional information
Hiking	Rothaarsteig Hiking trail: 156 km Opened 2001	- Brilon - Dillenburg (Dill-Lahn-Kreis / Hessen) - Certified Top-Trails-of-Germany - According to a Dwif-Study: (Anonymous, 2006) - 32.91 Mil. Euros net value-added including - 24.30 Mil. Euros gastronomy - 5.7 Mil. Euros retail - 800 work places in the region
Hiking	Sauerländer Waldroute Hiking trail Opened 2008	- Iserlohn – Arnsberg (Marsberg) - Length: 240 km - established to relocate the value added into the whole region of the County, not only along the

		Rothaarsteig corridor
Hiking	Sauerländer Höhenflug Hiking trail Opened 2008	- Meinerzhagen - Korbach - length: 240 km - established to relocate the value added into the whole region of the County, not only along the Rothaarsteig corridor
Hiking	Bergwanderpark Hiking trail net	- length: 400 km with over 6,500 m altitude difference, 7 main hiking trails: Briloner Kammweg, Medebacher Bergweg, Olsberger Kneippwanderweg, Willinger Uplandsteig, Winterberger Hochtour, Hochsauerland Kammweg, Rothaarsteig plus additional feeder trails - established to relocate the value added into the whole region of the County, not only along the Rothaarsteig corridor
Hiking	Additional trails Hiking trail net	- Sauerländischer Gebirgsverein maintains historical hiking trails in the whole Sauerland region, adding up to a net of 34,000 km of hiking trails
Biking	Bike Arena Sauerland	- mountain- and road bike parcours with signage and GPS data - mountain bike: 37 bike trails for three different skill levels, overall 1,700 km of cycle trail net - road bike: further development of road bike niche intended - according to a Dwif-Study (Harrer, 2007): - ca. 23 Mil. Euros net value-added
Biking	Bike Park Winterberg	downhill Mountain bike park - 9 km downhill track, with ski lifts, fun course, one of the most popular bike parks in northern Germany - bike schools as well as bike and equipment rental
Skiing	Wintersportarena Winterberg	- downhill skiing and snowboarding on 100 km ski slopes with 150 ski lifts in the region, all difficulty levels - cross country skiing on 300 km ski tracks - floodlight tracks - snow guns to extend winter season
Rock climbing	Kletter Arena Sauerland	- three climbing sites in the Hochsauerlandkreis, mainly in old stone pits - opened by Deutscher Alpenverein
Nordic-walking	Nordiczentrum NRW Westfeld	- nordic-walking, skating and skiing tracks with floodlight - official training center for Nordic sports in NRW - annual athletic events
Hiking, photography, animal watching	Wildwald Vosswinkel and Waldakademie	- private business of a private forest owner with large property offering forest-based tourism and recreation, as well as animals observations (park), environmental education programs (Waldakademie), outdoor sports (Canopy walk / climbing garden) and events (annual hunts and

		Christmas market)
Nordic sports	Wald-Fitness	- private business of former Olympia medalist Ramona Brandenburger for instructing Nordic sports
Nordic walking	Nordic Aktiv Park	- Towns and communities (mostly with health-related offers) established infrastructure for Nordic-walking, with signage for tourists and local recreation seekers, e.g. Nordic Walking track Arnsberger Wald
Horseback riding	At least 6 horseback riding schools and rentals	- horseback riders use official hiking trails which has resulted into conflicts in the past - mediation has taken place with tourism mangers
Bike trekking	Ruhrtalradweg	- Winterberg – Duisburg - Length: 230 km (main bike trekking route in HSK)
Rope course	Hochseilgarten Sauerland (rope course Sauerland)	- Facility offering rope course experience
Kräftespiel Arnsberg	Hochseilgarten Wildwald	- Facility offering rope course experience
Athletic events		
Falke Rothaarsteig Marathon	Rothaarsteig	- annual Marathon and Half-Marathon event mainly sponsored by Falke
FIS World cup Ski jump	Ski-jump Willingen	- annual ski jump competition
International dog sled race	Winterberg trail system “Am Kuhlenberg”	- traditional dog sled races as a major attraction for tourists and visitors, attracting around 10,000 spectators
Bob World cup	Bob track Winterberg	- annual bob-sledding competitions and events
Extreme hiking (Höllenmarsch)	Trail system around Rothaarsteig	- annual hiking, Nordic-walking event with distances from 11 to 101 km
Related forest-based tourism and recreation activities		
Bob-sledding	Bob track Winterberg	- official ice bob track with annual athletic events
Theme park	Fort Fun	- theme park for adventure and action in the heart of the Hochsauerlandkreis
Spa	SauerlandBAD / Bad Fredeburg	- sauna, Spa, Steam bath for tourists and recreation seekers after hiking, biking, etc.
Animal observation / photography	Wild- and leisure park Willingen	- animal observation, entertainment
Accommodation and leisure park	Center Parcs Hochsauerland	- accommodation, restaurant and leisure activities in one block of facilities

2.9.6. Seasons

The overall peak season is with hiking season in fall and spring. Tourist arrivals exceed 90,000 visitors per months in August, September and October, followed by Mai and June. Around 80,000 visitors arrive in January and February for winter sports (NRW, 2008). The main seasonal activities in the Hochsauerlandkreis differ from community to community. While Winterberg, with a majority of the ski tracks, primarily focuses on the winter season, other communities, such as Brilon, Olsberg or Schmallenberg emphasize hiking and Nordic sports in summer and fall (Figure 12). Additionally, the official biking season is from May to October. Communities of the *Bike Arena Sauerland* and along the *Ruhrtalradweg* receive additional visitors during this period.

Figure 12. Hiker on *Rothaarsteig* trail: local hiking infrastructure in commercially managed forest surroundings, photo: author (2006)

3. Results

3.1. The forest–based tourism cluster

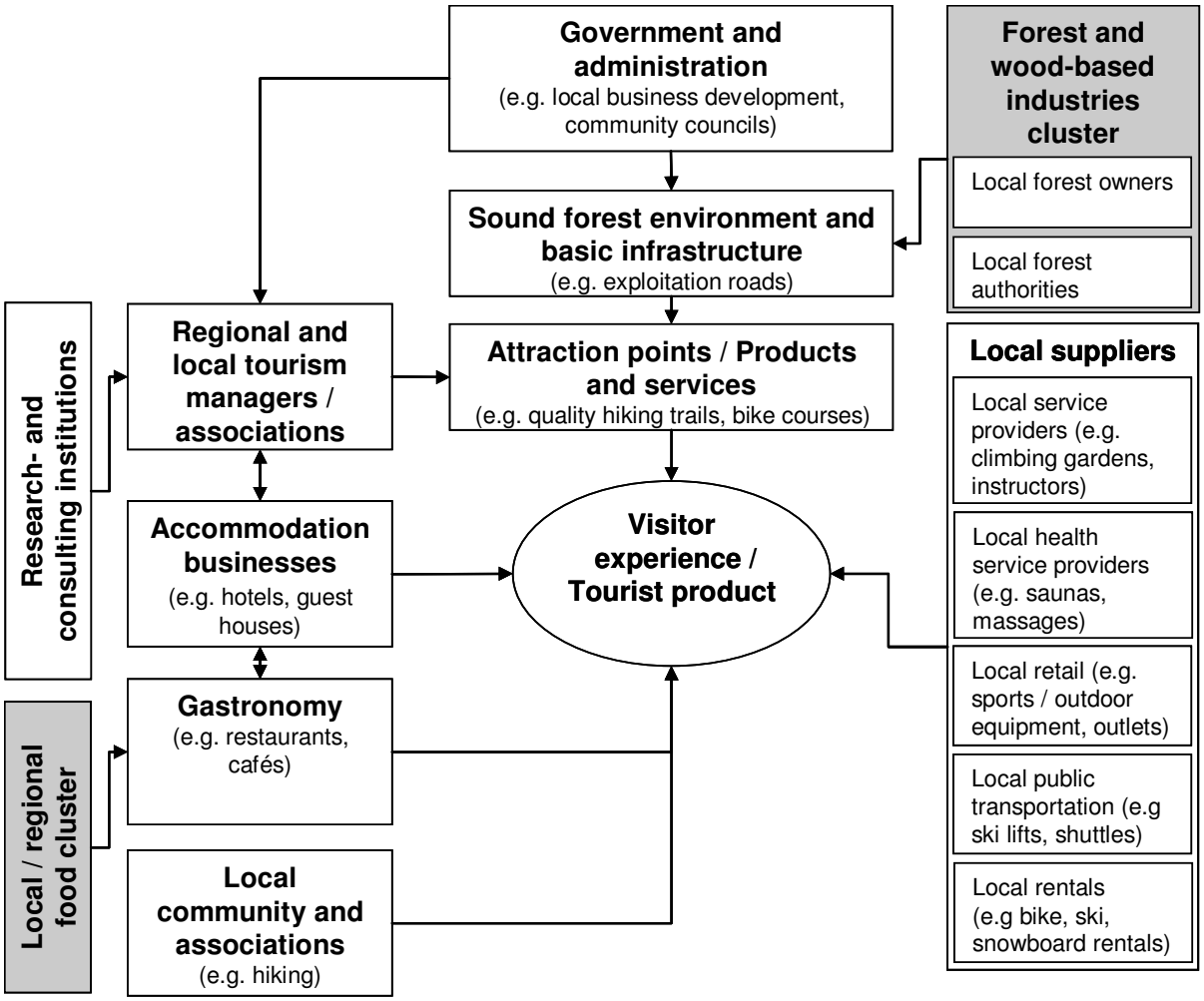
The forest–based tourism and recreation cluster is build up on an activity–based approach. Hence its core consists of products and services derived from forest–based activities. In the framework of this thesis, the forest–based tourism and recreation cluster comprehends the geographic concentration of interconnected companies, specialized suppliers of services and products around forest–based activities as well as related industries and associated institutions. These include [1] *attraction points* (Bieger and Laesser, 2003), [2] tourism service companies (e.g. accommodation and gastronomy businesses), [3] sectors that support tourism (e.g. agriculture, building and constructing sector), [4] infrastructure (e.g. roads, energy), [5] institutions providing specialized qualification (e.g. research institutes, consulting agencies) and [6] regulating institutions (e.g. government agencies) (da Cunha and da Cunha, 2005) (Figure 13).

The foundation of the forest–based tourism and recreation cluster is provided by the legislative framework of the *free access right* on private forest property and the societal duties of sustainable forest management in the national forest program for communal and state forests. Hence, it derives as a direct *externality* of governmental law. On this basis the responsible tourism planners are able to develop tourism products and services in a managed forest region, which add to the visitor's experience. Common forest–based recreational activities, such as hiking or mountain biking are usually developed as infrastructural products by local and communal tourism planners. They are generally funded by the community, or federal sources through political programs. They upgrade the local infrastructure and make for an increased quality of life in the community. In addition to the natural assets they can be seen as a foundation for the local *attraction points.* In many areas forest exploitation roads are used as hiking trails, too, constituting a direct *externality* from forest management.

Forest–based activities also offer product niches that can be filled in by private business owners. Therefore they constitute supplementary products or services to local accommodation and gastronomy businesses, which are grouped around the local *attraction points*. At the same time accommodation and gastronomy can be seen as *complementarities* for the natural *attraction points*. Supplemental products and services for forest–based tourism and recreation can either be integrated into the existing tourism industries (e.g. sports instructors, guided hiking tours) or built

by private investors / associations (e.g. adventure facilities, experience facilities, canopy walks or climbing gardens).

Figure 13. Outline of the forest-based tourism and recreation cluster, own depiction, modified from Porter (1990) as well as Weiermair and Steinhauser (2003)



Hence they can either be seen as *positioning* tools for tourism businesses or as *complementarities* adding up to the visitors "experience bundle". Depending on the local *complementarities density*, the *diagonal cluster dimension* is either more or less developed: Many supplemental service providers account for a strong diagonal dimension, providing options and purchasing incentive for the customer and generating additional value for the region. Various other local suppliers, like retail businesses and health service providers contribute to the diagonal cluster dimension. The interaction between the different providers creates the opportunity for a wide range of products and / or the offering of products at lower costs and a higher value.

Figure 14. Chain of services adding up to the visitors experience in forest-based tourism and recreation destinations adapted from (Weiermair and Steinhauser, 2003), own depiction

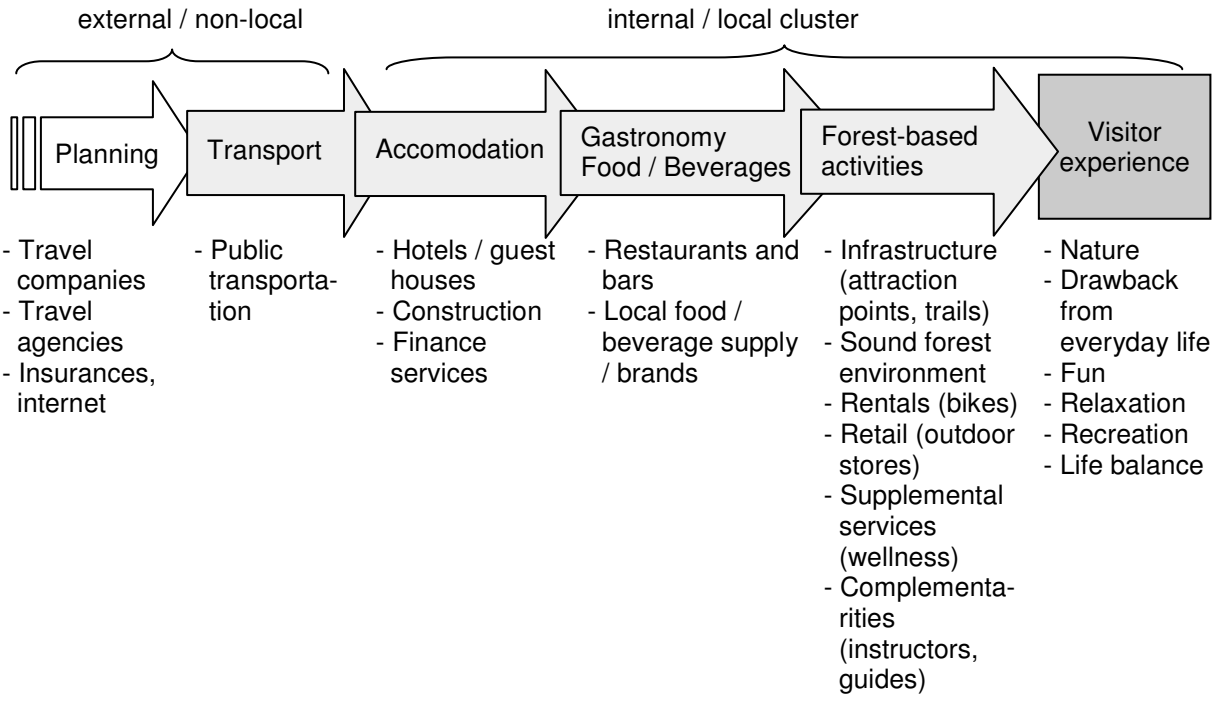
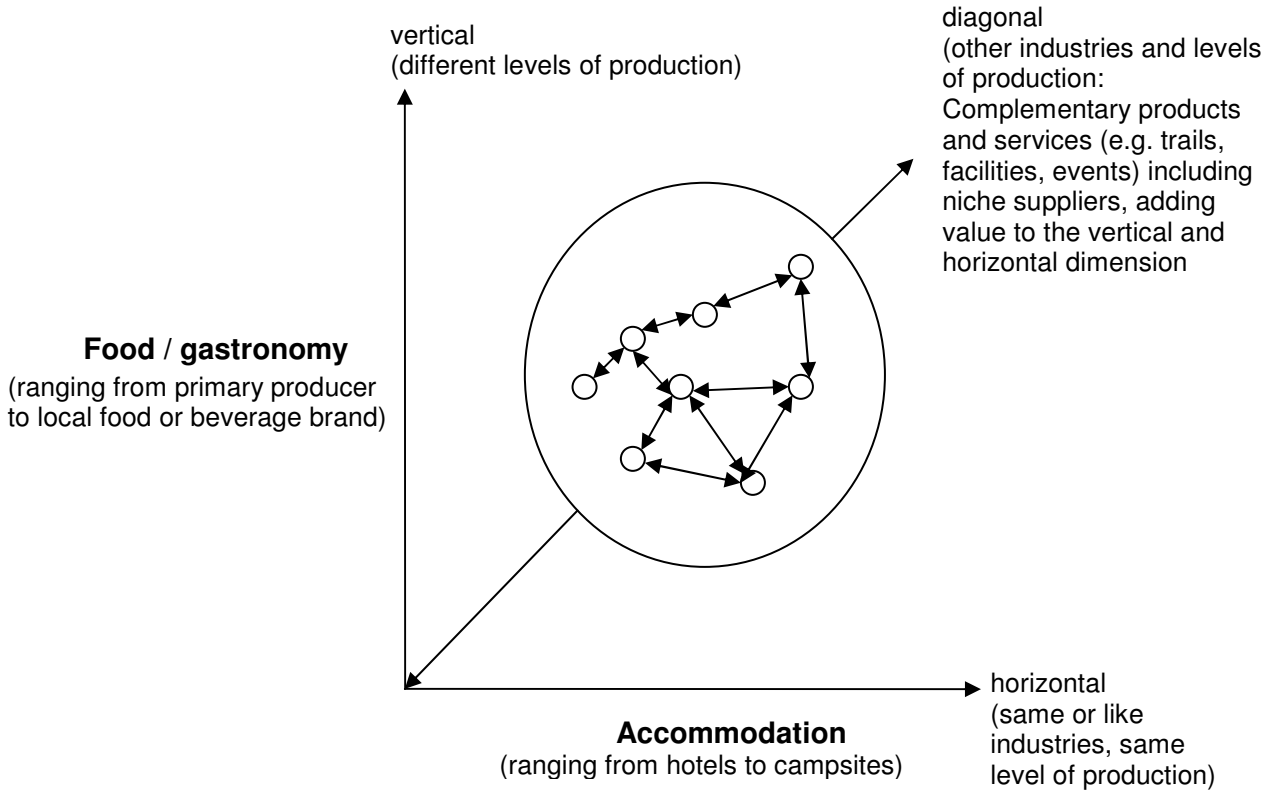


Figure 14 depicts nature–based tourism and recreation in a chain of services, showing the different segments that add up to the forest visitors' experience. If all products and services are integrated into the service chain, it becomes evident, that a sound forest management contributes at the same stage to the visitors' experience as any other Endeavour increasing the quality of the *attraction points* of an area. Every chain segment contains one or more products or services, which are consumed by the visitor either individually (incomplete complements: e.g. accommodation + mountain bike rental) or in combination with other products and services as a fix "bundle" (e.g. accommodation + food + guiding services + luggage transport). The generation of such fix "bundles" within one tourism business enables a precise *positioning* at the market towards a certain type of forest visitor or target group (e.g. the hiker, the mountain biker).

Although the net of products and services builds around the primary attraction and the forest–based activities, the two main pillars in tourism remain food / gastronomy and the accommodation branch. The following figure 15 depicts *cluster dimensions* in the forest–based tourism and recreation cluster modified according to Bieger and Scherer (2003):

Figure 15. Cluster dimensions in forest-based tourism and recreation, modified from (Bieger and Scherer, 2003)



3.2. Secondary data on the case study region

3.2.1. Tourist arrivals and overnight stays for the acquisition year 2007

Tourist arrivals during 2007 for the Sauerland were determined with 2,085,341 (–1.2 percentage points compared to the previous year). The number of accommodations added up to 7.002.886 (–1 percentage points compared to the previous year) (Bundesamt, 2008). Other low and mid mountain range regions such as the Erzgebirge (–1.2 percentage points), the Bayerischer Wald (–2.9 percentage points) or the Fichtelgebirge (–4.5 percentage points) also suffered from a significant decline in tourist arrivals.

However, there are also regions with an increase in tourist arrivals, such as the Schwarzwald (+4.9 percentage points) or the neighboring Siegerland–Wittgenstein with (+7.4 percentage points) (Bundesamt, 2008).

Table 9. Businesses offering accommodation in the Hochsauerland County for the survey period in 2007, Federal Agency for Statistics [Statistisches Bundesamt], 2008

Accommodation category	Accommodation businesses		Number of beds		Campsites	
	Total	Open	Total	Offered	Total	offered
Hotels	153	148	7,891	7,549	-	-
Guesthouse	94	90	1,927	1,830	-	-
Pension	98	94	1,788	1,649	-	-
Hotel garnis	10	7	607	503	-	-
Boarding houses, school vacation houses	41	38	3,691	3,470	-	-
Vacation homes, vacation centers	81	79	7,061	6,970	-	-
Youth hostels	24	21	1,541	1,345	-	-
Health resorts	9	9	1,203	1,166	-	-
Campsites	18	17	-	-	1,175	1,093
Total	528	503	25,709	24,482	1,175	1,093

In the Hochsauerlandkreis tourist arrivals were determined with 982,128 during the survey period in 2007 (including the month January and February 2008) (NRW, 2008). One sixth of all arriving tourists are foreigners, mostly from the neighboring Netherlands or Belgium. Overnight stays added up to 3,536,630. Compared to the previous year tourist arrivals decreased by –3.4 percentage points. Overnight stays decreased by –0.9 percentage points (NRW, 2007a). Foreign arrivals decreased by –11.8 percentage points. The average stay of a tourist was calculated with 3.6 days (NRW, 2008). During the survey period 503 accommodation businesses offered 24,482 beds in the Hochsauerlandkreis (Table 9).

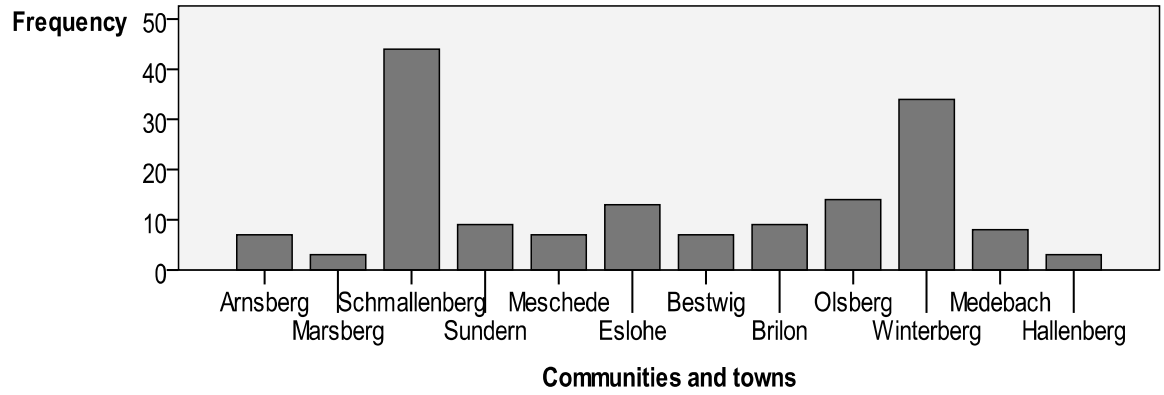
3.2.2. Average expenditure of visitor to the Sauerland

According to Harrer (2002) visitors to the Sauerland spend in average (per person) 22.20 Euros on accommodation, 23.80 Euros on gastronomy, 7.90 Euros on retail, 1.80 Euros for public transportation and 13.90 Euros for other services. Compared to other low to mid mountain range regions in North Rhine–Westphalia, such as the Eifel or the Teutoburger Wald, the average Sauerland prices are rather upscale (Harrer and Scherr, 2002).

3.3. Tourism businesses survey results

The returned questionnaires from tourism businesses show a very heterogeneous distribution. Because half of the overall businesses are situated in the towns Schmallenberg and Winterberg, forming important centers for forest–based tourism, these two towns contribute almost half to the total return rate (Figure 16).

Figure 16. Return distribution according to communities and towns [n=158]



3.3.1. Staff

The large part of the tourism businesses employs between one and five staff members full time or part time. The second leading response is the group of six to ten employees, followed by single businesses with no employees. These businesses can be small cafés or family businesses where family members do not count themselves as employees (personal communication, Beckmann, 2008) (Table 10). Only a small number of trainees (only 20 businesses declare to employ one trainee and 15 two trainees) are employed through all tourism businesses. Honorary workers or volunteers also provide labor for tourism businesses.

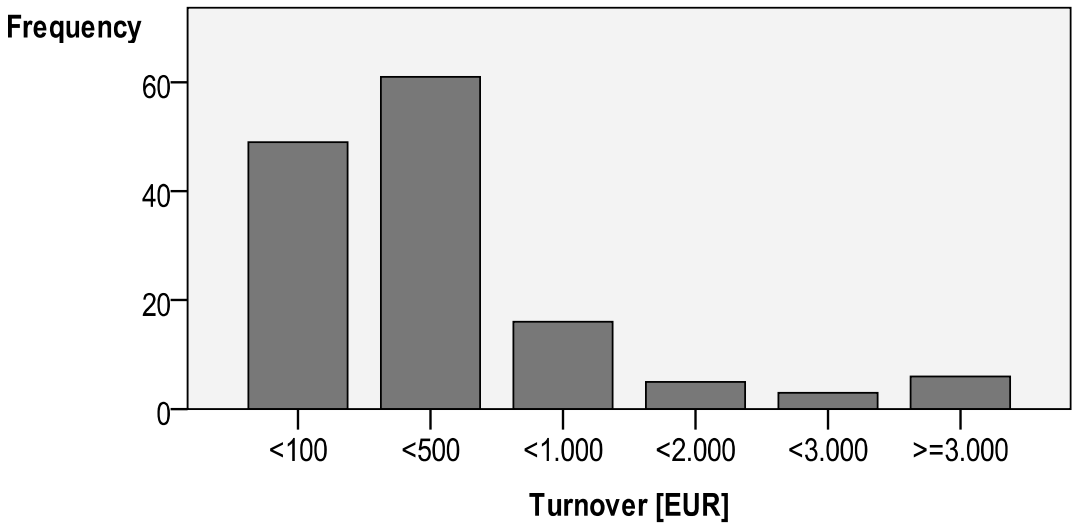
Table 10. Staff and other labor distribution frequency through all tourism businesses [n=144 full time / n=134 part time, n=104 trainees, n=84 honorary workers / volunteers]

Number / Category	0	1-5	6-10	11-20	> 20
Staff full time	15	91	19	9	10
Staff part time	21	91	10	8	5
Number / Category	**0**	**1**	**2**	**3**	**4**
Trainees	54	20	15	7	8
Honorary workers / volunteers	57	25	1	0	1

3.3.2. Turnover distribution

75% of all values belong to the first two categories. Thus it can be stated that three quarters of the businesses obtain a turnover lower than 500T Euros per year. The turnover of 16 businesses constitutes to the third category from 500T–1Mil. Euros and only 14 businesses obtain a turnover higher than 1 Mil. Euros / year (Figure 17).

Figure 17. Turnover distribution frequency in thousand through all tourism businesses in the Hochsauerlandkreis [n=140], where company is in smallest turnover class



3.3.3. Business depiction and profile

Businesses were asked to describe their average customers by age, social status and interests. The results are depicted in direct comparison to the expert's estimation in chapter 3.5.

In order to obtain belief and notion of the tourism business owners towards the forest in their surroundings and its value for their businesses, they were asked to comment on the set of statements presented in Table 11. During these questions – when asked in an interview – it turned out that a great number of business owners were forest owners as well.

While 95% of all businesses "fully agree" or "rather agree" that the forest is an important location factor, the large part of the businesses could not clearly state whether their business operation would be possible without the natural asset [$\bar{x} = 3.54$; $\sigma = 1.376$]. However there is a slight tendency towards "rather not agree". Finally, 95% of all businesses identify with the natural assets in the region.

Table 11. Tourism business owners beliefs concerning the forest landscape and its influence on their businesses on a 5-point-Likert-scale where 1=fully agree and 5=do not agree at all [n=142]

Statement	$\bar{x}$	σ	SE
The forest of the region is an important location factor for my business.	1.36	.653	.054
My business operation would be possible without the forest of the region.	3.54	1.376	.116
My business identifies with the natural assets and the forest of the region.	1.45	.729	.061

Tourism businesses were also asked whether the use of construction timber as a natural resource and historical method of construction occurs for their businesses for the interior, exterior or construction parts (Table 12). Most often, timber is used inside the businesses' facilities. Also its use for the exterior and construction parts was indicated.

Table 12. Tourism owners use of timber for the construction of their business facilities where 1=fully agree and 5=do not agree at all [n=139]

Statement	$\bar{x}$	σ	SE
Interior	1.67	.912	.077
Exterior	2.02	1.100	.093
Construction parts	2.14	1.029	.088

3.3.4. Business certification

Certification plays a major role in business *positioning*, especially for the accommodation businesses. Businesses were asked concerning their certification status and their brand. Multiple answers were possible. 34 *Qualitätsbetriebe Rothaarsteig* took part in the study, four of them also obtain a certificate of *Sauerländer Wandergasthöfe*. 15 businesses are certified *Sauerländer Wandergasthöfe*. 19 businesses obtain a supraregional certification which is not necessarily forest-based tourism related but certifies a certain standard (e.g. DeHoGa). Eight businesses hold another regional forest-based tourism related certificate, such as *Bike-freundliche Betriebe*. 74 businesses did not declare any certification. One business declared a non-relevant certification.

3.3.5. Products and Services

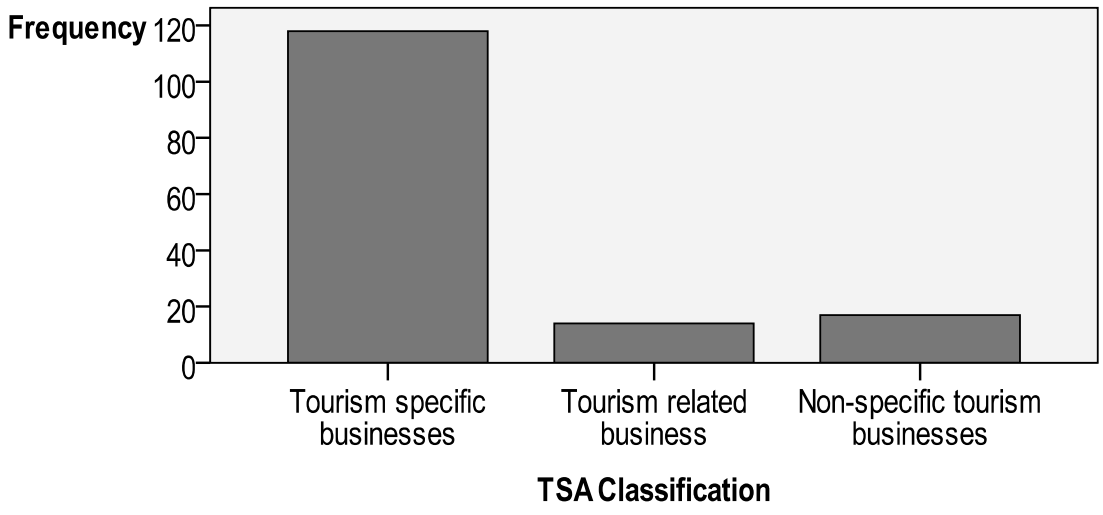
All survey participants were asked to determine their kind of business and the kind of products or services they provide. Out of all survey participants, 76 businesses provide hotel accommodation, 31 guest house accommodation, 6 campsites, 39 vacation homes and 7 other accommodation possibilities. Because multiple answers were possible, guest houses and hotels occurred to indicate vacation homes, too. 14 businesses without any accommodation services were surveyed. Of all accommodation businesses 89 businesses owned a restaurant.

Businesses were also asked to determine supplemental products and services. Multiple answers were possible. 31 businesses state to offer recreational infrastructure (e.g. walking / hiking trails on the business' property, benches, picnic tables, campfires sites). 24 survey participants offer information on forest–based tourism and recreation issues, 19 offer nature sports (e.g. Nordic–walking, guided hiking tours, biking) and 19 businesses rent sport equipment (e.g. mountain bikes, Nordic–walking poles). 31 businesses indicate to offer health related services (e.g. sauna, massage) and 10 businesses offer other services.

3.3.6. Business classification

Businesses were classified according to their TSA status, their product offering and their certification. First, the businesses were classified according to the TSA framework into tourism–specific businesses (offering accommodation), tourism–related businesses (gastronomy services) and non–specific tourism businesses.

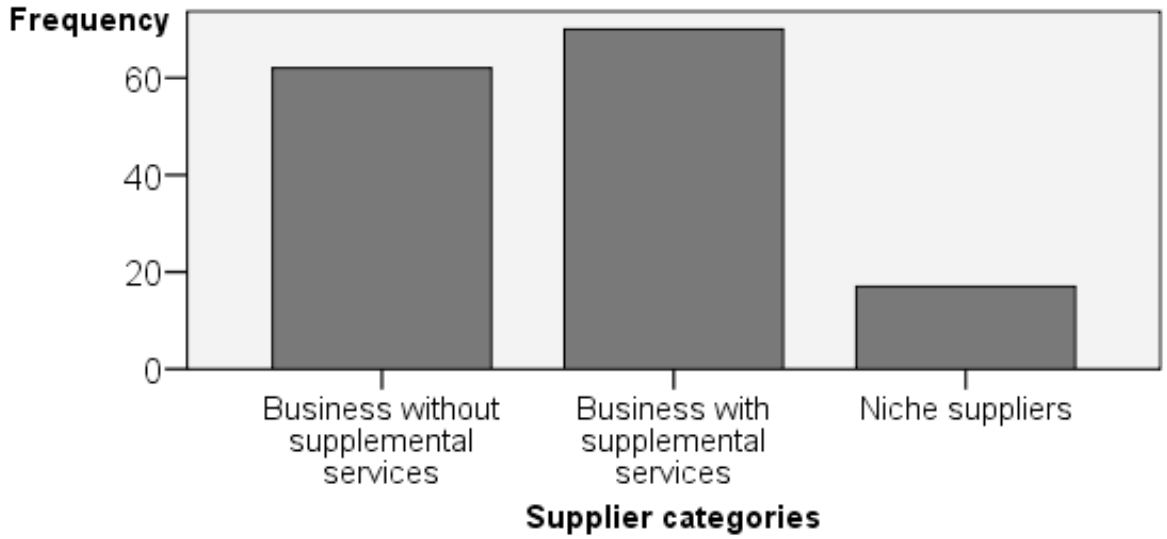
Figure 18. Frequency distribution of the tourism business categories according to the TSA classification [n=149]



Among all businesses, 118 tourism–specific, 14 tourism–related and 17 non–specific tourism businesses were surveyed (Figure18).

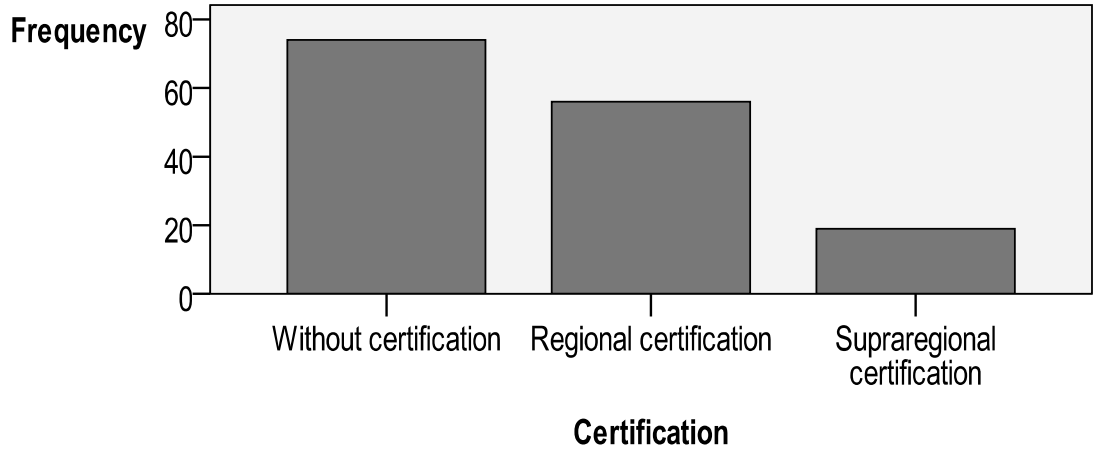
At the same time businesses were categorized according to their offer of products and services. Businesses with supplemental products and services, which exceeded a basic standard offer, were categorized "businesses with supplemental services" [n=70]. Those businesses are for example accommodation businesses offering forest–based activity information, guided tour services or health services. Businesses with accommodation and food services only, were grouped as "businesses without supplemental services" [n=62]. The category "niche suppliers" [n=17] contains businesses that exclusively aim their offers at forest tourists (Figure 19).

Figure 19. Frequency distribution of the tourism business categories according to their offers (products and services) [n=149]



In a third step businesses were classified according to their certification. Businesses that marked "no certification" were grouped into "without certification". Businesses belonging to a regional brand, such as *Qualitätsbetriebe Rothaarsteig*, *Sauerländer Wandergasthöfe* or *Bike–freundliche Betriebe* were grouped into "regional certification". If they occurred to possess an additional supraregional brand, such as *wanderfreundlicher Betrieb*, the regional brand was chosen before the supraregional brand. All businesses endued with a supraregional brand, were grouped into the supraregional category. 74 businesses had no certification, 56 a regional and 19 had a supraregional certification (Figure 20).

Figure 20. Frequency distribution of the different certified tourism businesses [n=149]

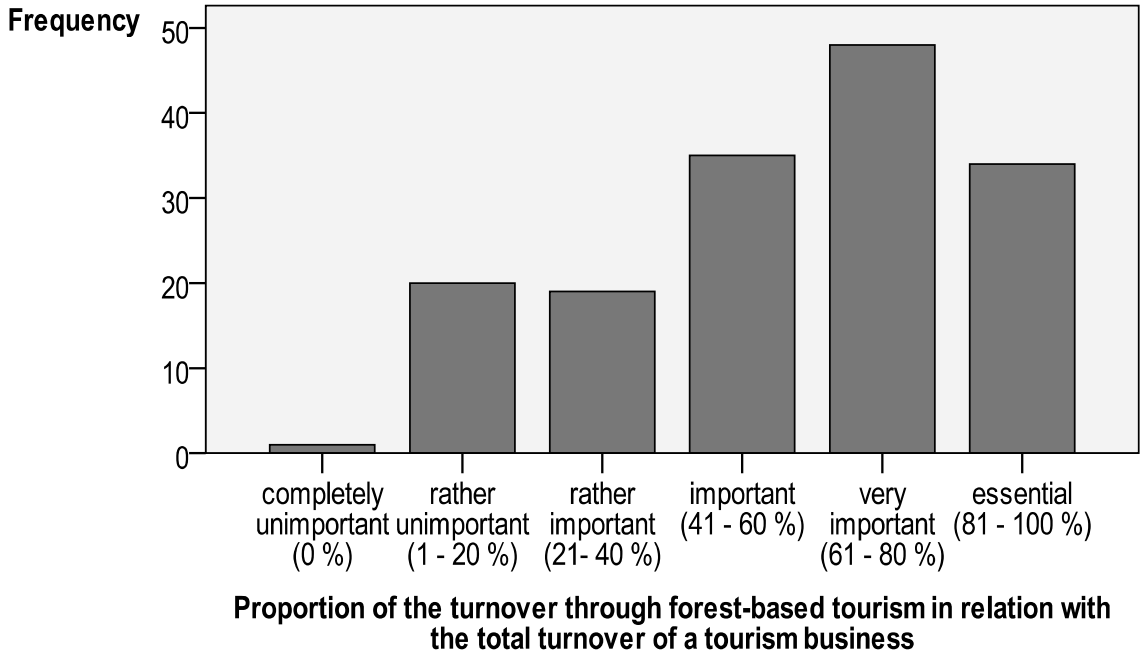


3.3.7. Relevance of forest-based tourism

Tourism businesses were asked to determine the relevance of forest-based tourism measured by the proportional turnover or share in relation to the total turnover of their business over the course of one year.

Across all business categories the average mean turnover through forest-based tourism was ranked to be 'important' (41–60%; $\bar{x} = 3.34$; $\sigma = 1.324$). Hence 95% of the tourism businesses agree that forest-based tourism is 'rather important' (21–40%) to 'very important' (61–80%) for their business operations (Figure 21).

Figure 21. Frequency distribution of proportional turnover through forest-based tourism across all tourism businesses [n=157], where categories in questionnaire match 0=0% to 5=81-100%



The means for the different TSA categories show that tourism–specific businesses estimate their turnover higher ($\bar{x}$ = 3.69; σ =1.119; category 3 =41–60%) than tourism–related businesses ($\bar{x}$ = 3.00; σ =1.155) or non–specific tourism businesses ($\bar{x}$ =3.00; σ =1.317). The means for the different categories according to the business offers show that businesses with complementary forest–based tourism products and services estimate their turnover through forest–based tourism higher (category 3, tendency to 4=41–60%; $\bar{x}$ =3.88; σ =1.100) than businesses without complementary services ($\bar{x}$ =3.32; σ =1.112) and niche suppliers ($\bar{x}$ =3.00; σ =1.317). For the different certification groups, the average mean is calculated with $\bar{x}$ =3.93 (σ =.931) (category 3, tendency to 4) for the businesses with a regional certification, $\bar{x}$ =3.05 (σ =1.471) for the businesses with supraregional certification and $\bar{x}$ =2.90 (category 2=21–40%; σ =1.406) for the businesses without certification.

3.3.8. Factor conditions for regional forest–based tourism

In order to understand how local tourism businesses perceive regional key factors with regard to forest–based tourism, they were asked to evaluate crucial factor conditions (Table 13). Most tourism businesses agree on the status of the natural assets in the region. They evaluate its nature use potential to be good or very good with 1.68 [σ = .575]. Tourism businesses also agree on well qualified employees [σ = .633] and a good *positioning* of their business [σ = .575]. Innovation and marketing are rated rather moderate with 2.42 [σ = .787] and 2.57 [σ = .834].

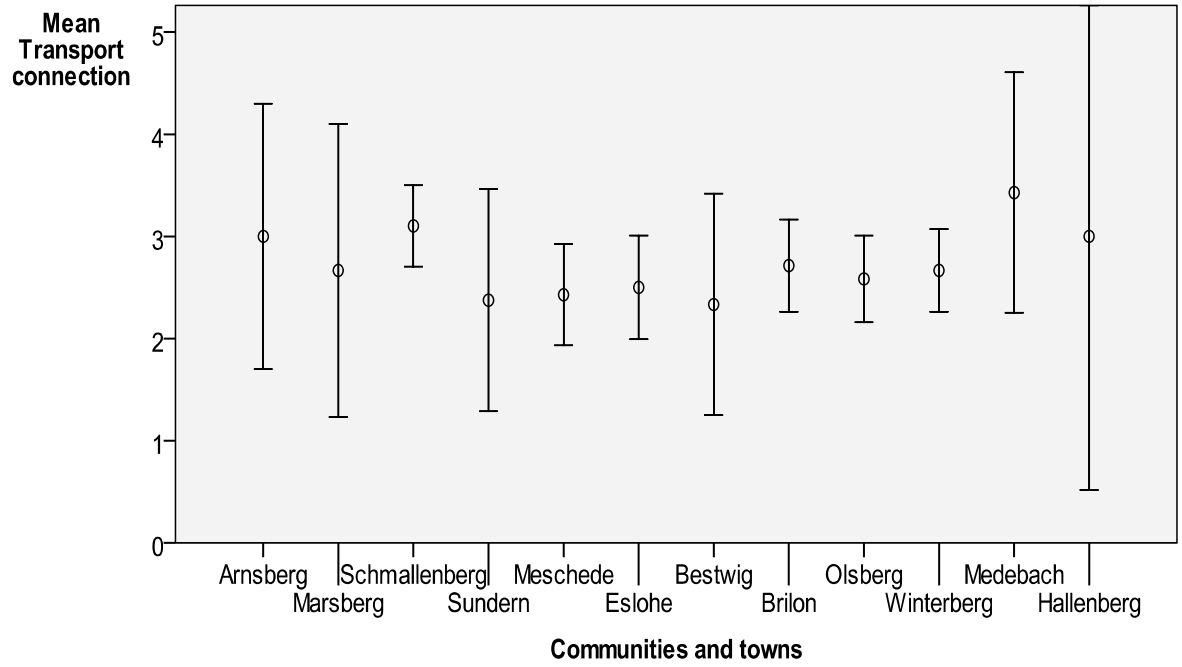
Factors which can not directly be influenced by the business owner, such as governmental support or extern depiction by media and society, are reviewed negatively. The same factors also stick out by their rather high standard deviation. The highest standard deviation can be found concerning the transport connection to the area (1.071) and the availability of investment funds (1.091), indicating a high variation of opinions. Since the 95% CI merely excludes the extremes of 1 and 5, transport connection as well as available investment funds are estimated to be neither extremely good nor bad. However, the transport connection differs from community to community, due to the single Autobahn 46 in the north of the County and a rather coarse railway net due to the mountainous character of the landscape.

Table 13. Evaluation of specific factor conditions for forest-based tourism by tourism businesses in the case study area Hochsauerlandkreis [n=145], using a five-point-Likert-scale with 1=very good and 5=very bad

Factor condition	$\bar{x}$	σ
Transport connection to the area	2.75	1.071
Nature use potential	1.68	.745
Qualification of employees	2.09	.633
Availability of qualified employees	3.00	.875
Availability of investment funds	2.93	1.091
Business positioning	2.14	.575
Business establishment at the market	2.32	.745
Innovation	2.42	.787
Marketing	2.57	.834
Governmental support	3.82	.823
Image through media and society	3.28	.751

The eastern communities and towns like Hallenberg, Marsberg and Medebach evaluate the transport connection to the area to be mediocre or rather bad (Figure 22). A significant increase in the standard deviation shows a high controversy concerning this factor.

Figure 22. Estimation of the transport connection to the area by tourism businesses in the individual communities and towns in the Hochsauerlandkreis with standard deviation (95% Error CI), [n=145]



Notably tourism businesses in Arnsberg evaluate their transport connection to be mediocre, although the infrastructure has been farther developed there than in any other town or community in the HSK. The towns Bestwig, Sundern and Meschede, all in proximity to the A46 evaluate the transport connection to be rather good. The two main tourist communities, Schmallenberg and Winterberg differ by 0.4 points on the five–point–Likert–scale. Businesses in Winterberg, which are closer to the A46 in Brilon and connected to the railway net, evaluate their infrastructure more positively than businesses in Schmallenberg.

3.3.9. Importance of cooperation with other businesses

Tourism businesses were asked to evaluate the importance of cooperation with businesses of the same branch, multiplier businesses (such as tourist information offices and tour operators), with other branches as well as with the forest service and forest owners. On a four–point–Likert–scale 1 marked "very important" and 4 marked "completely unimportant". In average the cooperation with multiplier businesses was evaluated to be most important [$\bar{x}$ = 1.60; σ = .657] followed by the cooperation with the same branch [$\bar{x}$ =1.66; σ = .643]. The cooperation with other branches [$\bar{x}$ =1.89; σ = .666] and with the forest service and forest owners [$\bar{x}$ =1.90; σ = .734] was less important than the prior two, though still important.

3.3.10. Certification and turn–over

In order to analyze the relationship between the different kinds of certification of the tourism businesses and their total turnover, a one–way ANOVA was performed (Table 14). The Kruskal–Wallis–test applied prior to the ANOVA confirmed its use despite the lack of a normal distribution. The same procedure was carried out concerning the proportional turnover through forest–based tourism.

In both cases a significant relation (at the .05 level) between the kind of certification and the total turnover can be observed (Table 14). This is identical with the estimated proportional turnover through forest–based tourism. The homogenous subsets show a clear division into two classes. The most significant relation is shown between certification and the turnover of a tourism business. While businesses without a certification or with a supraregional certification tend to have an average total turnover of less than 500T Euros, the businesses with a regional certification are situated one turnover class higher. Their average turnover lies between 500T and 1 Mil. Euros. Notably the significance is indicated with 1.000 (Table 15).

Table 14. One-way ANOVA with dependent variables: total turnover (in thousand Euros) and proportional turnover through forest-based tourism in relation with certification status: 1 = <100; 2 = <500; 3 = <1.000; 4 = <2.000; 5 = <3.000; 6 = ≥3.000, where company is in smallest turnover class

Dependant variable	[I] Certification	[J] Certification	MD	SE	Sig.
Turnover [EUR]	Regional certification	Without certification	.933***	.219	.000
		Supraregional certification	.925*	.319	.017
Estimated proportional turnover through forest-based tourism	Regional certification	Without certification	1.024***	.223	.000
		Supraregional certification	.876*	.334	.034

* The mean difference is significant at the .05 level.

Table 15. Homogenous subset for one-way ANOVA on business category according to certification status and total turnover in classes 1 – 6, where mean value describes mean turnover class

Certification	N	Subset for alpha = .05	
		1	2
Without certification	63	1.71	
Supraregional certification	18	1.72	
Regional certification	51		2.65
Sig.		1.000	1.000

A somewhat less significant relation between certification and proportional turnover through forest-based tourism is shown in the second homogenous subset. Tourism businesses without a certification or with a supraregional certification state turnover through forest-based tourism to be rather important (category 2) or important (category 3). A small difference in the average mean can be observed at the businesses with the supraregional certification, which indicate turnover through forest-based tourism to be slightly more important. Tourism businesses holding a regional certification declare forest-based tourism to be very important (category 4) for the turnover of their business (Table 16).

Table 16. Homogenous subset for one-way ANOVA on business category according to certification status and proportional turnover through forest based tourism in classes 1-6, where mean value is mean value of class [EUR]

Certification	N	Subset for alpha = .05	
		1	2
Without certification	73	2.90	
Supraregional certification	19	3.05	
Regional certification	56		3.93
Sig.		.883	1.000

3.3.11. Product offering and turnover

The same analysis is used to verify a linkage between product offerings and the total turnover. The procedure is also carried out for the proportional turnover through forest-based tourism.

The businesses with complementary services differ from the businesses without complementary services and niche suppliers by a MD of .741** and 1.067**.

Table 17. One-way ANOVA with dependent variables: total turnover [in thousand Euros] and proportional turnover through forest-based tourism in relation with product offering: 1 = <100; 2 = <500; 3 = <1.000; 4 = <2.000; 5 = <3.000; 6 = ≥3.000, where company is in smallest turnover class

Dependant variable	[I] Business categories	[J] Business categories	MD	SE	Sig.
Turnover [EUR]	Business with complementary service	Business without complementary service	.741**	.214	.003
		Niche businesses	1.067**	.328	.006
Estimated proportional turnover through forest-based tourism	Business with complementary service	Business without complementary service	.566*	.200	.021
		Niche businesses	.882*	.314	.021

* The mean difference is significant at the .05 level.

Regarding the proportional turnover through forest-based tourism, the MD turns out slightly lower. Moreover the significance is given at the .05 level (Table 17). The homogenous subsets show a clear tendency towards a higher total turnover among businesses offering complementary services (Table 18).

Table 18. Homogenous subset for one-way ANOVA on business category according to offered products and services and total turnover in classes 1- 6, where mean value is mean value of class [EUR]

Certification	N	Subset for alpha = .05	
		1	2
Niche suppliers	15	1.47	
Without complementary services	53	1.79	
With complementary services	60		2.53
Sig.		.549	1.000

However, there is no clear result on whether the higher turnover is derived from forest-based tourism (Table 19).

Table 19. Homogenous subset for one-way ANOVA on business category according to offered products and services and proportional turnover through forest-based tourism [EUR]

Certification	N	Subset for alpha = .05	
		1	2
Niche suppliers	16	3.00	
Without complementary services	60	3.32	3.32
With complementary services	68		3.88
Sig.		.535	.139

Applying a one-way ANOVA on the data subset according to the TSA categories (tourism-characteristic, tourism-related and non-specific tourism businesses) did not lead to significant results.

3.3.12. Tourism operators opinion on hurricane damages to the region

Tourism businesses were asked to comment on a set of statements (Table 20) concerning the influence of the hurricane *Kyrill* on the region. The statements included one positive, one neutral and one negative outlook (see Annex IV).

Table 20. Tourism operator attitude towards hurricane *Kyrill* and its influence on the landscape in the Hochsauerlandkreis on a 5-point-Likert-scale where 1=fully agree and 5=do not agree at all [n=134]

Statement	$\bar{x}$	σ	SE
The hurricane was a chance for the region. [e.g. better lookouts from the top of the hills, nicer views]	2.82	1.181	.099
The hurricane damages are to be seen negative for a short time [e.g. blocked trails], but they do not constitute danger to the attractiveness of the region for longer periods. [e.g. chance for new tree species]	2.14	.913	.076
The hurricane damaged the region and its natural assets severely [e.g. forestry] and will affect the natural scenery for longer periods.	2.96	1.196	.100

Resulting, tourism businesses rather agree on the neutral statement "The hurricane damages are to be seen negative for a short time but they do not constitute danger to the attractiveness of the region for longer periods" [$\bar{x}$ = 2.14; σ = .913]. The average response towards the positive and negative statements shows a rather high standard deviation. In both cases 95% of all businesses could either "rather agree", "partly agree / partly disagree" or "rather disagree". Clear conclusions can not be drawn from these results.

3.3.13. Tourism operators opinion on *free access right* and legal regulation

Because of the recurring controversy between forest owners and tourism planners in the last years, another objective of this study was to identify a general position of the tourism operators concerning the issue of the *free access right* on private forest property. First, tourism businesses were asked whether they were informed of the existence of a *free access right* in German forests. Out of 162 businesses, 110 (67,9%) are informed on the issue, 15 businesses (9,3%) state to have no knowledge of the issue and 37 (22,8%) refuse to respond. Tourism businesses

were then asked to comment on a set of statements (Table 21). Tourism operators "rather disagree" or "do not agree at all" on "reimbursing the forest owner out of their own pocket" [$\bar{x} = 4.21$; $\sigma = 1.045$].

Table 21. Tourism operators attitude on free access right to forests in Germany and the possible reimbursement of the forest owner on a 5-point-Likert-scale where 1=fully agree and 5=do not agree at all [n=134]

Statement	$\bar{x}$	σ	SE
The forest owner should be reimbursed for his additional expenses.	3.62	1.397	.121
Each tourist should pay an overall additional fee to reimburse the forest owner.	4.19	1.086	.094
Each profiting tourism business should pay a certain percentage of its income according to the total turnover to reimburse the forest owner.	4.21	1.045	.091
Nobody should pay anything.	2.15	1.493	.128

This response marks also the one with the lowest standard deviation. Although the standard deviations are rather high, a tendency towards "rather disagree" to "not agree at all" becomes evident through all sets of statements, except for the "Nobody should pay anything." statement. In the course of the data acquisition it became evident that a great part of the tourism business owners were forest owners as well. Revealing this fact sometimes included the refusal to answer these questions.

3.4. Visitor survey results

3.4.1. Demography

Since there was no differentiation between overnight guests, day visitors or local residents seeking recreation, every recreation seeker was able to fill out the questionnaire. Of all participants 79% are overnight guests, 19% day visitors and 2% locals or from the region.

The average age of the survey participants in the HSK is 51 years [σ =14.4] implicating that 95% of all survey visitors were between 37 and 65 years old while 46% [n=86] of them were men and 54% [n=101] were women. At the same time the average age of the overnight visitor is slightly higher with 53 years [σ =14.3] than the age of the day visitor with 46 years [σ =13.6]. The average educational level is rather high. Over 42% [n=75] of the visitors own a university degree, 15% [n=26] finished college [*Abitur*] and 28% [n=49] finished high school [*Realschule*]. The average income, before taxes, is around 2,500 Euros [$\bar{x}$ =4.44]. The rather high standard deviation of σ = 2.635 leads to the conclusion that 95% of all participants earn between 1,000 and 3,500 Euros per month.

3.4.2. Travel statistics

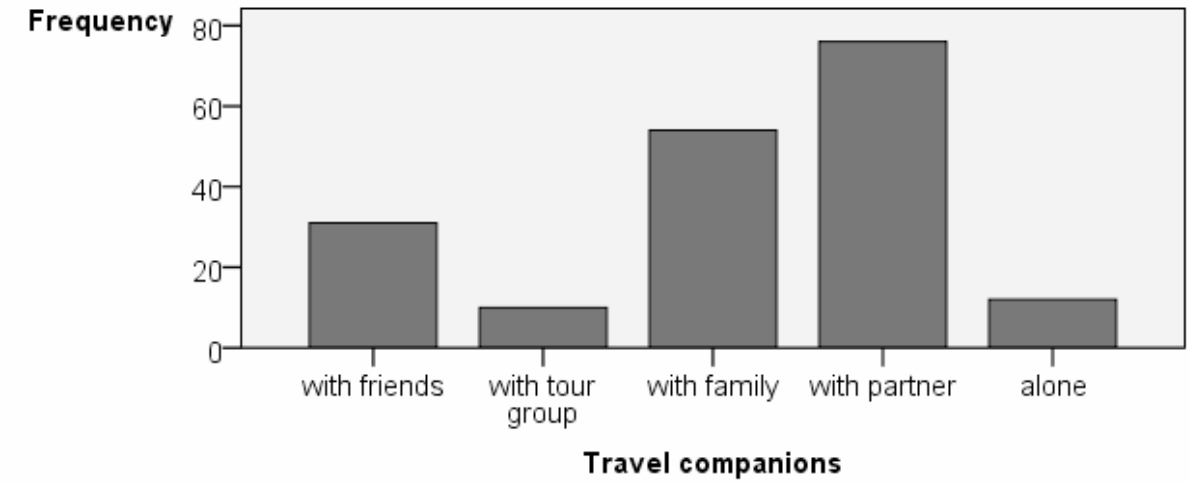
More than two thirds of the survey participants came from North Rhine–Westphalia, about 18% from other German federal states, while most of them visited from the neighboring states Rhineland–Palatinate and Hesse, 14% came from the Netherlands (Table 22).

Table 22. Cross table: Visitor accommodation according to origin of the survey participants in the Hochsauerlandkreis

		Federal state			
		North Rhine-Westphalia	**Germany**	**Netherlands**	**Total**
Accommodation	**Overnight guest**	87 (62.6%)	28 (20.1%)	24 (17.3%)	**139** (100.0%)
	Day visitor	31 (96.9%)	1 (3.1%)	0 (0%)	**32** (100.0%)
	Other	2 (50.0%)	2 (50.0%)	0 (0%)	**4** (100.0%)
Total		**120 (68.6%)**	**31 (17.7%)**	**24 (13.7%)**	**175 (100.0%)**

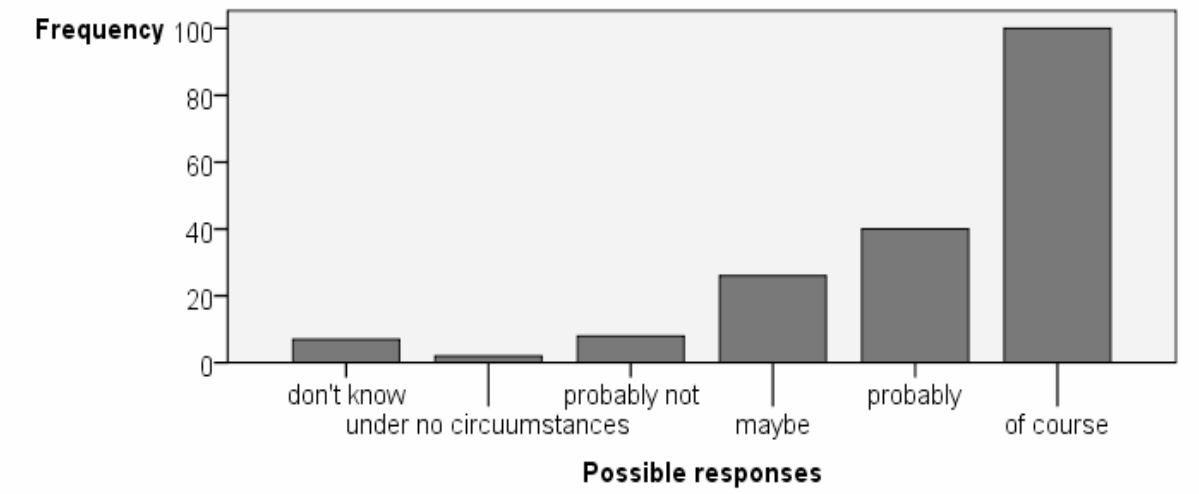
The majority of the survey participants traveled accompanied by their partners (41.5%), the next biggest group is marked by families (29.5%) (Figure 23). 16.9% traveled with their friends and only 6.6% traveled alone. The most common type of transportation taken to the destination was the private car with 91.3%. Only 6% used public transportation. Among the overnight guests, the vacation home was the most common accommodation feature with 32.2%. 28.3% of the participants stayed at hotels. The majority stayed for 2 (12.9%), 3 (14.4%) or 4 (17.3%) nights. The average stay through all visitors is 5.6 days [σ =4.47]. In summary 69.1% stayed for less than a week emphasizing once more the region's short–trip character.

Figure 23. Frequency distribution of the different kinds of travel company of the visitors in the Hochsauerlandkreis [n=183]



Visitors learned about vacation possibilities in the region primarily through family and friends (38.1%), internet (22.7%) or other sources (23.2%). Only 8.3% came through advertisements from tour operators or tourism businesses and 7.7% through newspapers or magazines. The most survey participants are regulars or repeat visitors to the region (63%). Only 12.5% have never visited the region before. On the question if the survey participant plans another visit to the region, more than half of the visitors are sure to come back (54.6%) (Figure 24). Only 5.5% exclude another visit to the area.

Figure 24. Frequency distribution of the different answer possibilities whether or not the visitor plans to return to the Hochsauerlandkreis [n=183]



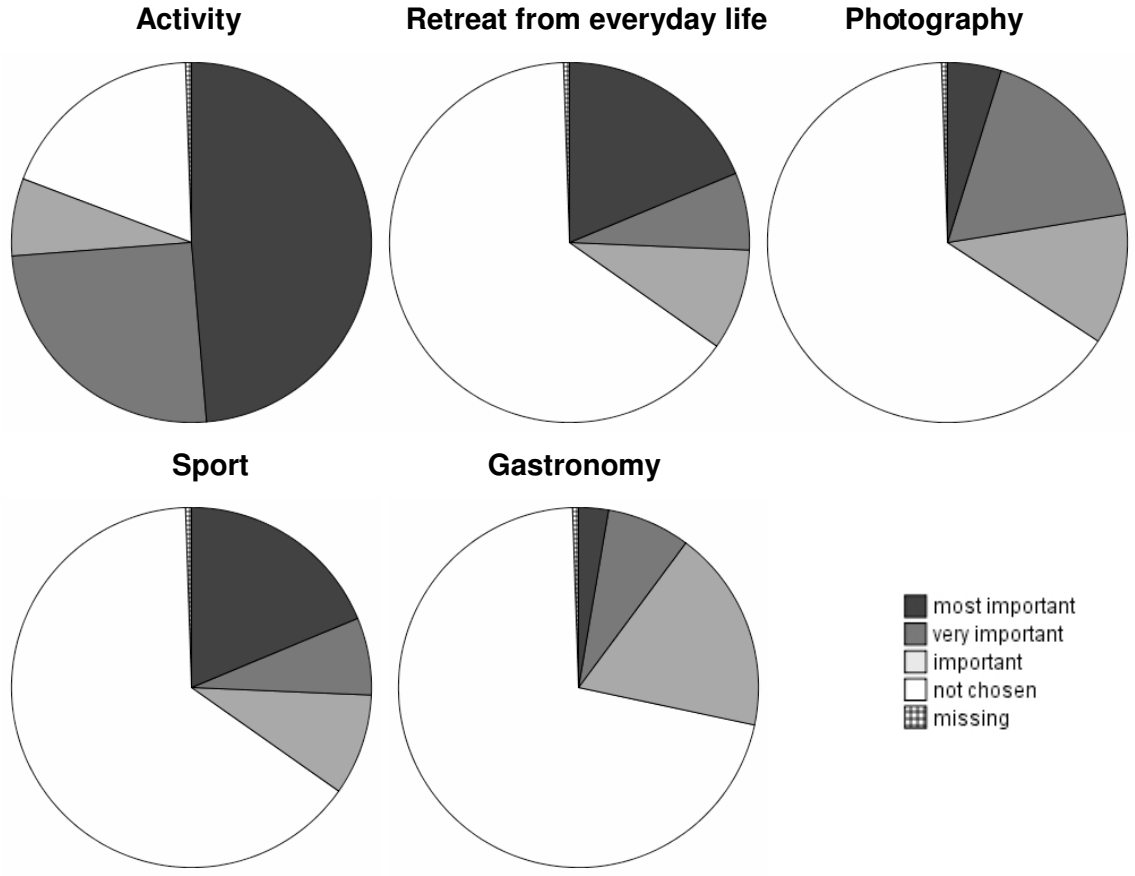
3.4.3. Visitor attitude and interests

In order to detect which regional landscape features the participants find to be most characteristic, they were asked to choose various features from a list with multiple answer possibilities. Among all characteristics “hills and valleys” were chosen with 83.3% and “forest” with 76.3% most often. “Little towns and villages” followed with 53.2% and “springs, creeks and rivers” with 51.1%. The “climate” (29.6%) and “acres, fields and meadows” (20.4%) were chosen least often.

Additionally, the survey participants were asked to rank their top three interests according to the scale “most important”, “very important” and “important” while staying the region. Every second participant ranked “recreation through activity” most important. For every fourth participant it was still “very important” and for 7% it was “important” (Figure 25). With $\Sigma = 366$ (frequency x importance) “recreation through activity” is the most important interest to the survey participants. This was followed by the “search for a retreat from everyday life” which half of the survey participants found to be “most important” or “very important” [$\Sigma = 245$]. The two subsequent interests were “recreation through sports” [$\Sigma = 143$] and “photography and nature observation” [$\Sigma = 111$] of which the latter was chosen most often as “very important” or “important”. “Gastronomy of the region” was chosen most often as “important”. These last two interests often remain complementary to main interests.

Other interests such as “wellness”, “towns and architecture” and “culture and history” were rarely chosen and most often additionally to other “most important” interests. The latter interests mark no top interests for the visitors.

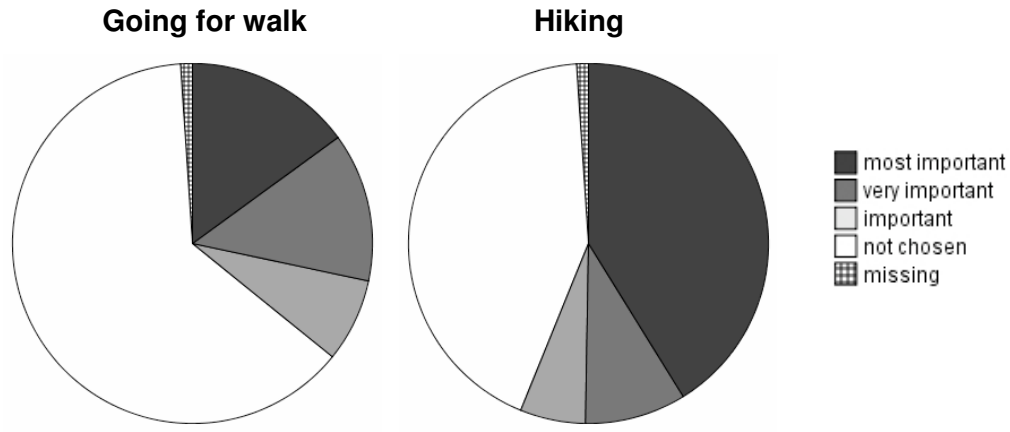
Figure 25. Survey participants top three interests while staying in Hochsauerlandkreis [n=186]



3.4.4. Forest–based activities

Another objective of the study is specifying which activities people pursue during their stay in the region and what their main activities and their secondary (supplemental) activities are. Although the survey questionnaires were available through out the seasons, the most important activity remains hiking with $\Sigma=276$. Additionally, "hiking" is chosen to be "very important" by 77 survey participants (Figure 26). Consequently "going for a walk", the less intense form of "hiking" is specified with "most important" by 28 participants and it is still "important" to 25 participants. Every fourth visitor primarily seeks recreation through other sports such as skiing [$\Sigma=72$], mountain biking [$\Sigma=55$] and Nordic–walking. Complementary activities are "sightseeing" (very important=26; important=20), testing the regional cuisine (very important=11; important=19) and a general "recreational stay in the nature" (very important=30; important=31).

Figure 26. Ranking differences between "going for a walk" and the more intense form "hiking" through all forest-based tourists in the HSK [n=186]



The least chosen activities are "Nordic–skating", "horseback riding", "visiting cultural events" and "visiting athletic events" (Table 23).

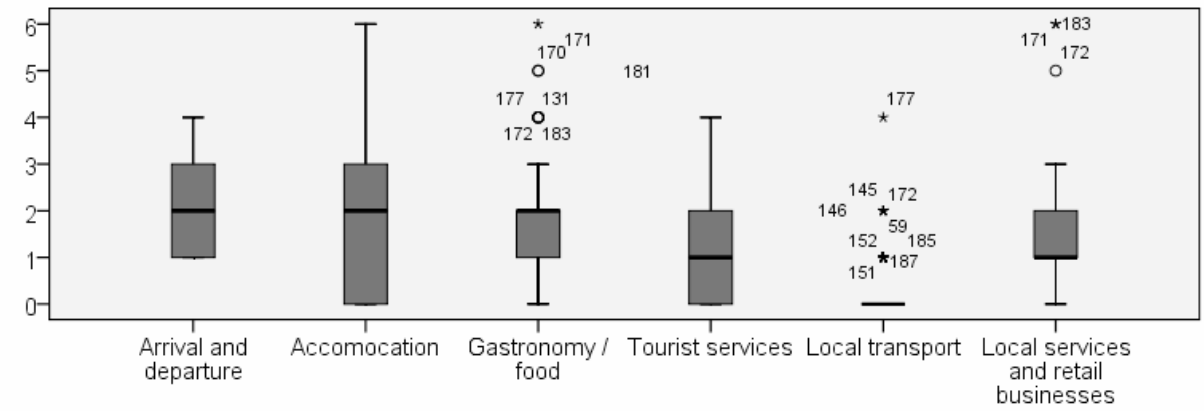
Table 23. Frequency of the pursued activities according to their importance [n=186], (values missing not in count)

Activity	most important (factor 3)	very important (factor 2)	important (factor 1)	not chosen	Σ
Hiking	77	17	11	80	276
Going for a walk	28	25	14	118	148
Nordic-walking	8	6	1	170	37
Cycling	6	6	4	169	34
Nordic-skating	1	0	0	185	3
Mountain biking	11	11	0	163	55
Skiing	15	10	7	153	72
Horseback riding	1	5	0	179	13
Bob sledding	5	2	3	175	22
Sightseeing	4	26	20	135	84
Visiting cultural events	0	1	5	179	7
Test regional cuisine	1	11	19	154	44
Visiting athletic events	0	3	2	180	8
Wellness	0	6	9	170	21
Recreational stay in the nature	12	30	31	112	127
No special activities, just a change of place	7	11	27	140	70

3.4.5. Average expenditure

The average expenditure of the visitor varies strongly, depending on the practiced activities, the length of the stay and the income of the visitor. The most significant differences can be found in accommodation services and tourist services. The average visitor spends between 11–50 Euros per day on accommodation, between 11–25 Euros per day on food, and up to 25 Euros on tourist services (Figure 27). No expenses for the local transport are made. The few outliers can be traced back to ski tourists, whose local transport use includes ski–lifts. A marginal expense of 11–25 Euros occurs for local services and retail businesses.

Figure 27. Average expenditure and standard deviation extend of tourists and recreation seekers per day in the Hochsauerlandkreis for different declarations in classes [where 1<10; 2<25; 3<50; 4<75; 5<100; 6≥100 except for arrival and departure where 1<20; 2<40; 3<80; 4≥80 n=184, outliers mark numbered cases in dataset]



The results confirm the published average expenses by Harrer for overnight visitors to the area (Harrer and Scherr, 2002).

3.4.6. Forest values

To obtain visitor values and beliefs on the forests in the Hochsauerlandkreis, visitors were asked to comment on a set of statements. Generally the survey participants fully agree or agree on all statements made (Table 24). However, they agree least on the statement that forests serve as an important employer to the region [$\bar{x}$ =1.99; σ = .793]. Notably is also the high standard deviation marking a controversy among the survey participants concerning this statement, although the first phrase on the cover letter of the questionnaire stated the economic importance of forests. Visitors agreed the most that forests are important for fauna and flora [$\bar{x}$ = 1.18; σ = .399] and an attractive landscape element [$\bar{x}$ = 1.32; σ = .491].

Table 24. Visitors values and beliefs concerning the forest and its importance in the Hochsauerlandkreis on a 4-point-Likert-scale where 1=fully agree and 4=do not agree at all [n=168]

Statement	$\bar{x}$	σ	SE
The forest of the region is an attractive landscape element.	1.32	.491	.037
The forest protects climate, air, soil and groundwater.	1.31	.499	.038
The forest of the region is a producer of regenerative energy.	1.61	.698	.054
The forest of the region is an important employer.	1.99	.793	.061
The forest of the region is important for tourism and recreation.	1.33	.551	.042
The forest of the region is an important habitat for plants and animals.	1.18	.399	.030

3.4.7. Visitor opinion on hurricane damages to the region

A similar set of statements was given to the visitors concerning influences of hurricane *Kyrill* on the region. Three scenarios, one positive, one neutral and one negative, were offered (Table 25).

Table 25. Visitors attitude towards hurricane *Kyrill* and its influence on the landscape of the region in the Hochsauerlandkreis on a 5-point-Likert-scale where 1=fully agree and 5=do not agree at all [n=168]

Statement	$\bar{x}$	σ	SE
The hurricane was a chance for the region. (e.g. better lookouts from the top of the hills)	3.49	1.312	.103
The hurricane damages are to be seen negative for a short time [e.g. blocked trails], but they do not constitute danger to the attractiveness of the region for longer periods. (e.g. chance for new tree species)	2.50	1.178	.090
The hurricane damaged the region and its natural assets severely (e.g. forestry) and will affect the natural scenery for longer periods.	2.52	1.257	.098

People tend to agree most on the neutral statement “The hurricane damages are to be seen negative for a short time but they do not constitute danger to the

attractiveness of the region for longer periods" [$\bar{x}$ = 2.50; σ = 1.178]. The second most agreed on statement was the negative statement "The hurricane damaged the region and its natural assets severely and will affect the natural scenery for longer periods." [$\bar{x}$ = 2.52; σ = 1.257]. A slight increase in the standard deviation can be observed. The survey participants tend to not agree with the positive statement which sees the hurricane as a chance for the region [$\bar{x}$ = 3.49]. A rather high standard deviation of σ = 1.312 indicates a high dissent on the statement. The generally high standard deviations on all statements impede a clear conclusion towards one or another statement. 95% of all visitor opinions vary between "rather agree", "partly agree / partly disagree", "rather disagree".

3.4.8. Visitor opinion on *free access right* and legal regulation

Because the *free access right* to forests in Germany and the herewith connected regulations have been reason for recurring controversy between forest owners and tourism planners in the last years, another objective of this study was to detect whether the tourist or recreation seeker was informed on the issue. Of n=160, 87 survey participants (46.5%) state that they know about the free access right and the possible additional costs for the forest owner caused by recreation seekers. 65 survey participants (34.8%) indicate that they are not informed on the issue. 8 participants (4.3%) refuse to respond and 27 values are missing.

Additionally, the visitors were given a set of options concerning a reimbursement of the forest owner through different sources (Table 26). An overall tendency towards a disagreement concerning the reimbursement of the forest owner could be observed. Even more strongly, the forest owner should not be reimbursed by the tourist.

Table 26. Visitors attitude towards options to reimburse the forest owner in the Hochsauerlandkreis on a 5-point-Likert-scale where 1=fully agree and 5=do not agree at all [n=168]

Statement	$\bar{x}$	σ
The forest owner should be reimbursed for his additional expenses.	3.49	1.331
Each tourist should pay an overall additional fee to reimburse the forest owner.	3.68	1.284
Each profiting tourism business should pay a certain percentage of its income according to the total turnover to reimburse the forest owner.	2.96	1.373
Nobody should pay anything.	2.64	1.467

According to visitor opinion the forest owner should rather be reimbursed by the profiting tourism businesses. The most agreeing response is given on “Nobody should pay anything”, however this is also the statement with the highest standard deviation. From the generally high standard deviations between 1.284 and 1.467, it is difficult to draw a clear conclusion since 95% of all opinions could be either “rather agreeing”, “partly agreeing / partly disagreeing” or “rather disagreeing”. However, visitors tend to be unwilling to spent additional money to reimburse the forest owner.

3.5. Results from expert interviews

18 expert interviews were carried out in the course of the data acquisition in order to obtain additional qualitative information and to compare statements made by tourism businesses and managers. The focus of the expert interviews was on the additional qualitative data. This includes communication and cooperation between the different institutions, communication patters, networking, innovation processes and an outline of problems and conflicts. Additionally, a SWOT-analysis was carried out.

Prior to the acquisition of the qualitative data, tourism experts were asked to estimate the average forest-based tourist or customer in the Hochsauerlandkreis compared to other forest-based tourism destinations in a 3-point-Lickert-membrane. This was carried out in order to compare the experts' specifications with the ones made by tourism businesses. Tourism experts were therefore filtered from the other forest-based tourism related experts, resulting in n=7. In a direct comparison a similar result can be detected. Tourism experts possess the same knowledge about the average client as tourism businesses (Table 27).

Table 27. Estimation of the average customer by tourism operators and tourism experts in the Hochsauerlandkreis in comparison with other forest-based tourism destinations in frequency percent (where 1 = age, 2 = number of single visitors, 3 = number of families, 4 = number of couples, 5 = new visitors, 6 = regular / repeat visitors, 7 = comfort demand of customer, 8 = customers' interest in nature, 9 = customers interest in sports and health). Highlighted values mark strong deviations.

Tourism operators and experts	1	2	3	4	5	6	7	8	9
Operators (n = 142)									
low	4.2	49.3	42.6	6.4	23.7	16.4	2.2	4.3	9.1
average	64.8	38.4	35.5	35.0	59.0	42.1	51.4	20.3	46.2
high	31.0	12.3	22.0	58.6	17.3	41.4	46.4	75.4	44.8
Experts (n = 7)	n = 6	n = 6	n = 7	n = 7	n = 7	n = 7	n = 6	n = 6	n = 6
low	-	83.3	14.3	-	14.3	-	-	-	-
average	83.3	-	57.1	28.6	57.1	42.9	50.0	33.3	16.7
high	16.7	16.7	28.6	71.4	28.6	57.1	50.0	66.7	83.3

Deviations are marked in orange and can be observed regarding the estimation of the average customer's interest in sports [9] and the number of visiting families [3]. The yellow fields mark the same tendency but a significant difference in peculiarity.

3.5.1. Factor conditions for regional forest–based tourism

Experts were asked to evaluate the factor conditions for forest–based tourism and recreation in the HSK. The greatest compliances concern the nature use potential, which experts evaluate to be "very good". This criterion shows also the smallest standard deviation (Table 28). The transport connection is the most controversial point. Generally all criteria are evaluated rather positive. Especially experts with a tourism background evaluate the marketing and innovation power to be well developed, compared to other regions. In the interview situation experts add the different certificates as a regional asset to business *positioning*.

Table 28. Evaluation of specific factor conditions for forest-based tourism by experts of forest-based tourism and related branches in the case study area Hochsauerlandkreis [n=15], using a five-point-Likert-scale with 1=very good and 5=very bad

Factor condition	$\bar{x}$	σ
Transport connection to the area	2.07	1.067
Nature use potential	1.40	.257
Qualification of employees	2.13	.410
Availability of qualified employees	2.77	.359
Availability of investment funds	3.14	.747
Business positioning	2.00	.154
Business establishment at the market	2.43	.725
Innovation	2.43	.879
Marketing	2.36	.247
Governmental support	2.54	.769

3.5.2. Networks and cooperation

In order to determine all connected entities, linked by networks and through communication processes among tourism managers, representative, stakeholders and infrastructural providers, the experts were asked to name all organizations, associations or companies they cooperate with on a regular basis. It becomes evident that governmental institutions primarily seek contact to other administrative scale institutions, which they commonly named first. Local tourism

management organizations focus on product networks in different market segments (e.g. hiking, family vacation) and on a close communication with the local accommodation businesses. In the case of Schmallenberg, where the managing institutions for tourism, forestry, sawmill and wood industries are situated in one building (*Holz– und Touristikzentrum Schmallenberg*) shorter communication channels support a frequent communication and cooperation (personal communication, von der Golz, 01/2008, Weber, 07/2007, Rosenkranz 07/2007).

Notably the network of cooperating institutions spreads outside the region reaching food brands, e.g. *Alpro Soja* and *Veltins*, universities as well as research institutions and associations, e.g. *Deutscher Wanderverband* (DWV), *Sporthochschule Köln*, *Dwif, Europäisches Tourismus Institut Trier* (ETI), and consulting services, e.g. *Wenzel Consulting*. Commissioned studies have covered evaluation and product improvements (Dwif, Wenzel Consulting, DSHK) as well as potential niche markets for forest–based products and services by ETI (Quark *et al.*, 2005, Quark and Philipsenburg, 2006).

While almost all organization stated to be interconnected, the regional hunters association is the only association no one declared to cooperate with.

Additionally, experts were asked to rank communication processes between their institution and other tourism or tourism–related institutions on a 5–point–Likert scale. Most important is the communication among and with the tourist managers [$\bar{x} = 1.42$; $\sigma = .515$]. Communication with the local accommodation businesses is also important [$\bar{x} = 1.83$; $\sigma = 1.337$]. The high standard deviation derives from other experts, e.g. forest authorities or the regional hunters association, who evaluate the communication with the hotel sector as rather unimportant. Although all tourism managers agree on the importance to closely communicate with forest authorities, they admit that the first mutual communication and cooperation has occurred past the hurricane *Kyrill*. The same was stated from the side of the forest authorities:

- "*Although our forest officers maintain good relations with the tourism management, […] Kyrill caused a change of the situation. […] We wanted to get the timber out as fast as possible and they [the tourism management] wanted to reopen their trails. […] This couldn't be done in a day. We needed to work together.*"

  (von der Golz, Head of the Forestry Office, 01/2008)

Although there are strong statements at the side of the forest authorities who underline a good cooperation with the local tourism managers, the tourism marketing point of view differs:

- "*The administrative structures of the forest authorities impede a successful cooperation between tourism organization and the federal ministry of forestry [Landesbetrieb Wald und Holz] because the ministry is not authorized to instruct the forest offices [Forstämter].*"

  (Schwier, Marketing Manager, 07/2007)

A further inquiry on the extend of the lacking authority for instructing the forest offices showed that the marketing manager felt an autonomy of the forest offices and a lacking power of the ministry of forestry for the realization of specific projects on the local scale.

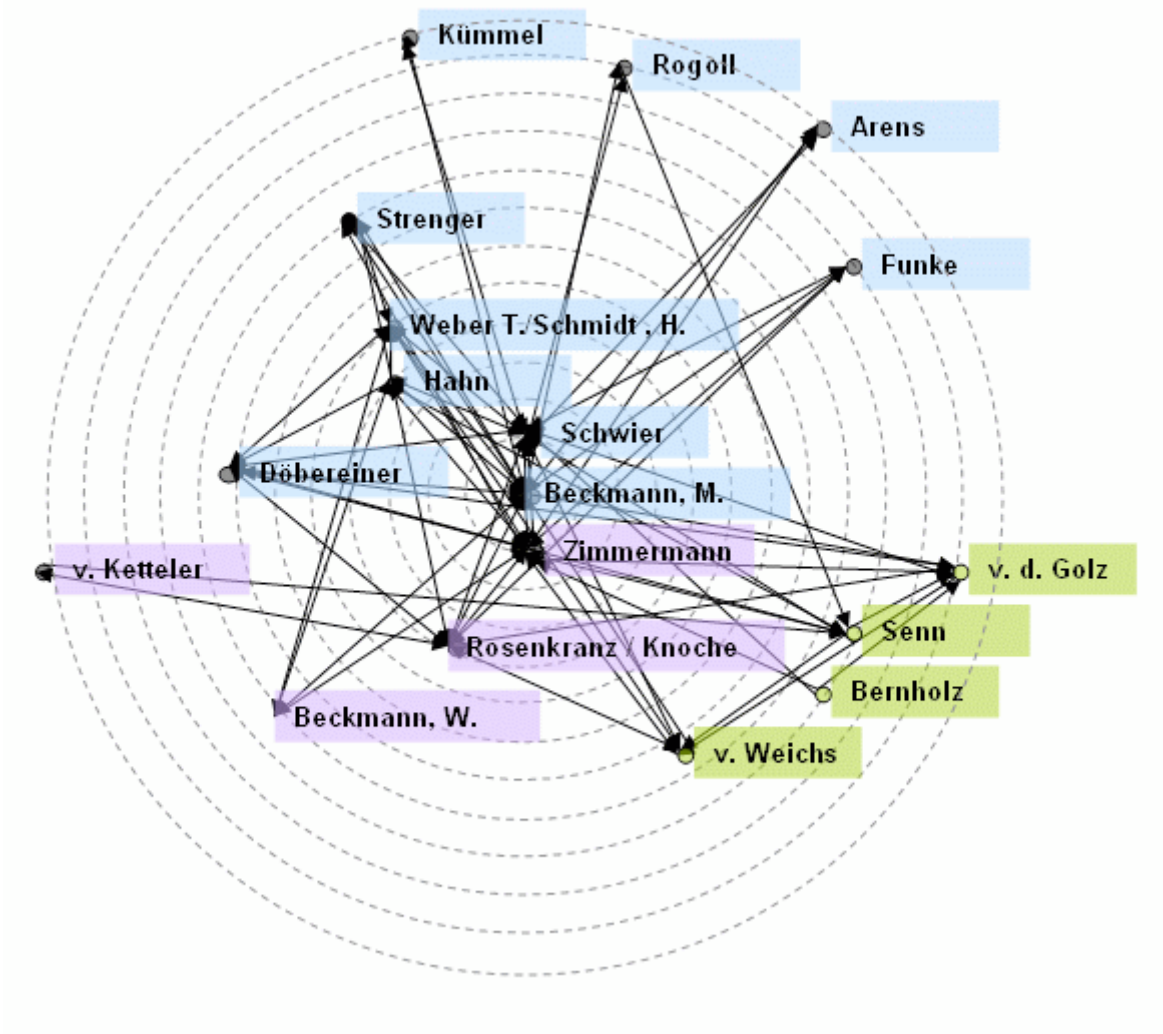
The least communication occurs between experts and suppliers of the tourism businesses [$\bar{x} = 3.27$; $\sigma = .905$], with financial management [$\bar{x} = 2.58$ $\sigma = 1.165$] and with nature protection organizations [$\bar{x} = 2.58$ $\sigma = .900$]. Since clusters involve a certain spatial proximity, experts were also asked which kind of communication they think to be most effective and important (on a 5–point–Likert–scale). With a very narrow standard deviation [$\sigma = .493$] all experts agree that "regular professional personal contact" proves most import and effective [$\bar{x} = 1.35$], followed by "occasional professional personal contact" [$\bar{x} = 1.81$; $\sigma = .834$] and "regularly private personal contact" [$\bar{x} = 2.38$; $\sigma = 1.408$]. The rather high standard deviation at the last criterion indicates the very different sets of opinion. On a closer look: while a majority of the experts in tourism also sees private personal contacts as a successful tool, experts working in governmental and administrative structures tend to oppose private personal contact. "Occasional private personal contact" is seen rather neutral [$\bar{x} = 2.88$; $\sigma = 1.111$]. "Office communication", e.g. newsletters, regular mail contact, is thought to be important [$\bar{x} = 2.00$; $\sigma = 0.866$].

3.5.3. Social Network Analysis in Expert Group

There are two important positions in the forest–based tourism cluster. In accordance with the organization chart, the head of tourism marketing association Samone Schwier seems to mark one central position (Figure 28). The second important position is marked by one of the tourism managers of the communities,

Michael Beckmann. Similarly to the marketing manager, he principally maintains contacts within the tourism branch, but also with actors in forestry and the local hiking association. This seems obvious since his community is very well developed in forest–based tourism. As a result of this forced activity equaling the activity of the leading marketing manager, he may acquire more responsibility and freedom of choice for his tourism projects. *Strong ties* to other tourism actors and actors in related branches open the opportunity to act much more independently of the regional leading position (tourism marketing association) regarding tourism projects and marketing. The marketing manager of the Sauerland region criticized for instance, that the community of Winterberg did not adapt to the corporate design of Sauerland Tourismus right away (personal information, Schwier, 2007), which could result from this double–power position.

Figure 28. Experts network according to *outdegrees*. Green = environmental branch, blue = tourism managers / tourism marketer, purple = tourism product suppliers / associations, generated in SocNet V



Products in the tourism service chain are highly mutually depending on the cooperation within other providers and branches. However, according to the calculated network density, the cooperation within the tourism marketing and management group is higher (Δ=0.76) than the overall intersectoral cooperation (including all branches and backgrounds) that add up to the full tourism product of a destination (Δ=0.43). Highly dense networks are supposed to produce "*tighter communication systems and stronger information exchanges*" while enhancing the circulation of norms and producing shared behavioral expectations (Scott *et al.*, 2008). According to the expert interviews general understanding and cooperation is easier within the tourism branch. Examples that the experts presented throughout the interviews lead to the assumption that a fully and explicit understanding of other stakeholders concerns (e.g. forestry and hunting) is not always given. However, this may be thoroughly natural and implicit in the different use objectives of the stakeholders and their perception on the resource. According to these results, the missing understanding of other stakeholders concerns may emerge from general looser intersectoral ties.

Although Walter Beckmann of the brand *Sauerländer Wandergasthöfe* represents a part of the accommodation and gastronomy branch, no specific expert represents the accommodation or the gastronomy branch for the chosen County. Focusing on the other actors that were named to be valuable communication and cooperation partners, it becomes evident, that also an administrative unit [*Bezirksregierung*] and a representative of the accommodation and gastronomy branch were not considered in the sampling approach. All three bodies would not be specifically responsible for the spatially limited County; however including them into the expert group could have lead to a more detailed analysis.

Other network approaches in tourism destinations usually investigate SMEs to deduct criteria of success for the destination development. The SNA focuses mainly on one dimension (mostly horizontally), e.g. all accommodation businesses. At this point in time no other SNA for experts in tourism clusters could be retrieved. Hence these results can not be compared to other results.

3.5.4. SWOT Analysis

A SWOT analysis among the experts was carried out to gain an overview on the different main foci of the individual expert groups, leading to a multitude of insights. In the course of the interview experts with a tourism background tended to focus rather on prospective factors than to look at their strength and weaknesses in

the present. Innovation and product development processes played a major role. Experts with a forestry background tended to focus on the past.

Additionally they were concerned about externalities caused by tourism development endeavors for the local forest owners. Experts of associations and governmental organizations could easily picture and provide various scenarios regarding the opportunities and threats factors.

Generally all experts agreed on the vast nature use potential of the region as a major strength. Correspondingly, the initial conditions including tourism infrastructure and the long history as a tourism destination are also strengths. According to the experts, the most significant weaknesses can be found in a lack of communication between the region (administrative level) and the single towns and communities (operational level) (Table 29). Especially the experts on the operational tourism level complain about controversial courses of action by the main marketing association *Sauerland Tourismus e.V.*. Almost every tourism expert used the key word "Kirchturmdenken" (parish–pump thinking) when it came to weaknesses, stressing the importance of this point. Another major weakness regarding the tourism operators is seen in the missing impulse or readiness to invest in product– and service quality and in profiling measures.

Opportunities are seen in the enhancement of the service quality in the different businesses of the tourism operators. Especially tourism managers from towns and communities which are not in the proximity of the *Rothaarsteig* see opportunities for the hiking segment in the new hiking trails *Sauerländer Waldroute* and *Sauerländer Höhenflug*.

Other opportunity may lie in the amplifications of innovative theme marketing especially in the outdoor sports and fun segment. Activities with further possibilities for development are seen in hiking and biking.

- "*The first reason why visitors come to a destination […] and still before the assets of the region is always the offered activity.*"

  (personal communication, Weber, 24/07/2007)

The extension of the certification concept on a national scale could provide an additional margin of profit for the organization *Sauerländer Wandergasthöfe*. Difficulties are seen in the already existing national brand by the German *Wanderverband* as "*wanderfreundliche Betriebe*" of the initiative *Qualitätsgastgeber wanderbares Deutschland*. However, a possible niche is still seen in the upscale accommodation segment.

Table 29. Summarizing SWOT analysis (strengths, weaknesses, opportunities, threats) of forest-based tourism and recreation in the Hochsauerlandkreis by 16 experts in the forest-based tourism and recreation cluster.

Strength	Weaknesses
▪ Vast nature use potential with excellent tourism infrastructure ▪ Traditional tourist destination with 10. Mio. people in the surrounding catchment area ▪ Amongst the most popular hiking destinations in Germany ▪ Trustfully established cooperation between tourism management and regional hiking associations (e.g. SGV)	▪ Lacking communication on the different spatial levels (e.g. town / community with local tourism managers and region with regional tourism marketing association) ▪ Low quality of traffic infrastructure (e.g. roads), little transport connections for public transit ▪ Everybody-on-their-own-approach of small towns and communities (lacking awareness of marketing efforts of the regional marketing association) ▪ Missing impulse to invest in profiling measures / quality control
Opportunities	**Threats**
▪ Enhancement of service quality of tourism operators ▪ New quality trails, such as "*Sauerländer Waldroute*" and "*Sauerländer Höhenflug*" and further profiling of theme marketing "hiking" ▪ Integrative work between forestry administration and tourism management ▪ Innovative activity and theme marketing (e.g. fun-sports) ▪ Improve international customer acquisition and retention by multilingual endeavors (e.g. internet appearance bilingual) ▪ Extend certification concept "*Sauerländer Wandergasthöfe*" on national scale with margin of profit (upscale accommodation for hikers) and develop a brand image transfer for regional cluster-inherent products and services ▪ Extend marketing efforts and strategies by the application of new media tools (e.g. Twitter)	▪ Diminishing winter sports segment through climate change ▪ "Certificate jungle", too many independent certificates with differing sets of criteria leading to lacking transparency at the customer level ▪ Mass tourism structures by indefinite regional profile ▪ Copy of new innovative products with a simple product structure (e.g. events, fun courses) by other destinations, risking a unique selling point ▪ Lacking telecommunication infrastructure especially in small-scale accommodation businesses (e.g. no broad band internet access)

Threats are mainly seen regarding the climate change. Although the region has recently purchased snow guns which proved to extend skiing season, the ambiguity concerning rising temperatures in the winter months remains. Also certification is addressed critically. Because various regional and supraregional brands exist tourism experts fear a "certificate jungle". Since the individual certificates attribute to different sets of criteria, orientation for the customer becomes more difficult. The original purpose of providing the customer with transparency concerning product and service quality is lost. Another threat – mainly from the tourism marketing point of view – is seen in the random marketing of the towns and communities with a multitude of products and services. This prevents the development of a clear profile for the region.

3.5.5. Tourism and forestry

Tourism managers were asked to critically review the recent issue of *free access rights* and the duty to maintain safety on private property. Several tourism managers argue that the forest owner association as a mouthpiece of the forest owners "mainly fuels this controversy". The managers add quite boldly that the association is not "representative for the majority of the forest owners", which hold small forest properties, organize in collective forest farming associations (Forstbetriebsgemeinschaften) and keep their forest property for thrift purposes. Leaders and speakers of the forest owner association would hold larger properties, following different management objectives. Tourism experts are aware that a large part of the tourism operators in the region hold small private forest properties. Thus, they assume a high understanding regarding tourism planning and management issues from the side of these businesses.

All experts were addressed with the conflict between private forest owners and the developing tourism industry. In the past, the forest owner association argued that the forest owners were not considered in the process of new product development, e.g. the main hiking trail *Rothaarsteig*. They demand to be informed on infrastructural measures on their property in the future because of their legal duty and responsibility to maintain the general safety along recreational infrastructure. Tourism planners argued that this was impossible because "*the Rothaarsteig borders at about 1,000 different private forest properties*" (personal communication, Rosenkranz, 2007). To avoid further arguments a general agreement was signed between forest owners and tourism planners in the course of the newly opened trails *Sauerländer Waldroute* and *Sauerländer Höhenflug* for the region. The common objective is "*to maintain the forest as marketing area for*

timber and tourism and to support the local forest industry at the same time" (Anonymous, 2007). An agreement was made to reduce the existing hiking trail network as part of a more qualitative approach. However, a majority of the tourism experts disapprove of such individual solution: five of nine do not see their long time merit. They demand the revision of the statute. The commissioning of the general safety inspections and thus a shift of costs towards the local community or town is argued to be more appropriate and sustainable. Additional stakeholders in the planning process of new tourism products would disturb innovation processes and decelerate the planning. Forest owners disagree with this argument since their disapproval and protest concerning tourism planning actions would delay these processes as well.

4. Discussion

4.1. General

The first part of this chapter examines the used approach and methods as well as their application in the forest–based tourism and recreation cluster. In the second part, the results from chapter 3 are summarized and discussed; addressing the formulated question for this study (see chapter 1.3). The dimensions of the described forest–based tourism cluster are explored, factor conditions are analyzed and networks and cooperation are examined. Finally, with a closer look at the SMEs and an analysis of the expert interviews, competitive strategies are discussed. Concluding recommendations are made for the further development of forest–based tourism and recreation in the HSK and its assignability to forested rural areas in Germany. Implications for the embedding of non–timber forest products in services into the forest and wood–based industry cluster are made from the case study findings. Finally further research needs are outlined.

4.2. Approach and methods

4.2.1. The thematic segment of forest–based tourism and recreation

Forest–based tourism and recreation is defined using an activity–based approach. North American or Scandinavian research, although using the same approach, has termed it “forest–based outdoor recreation” or “outdoor recreation” (Cordell and Tarrant, 2002). However, partly these approaches include consumptive recreational use, too, like hunting, fishing or mushroom gathering, which were not considered for this study. This excludes a number of forest visitors, who also add value to the destination and influence local policy. Since the framework conditions for hunting, fishing and mushroom gathering are different for all three activities in Germany, a different approach would be needed. Consumptive recreational use hence remains a further research topic.

Activity–based approaches are a common tool for the segmentation of tourism markets in practice (McKercher *et al.*, 2002, Mehmetoglu, 2007). Theoretical research has proposed to replace theses with experiences–based approaches (Prentice *et al.*, 1998). However, due to the lacking concreteness of terms and definitions for “experience” and still ongoing debates, an activity–based approach was chosen to be most appropriate for this study. Other approaches are motivation–based approaches (Loker–Murphy, 1996) and value–based approaches (Ananda and Herath, 2002, Hansen–Moller and Oustrup, 2004). Although both are used quite

often in nature–based tourism research, they do not allow for an extraction of products and services. Nonetheless, it can be argued that the chosen approach includes activities that are not necessarily bound to forest resources. While this is partly underlined by the differing answers and attitude of some providers of recreational activities (e.g. ski rentals), the visitors to the region – explicitly addressed as forest visitors – chose all activities offered in the questionnaire. Forest–based activities considered in other studies (e.g. canoeing) are set aside in the case study since experts did not grant them with much significance. The activity–based approach, aiming purposely on a limited thematic segment, facilitates the identification of the associate co–located businesses, which commit to and support mutual cooperative connections.

4.2.2. Questionnaires

4.2.2.1. Tourism businesses

The main reason for the generally high participation is seen in the ensured anonymity of the business owner. Prior to the survey, the local tourism manager had stated that previous tourism operator studies by the local tourism marketing association had lead to no or little results (personal communication, Schwier, 2007). However, with the means of building answer categories for numeric data, especially for variables such as turnover or staff, the option for metric data is intentionally set aside. The scale becomes ordinal at the cost of precise means for the variable. Nonetheless, tendencies are still apparent, which is sufficient in the scope of this study. This approach was mainly chosen in favor of a higher return rate than the one announced by the tourism marketing association and as the study shows, this could be achieved. However, more precise results could have been achieved by choosing more than six categories for the turnover or by splitting the first three categories again.

Although the answer scale through all questionnaires was based on the 5–point–Likert system, it was changed for the question on cooperation to avoid a neutral category and a clearer tendency towards one or the other direction. This result is only achieved at the cost of the manipulation of the respondent; however, it is a legitimate tool in questionnaires surveys (Scholl, 2003).

Partly answering categories were kept quite general (e.g. section three, framework conditions for economic activity in the HSK) to fit in an as broad spectrum as possible in the very heterogeneous field tourism operators. If only a

certain specific niche segment (e.g. hotel garnis) would have been surveyed, questions could have been more adapted to the according niche.

To obtain data from winter–season dependent businesses, such as ski lift owners or ski rentals, the survey was extended through January and February 2008. Since skiing season in the time of the data acquisition exceeded capacities and businesses were addressed on days with high visitor traffic, they mostly refused to participate. Although a follow up telephone survey of theses businesses was initiated after the rather low return rate was noticed, different results could not be achieved.

In the course of the study it became evident that a large number of tourism businesses owned a small private forest property. Had this been known prior to the start of the data acquisition, additional questions concerning the private forest property and connected supplementary products could have been asked.

4.2.2.2. Visitors

The data acquisition period comprehended summer, fall and winter. Because hiking as a main forest–based recreation activity was already surveyed in summer and fall, an extension through spring was not necessary. Other activities could have been additionally surveyed in spring. However, tourism managers ensured a possible coverage of all forest–based activities in the other three seasons as well. During the data acquisition period, at least three other studies have been carried out, surveying for instance visitor's satisfaction for marketing purposes. According to the local tourism managers it is very likely that saturation in terms of survey participation might have occurred at the visitor's side. The response rate could have been increased by rewarding the business owners or tourist information staff for completed questionnaires. However, visitor surveys have been successfully completed and analyzed with a far smaller set of data (Greer, 2000, Jackson and Murphy, 2006).

The slight above–average participation by women (54%) does not necessarily point at a higher percentage of women visiting the region. Generally, women tend to fill in paper work more frequently than men (Veil, 2006) and the prizes might have been more attractive to women than to men.

The amount of Dutch visitors was below the average number identified by the annual statistics. This can be explained by the fact that the questionnaire was only available in German. However, the use of a German questionnaire was encouraged by regional tourism managers and additional business owners. In the pre–test phase

it turned out, that Dutch visitors were able to complete the questionnaire without difficulties.

The main activity group consisted of hikers which is the main tourist segment in the HSK. However, the second biggest group, the bikers are – in direct comparison with the permanent visitor survey – underrepresented, which may be due to the chosen display locations for the questionnaire. An additional display in the *Bikepark Winterberg* could have influenced the average age of the respondents significantly. By the time this was realized, biking season was over. Nonetheless, the set of offered activities in the questionnaire seemed to have been complete. In only two cases visitors added a further activity.

As every survey open to voluntary participation of the respondent, this survey is biased since the opinion of visitors unwilling to respond are not included in the survey (Veil, 2006). The survey results may thus lack certain information.

The statistic results in the demography of the participants are very similar to the results from the permanent visitor surveys of *Sauerland Tourismus*. While here 56% of the overnight guests came from North Rhine–Westphalia, this study counted 62.6%. According to the permanent visitor surveys 13% of the participants were from foreign countries, here 13.7% exclusively from the Netherlands. The typical day visitors comprised 90% visitors from North Rhine–Westphalia and 2% from foreign countries. This study counted 96.9% from North Rhine–Westphalia and 0% from foreign countries. Slight differences between the permanent visitor survey of *Sauerland Tourismus* and this study show in the age distribution of the visitor. While this survey demonstrates an average age of 53 years [σ =14.3] for the overnight guest and 46 years [σ =13.6] for the day visitor, the permanent visitor survey determined a slightly younger average age of 46 years for the overnight guest and 41 years [σ unknown] for the day visitor (Sauerland–Tourismus, 2004). Concluding, this study leads to a quite similar visitor profile as the permanent visitor surveys of Sauerland Tourismus. International studies e.g. the one by Roberts and Hall in (Juvan and Ovsenik, 2008), also conclude that rural tourism is mainly consumed by middle aged visitors.

4.2.2.3. Experts

The methodologically known handicaps in expert surveys are the often lacking capability of communicating expert knowledge and hence a short fall in phrasing cognition and cogitation (Chi, 2006). This was attempted to inhibit by clearly communicating the used interview terminology at the beginning of the interview. While the expert interviews were carried out following the guidelines indicated by

Scholl (2003) and Schnell *et al.* (2005), it was inevitable to narrow the experts' coverage on a certain question to the same amount of time, without interrupting the flow or the focus of the interview. Hence, each expert used a different amount of interview time on the various questions resulting in a very individual focus of each interview on one of the key topics, strongly related to the background of the expert, especially regarding open questions. This lead to differing interview periods and smaller or larger interview content. At the same time this broadened the output extend and concluded in additional results. An advantage in data acquisition was certainly the splitting of the expert interviews into two periods of summer 2007 and winter 2008. Various questions evolving from the first survey results from tourism businesses and visitors in January 2008 could be resolved in the second interview period.

Expert interviews are also biased due to the natural avoidance of a "*bad impression*" or "*impression management*", especially if asked to estimate the own performance (Scholl, 2003). The expert's estimation of their own knowledge on various thematic focal points was not evaluated in detail and serves merely for the purpose of confidence rating (Scholl, 2003). Confidence rating means to evaluate the response concerning accuracy and reliability. However, the "*actual problem of unreliable answers can only be tapped indirectly*" (ibid.). Because of this, only the responses of tourism experts were used for the estimation of the average customer, leading to an overall smaller frequency of n=6 because not all experts were willing to answer this question. A quantitative approach is not acceptable in this case. However, the comparison with the estimation of the average customer from the side of the tourism businesses was still made. The tendency is used to compare the estimation of the customer between experts and operators.

4.2.2.4. Social network analysis

Although the free choice approach in gathering data on all possible important contacts in regional forest–based tourism for the single actor casts light on common relations and structural relational neglecting or so called *weak ties* (e.g. contacts between tourism on the management scale and other resource management levels like the lower nature conservation administration), data quality could have been improved by picking a complex rating approach. In this case additional relational data could have been obtained by asking the actor to rank the relation according to levels of importance on an evaluation scale (Jansen, 2006) instead of just naming an important actor. However, these complex rating approaches are mostly added to fixed choice approaches to make sure all relations are considered by the actor. In

this case *weak ties* could become more meaningful because they are less likely to be "forgotten". Additionally, neglecting the relation towards a rather unimportant contact will occur less likely, because the actor is not longer challenged to search for "important / intensive contacts" but asked to evaluate existing contact suggestions. Another suitable approach for the acquisition of the expert group could have been the "snowball" approach, starting with the tourism marketing manager and following up open alteri on x–levels (Wasserman and Faust, 2009). However, the chosen approach proved sufficient for this study frame since the main features of networks could be analyzed.

Still ongoing debates in SNA research for tourism clusters concern the network or sample group boundaries. As Tinsley and Lynch (2001) already argued quoting Johannisson (1986) "fuzzy boundaries" may indeed be one of the reasons "*identified for the lack of research in this topic area*". On the other hand there is hardly any advice on how to solve this problem. On the contrary: Method discussions always point out the problem almost as a stand–alone issue in SNA. Regarding future studies, approaches and methods for solving this limiting factor need to be developed and tested.

Although this network analysis points out that not all possible experts were considered in this approach, the relations and relational structures of the existing sample group paint a picture of the overall situation. This was clearly communicated throughout the interviews: communication and cooperation seems much easier if the intention of the actors is similar, e.g. within one branch or sector. Local adjacency, i.e. the allocation of three different sectors in one building, seems to be a reason for overcoming sectoral boundaries and may lead to an increased intersectoral communication and cooperation. However, in order to thoroughly investigate cooperation patters, qualitative relational and structural data would need to be obtained and surrounding experts – beyond the spatial boundaries of the HSK – need to be integrated.

Nonetheless, as part of a cluster approach in tourism, SNA analysis proves useful on an in–depth qualitative basis and small expert networks.

4.2.2.5. SWOT analysis and operationalization

Developing criteria and indicators for SWOT in cluster research proves difficult because frequently the criteria are interdependent. Furthermore the presence of a certain feature in forest–based tourism and recreation may be an indicator for strength (e.g. vast nature use potential). At the same time, its absence (e.g. no vast nature use potential due to heavily used landscape for intensive primary

production, i.e. Cloppenburg / Vechta area with poultry and pork production cluster) might result in weaknesses, but without another criterion (e.g. infrastructural development), neither one is useful or valid in an evaluation. Simultaneously strengths in the limited framework of forest–based tourism and recreation might constitute weaknesses for related clusters (e.g. high on–site demand by visitors to forests resulting in crowding in forest areas may be of major disadvantage for the forestry sector). Additionally, strengths may be weaknesses at the same time: For example, if a business earns 75% of its turnover with one customer, then this long–time business contact with a quite strong customer may well be interpreted as a strength, which – if public – may be used for image purposes and future acquisition. On the other hand, a 75% turnover generation with one customer discloses a major dependence, setting the company at risk in case of a customer bail out.

Opportunities and threats (OT) constitute another methodical problem when developing criteria and indicators for regional clusters. More than internal strengths and weaknesses are external opportunities and threats, a matter of visions and interpretation. According to the author it is nearly impossible to anticipate a set of criteria for OT. Hence, this study disclaims a criteria listing for OT.

While generating the criteria and indicators for SWOT in forest–based tourism and recreation on the basis of study results in other tourism segments, it became evident, that differing legislative frameworks (government) and segments (e.g. Cape Breton tourism cluster in Brown (2007)) influence the interpretation of strengths and weaknesses. The herein developed criteria and indicators may well be used as foundation for future SWOT analyses in other tourism cluster research, but they do not constitute a fixed set of parameters ready to apply elsewhere.

The two major points of critique in SWOT, that SWOT matrixes can not be generalized and that the opinion of the interviewed person (in this case: the expert) is biased and not objective, remain a part of qualitative empirical research.

4.3. Results

4.3.1. The forest–based tourism and recreation cluster in the HSK

Geographical scope

The geographical scope of the analyzed cluster is spatially limited by the localized case study frame since an analysis of the whole Sauerland region was not feasible. However, due to the nature of the examined tourism segment, connected to the forest coverage, the geographical scope studied within this thesis is local. Within the case study different forms of agglomerations (i.e. breadth in the hotel and accommodation industry in the communities of Schmallenberg and Winterberg) could be observed which will be addressed in the further discussion. As the examined cluster of forest–based tourism and recreation clearly cuts across the determined spatial study frame, extending over most of the Sauerland region, results from this study (e.g. for SME) may partly be assigned to other businesses of the Sauerland region.

Dimensions

The forest–based tourism cluster in the HSK is marked by a majority of SMEs, mainly in the gastronomy and accommodation branch. This results in a high *density* of accommodation businesses, centering in the two towns Schmallenberg and Winterberg. At the same time a wide *breadth* in accommodation can be observed, offering similar products and services at different rates and quality. Little is known about the tourism–related businesses in the gastronomy sector and their cluster dimension along the food supply chain, since neither the agricultural production nor additional food production chains were explicitly the primary scope of the study. However, especially certified accommodation businesses indicate the use of local and regional food produces (e.g. game), since this is a part of the certification criteria. Additionally, tourism businesses indicate the use of timber for their facilities, predominantly in the interior, adding value to other branches of the forestry sector.

In the diagonal cluster dimension two types of forest–based tourism and recreation products can be distinguished. One part is funded by community or federal sources, comprising the public products and services of quality hiking and biking trails. They are organized in product networks of the local tourism management offices and have been major investment projects in the last years. The public product facilities open up supplemental service niches on the one hand (e.g. guided tours on quality trails) and offer the possibility to create *complementarities*

for private businesses, on the other hand (e.g. campsite on private ground near quality trails). However, apart from some private businesses (e.g. *Kräftespiel Arnsberg, Wildwald Vosswinkel*) little development has occurred to use these niches in the private sector. This leads to little specialized businesses and shortcomings in *diagonal clustering.* A similar situation is reported from a nature–based tourism case study in Are Valley, Sweden, where mainly hotel entrepreneurs and tourism management formed the regional tourism character (Nilsson, 2001). Nilsson (2001) sees opportunities for new actors, encouraging new sports and market segments. Forestry literature argues that these niches could be filled by forest owners (Welcker, 2001, Mrosek *et al.*, 2006). However, the literature review chapter of this thesis has proven that considering the basic conditions, this argument might be difficult to sustain.

In wine tourism cluster studies a similar phenomenon can be observed: The poor perception among the primary production entities (wineries) of the benefits of tourism for the wine industry result in little participation of the mass–market and only few benefiting entrepreneurs (Hall, 2003). It can be argued that this is a rather lopsided comparison since the wine industry offers an extractable and consumable product while the sound forest landscape remains merely an *externality* of sustainable management practices. However, it is the inherent attitude of cluster members for an innovative product and services extension and thus a diversification that remains the crux for competitive destinations. Although the local tourism managers in the HSK support the idea for innovative products, they anticipate little private efforts. In spite of this, tourism cluster studies show, that innovation emerges almost exclusively from the private sector (Aylward, 2005, Simpson, 2008).

Other *complementarities* are seen in the specialized local SMEs of other branches and the already initialized endeavors to introduce capital and brand name of those SMEs to the local forest–based tourism and recreation cluster. Examples are the beverage brand *Veltins* as cooperation partner for the certification brand *Sauerländer Wandergasthöfe* and the textile producer *Falke* for competitive sporting events, such as the *Rothaarsteig Marathon*.

Ownership structures

Due to a long history of tourism and recreation in the area, ownership structures base on local families. A myriad of tourism business owners are owners of local forest properties as well. Tourism leakages compose no major issue.

Activity base

From the nature of the examined segment of forest–based tourism and recreation, it becomes clear that a rich *activity base* must be given. Local forest–based *attraction points* and their inherent activities as well as tourism products and services that group around these activities form most naturally many "*of the critical activities of the value chain*" (Enright, 2000) in this significant tourism segment. Among the businesses one outfitter and several rentals were surveyed. Each of them indicated to be supplied by non–local businesses. Aside from these businesses, no further approaches have been made to specifically analyze upstream production processes in the vertical dimension. First, because this was not the primary study objective and second, because it would be clearly beyond the scope of the study to analyze value chains of each upstream industry contributing to the different chain segments.

Externalities

Externalities are grouped into hard and soft externalities. Hard externalities comprise for instance lower supply costs and a greater variety of businesses with specialized and customized suppliers. Soft externalities comprise tacit knowledge and opportunities to build up networks.

Forest–based tourism and recreation activities derive as positive hard externalities of the local sustainable forest management practice. As the study shows the consulted tourism businesses are aware that the forest is an important location factor for their business. Tourism planners additionally benefit from the internalized free access right while developing tourism products and services. They hence see the need in a mutual cooperation with the forest authorities. While sustainable forest management offers mainly positive external effects for the local tourism management, rebouncing externalities from tourism are [1] the internalized increased legal duty to maintain safety on private property leading to virtual increased costs for the forest owner and [2] possibly arising use conflicts. A Swiss study found that these externalities, besides property rights and public goods, constitute possible explanations for the market failure of forest–based tourism and recreation products (Kissling–Näf, 1999), which is indeed also the case for the HSK.

However, a first attempt to solving conflicts from rebouncing externalities was made by internalizing the legal duty to maintain safety into the responsibility of the local authorities. Political actions were initiated after the local forest farmers associations had repeatedly complained in public (personal conversation, Schwier, 07/2007). This could have influenced the visitor in an opinion–forming way the

complaint was carried out in the communication process. Eventually it could have aimed to disadvantage local tourism (personal conversation, Schwier, 07/2007). However, as the study shows not even half of the visitors (46.5%) knew about the debate, which has been discussed for more than two decades and thus did not only come up recently. One third (34.8%) of the visitors had not heard of the issue before. It is hence assumed that the majority of the forest visitors are not primarily interested in the remote legislative problems of the local tourism sector. This is underlined by the most common visitor suggestion to not reimburse the forest owner for possible increased costs caused by the tourism sector. Two thirds of the tourism businesses are informed on the issue. Yet, 22% of the respondents refused to answer. When addressed with this question personally business owners uttered annoyance. This indicates a still persisting controversy.

Share

Tourism businesses indicate an average share of income through forest–based visitors in the class of 41–60% ($\bar{x}$ = 3.34; σ = 1.324). With a mean of 3.69 (σ =1.119), accommodation businesses indicate that a bigger proportion of their turnover is derived through forest visitors. The tourism experts in the region estimate the average share of the overall turnover through forest–based tourism to be 70% ($\bar{x}$ = 70; σ =12.500) [n=9]. The 95% confidence interval indicates a class of 57.5–82.5%. Notably this resembles the average share resulting from businesses with a regional certification ($\bar{x}$ =3.93, σ =931; category 3=41–60%, tendency to category 4=61–80%) or with an offer of supplemental forest–based products and services ($\bar{x}$ =3.88; σ =1.100; category 3=41–60%; tendency to category 4=61–80%). It can be assumed that positioned businesses –obtaining a local certification and/or offering supplemental products or services for forest–based visitors– manage to reach the target group of the forest–based visitor, while other accommodation businesses either focus on a different target group or did not manage to identify a target group, yet. Although facilities focusing on other tourism segments exist (e.g. congress tourism), it is strongly assumed –with regard to the experts' opinion– that not all accommodation businesses manage to identify their target group.

Niche suppliers are heterogeneous. The majority reports a relatively low overall turnover, a high seasonal dependency and few staff members resulting in a micro sized business rather than an SME. Some of these businesses fit into a category described by Braun and Hollick (2005) as "lifestyle entrepreneurs", "*who often do not even consider themselves part of the industry*" (Braun and Hollick, 2005).

This may explain why various businesses, especially the ski rentals, marked categories 1 or 2 when asked for their share through forest–based tourism and recreation, obviously disregarding the integration of ski tourism into the scope of the study on the first page of the questionnaire (see Appendix IV). Bike and horse rentals indicated their share in category 4 or 5. This results in a mean of 3.00 (σ =1.317) with a high standard deviation.

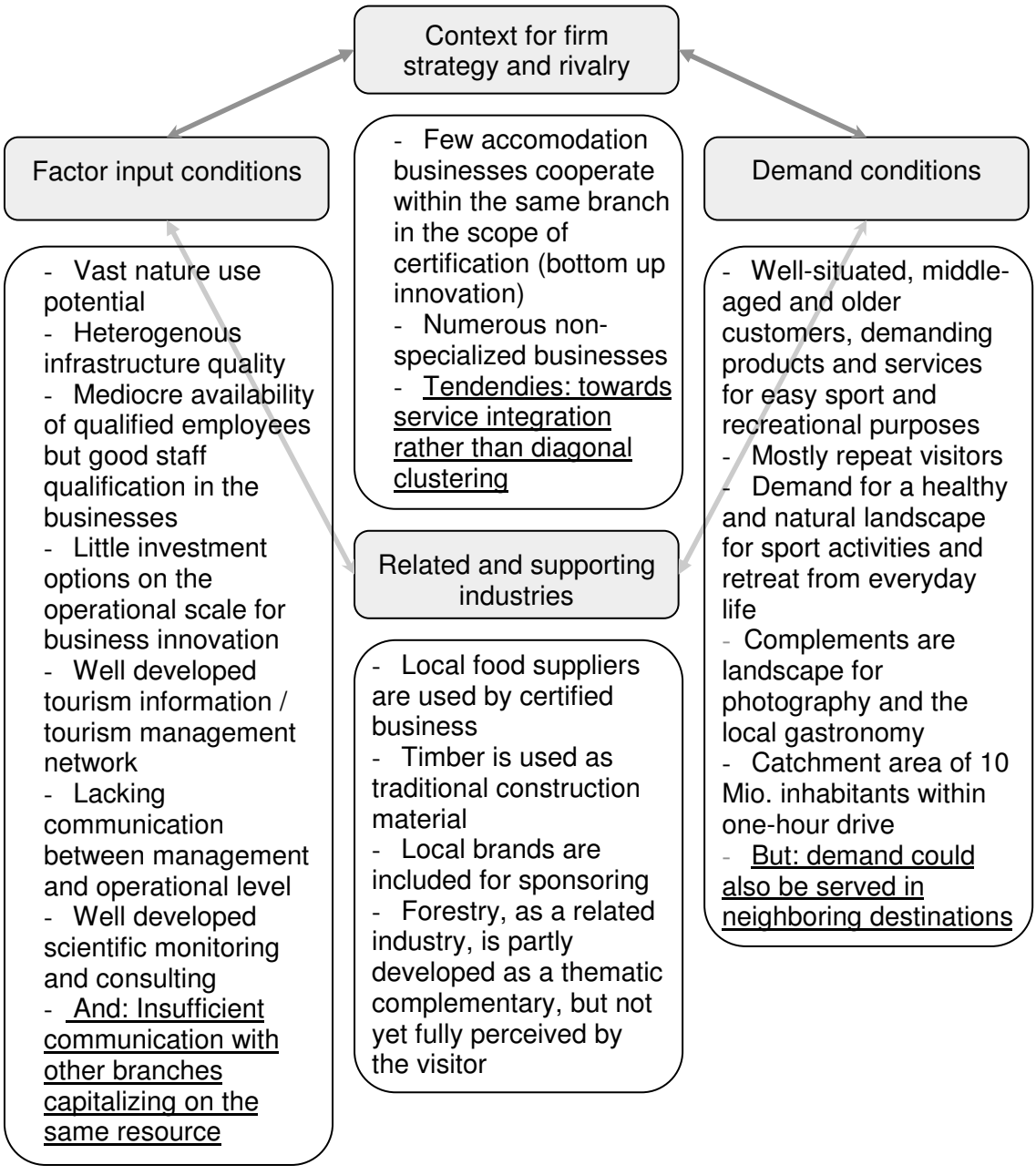
Factor endowment

Tourism businesses and experts were asked to estimate the local factor endowment regarding forest–based tourism and recreation in the HSK. Both, businesses and experts, evaluated the nature use potential to be very good. Especially tourism experts are confident that consequences of the hurricane *Kyrill* will contribute positively to the future landscape characteristics (e.g. deforested hilltops offer lookout possibilities), while admitting major detriments for the forest sector and the recreational infrastructure at the same time. The local traffic infrastructure marks the most controversial factor. Differing evaluations can be observed between towns and communities close by the major auto route A46 and more remote towns and communities. According to the experts, infrastructural development has been an issue for several years for the regional economic development institution. Apart from the discussion concerning the extension of the A46, experts indicated the need for quality improvements of the existing country roads, which suffered from the exploitation operation with heavy logging trucks after *Kyrill*. Regarding the underdeveloped public transportation net (esp. railways) and the fact, that the vast majority of the visitors arrive by car (91.3%), this issue will certainly remain. Recommendations concerning this issue will follow.

The qualification level of local employees was evaluated to be good. However, the availability of qualified employees was seen critical. This might be due to the reason that not even half of the surveyed businesses invest in trainees. Only 20 of indicated to employ 1 trainee. 15 businesses employ 2 trainees. The majority of the businesses employing more than 2 trainees is locally certified and indicates an overall turnover of more than 1 Mil Euros. Hence, it is rather the medium sized businesses with an above average turnover that invest in trainees. Deficiencies of qualified employees in the tertiary sector of the HSK have also been detected by Ahlert *et al.* (2003). Yet, the retention of skills as well as of qualified employees is crucial for the competitiveness of a destination (Novelli *et al.*, 2006). Shortcomings in the investment in trainees may later result in a decline of local service quality

(ibid.), while further investment in the education and formation of employees would lead to positive *externalities*.

Figure 29. Characteristics of locational *competitive advantage* in the forest-based tourism and recreation cluster of the Hochsauerlandkreis, NRW (modified, 2009, according to Porter (1990)), green = positive, blue = neutral or negative, purple = key characteristic



Experts motivate for further cooperation development. The local textile manufacturing business *Falke* is named for an extension of the cooperation beyond the hiking segment. Local outlets could be promoted more.

Factors that could not be influenced directly by the business owners, such as governmental support, were estimated to be rather bad. Experts, however, evaluated them to be good. This might be due to the fact that most experts are employed in tourism management and know about means and possibilities to acquire governmental support. Since the majority of business owners is not directly involved in regional development processes (e.g. *Regionale* projects), the knowledge of possibilities might be smaller.

The close orientation of tourism managers towards research institutions and universities has lead to commissioned studies on destination management, marketing and innovation in tourism services throughout the last years. A majority of the studies has resulted in improved and certified quality trails, better destination objectives and marketing strategies. However, although there is a constant monitoring for the tourism business, little response occurs from the business owners (personal conversation, Schwier, 2007). Due to that fact and the insufficient investment possibilities, only little innovation has taken place in the tourism businesses on the operational level. This affects the service quality of tourism operators in the HSK, prevents the establishment of a unique selling point and influences the destination image.

Strategies for competitive advantage

Among accommodation businesses and at the destination level, various competitive strategies can be observed. [1] gathering of labels / certification, [2] offer of supplemental products and services, [3] *positioning* by certification, [4] *diagonal integration* of supplemental products and services [5] cooperation within the same branch. Two different approaches to the certification process are shown in the study. While the *Qualitätsbetriebe Rothaarsteig* were initiated by the *Rothaarsteig Verein e.V.*, financially pushed by one major investment of the federal state, the *Sauerländer Wandergasthöfe* were initiated by one local gastronome. Addressing his rivals and the local tourism planner resulted in a second brand with higher quality standards than the QRH brand and a limited amount of members. According to Porter (1998), much of the future development may depend on the entering of this certificate: "*If barriers to entry are high and newcomers can expect sharp retaliation from the entrenched competitors, obviously the newcomers will not pose a serious threat of entering.*" He also argues that "*government efforts to create advanced and specialized factors often fail [...] because government entities are notoriously slow or unable to identify new fields or the specialized needs of particular industries.*" (Porter, 1990). Notably implicit initiatives of cluster promotion use the

bottom–up, “explicit cluster policies the top–down approach” (Fromhold–Eisebith and Eisebith, 2005). Also according to Fromhold–Eisebith and Eisebith, it is the bottom–up approaches, which are often more sustainable than the ones initiated by authorities. However, the QRH, as a top–down label, did not fail. In contrary, significant differences between the two brands could not be determined. Nonetheless, it was a private sector initative (by the gastronome and founder Walter Beckmann), which lead to second regional label *Sauerländer Wandergasthöfe*.

Certification by brand generation is a valuable tool for SMEs in tourism. In the forest–based tourism cluster in the case study, certification is used to position the business in the forest–based tourism market. Although a clear business profile is thought to distinguish one business from another, it is also evident from the study that some businesses ‘collect’ certification brands by the means of quantity rather than quality. This affects profiling attempts adversely. Experts argue that “collection” remains unsuccessful as long as the certified business does not provide the promised products or services. Certification is hence not a means to automatically generate turnover but can be a facilitating factor to do so. Additionally it “*strengthens the players position within the tourism industry*”, a key principle for competitive success accordin to Poon (1993).

Fostering certification processes means enhancing and ensuring the existing product and service quality. At the same time it means a further orientation towards the repeat visitor, who makes already the majority of the visitors to the HSK. However, at a time of declining overnight stays in mid–mountainous regions and tough competition at the destination level, it is crucial for the businesses to not only rely on the safe bank, but to search for acquisition methods.

Networks and cooperation

Different sets of network processes occur in the case study area. Among tourism managers networking processes take place at the product level. E.g. hiking and biking trails are planned and established with neighboring communities. Marketing endeavors are carried out in networks and due to the immediate co–location of the different cluster entities in the tourist center in Schmallenberg, networks between tourism, quality trail management and forestry could be detected, leading to shorter communication channels. According to Walton (1978) in Lynch & Morrison (2007) “*co–location within a locality facilitates trust*”. Trust is identified as a key criterion for the exchange tacit knowledge among the participants (Staber, 2007). However, when asked in the expert interview neither of the experts wanted to freely comment on “trust”. Instead, “professional cooperation” was highlighted to be

the rather matching term. This leads to the assumption, that trust is not yet seen as a criterion in professional relations by the experts.

Braun (2005) argues that "*clusters and networks are interdependent, whereby small business network structures underpin the growth and sustainability of clusters*." This interdependence shows very well in the forest–based tourism and recreation cluster within the case study: Among the SMEs in the accommodation branch, networks have been established within the certification brands or labels. When asked how it was possible that other businesses of the same branch joined together to form the *Sauerländer Wandergasthöfe*, founder Walter Beckmann argued that a constant personal communication on a private and personal level was crucial to convince competitors. Hence SMEs in forest–based tourism and recreation clusters profit from cooperation processes, if they appear as a unified agglomeration of service providers, which commit themselves to certain standards. At the same time, however, it is absolutely crucial for each single business to maintain unique features, such as supplemental services or access to *complementarities*. While the certification provides the customer with a secured standard for the destination, only the individual note of the business allows differentiation from other businesses in the same area. However, network and cooperation processes between niche–providers remained scarce. Reasons are seen in the facilitation of bundling services in network structures among businesses in the horizontal dimension, because they are located at the same step of the service chain. Cooperation, such as certification, feed the customer's attitude of comparing products and choosing the best one. Since tourism means always a bundle of products and services comprising different levels in the service chain, a fix vertical cooperation could result in an all–inclusive character. This could appear as a limitation to the customer, who has been demanding more and more individual products and services lately (Poon, 1993). Similar results are reported by Novelli et al. (2006) from the health and wellness cluster in South England. "*SMEs offering accommodation facilities formed alliances with those supplying recreational opportunities and a small organic farmer looking to market his products to local B&Bs, but never managed to due to his lack of knowledge about the locality, was able to start distributing his product to other members. Commercial collaboration became one of the most obvious outputs of the alliances facilitated by the cluster.*"

If asked in accommodation businesses, an important process for cooperation was also seen in the recommendation of competitors if the own business was booked. This process takes place because it is understood that the customer would

remain in –and hence add profit to– the region. Additionally, it was assumed that the competitor would act likewise in the converse situation.

Generally it can be summarized that it is always personal contacts and personal endeavors that see merit for multiple entities by fostering cooperation and network processes.

Complementarities

Complementarities within the forest–based tourism and recreation cluster are gathered along the *diagonal dimension*. As this study shows, the main impulse for integrating complements into the cluster is given by the local accommodation businesses, which are suffering the most from declining overnight stays. This is accomplished for instance by adding value to the own product and service, while setting up criteria to fulfill a certain quality standard (certification). Such integrated complements, as the provision of hiking shuttles, which support local private transportation businesses or the lodging with regional food, supporting local organic farms, means indeed "*making the pie bigger rather than fighting with competitors over a fixed pie"* (Nalebuff and Brandenburger, 2002). On the other hand, guided hiking tours are sometimes also given by the owner of the accommodation business him– or herself, which can be seen as an *integration* of a service into the own business structure. In this case, service value is increased at the cost of the own business.

Also *complementarities* comprising the forestry sector, such as guided hiking tours offered by Rangers add value to the attraction points without raising the cost for the visitor. This is only possible because the federal state, namely the federal state government, finances these measures through the regional forest authorities. Although these state regulated bottom–down measures for regional development prove to work out well for the region, they now cause major discussion, since other communities, namely the ones providing the new quality hiking trails of *Sauerländer Höhenflug* and *Sauerländer Waldroute* also call for the free Ranger service, since it constitutes another *attraction point* (service). While the state has constantly been cutting back the costs for additional services through the forest authorities, it becomes difficult to argue why the other communities should not profit from the state provided ranger service. Porter (1998) claims, state regulation in free markets has to be regarded with scrutiny. He even adds, that "*the government can also play a major role by affecting entry barriers*". Although there is reasonable doubt, whether a service, such as the Ranger service on quality hiking

trails, could be offered cost–effectively by a private contractor, the state interference on this subject indeed needs to be rediscussed.

Complementary infrastructure is provided by the local forest authorities, since the majority of the local hiking trails use logging roads. Post–*Kyrill* the roads suffered from a significant quality decline. Visitors complained at the local tourism management, which finally resulted in an overall visitor decline. Porter (1998) states, that "*bad performance by one part of the cluster can undermine the success of the others."* In the forest–based tourism and recreation cluster, though, the quality of the activity and thus the quality of the facility, the forest, to pursue this activity seem to be pivotal for "*the success of the others*."

Innovation

Innovation processes occur on different levels in the forest–based tourism and recreation cluster of the HSK. On the level of the service providers, there are few accommodation businesses which further service quality by certification measures, while improving their own business. On the level of tourism management, the forest–based tourism and recreation image is furthered by adding more quality hiking trails to the areas, which are supposed to distribute the profits that were generated by the first quality hiking trail *Rothaarsteig*. (Profit increase of tourism businesses had been detected along the *Rothaarsteig* corridor.) Additionally quality enhancement measures are currently undertaken for the biking trails in cooperation with research institutes such as the *Deutsche Sporthochschule Köln*.

However, factors that decelerate innovation are to be found in the forestry sector: Tourism planners are convinced that processes of product innovation and product development are slowed down by consulting third parties, such as forest owners. Nevertheless a non–integration of forest owners in tourism product development proves similarly time–consuming in the aftermath.

Furthering innovative fun sport events, such as the snow ball world championships in Winterberg might draw (short–term) additional visitors to the region, but may not strengthen the image of a sustainable and forest–based, healthy destination so much, as of a fun sport destination. Additionally, event–based structures require high quality accommodation and gastronomy services that are – until now– only available at a limited amount. It also has to be considered that a furthering of these endeavors could commence a change in destination image.

By some experts and tourism operators *Kyrill* was seen as a possible chance for innovation. They suggested abandoning reforestation on some windthrow areas to install additional forest–based *attraction points*, such as a wood–center.

4.3.2. Recommendations

Among other existing tourism segments forest–based tourism and recreation seems to play a major role in the overall tourism industry of the HSK. Yet, only a few service providers, mostly in the upscale segment realize the chance to fully position themselves at the market. According to Porter (1998) "*customer service […] and product differences are among the factors fostering brand identification.*" Hence, a further *positioning* at the forest–based tourism and recreation market is also recommended for low–priced accommodation businesses, by either upgrading the service offers to the criteria of one of the regional labels, or by adding supplemental services to the own offer and communicating the effort. This could facilitate the imitation of low costs (Weiermair, 2006). In the end, upscale business will need to improve their services again, which might add innovative products to the destination. However, product innovation also *"carries a high level of risk*", and if the new product idea is easily replaceable by the competitor, it also carries "*high costs with little enduring first mover advantages*" (Weiermair, 2006). Nonetheless, product innovation and the means of *positioning* will eventually not only result in a product quality increase for the customers, but also in an outright overall image of the destination.

Small accommodation businesses, notably those with less than 9 beds (family boarding houses) will suffer from visitor declines in the future. Reasons are seen in a market break–down, due to the high age of the regular customer and his / her limited mobility on the demand side, and the tendency to reduce or stop the business of the parental generation (which was mainly carried out in order to financially support the national old–age pension) and the tendency towards a permanent rent contract of former vacation flats from the supply side (Harrer and Scherr, 2002). Resulting at first in a decline of the *breadth* in accommodation offerings, this may also mean a chance for the destination to become overall more demand–oriented. Small accommodation businesses are recommended to change their image from the "dusty, old boarding house" into an economy–priced home for the younger forest visitor with a low budget, who is looking for a reasonable cost–performance ratio. However, without an orientation towards new media, such as internet with websites, web 2.0 placements and search engine optimization, the development of small private accomodation businesses is seen critically.

The enhancement or maintenance of service quality will play a major role for German rural destinations in the future. Since service is a significant cost factor, *diagonal integration* may be a solution for larger accommodation businesses. This also involves cooperation perhaps even with competing businesses. However,

cooperation among competitors on SME scale will by all means contribute to the *competitive advantage* of the destination.

Furthermore the development of niche products and services adding to the diagonal cluster dimension should be encouraged, despite of the possible seasonal business operation schedule.

According to the study results, there is still great disagreement concerning the heterogeneous infrastructure situation. Although overnight tourists to the HSK are able to obtain the Sauerlandcard, allowing for the free use of public transportation, the bus and railway net still needs to be improved since public transport from small towns to small towns (where partly accommodation businesses are situated) sometimes occurs only twice a day. Additionally, the vast majority of the visitors (91.3%) arrive by car. A completion of the auto route A46 seems hence essential and is thus recommended.

Concerning new forest–based tourism product development on private forest property and despite of the locally existing caveats, it is recommended to follow the regional solutions in cooperation with the respective organizations because –after years of scientific forest policy publications on the national (Krott, 2005, Memmler and Ruppert, 2006) and international scale (Ananda and Herath, 2002, Hansen–Moller and Oustrup, 2004) – a regional solution still might be the most effective strategy to overcome this issue.

If destination management and marketing improves and achieves the establishment of one umbrella brand name "*Sauerland*" (including the network and cluster endeavors of the local businesses), a further step could be a brand transfer to regional nature–based products and services, such as products of regional food brands (e.g. Oberengadin or St. Moritz in Switzerland with associated products and brands in the food and furniture industry (Bieger, 2005)).

4.4. Generalizing

As Porter puts it, "*a cluster is the manifestation of the diamond at work*" (Porter, 2000). The forest–based tourism and recreation cluster of the HSK might technically be seen as a cluster in the sense of Porter's definition. However, internal structures, especially intersectoral cooperation and the existing information processes do not fully reflect "*a diamond at work*". "*To initiate a cluster it is not sufficient that some suppliers cooperate and work together*" (Weiermair and Steinhauser, 2003). Since mainly accommodation businesses of the same branch and few facilities in tourism management on the operation level work together, the

cooperation takes place at a network basis. Cluster development can be affected by a lack of leadership, low levels of collaboration and a lack of trust between firms (Braun, 2005). The lack of leadership is given through the "*Kirchturmdenken*" of each individual community. As stated earlier, cooperation exist only at a few levels and "trust" appears to be too unprofessional for the experts, since it is rather replaced by the word "professional cooperation". According to Weiermair and Steinhauser (2003) it is more the vertical and horizontal cooperation within and along the tourist service chain that is essential.

The forest–based tourism and recreation cluster of the HSK provides few good examples for fostering *competitive advantage* from SME initiatives at the destination level. However, true cluster structures have yet to be developed.

The forest–based tourism and recreation cluster approach addresses *cluster–specific strategy*. Choosing this cluster approach means the attempt of getting all necessary information on an agglomeration of businesses grouped around a natural resource to further develop and support this formation. It identifies the individual entities of the cluster and their interconnection. Although the extension of the forest and wood–based industry cluster by tourism and recreation contributes to a more comprehensive understanding of the economic, social and ecological value of forest–based communities, the principal cluster approach is generalized and thus becomes less specific. According to Enright (2000) "*such wide–ranging clusters are too general to have much coherency for policy support*". Agreeing with Enright, a full integration of the forest–based tourism and recreation cluster into the forest and wood–based industries on a practical scale might be inefficient. On a political scale, however, it shows significant relevance for decision makers. Against this background, it is absolutely crucial to separate the *cluster–specific approach* in a localized environment of a case study from general political will to avoid performance ambiguity.

From the perspective of the forest–based tourism and recreation cluster in a localized setting of a case study, the cluster concept provides helpful tools to analyze business structures and strategies within the region. Recommendations – albeit admittedly apparent ones – can be made for the local SMEs and the cluster. Since the examined cluster is special in its cluster entities, size and dimenstions, it is not recommended to draw conclusions from this case study for all forested rural areas. Rural forest areas in low mountain ranges might profit from the results but other clusters might be too different due to surrounding conditions, such as activities that relate to forest–based tourism. Different service providers and tourism operator structures are possible and thus another forest–based tourism

cluster (e.g. *Mecklenburger Seenplatte*) might differ significantly from the one described in the HSK. Additionally, Porter (2002) argues that "*the appropriate definition of a cluster can differ in different locations, depending on the segments in which the member companies compete and the strategies they employ*."

The herein drafted forest–based tourism and recreation cluster may thus be suitable for the chosen case study but may have to be extended if applied under different surrounding conditions. This may range from basic premises such as forest property rights to the supply structure of forest–based tourism products and services. However, from the results of the study, it can be assumed that the segment of forest–based tourism and recreation was covered completely for the case study region.

In the framework of a localized case study environment the segment of forest–based tourism and recreation can be seen as a *micro–cluster* (Michael, 2007c) because businesses around a local resource "*contribute to a local specialization and engage in servicing a common clientele*" *(ibid.).* This presumes the existence of the forest resource and the community building activities –including derived products and services– around this resource.

By its application in a case study the original methodological structure of the cluster approach is nearly inverted: the focus on the descriptive identification of a certain geographic agglomeration through secondary statistical data is extended by an explicative and furthermore practical–normative effort. The focus is no longer on the question *if* certain interconnected companies agglomerate and form a cluster but rather on "*what makes this cluster successful and the region competitive?*" and furthermore "*which conditions need to be maintained or improved to foster the competitiveness of the region?*".

Aiming at the delivery of a specific package for the chosen target group, this approach supports the identification of new producers or the product modification of existing producers and the overall goal of adding value to the regional product. Since the primary goal was the holistic examination of the external effects from regional forest management in forest–based tourism and recreation clusters and the consideration of *complementarities*, neither input–output analyses (e.g. due to the lacking statistical data and depth of detail or aggregated processes) nor common market analysis could have been applied, to achieve the same results.

4.5. Further research need

Porter's *Diamond model* comprises a multitude of factors, which are interlinked. Not all factors can be equally considered. In this study the supply side of food and other primary sectors was fairly neglected, because it would have been beyond the scope to consider the supplier industries of all tourism branches. A study on the used suppliers and their products could expose information on the value added in the region (input–output) and imported goods. Although nature–based tourism clusters that offer regional products to their guests exclusively exist (e.g. Tirol), detailed studies to determine factors which strengthen regional suppliers to maintain regional cash flows are still lacking. Such supply side analyses in tourism clusters would once more expand the view on the regional economy of the case study area.

The application of the applied LQ method could be used for further identification of forest–based tourism clusters in the different *federal states* in Germany. It is assumed that the results will be differing with the forms of forest–based activities and thus the local tourism businesses' structures and factor conditions. Furthermore the LQ might be a useful tool to finally compare forest–based tourism and recreation and its regional economic benefits of protected forest areas (e.g. *Nationalpark Bayerischer Wald*) to managed forest areas (e.g. *Sauerland*). It is assumed that besides the exclusively promoted protected forest areas in Germany, forest–based tourism and recreation clusters can be found in many rural, forested regions. Moreover, using the LQ, a separated viewing of forest–based day visitors (tourist arrivals / population size) and forest–based tourists (e.g. overnight stays / number of beds) could lead to a closer look at two different target groups.

This study approach purposely excludes consumptive recreational use, such as fishing and hunting. Following the conceptual extention of the forest and wood–based industries cluster by recreational activities and their industries, a further look on consumptive recreational businesses could once more contribute to a more holistic understanding of this sector. On a practical scale, limits to the identification of consumptive recreational use hotspots will be given by the German Classification of Economic Activities, which does not allow for a separated view on e.g. mushroom gathering, hunting and fishing through data limitation.

Although a social network analysis was carried out among the expert circle, more information on cooperation patterns and the quality of cooperation could have been detected, if another method had been chosen to obain the data (see method chapter for SNA). Additional results in SNA can be generated if more relational data is obtained in future cluster analyses.

Furthermore, new communication tools and strategies, such as the integration of web 2.0 in local destination marketing should be considered. The use of web 2.0 seems – at this point – already as a standard in destination marketing. Yet, in tourism cluster literature it has been covered only sporadically. Feasibility studies of RSS feeds, blogs and the use of twitter for continuous news on e.g. trail conditions and weather forecast might contribute to a younger customer profile and hence to differing demand conditions and new, innovative product generation.

5. Conclusion

The integration of the service–related tourism industry into the output–defined value–chain–comprising forest and wood–based industries cluster on a conceptual scale introduces the viewing of two different industries, capitalizing on the same resource.

The herein applied methods prove useful to describe and analyze a forest–based tourism cluster in a set frame of a case study. The further analysis based on Porter's *Diamond model* emphasizes the socio–economic and socio–political importance of managed forests for rural forest–based tourism and recreation areas. "*In the best case scenario, cluster analysis is used to expose interdependencies and associated regional economic strengths and weaknesses, given alternative explicit assumptions about a community's development challenges, goals, values, and political realities*" (Enright, 2000). As this study shows, interdependencies between forestry and tourism become apparent, strength and weaknesses of the forest–based tourism and recreation cluster are outlined and communal development recommendations are made.

Out of the forestry perspective it becomes clear which other industries depend on a sound forest environment and its management practices and in which dimension they are able to capitalize on the resource. An integration of non–timber forest products and services would enlarge – in cluster breadth and depth – the forest and wood–based industries cluster. On the conceptual and political scale, this might be useful for politicians and decision makers. On a practical scale and in the localized framework of a case study, a complete integration might be inefficient. However, a more holistic thinking and understanding of both, the forestry and tourism industry could lead to a more cohesive and stronger regional cluster formation. As an outcome of this study, it becomes evident that local and regional policy support needs to look beyond the value–chain along the resource wood to cover important societal needs.

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I. List of Experts and Corresponding Interview Date

List of Experts and corresponding interview date		
Expert	**Organization**	**Date**
Ms. Schwier	Sauerland Tourismus (regional tourism marketing association)	27/07/2007
Mr. Bernholz	Kreisjägerschaft HSK (hunters association of the County)	16/07/2007
Ms. Funke	Olsberg Touristik (local tourism management office)	08/2007
Mr. v. d. Golz	Regionalforstamt Oberes Sauerland	01/2008
Mr. Ahrends	Bestwig Tourismus (local tourism management office)	21/08/2007
Mr. Zimmermann	Sauerländischer Gebirgsverein e.V.	20/02/2008
Mr. Rogoll	Stadtmarketing Sundern (local tourism management office)	29/02/2008
Mr. Senn	Untere Landschaftsbehörde	24/01/2008
Ms. Kümmel	Marsberg Tourismus (local tourism management office)	24/01/2008
Mr. Strenger	Brilon Wirtschaft und Tourismus (local tourism management office)	11/2007
Mr. Döbereiner	Medebach Touristik (local tourism management office)	08/2008
Ms. Hahn	Tourist Information Arnsberg (local tourism management office)	21/08/2007
Mr. Weber	Schmallenberger Tourismus (local tourism management office)	24/07/2007
Mr. Rosenkranz Mr. Dr. Knoche	Rothaarsteig e.V. (Marketing office hiking trail)	18/07/2007
Mr. Schmidt	Sauerländer Wandergasthöfe e.V.	22/06/2007
Mr. von Ketteler	Private forest owner / Wildwald Vosswinkel	28/07/2007
Mr. Wegerich	Bike–Arena Sauerland	01/2008
Mr. v. Weichs	Waldbauernverband NRW	08/2007
Mr. Beckmann	Winterberg Tourismus (local tourism management office)	01/2008

II. List of Cooperating Institutins According to Experts

Expert's list of cooperating institutions [n=18]
Alpro Soja (Food brand)
Bezirksregierung (Administrative unit)
Bike Arena Sauerland (Tourism operator)
Bike Park Winterberg (Tourism operator)
Bobbahn GmbH (Tourism operator)
Brilon Wirtschaft und Touristik (Administrative unit)
Bundesgeschäftsstelle Naturgemäße Waldwirtschaft (Administrative unit / interest group)
Deutsche Sporthochschule Köln (Research- and consulting institution)
Einzelhandel / Verleihe (Retailers / rentals)
Gastronomie (Gastronomy)
Gemeindewaldbesitzerverband (Forest owners)
Heilbäderverband e.V. (Health service interest group)
Hessisch-waldeck'scher Gebirgs- und Heimatverein (Regional association)
Holzabsatzfonds (Administrative unit)
Hoteliers / guest houses (Accommodation businesses)
Kreisjägerschaft HSK (Local hunters association)
Landesbetrieb Wald und Holz NRW (Federal ministry of forestry North Rhine-Westphalia)
Landesgemeinschaft Naturschutz und Umwelt NRW (LNU) (Federal nature conservation association)
Landschaftsverband Westfalen-Lippe (Regional authority Westphalia-Lippe)
Landwirtschaftskammer (Chamber of agriculture)
Marsberg Touristik (Local tourism management office)

Medebach Touristik
(Local tourism management office)

Naturparkverwaltung Homert
Administration of the nature park Homert

Olsberg Touristik
(Local tourism management office)

Rothaarsteigverein e.V.
(Tourism operator / Local certification brand)

Ruhrverband
(Regional authority Ruhr)

RWE
(Regional supplier of electric energy)

Sauerland Tourismus
(Regional marketing association)

Sauerländer Wandergasthöfe e.V.
(Local certification brand)

Schmallenberg Tourismus
(local tourism management)

Schöffel
(Outdoor equipment brand)

Siegerland Tourismus
(Regional tourism management)

Skilifte
(Local transportation)

Stadtmarketing Brilon
(Local tourism management office)

Stadtmarketing Sundern
(Citymarketing office / Local tourism office)

Tatonka
(Outdoor equipment brand)

Tourist Information Arnsberg
(Local tourism management office)

Tourist-Information Willingen
(Regional tourism management office)

Transportverbände, z.B. RLG
(Local transportation, e.g. regional public transportation)

Untere Landschaftsbehörde
(Administrative unit for nature- and landscape planning)

Veltins
(Food brand)

Waldbauernverband
(Association of forest farmers)

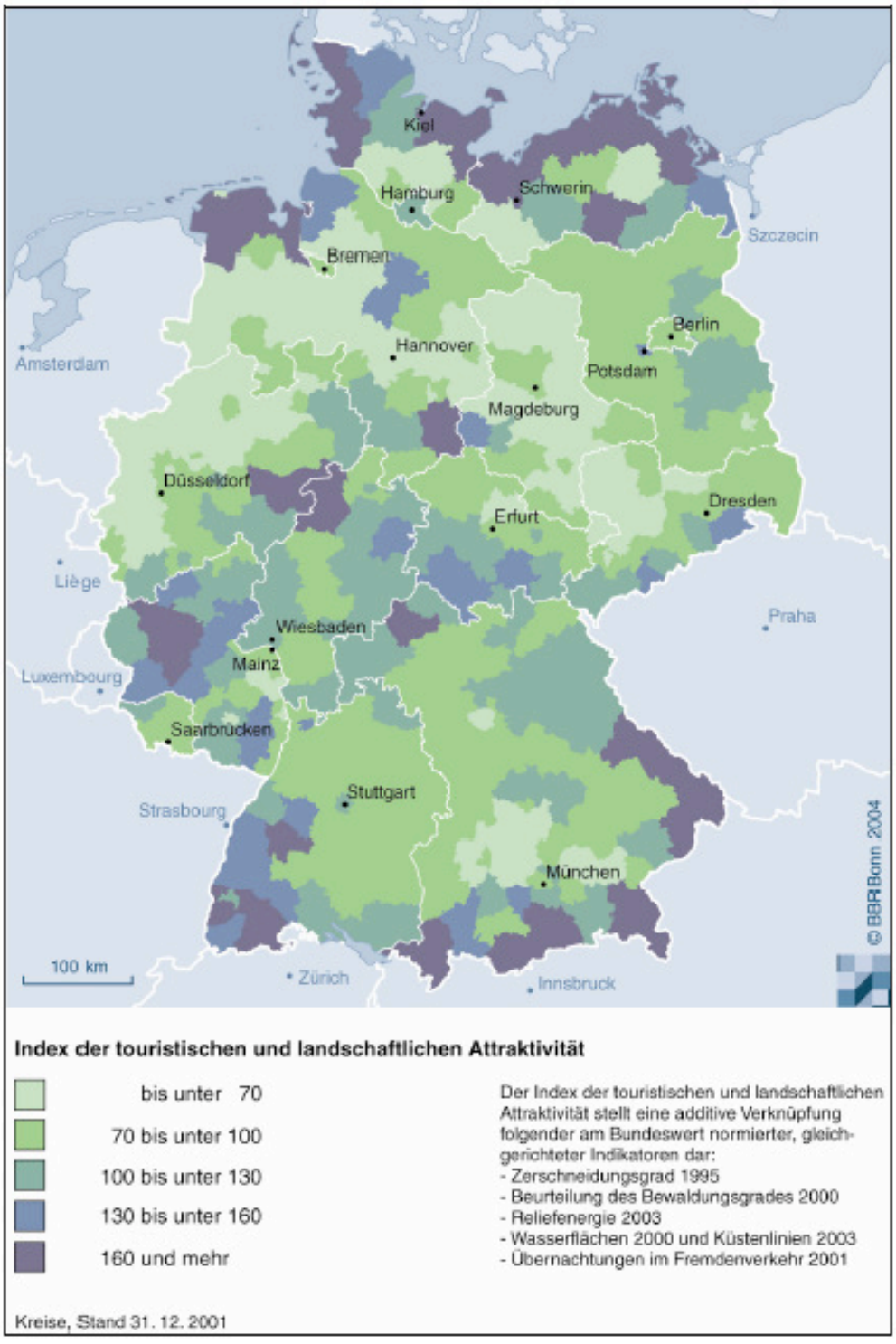
Waldbesitzerverband
(Association of forest owners)

Wildwald Vosswinkel
(Tourism operator)

Winterberg Tourismus
(Local tourism management office)

Deutscher Wanderverband
(National hiking association)

III. Index of Touristic and Scenic Attractivity in Germany (Bundesamt für Bauordnung und Raumwesen in (Engels, 2008))



IV. Survey Questionnaire Businesses

Wald-Zentrum

Westfälische Wilhelms-Universität Münster

in Kooperation mit
Sauerland Tourismus e.V

Waldtourismus und Erholungsnutzung im Hochsauerlandkreis

Sehr geehrter Gastwirt, Hotelbetreiber, Restaurantbesitzer oder Anbieter sonstiger touristischer Produkte und Dienstleistungen,

Wir benötigen Ihre Unterstützung!

Die Attraktivität Ihrer Region wird maßgeblich durch Ihr Angebot touristischer Produkte und Dienstleistungen beeinflusst.
Im Rahmen dieses Forschungsvorhabens an der Universität Münster sind uns Ihre Angaben und Meinungen zum Thema Waldtourismus und Erholungsnutzung im Hochsauerlandkreis besonders wichtig. Hierzu zählen wir Waldbesucher, Wanderer, Natursportler und Naturliebhaber.

Das Ziel der Studie ist die Untersuchung der Bedeutung des Waldtourismus im Hochsauerlandkreis, um Empfehlungen zur Förderung eines nachhaltigen und zukunftsfähigen Tourismus in der Region zu entwickeln.

Auch wenn Sie für Ihr Unternehmen zunächst keinen direkten Bezug zum Thema Waldtourismus sehen, würden wir uns freuen wenn Sie zumindest die erste Seit des Fragebogens ausfüllen, da auch Ihr unternehmen für unsere Studie wichtig ist.

Wir würden uns freuen wenn Sie sich durch das Ausfüllen dieses Fragebogens an der Studie beteiligen und so zum Gelingen des Vorhabens beitragen.

Die Bearbeitung des Fragebogens nimmt ca. 10 Minuten in Anspruch. Für die einfache **Rücksendung bis zum 30. Oktober 2007** finden Sie beigefügt einen Rückumschlag. Den Versand zahlen wir natürlich.

Bitte geben Sie nicht Ihren Namen oder Ihre Adresse auf dem Fragebogen an, damit die Anonymität Ihrer Angaben gewährleistet bleibt. Für die Auswertung benötigen wir lediglich die Angabe Ihrer Postleitzahl.

Für Rückfragen oder näheren Informationen zur Erhebung steht Ihnen Anna Martinsohn zur Verfügung (0251-8330140, anna.martinsohn@wald-zentrum.de), welche die Studie im Rahmen ihres Promotionsvorhabens durchführt.

Herzlichen Dank für Ihre Unterstützung!

Weitere Informationen finden Sie unter:

www.wald-zentrum.de

Die Ergebnisse werden wir Ihnen 2008 in Ihrer regionalen Tourismuseinrichtungen zur Verfügung stellen.

1 Ihre Einrichtung

Bitte geben Sie die Postleitzahl Ihres Unternehmens an: | | | | | |

Bitte charakterisieren Sie Ihre Einrichtung nach den folgenden Kriterien:

Organisationsform (Rechtsform)	☐ Einzel-unternehmen	☐ KG (Kommandit-gesellschaft)	☐ GmbH (Gesellschaft mit beschränkter Haftung)	☐ GbR (Gesellschaft bürgerlichen Rechts)	☐ Sonstiges _____

Handelt es sich bei Ihrem Betrieb um einen zertifizierten Betrieb?	☐ ja, Sauerländer Wandergasthöfe	☐ ja, Qualitätsbetriebe Rothaarsteig	☐ nein	☐ Sonstige _____

Was ist die Hauptzielsetzung oder der Auftrag Ihrer Einrichtung? (Mehrfachnennung möglich)	☐ Wirtschaftliche Tätigkeit	☐ Verwaltung
	☐ Marketing / Öffentlichkeitsarbeit	☐ (Umwelt-)Bildung / Qualifizierung
	☐ Fachliche Beratung	☐ Forschung / Entwicklung
	☐ Interessenvertretung / Lobbyarbeit	☐ Sonstige _____

Personal Vollzeit	☐ 0	☐ 1-5	☐ 6-10	☐ 11-20	☐ > 20
Personal Teilzeit	☐ 0	☐ 1-5	☐ 6-10	☐ 11-20	☐ > 20
Davon Azubis	☐ 0	☐ 1-2	☐ 3-4	☐ 5-6	☐ > 6
Sonstige (Ehrenamtliche, Mitglieder etc.)	☐ 0	☐ 1-10	☐ 11-25	☐ 26-50	☐ > 50

Umsatz in Euro / Jahr	☐ < 100.000	☐ 100.001-500.000	☐ 500.001-1.000.000	☐ 1.000.001-2.000.000	☐ 2.000.001-3.000.000	☐ > 3.000.000

Schätzung der Auslastung Ihrer Kapazitäten in Prozent im letzten Jahr (2006) (nach Saison)	Winter ___%	Frühjahr ___%	Sommer ___%	Herbst ___%

Ist die Walderholung / der Wald- und Naturtourismus für die Geschäftstätigkeit Ihres Unternehmens / Ihrer Einrichtung relevant, beziehungsweise erwirtschaften Sie einen für Sie wichtigen Teil des Umsatzes aufgrund dieser Art von Tourismus?
Wie wichtig ist dessen Anteil am Gesamtumsatz Ihres Unternehmens / Ihrer Einrichtung?

völlig unwichtig* (0 %) ☐	**eher unwichtig*** (1-20 %) ☐	**eher wichtig** (21-40 %) ☐	**wichtig** (41-60 %) ☐	**sehr wichtig** (61-80 %) ☐	**essenziell** (81-100 %) ☐	**Keine Angaben** ☐

*Sollten Sie „völlig unwichtig“ oder „eher unwichtig“ angekreuzt haben, steht es Ihnen frei mit der Befragung fort zufahren. Bitte senden Sie jedoch zumindest die erste Seite ausgefüllt an uns zurück. Vielen Dank für Ihre Beteiligung!

2 Produktkatalog

Meine Einrichtung / mein Unternehmen bietet folgende Unterkünfte an: (Mehrfachnennungen möglich)
☐ Hotel ☐ Pension ☐ Campingplatz ☐ Ferienwohnung, Jugendherberge, Hütte o. ä. Unterkunft ☐ sonstige Unterkünfte _____
Meine Einrichtung / mein Unternehmen bietet folgenden touristischen Service an: (Mehrfachnennungen möglich)
☐ Restaurant / Gasthof ☐ Anbieter touristischer Infrastruktur (z.B. Wanderwege, Mountainbikestrecken, Bergbahn, Skilift) ☐ Anbieter touristischer Informationen (z.B. Tourismusbüros, Reisebüros, Führer / Guides) ☐ Anbieter von Natursportarten (z.B. Nordic-Walking Trainer) ☐ Verleih von Material (z.B. Bootsverleihe) ☐ Verkauf touristischer Waren / Produkte (z.B. Souvenirläden) ☐ Anbieter von Dienstleistungen im Kur- und Gesundheitsbereich (z. B. Fitness-Center, Sauna, Solarium) ☐ sonstige Dienstleistungen (bitte spezifizieren Sie) _____

Bitte beurteilen Sie Ihre durchschnittliche Kundenklientel anhand der aufgelisteten Kriterien.

Wie hoch ist Ihrer Einschätzung nach…	**niedrig**	**durch-schnittlich**	**hoch**	**keine Angabe**
…das durchschnittliches Alter	☐ (20–30)	☐ (30–55)	☐ (55+)	☐

… die Anzahl der Einzelpersonen	☐ (< 20 %)	☐ (21-40 %)	☐ (> 40%)	☐
… die Anzahl der Paare	☐ (< 20 %)	☐ (21-40 %)	☐ (> 40%)	☐
… die Anzahl der Familien	☐ (< 20 %)	☐ (21-40 %)	☐ (> 40%)	☐
… Reisegruppen / Clubs / Vereine	☐ (< 20 %)	☐ (21-40 %)	☐ (> 40%)	☐

… die Anzahl der Stammgäste	☐ (< 25 %)	☐ (25-50 %)	☐ (> 50 %)	☐
… die Anzahl der Neukunden	☐ (< 25 %)	☐ (25-50 %)	☐ (> 50 %)	☐

… die Einkommensklasse (brutto / Monat)	☐ (< 2.000 Euro)	☐ (2.000-2.500)	☐ (> 2.500 Euro)	☐

… der Komfortanspruch der Gäste	☐	☐	☐	☐
.. das Kulturinteresse der Gäste	☐	☐	☐	☐
… das Naturinteresse der Gäste	☐	☐	☐	☐
… das Gesundheits- / Aktivitäts- / Sportinteresse der Gäste	☐	☐	☐	☐

3 Rahmenbedingungen für wirtschaftliches Handeln

Bitte beurteilen Sie anhand der aufgelisteten Kriterien die aktuelle Situation Ihres Unternehmens / Ihrer Einrichtung bezüglich Wirtschaftlichkeit und Konkurrenzfähigkeit in der Region. Bitte ergänzen Sie gegebenenfalls die Kriterien um für Sie bedeutende Eigenschaften.

Kriterium	sehr gut	gut	mittel	schlecht	sehr schlecht	nicht zutreffend
Verkehrsanbindung (z. B. Lage und Infrastruktur Ihres Unternehmens)	☐	☐	☐	☐	☐	☐
Naturraum (z. B. ästhetisches Landschaftsbild)	☐	☐	☐	☐	☐	☐
Qualifikation Ihres Personals (z. B. Aus- und Weiterbildung)	☐	☐	☐	☐	☐	☐
Verfügbarkeit qualifizierter Arbeitskräfte in der Region	☐	☐	☐	☐	☐	☐
Verfügbarkeit von Mitteln für Investitionen (z. B. Kredite regionaler Banken)	☐	☐	☐	☐	☐	☐
Positionierung (Ausrichtung, Zuordnung Ihres Produkts / Ihrer Dienstleistung am Zielmarkt: Wie sieht mich der Kunde?)	☐	☐	☐	☐	☐	☐
Etablierung Ihres Unternehmens am Markt (Kontinuität in der Nachfrage Ihres Produkts / Ihrer Dienstleistung)	☐	☐	☐	☐	☐	☐
Innovation (Abgrenzung des Angebots Ihres Unternehmens zu anderen Anbietern)	☐	☐	☐	☐	☐	☐
Marketing und Öffentlichkeitsarbeit (Unternehmungen zur Kundengewinnung bzw. Unternehmensdarstellung z.B. durch Werbung)	☐	☐	☐	☐	☐	☐
Wahrnehmung und Unterstützung durch Politik (z. B. Wirtschaftsförderung)	☐	☐	☐	☐	☐	☐
Medien und Gesellschaft	☐	☐	☐	☐	☐	☐
Sonstige (bitte angeben) _____	☐	☐	☐	☐	☐	☐
_____	☐	☐	☐	☐	☐	☐

Wie wichtig ist Ihnen die Kooperation mit anderen Unternehmen / Einrichtungen in der Region?

	sehr wichtig	ziemlich wichtig	ziemlich unwichtig	völlig un-wichtig	nicht zutreffend
… mit Unternehmen / Einrichtungen der selben Branche (touristische Anbieter, wie Hotels, Gastronomie etc.)	☐	☐	☐	☐	☐
… mit Multiplikatorunternehmen (z. B. Touristikbüros, Informations- und Werbebüros, Vereine)	☐	☐	☐	☐	☐
… mit Unternehmen / Einrichtungen anderer Branchen (z.B. Zulieferer, Großhändler…	☐	☐	☐	☐	☐
… Forstwirtschaft, Waldbesitzern)	☐	☐	☐	☐	☐
Sonstige (bitte angeben) _____	☐	☐	☐	☐	☐

4 Besondere Angaben

Welche Bedeutung hat Ihrer Meinung nach der Wald in der Region für Ihr Unternehmen?

Unser Unternehmen / unsere Einrichtung…	**stimme voll und ganz zu**	**stimme eher zu**	**stimme teils zu**	**stimme eher nicht zu**	**stimme gar nicht zu**	**keine Angaben**
… identifiziert sich mit dem Wald mehr als mit anderen Landschaftselementen (z.B. Täler, Flüsse, Mittelgebirge)	☐	☐	☐	☐	☐	☐
… sieht den Wald als wichtigen Standortfaktor an (z. B. als Motivationsgrund für Touristen die Region zu besuchen)	☐	☐	☐	☐	☐	☐
… würde ohne den Wald als Landschaftselement ebenso gut / ebenso schlecht wirtschaften	☐	☐	☐	☐	☐	☐

Wie schätzen Sie regionale Umwelteinflüsse wie den Orkan „Kyrill“ vom 18.01.2007 für Ihre Branche ein?

Umwelteinflüsse wie der Orkan „Kyrill“ …	**stimme voll und ganz zu**	**stimme eher zu**	**Stimme eher nicht zu**	**Stimme gar nicht zu**	**keine Angaben**
… sind eine Chance für die Region (z.B. offenes attraktives Landschaftsbild)	☐	☐	☐	☐	☐
… sind zwar kurzfristig negativ zu bewerten (gesperrte Wege) **bedeuten aber längerfristig keine Gefahr** /Wiederaufforstungen)	☐	☐	☐	☐	☐
… verursachen auch längerfristig schwere Schäden (z.B. Forstwirtschaft)	☐	☐	☐	☐	☐
Sonstige (bitte angeben) _____	☐	☐	☐	☐	☐

Was vermittelt Ihnen der Werkstoff Holz?

Holz vermittelt mir…	**stimme voll und ganz zu**	**stimme eher zu**	**stimme teils zu**	**stimme eher nicht zu**	**stimme gar nicht zu**	**keine Angaben**
… Wärme und Behaglichkeit	☐	☐	☐	☐	☐	☐
… ein ländlich rustikales Erscheinungsbild	☐	☐	☐	☐	☐	☐
… eine kostengünstige Bauweise	☐	☐	☐	☐	☐	☐
… eine innovative Bauweise	☐	☐	☐	☐	☐	☐
… eine ökologische Orientierung	☐	☐	☐	☐	☐	☐
… sonstiges	☐	☐	☐	☐	☐	☐

Welche Bedeutung hat der Rohstoff Holz bei der Ausstattung Ihrer touristischen Einrichtungen?

Holz ist für touristische Einrichtungen in der Region…	**stimme voll und ganz zu**	**stimme eher zu**	**stimme teils zu**	**stimme eher nicht zu**	**stimme gar nicht zu**	**keine Angaben**
… im Innenbereich (z. B. Böden, Treppen, Möbel etc.)	☐	☐	☐	☐	☐	☐
… für Baukörper (z. B. Außen- und Zwischenwände)	☐	☐	☐	☐	☐	☐
… im Außenbereich (z. B. Balkone, Terrasse, Stege)	☐	☐	☐	☐	☐	☐

Waldtouristen und Erholungssuchende dürfen den Wald betreten ohne ein Entgelt an den Besitzer entrichten zu müssen. Dem Waldbesitzer entstehen in ausgeschilderten Erholungsgebieten erhöhte Kosten weil er gesetzlich zu der Überprüfung seiner Wege im Rahmen der Verkehrssicherheit verpflichtet ist (Verkehrssicherungspflicht).

Durch den erhöhten Besucherverkehr muss der Waldbesitzer gelegentlich auch mit Verlusten bei der Jagdpacht rechnen.

Mit diesem Sachverhalt bin ich vertraut.

☐ Ja **☐ Nein** **☐ keine Angabe**

Meiner Meinung nach…	**stimme voll und ganz zu**	**stimme eher zu**	**stimme teils zu**	**stimme eher nicht zu**	**stimme gar nicht zu**	**keine Angaben**
… sollte der Waldbesitzer ein Entgelt für die touristische Nutzung seines Waldes erhalten.	☐	☐	☐	☐	☐	☐
… sollte eine pauschale Abgabe pro Tourist veranschlagt werden..	☐	☐	☐	☐	☐	☐
… sollte jedes profitierende Tourismusunternehmen eine dem Umsatz angepasste Pauschale für die Waldbesitzer entrichten.	☐	☐	☐	☐	☐	☐
… ist der Wald eine Ressource wie Wasser und Luft. Niemand sollte dafür zahlen müssen.	☐	☐	☐	☐	☐	☐
…ist die Verkehrssicherungspflicht überholt.	☐	☐	☐	☐	☐	☐

Vielen Dank für Ihre Beteiligung an dieser Befragung!

V. Survey Questionnaire Visitors

Wald-Zentrum

Westfälische Wilhelms-Universität Münster

in Kooperation mit
Sauerland Tourismus e.V.

Waldtourismus und Erholungsnutzung im Hochsauerlandkreis

Sehr geehrte/r Waldbesucher/in, Wanderer/in, Natursportler/in oder Naturliebhaber/in,

Wir benötigen Ihre Unterstützung!

Im Arbeitsfeld Wald, Forst- und Holzwirtschaft arbeiten deutschlandweit über 1,3 Millionen Beschäftigte. Sie erwirtschaften einen Umsatz von rund 181 Milliarden Euro pro Jahr. Doch der Wald ist nur ein Holzproduzent… .

Das Forschungsvorhaben zielt auf die Erfassung und Analyse des waldbezogenen Tourismus im Hochsauerlandkreis ab. Hierbei sollen die indirekten Leistungen des Wirtschaftswaldes im Rahmen des Tourismus für den ländlichen Raum ermittelt werden.
Die Ergebnisse der Studie sollen einerseits zu einer verbesserten Planung und Förderung des Tourismus, andererseits zu einer effektiveren Kommunikation zwischen Tourismus, Wald- Und Forstwirtschaft beitragen und somit Konkurrenz- und Zukunftsfähigkeit der Region erhalten.

Mit Ihrer Meinung, als Waldbesucher und Tourist, tragen Sie zu einem besseren Verständnis der Bedeutung des Waldtourismus im Hochsauerlandkreis und zur Vollständigkeit dieser Studie bei.

Unter allen Teilnehmern der Studie verlosen wir folgende Preise:

1. **Preis: 1 Wochenende für 2 Personen in einem Sauerländer Wandergasthof**
2. **Preis: 1 Rothaarsteig Tatonka Wanderrucksack**

3.-5. **Preis: 1 Jahreskarte für den Wildwald Vosswinkel / Arnsberg**

Wenn Sie an der Verlosung teilnehmen möchten, bitten wir Sie Ihre Telefonnummer oder E-Mail Adresse nur auf das Deckblatt zu schreiben. Um Anonymität zu gewährleisten, geben Sie bitte weder Ihren Namen noch Ihre Adresse auf dem Frageformular an. Der Rechtsweg ist ausgeschlossen.

Für das Ausfüllen des Fragebogens benötigen Sie ca. 5-10 Minuten. Wir danken Ihnen für Ihr Interesse an der Studie und Ihre Kooperation.

Diese Studie wird von Anna Martinsohn (wissenschaftliche Mitarbeiterin am Wald-Zentrum der Universität Münster) im Rahmen eines Promotionsvorhabens durchgeführt und von Prof. Dr. Andreas Schulte betreut. Für Rückfragen, Anmerkungen oder näherer Information zur Studie stehen wir Ihnen unter folgenden Kontaktdaten gern zur Verfügung:
Tel. 0251-8330140, E-Mail anna.martinsohn@wald-zentrum.de.

☐ Ja, ich möchte an der Verlosung teilnehmen.
E-Mail:_____ Tel.:_____

1 Reisedaten

Bitte geben Sie folgende Information zu Ihrer aktuellen Reiseplanung und -durchführung an:

Reisebegleitung	☐ allein	☐ mit Partner/in	☐ mit Familie	☐ mit Reise -gruppe	☐ mit Freunden/ innen	☐ sonstiges _____

Anreise	☐ öffentliche Verkehrsmittel (Bahn, ÖPNV)	☐ eigener PKW	☐ Reiseanbieter (Reisebüro / Pauschalreise, Busreisen)	☐ sonstiges _____

Aufenthalt in der Region in Tagen	☐ auf der Durchfahrt	☐ ____Tag/e

Unterbringung	☐ Hotel	☐ Pension / Bed & Breakfast	☐ Ferien- haus	☐ Camping- platz	☐ privat	☐ trifft nicht zu	☐ sonstiges

Wann haben Sie sich zum Reiseantritt entschieden?	☐ spontan	☐ eine Woche zuvor	☐ einen Monat zuvor	☐ vor ____ Monaten

Wie oft waren Sie schon in der Region?	☐ noch nie	☐ einmal	☐ zwei Mal	☐ Ich komme öfter hierher

Wodurch haben Sie über Erholungsaktivitäten in dieser Region erfahren? (Mehrfachnennung möglich)	☐ Freunde und Bekannte	☐ Zeitschriften / Broschüren	☐ Werbung von Tourismus-Anbietern	☐ Internet	☐ Sonstige _____

Planen Sie den Hochsauerlandkreis nächstes Jahr wieder zu besuchen?	☐ sicher	☐ wahrscheinlich	☐ eher nicht	☐ auf keinen Fall	☐ weiß nicht

2 Interessen und Aktivitäten

Was finden Sie an Natur und Landschaft in dieser Region besonders charakteristisch? (Mehrfachnennung möglich)	☐ Äcker / Felder und Wiesen	☐ Klima
	☐ Berge und Täler	☐ Wald
	☐ kleine Städte und Dörfer (charakteristische Architektur)	☐ Quellen, Bäche und Flüsse

Bitte nennen Sie nach Wichtigkeit geordnet (1, 2 und 3) Ihre drei wichtigsten Interessen während Ihres Urlaubs in der Region.	…	Erholung durch Bewegung	…	Rückzug aus dem Alltag
	…	Erholung durch Sport im Freien	…	Städte / Architektur
	…	Fotografie / Beobachtung von Natur und Landschaft	…	Wellness
			…	Kultur und Geschichte
	…	Gastronomie der Region (kulinarische Interessen)	…	Sonstige _____

Welche Aktivitäten verfolgen Sie während Ihres Aufenthalts – bitte nennen Sie nach Wichtigkeit geordnet (1, 2 und 3) nur die drei Wichtigsten.	….	Wandern (ab 5 km / Tag, länger als 2 Stunden)	…	Besichtigung von Sehenswürdigkeiten (z. B. Kirchen, historischen Bauten etc.)
	…	Spazieren gehen (weniger als 5 km / Tag, 1-2 Stunden)	…	Besuch von kulturellen Events (z. B. regionalen Festivitäten)
	…	Nordic-Walking / Walking		
	…	Rad fahren (radeln)	…	Besuch von Sport-Events (z. B. Wettkämpfe)
	…	Nordic-Skating / Skating		
	…	Mountainbike fahren	…	Wellness (z. B. Sauna, Massage, Yoga)
	…	Ski/Snowboard fahren und zwar ☐ Abfahrt ☐ Langlauf	…	Aufenthalt in der Natur (Fotografieren, Picknicken usw.)
	…	Reiten	…	keine besonderen Aktivitäten, nur Erholung durch „Ortswechsel“
	…	Rodeln		
	…	sonstige Sportarten _____	…	Sonstige Aktivitäten _____

3 Ausgaben

Ausgaben für die An- und Abreise (pro Person)	☐ 0 – 20 €	☐ 21 – 40 €	☐ 41 – 80 €	☐ > 80 €

Wie viel geben Sie pro Tag für folgende Posten aus? (pro Person)	Keine Ausgaben	< 10 €	11 – 25 €	26 – 50 €	51 – 75 €	> 75 €
… Unterkunft? (Hotellerie, Pension, Ferienhaus, Campingplatz)	☐	☐	☐	☐	☐	☐
… touristische Dienstleistungen? (Informationsbroschüren, Kartenmaterial, Führungen, Kurse (z.B. Nordic-Walking), Seilbahnen, Souvenirs etc.)	☐	☐	☐	☐	☐	☐
… Gastronomie? (in der Unterkunft, wenn nicht im Übernachtungspreis enthalten sowie außerhalb der Unterkunft)	☐	☐	☐	☐	☐	☐
…lokaler Transport? (öffentliche Verkehrsmittel wie Bus und Bahn)	☐	☐	☐	☐	☐	☐
…lokale Dienstleistungen bzw. Einzelhandel? (Bäcker, Fleischer, Tankstellen, Kaufhäuser, Shops etc.)	☐	☐	☐	☐	☐	☐

4 Bedeutung des Waldes

Bitte schätzen Sie die Bedeutung des Waldes für die Region ein?

Maßnahme/Bedeutung	**sehr bedeutend**	**ziemlich bedeutend**	**ziemlich un-bedeutend**	**völlig un-bedeutend**	**nicht zutreffend**
…als attraktives Landschaftselement	☐	☐	☐	☐	☐
… als Klima-, Luft-, Boden, und Grundwasserschutz	☐	☐	☐	☐	☐
… als Produzent nachwachsender Rohstoffe (z. B. Bauholz, Kaminholz, Holz zur Papierherstellung etc.)	☐	☐	☐	☐	☐
… als wichtiger Arbeitgeber	☐	☐	☐	☐	☐
…für Tourismus und Erholung	☐	☐	☐	☐	☐

Waldtouristen und Erholungssuchende dürfen den Wald betreten ohne ein Entgelt an den Besitzer entrichten zu müssen. Dem Waldbesitzer entstehen in ausgeschilderten Erholungsgebieten erhöhte Kosten weil er gesetzlich zu der Überprüfung seiner Wege im Rahmen der Verkehrssicherheit verpflichtet ist. Mit dieser Problematik bin ich vertraut.

☐ **Ja** ☐ **Nein** ☐ **keine Angabe**

Meiner Meinung nach…	**stimme voll und ganz zu**	**stimme eher zu**	**stimme teils zu**	**stimme eher nicht zu**	**stimme gar nicht zu**	**keine Angaben**
… sollte der Waldbesitzer ein Entgelt für die touristische Nutzung seines Waldes erhalten.	☐	☐	☐	☐	☐	☐
… sollte eine pauschale Abgabe pro Tourist veranschlagt werden..	☐	☐	☐	☐	☐	☐
… sollte jedes profitierende Tourismusunternehmen eine dem Umsatz angepasste Pauschale für die Waldbesitzer entrichten.	☐	☐	☐	☐	☐	☐
… ist der Wald eine Ressource wie Wasser und Luft. Niemand sollte dafür zahlen müssen.	☐	☐	☐	☐	☐	☐
…ist die Verkehrssicherungspflicht überholt.	☐	☐	☐	☐	☐	☐

Wie schätzen Sie die Folgen des Orkan „Kyrill“ für den Tourismus in der Region ein?

Umwelteinflüsse wie der Orkan „Kyrill“ …	**stimme voll und ganz zu**	**stimme eher zu**	**stimme teils zu**	**stimme eher nicht zu**	**stimme gar nicht zu**	**keine Angaben**
… sind eine Chance für die Region (z.B. offenes attraktives Landschaftsbild)	☐	☐	☐	☐	☐	☐
… sind zwar kurzfristig negativ zu bewerten (gesperrte Wege) **bedeuten aber längerfristig keine Gefahr** /Wiederaufforstungen)	☐	☐	☐	☐	☐	☐
… verursachen auch längerfristig schwere Schäden (z.B. Forstwirtschaft)	☐	☐	☐	☐	☐	☐
Sonstige (bitte angeben) _____	☐	☐	☐	☐	☐	☐

5 Persönliche Angaben

Bitte geben Sie einige allgemeine Informationen zu Ihrer Person an:

Geschlecht	☐ weiblich ☐ männlich								
Alter	☐ _____ Jahre								
Familienstand	☐ ledig ☐ eingetragene Partnerschaft ☐ verheiratet ☐ geschieden ☐ verwitwet								
Bildungsstand	☐ Hauptschule ☐ Realschule ☐ Abitur ☐ Hochschule								
Wohnort	☐ NRW (Stadt / Kreis _____) ☐ anderes Bundesland (_____) ☐ Ausland (_____ _____)								
Netto-Einkommen in Euro (pro Person pro Monat)	☐ <1.000	☐ 1.001-1.500	☐ 1.501-2.000	☐ 2.001-2.500	☐ 2.501-3.000	☐ 3.001-3.500	☐ >3.501-4000	☐ >4.001-4.500	☐ <4.501

Ort: _____ Datum: _____

Vielen Dank für Ihre Beteiligung an dieser Befragung! Wir wünschen Ihnen einen angenehmen Aufenthalt im Sauerland!

VI. Survey Guideline Expert Interviews

Wald-Zentrum

Westfälische Wilhelms-Universität Münster

Gesprächsleitfaden Expertenbefragung

Erhebung Waldtourismus und -erholungsnutzung im Cluster Wald und Holz

Fallstudie: Hochsauerlandkreis

Im Rahmen einer Promotionsarbeit an der Westfälischen Wilhelms-Universität Münster

Ansprechpartner für Rückfragen:
[Visitenkarte]
Anna Martinsohn M. Sc.
Tel.: 0251-8330140
E-Mail: anna.martinsohn@wald-zentrum.de

1. **Allgemeines**

[Anonymität / Information über Dauer des Gesprächs / Information über Mitschnitt des Gesprächs und Transkipt, Abfrage allgemeiner Information zur Einrichtung, abweichende Adressen Verwaltung, Standorte, Ansprechpartner (mögliche Vertreter), Mobilnummern]

Einrichtung	
Branche	Forstwirtschaft, Tourismus, Gastronomie, Hotellerie, waldspezifische Anbieter, Regionalplanung/-management, Fachverwaltung, andere Interessensvertretungen (NatSchu, Jagd)
Ansprechpartner	

Organisationsform (z. B. Rechtsform)		
Was ist die Hauptzielsetzung / das Hauptgeschäftsfeld oder der Auftrag Ihrer Einrichtung? (Mehrfachnennung möglich)	☐ Wirtschaftliche Tätigkeit	☐ Verwaltung
	☐ Interessenvertretung / Lobbyarbeit	☐ Marketing / Öffentlichkeitsarbeit
	☐ Fachliche Beratung	☐ Bildung / Qualifizierung
	☐ Forschung / Entwicklung	☐ Sonstige _____

Vorhandenes Datenmaterial, Jahresberichte, Planungsdokument, Adressen, Kontakte etc.	

Definition Waldtourismus: Waldtouristen: Waldbesucher, Wanderer, Natursportler sowie Naturliebhaber.
Anbieter waldbezogener Dienstleistungen für Tourismus und Erholung: tourismusspezifische Anbieter, tourismusverwandte Anbieter. Erklärung

Wie schätzen Sie Ihren Wissens- und Kenntnisstand bezüglich der folgenden Kriterien ein (Expertenwissen: Erkennen großer Bedeutungszusammenhänge, arbeiten schneller und fehlerfreier, besseres Kurzzeit- und Langzeitgedächtnis, achten auf Strukturen als auf oberflächliche Eigenschaften, verwenden Zeit für qualitative Analysen, können ihre Fähigkeiten und Leistungen richtig beurteilen)

Können Sie über die Gesamtsituation des Waldtourismus bzw. der waldbezogenen Erholungsnutzung in der Region Auskünfte erteilen? Inwieweit verfügen Sie Ihrer Meinung nach über so genanntes Expertenwissen …. (1=gar nicht / 10=umfangreiches Expertenwissen).

Expertenwissen:

….Kriterium	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Tourismus										
Natursport										
Gastronomie und Hotellerie										
Forstwirtschaft										
Regionalmanagement										
Andere Waldnutzungsformen (z.B. Jagd)										
Naturschutz										

[Einschätzung der Sekundärdaten, Anzahl der Anbieter, Anzahl Kleinunternehmen, Vollständigkeit des Branchenbildes]

[Angaben von Anbietern über die Einschätzung des Waldbezugs, Kundenaktivitäten und Kundeninteressen]

Wie schätzen Sie anhand der Tabelle die durchschnittliche Kundenklientel der Touristen in im Hochsauerlandkreis ein?

Wie hoch ist Ihrer Einschätzung nach…	**niedrig**	**durch-schnittlich**	**hoch**	**keine Angabe**
…das durchschnittliches Alter	☐ (20 – 30)	☐ (30 – 55)	☐ (55+)	☐
… die Anzahl der Einzelpersonen	☐ (< 10 %)	☐ (11-25 %)	☐ (> 25%)	☐
… die Anzahl der Paare	☐ (< 10 %)	☐ (11-25 %)	☐ (> 25%)	☐
… die Anzahl der Familien	☐ (< 10 %)	☐ (11-25 %)	☐ (> 25%)	☐
… die Anzahl der Stammgäste	☐ (< 25 %)	☐ (25-50 %)	☐ (> 50 %)	☐
… die Anzahl der Neukunden	☐ (< 25 %)	☐ (25-50 %)	☐ (> 50 %)	☐
… die Einkommensklasse (brutto / Monat)	☐ (< 2.000 Euro)	☐ (2.000-2.500)	☐ (> 2.500 Euro)	☐

Komfortanspruch der Gäste	☐	☐	☐	☐
Kulturinteresse der Gäste	☐	☐	☐	☐
Naturinteresse der Gäste	☐	☐	☐	☐
Gesundheits- / Aktivitäts- / Sportinteresse der Gäste	☐	☐	☐	☐

2. **Kooperation**

Bitte schätzen Sie die Kooperation im Bezug auf Implementierung von Neuprojekten und täglichem Management / Monitoring Ihrer Einrichtung mit anderen branchenverwandten Einrichtungen ein. (1=sehr häufig, 2=häufig, 3=gelegentlich, 4=kaum -5=nie)

Branche / Bedeutung	**1**	**2**	**3**	**4**	**5**	**nicht zutreffend**
Forstwirtschaft (z. B. Waldbesitzer, Forstbetriebe, Dienstleister)	☐	☐	☐	☐	☐	☐
Tourismus (z. B. Touristikbüros, Informationsbüros)	☐	☐	☐	☐	☐	☐
Gastronomie (z. B. Restaurants, Gasthöfe)	☐	☐	☐	☐	☐	☐
Hotellerie (z. B. Pensionen, Hotels, Ferienhausvermietungen)	☐	☐	☐	☐	☐	☐
Andere Anbieter (z. B. private Anbieter / Unternehmen, Vereine, Verbände)	☐	☐	☐	☐	☐	☐
Zulieferer (lokale kleine und mittelständische Unternehmen des Handwerks und Einzelhandels wie Bäcker, Lieferanten)	☐	☐	☐	☐	☐	☐
Finanzwesen (Banken)	☐	☐	☐	☐	☐	☐
Naturschutz (Ortsgruppen, Vereine, Verbände, z.B. BUND, NABU,)	☐	☐	☐	☐	☐	☐
Fachverwaltung (Ministerien, Landesbetriebe, Ämter)	☐	☐	☐	☐	☐	☐
Andere Interessenvertretungen (Verbände)	☐	☐	☐	☐	☐	☐
Bildung und Forschung	☐	☐	☐	☐	☐	☐
Sonstige (bitte angeben) _____	☐	☐	☐	☐	☐	☐

Bitte nennen Sie Unternehmen und Einrichtungen (Personen und Funktion) aus den o. g. Branchen mit denen Sie sehr intensiv in Kontakt stehen (hohe Kommunikation oder Kooperation) / die eine Schlüsselrolle im regionalen Management bezüglich Waldtourismus einnehmen.

Bitte erläutern Sie die Ihrer Meinung nach die Wichtigkeit der Art der Kommunikation generell:

Kommunikationsart / Bedeutung _____	**1**	**2**	**3**	**4**	**5**	**nicht zutreffend**
Regelmäßiger beruflicher persönlicher Kontakt (z. B. förmlich geregelte Besprechungen)	☐	☐	☐	☐	☐	☐
Regelmäßiger privater persönlicher Kontakt (z. B. gemeinsame Freizeitbeschäftigung)	☐	☐	☐	☐	☐	☐
Gelegentlicher persönlicher Kontakt (z. B. gelegentliche Besprechungen, Veranstaltungen)	☐	☐	☐	☐	☐	☐
Gelegentlicher privater persönlicher Kontakt (z. B. feierliche Anlässe)	☐	☐	☐	☐	☐	☐
Bürokommunikation (Post, E-Mail, Telefon, Fax)	☐	☐	☐	☐	☐	☐
Allgemeiner Kontakt (z. B. Bezug oder Lieferung von Informationsmaterialen)	☐	☐	☐	☐	☐	☐
Sonstige (bitte angeben)	☐	☐	☐	☐	☐	☐

Gemeinsame Projekte / gemeinsame Netzwerke:

Ich bin Teil des Netzwerks:

Spezifische Parameter und Rahmenbedingungen

Bitte beschreiben Sie den Ist-Zustand Ihrer Branche oder Ihres Bereichs.
Bitte beschreiben Sie die wichtigsten **Entwicklungstrends Ihrer Branche** oder Ihres Bereichs (basierend auf der zurückliegenden Entwicklung und der aktuellen Situation).

Kriterium	sehr gut	gut	mittel	schlecht	sehr schlecht	nicht zutreffend
Verkehrsanbindung (z. B. Lage und Infrastruktur Ihres Unternehmens)	☐	☐	☐	☐	☐	☐
Naturraum (z. B. ästhetisches Landschaftsbild)	☐	☐	☐	☐	☐	☐
Qualifikation Ihres Personals (z. B. Aus- und Weiterbildung)	☐	☐	☐	☐	☐	☐
Verfügbarkeit qualifizierter Arbeitskräfte in der Region	☐	☐	☐	☐	☐	☐
Verfügbarkeit von Mitteln für Investitionen (z. B. Kredite regionaler Banken)	☐	☐	☐	☐	☐	☐
Positionierung (Ausrichtung, Zuordnung Ihres Produkts / Ihrer Dienstleistung am Zielmarkt: Wie sieht mich der Kunde?)	☐	☐	☐	☐	☐	☐
Etablierung Ihres Unternehmens am Markt (Kontinuität in der Nachfrage Ihres Produkts / Ihrer Dienstleistung)	☐	☐	☐	☐	☐	☐
Innovation (Abgrenzung des Angebots Ihres Unternehmens zu anderen Anbietern)	☐	☐	☐	☐	☐	☐
Marketing und Öffentlichkeitsarbeit (Unternehmungen zur Kundengewinnung bzw. Unternehmensdarstellung z.B. durch Werbung)	☐	☐	☐	☐	☐	☐
Wahrnehmung und Unterstützung durch Politik (z. B. Wirtschaftsförderung)	☐	☐	☐	☐	☐	☐
Medien und Gesellschaft	☐	☐	☐	☐	☐	☐
Sonstige (bitte angeben) _____	☐	☐	☐	☐	☐	☐
_____	☐	☐	☐	☐	☐	☐

[Beispiele: ökonomische, ökologische, kommunikative Trends…]

Entwicklungstrend	Erläuterungen

Bitte beschreiben Sie die wichtigsten **Problem- und Konfliktfelder** Ihrer Branche oder Ihres Bereichs.

Problem- und Konfliktfelder	**Erläuterungen**

Bitte nehmen Sie eine Bewertung der spezifischen Stärken, Schwächen, Chancen und Risiken Ihrer Branche oder Ihres Bereichs mit direktem Bezug zum Standort vor:

Stärken der Branche	**Schwächen der Branche**
Chancen für die weitere Entwicklung der Branche	**Risiken für die weitere Entwicklung der Branche**

Modul 4 - Handlungsempfehlungen

Wo sehen Sie Entwicklungspotenziale?

Entwicklungspotenziale	**Erläuterungen**

Welche Handlungsempfehlungen können Sie für Ihre Branche aussprechen?

Handlungsempfehlungen	**Erläuterungen**

Zusätzliche Einschätzungen zu …

Problempunkt	**Erläuterungen**
Datensicherheit	
Grundgesamtheit	
Kleine Unternehmen (z.B. Pensionen unter 8 Betten)	
Einschätzung des Interesses und des Rücklaufs.	
Orkan „Kyrill“ **[Folgen, Erfahrungen, Kommunikation, Verwaltung, Vernetzung]**	
Betretungsrecht **[Erfahrungen, Kommunikation]**	
Holz im Bau	
Weitere Experten	

Vielen Dank für Ihre Beteiligung an dieser Studie!